EDUCATION SECTOR REFORMS IN CENTRAL ASIA
DURING THE POST-SOVIET PERIOD
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The collapse of the Soviet Union brought with it an opportunity for educational reform in many Central Asian Republics that previously used the centralized Russian system of Education. A paradigm shift from a centralized, socialist market to a market economy necessitated reforms in education. The paper will briefly describe how 5 Central Asian countries made that transition and deal in depth with the burgeoning reforms and transformation higher educational system of Kazakhstan, Kyrgyzstan, Uzbekistan, Turkmenistan, and Tajikistan.

Central Asian states have gained independence in the beginning of 1990s. Together with the political and economic reforms, each of them attempted to restructure education system that they inherited from the Soviet past. With more than two decades of independence behind, today the five countries are still having trouble in reaching international standards of education. However, some perform better than others do. In Kyrgyzstan, frequent changes of government authorities and even violent ousters have stalled reforms in education, lacking continuity and stability in government's development vector. Civil war in Tajikistan has affected the education reform process, and overall poverty in the country does not allow large government investment into the sector. Rapid changes that Turkmenistan and Uzbekistan have attempted to implement lead to mixed results.

Many experts note that different outcomes of education reforms in these countries are largely explained by differences in their social discoveries as well as progress in embedding a market economy. In other words, the countries such as Kazakhstan, which performed more successfully in other sectors, including economy, tended to have more far-reaching reforms in education. As opposed to those countries, this preserved a large number of elements from the old command economy.

Key Words
reforms in education, Central Asia, reform, post-Soviet, curriculum and teaching methods, qualification requirements, self-financing mechanisms, extra-curricular activities, government educational policy, management capacity, highly qualified specialists, nepotism and regionalism, list of obligatory topics, consequences of regressive policy, market economy and open society, corruption in the education system, academic mobility of faculty members.

Introduction

The human civilization has always been placing its hopes for the future on education. Reforms in education sphere are a global process and an integral part of public changes occurring throughout the world.
The Central Asian states that gained sovereignty in the beginning of 1990s developed national education models of their own. Soon after independence, expenditures for the education sector have shrunk in the region, especially in Tajikistan and Kyrgyzstan. During 1990-2001, public expenditures on education in Tajikistan as percentage of GDP have declined from 9.7 to 2.4% and from 8.3% to 3.1% in Kyrgyzstan. Meanwhile, the world average expenditure is 4.1%. (Omirbaev, 2009:172)

KAZAKHSTAN

Among the Central Asian countries, only Kazakhstan has been internationally recognized as a country with a successful market economy. As said Kazakh President Nursultan Nazarbayev said, educational reform must aim at "every citizen of our country so that s/he receives a decent education and skills in order to become a demanded specialist in every corner of the world". In this regard, the goal is "to make the Kazakh educational system as well as its adult re-training closer to international standards" that is one of the thirty most indispensable target areas outlined in the new strategy of Kazakhstan". (Zharkynbaeva, 2008:6)

Overall, Kazakhstan has inherited principles and methods of the Soviet education and pedagogy. The existing legislation in Kazakhstan stipulates that a national education system, which is based on the principles of succession and continuity of educational programs, should be composed of four levels of education:  
1) pre-school education;  
2) secondary education (primary, secondary and vocational);  
3) higher education;  
4) post-graduate education.

The education re-structuring paradigm in Kazakhstan was grounded in late 1990s and shaped by the three basic documents such as the Law on Education, the State Educational Standards as well as the State Educational Program. The pivotal stone in reformation was the shift from a “Education for all” model to “Education by choice” principle. The goal of the reform was to integrate the educational system of Kazakhstan into the global education. An important step in reforming Kazakhstan’s education system was made in 2001 when the Education Ministry had approved the Classifier of Majors and Occupations in Higher Education, making enrollment requirements closer to the international educational standards, and particularly, to the Lisbon Convention on the Recognition of Qualifications concerning Higher Education, which Kazakhstan had signed far earlier than other CIS countries.

Moreover, an International Bolashak Fellowship Program has become quite successful in educating the cadres of the new generation. Since 2004, up to 3000 Bolashak fellowships are awarded annually. According to the official statistics, over 1700 people studied in some of the world’s best universities, including Harvard, Stanford, Cambridge, Sorbonne and others. However, during the first years of independence, one of the results of secondary schools’ development in Kazakhstan was the elitization of education. The number of specialized schools with additional paid services had increased attracting many of the best instructors. Meanwhile, the quality of education in ordinary schools as well as their teaching aids had decayed.

Moreover, by mid-1990s, some negative tendencies were under way in secondary education. During 1995-1997, the so-called "optimization" of educational institutions was implemented forcing 300 small schools to close.
All levels of education are institutionalized with the following set of elements and structures:

- The structure of education has been aligned with the International Standard Classification of Education;
- Enabling environment is being created to practice a 12-year-schooling model;
- Three-cycle degree system has been introduced to have Bachelor, Master and PhD degrees;
- Classifier of undergraduate and graduate education occupations has been approved with aggregated clusters of occupations being created;
- A national system of assessing the quality of education has been created that incorporates elements of independent external evaluation such as licensing, certification, accreditation, ranking, unified national testing (hereinafter referred to as the “UNT”), intermediate state control (hereinafter referred to as the “ISC”), comprehensive testing of university applicants and others);
- Issues concerning provision of free hot meals and free transportation for high school students are being resolved.
- In 2005, the Kazakh government placed an order to train 25,710 students for higher and post-graduate education, increasing it up to 35,425 in 2010;
- Access to internet is provided by 98% in urban schools and 97% in rural schools. In 2005, this figure was just 75% and 70% respectively. In total, 34% of schools are connected to the broadband internet;
- A network of specialized schools is created for gifted children, where courses are taught in three languages (Kazakh, Russian and English). Currently, there are thirty three specialized secondary schools;
- Universities are given much freedom in determining their curriculum. For example, the share of elective courses has increased from 40% to 50% for the Bachelor programs, from 50% to 60% for Master’s program and from 70% to 80% for PhD programs.

Yet, the education quality in Kazakhstan remains not highly attractive.

Preschool education:
As of July 1, 2010, the coverage of pre-school education in Kazakhstan had increased by 16.8% in comparison with the same period in 2005. Yet, the number of children attending preschool is still only 40% while this figure reaches 90-100% in the developed countries. Due to the increasing birth rate, annual growth for queuing in pre-school institutions is 5.7% in the country. This percentage is higher in five geographical areas of Kazakhstan due to the birth rate and migration, when it reaches.
On the average, 100 seats are provided for 111 children, while this figure is higher in urban area reaching 120 children. In urban area, every third child attends kindergarten while in rural area only 5 out of 100 children have this opportunity.
Inclusive education has not been developed properly. Out of 149,246 children with special needs, 29,212 people or 19.5% belong to the pre-school age children. There are 37 specialized kindergartens and 240 special groups for children with special needs that are attended by around 10,000 children, accounting for only 32.8% of total number.
In addition to the public pre-school institutions, private kindergartens have been opened. In 2005, there were 158 private kindergartens, but in 2010, the number increased to 284. During last years, the share of public funds allotted for pre-school education was around 0.1% of GDP. In the OECD countries (Organization for Economic Cooperation and Development), this share ranges from 1% to 2% of GDP.
Secondary education: the Constitution of Kazakhstan guarantees the right for free secondary education. Secondary education encounters problems related to poor logistical supply. Curriculum and teaching methods are also a concern.

As of July 1, 2010, there were 7,576 public secondary schools in Kazakhstan attended by around 2.5 million students. Local executive bodies as well as the Kazakh Ministry of Education and Science administer these secondary schools. Out of total number of schools, 64.6% are located in typical buildings, 35.4% of them are based in re-adjusted buildings and 201 schools are in emergency condition requiring urgent repair and rehabilitation. Moreover, 37.4% of schools have no direct access to drinking water; water is delivered in bottled tanks. Seventy schools practice three time shifts while one school delivers four-time shift. Overall, 25.1% of schools need a comprehensive repair.

Every fifth school does not have a cafeteria or buffet. Depreciation of equipment and furniture in school cafeterias reaches 80%. Moreover, 26.4% of schools do not have gymnasiums. Many schools do not have free public transportation service to be rendered by special school buses, which are to be funded by the government.

All the reasons mentioned above have delayed the introduction of a 12-year secondary education model in the country.

The number of children with special needs grows in the country. In 2005, there were around 124,000 children with special needs, but in 2010, this number increased, exceeding 149,000. Special education programs cover only 41.4% of them. There are no well-developed legislatorial regulations as well as financial stimulus to support teachers working with children with special needs. Moreover, public recognition for their service is also absent.

Every fifth instructor working in the secondary schools is aged 50 years and older. Out of total number of teachers, 13% of them have less than 3 years of working experience. Annual recruitment of new teachers composes only 2.6%.

There is a gender disproportion among instructors working at secondary schools with a vivid trend of feminization: 81.3% of teachers are women. Low wages (approximately 60% from the national average salary rate) and low prestige of teacher’s occupation have led to the drain of highly qualified instructors of secondary schools. Despite the rise in salary amount, a process practiced in the country since 2000, when the salary of education sector workforce has increased by 400%, their wages still remain one of the lowest in the country.

Vocational schools: The government statistics state that as of July 1, 2010, there were 786 vocational schools, including 306 vocational schools and 480 technical colleges. Compared to the same period of 2005, the number of vocational schools had risen by 64 pieces with 22.8% of them being located in rural area. At the same time, the lack of clear professional standards as well as qualification requirements developed for occupations trained in vocational schools has influenced on poor curriculum as well as inadequate training of students. As result, they hardly meet the demands of employers.

Universities: The enormous number of universities opened in 1990s has resulted in Kazakhstan outpacing England, Japan, Germany and Russia in terms of number of universities per person. In 2002, there were 11 universities per 1 million people in the country.

Today, there are 148 higher educational institutions, including 9 national, 2 international, 32 public, 12 non-civic and 93 private universities. Of this number, sixteen universities are registered as joint stock companies. Over 595,000 students study in these universities.
Corruption is one of the latent elements penetrated into higher education system of Kazakhstan. The higher education policy will not be effective unless concrete actions are taken to eradicate corruption.

Another concern is related to accreditation and licensing of universities. Some scandals accompanied these two processes. Three years ago, only 25% of all universities passed the first round of accreditation. The reason was trivial when the majority of universities were unable to meet the declared international standards. However, the disputing points were related to simple criteria such as percentage of teachers having doctoral degrees, percentage of teachers working full-time and sufficiency of classrooms as well as books in libraries.

It is known that annual tuition fee in some of the most prestigious national universities is around USD3,000-4,000. Within the context of Kazakhstan, opportunities of universities to earn money are significantly limited. Therefore, the financial support of university employees remains, first of all, as a government responsibility. As the Kazakh universities lack additional sources of income, the salary of university instructors is not high. This is another barrier for universities to attract young instructors.

Thus, reform of higher education system in Kazakhstan has been undertaken in familiar directions. It means that single educational domain is preserved thanks to both the old Soviet educational traditions and new “reformation” vector oriented towards international standards. At the same time, reforms of higher education in Kazakhstan are implemented more aggressively than in other Central Asian countries. They are grounded on the state goals of rationalization of the educational sector, and first of all, in terms of expenditures.

In Kazakhstan, the core elements in re-organization of higher education are reduction government expenditures for maintaining universities introduction of self-financing mechanisms in universities, and provision indirect financial assistance to the most gifted students.

Kazakhstan has recently started developing its own commercial system in providing education loans. The Financial Center was transferred into a joint-stock company where 100% of company's equities are owned by the government. It is planned that the Center will act as the guarantor of students when they receive loans from private banks.

Another type of financial assistance for young people in Kazakhstan is the Bolashak Fellowship Program. The fellowships are provided for the most talented students to study in selected universities worldwide. About 6,500 applications are submitted annually to receive the Bolashak fellowship. It can be assumed that one of the foremost objectives of the Bolashak Program is upbringing of future political and business elite of Kazakhstan, who are loyal to the strategy and principles of the present power holders.

KYRGYZSTAN

In Kyrgyzstan, the education sector was subject to drastic changes during the last two decades. New concepts, doctrines, government strategies and programs, regulations and other documents have been elaborated and adopted by the Ministry of Education and Science of the Kyrgyz Republic. The senior administrators of this body changed quite frequently. Within the period of 1991-2010, thirteen different Ministers have headed this government body. (For more details, please see Table #1 in Annex).

During 1991-2000, a period known in Kyrgyzstan as the early stage of transition to democracy, many critical documents were adopted in the country. They are the Constitutional norms related to education, a Law on Education, a National Doctrine and a
State Concept on Development of Higher Education and "Bilim" National Educational Program. Moreover, the state educational standards and licensing norms, regulations and requirements have been developed. Since 1991, the number of higher education institutions had increased from 12 to 54, including 22 private universities.

In his doctoral thesis entitled, Higher Professional Education in the Kyrgyz Republic is an Important Factor in Tackling Social Problems of Transitional Society; Abrahmanov has clustered education policy adopted in the post-Soviet Kyrgyzstan into two stages:

- Positive period known to be from 1991 to 1999;
- Stagnation period from 2000-2005 because “education system as a part of society facing crisis was subject to crisis that resulted in significant slowing down the reform speed». (Abdyrakhmanov, 2010:2)

The Law on Education adopted in 1992 and amended later in 1997 is the first document that laid the foundation for educational policy in sovereign Kyrgyzstan. The state "Bilim" (Knowledge) program was adopted in 1996. It specifies measures to improve legal norms, revise curriculum, ensure high-quality growth and social protection of students as well as teachers, and introduce stable financing mechanisms for educational institutions.

Since 1999, the Kyrgyz government has been paying close attention to the accessibility of school education. In this regard, the Zhetkinchek – "Access to Education" State Program, was approved. As a whole, the list of programs implemented in Kyrgyzstan include "XXI Century Cadre" Presidential Program adopted in 1995 "Araket" National Program on Poverty Alleviation (1998), "Women/Ayalzat" National Program (1997), the "New Generation" National Program (2001), «Education for All” National Plan of Actions (2002), the National Strategy of Poverty Reduction (2003), the "Rural School/Aiy Mektebi» National Program (2003), and others. First, these programs were aimed at securing access to and quality of education.

The above-mentioned state programs had positive results, but unfortunately, they were not implemented to the logical end. For example, programs such as "Bilim/Knowledge", "Araket/Effort" and "Zhetkinchek" were terminated because of the government change in Kyrgyzstan in 2005, when the so-called March Revolution took place. Since 2000, we begin to notice the development of long-term 2010-2025 and mid-term 2000-2010 policies. In May 2000, twenty-year long State Education Doctrine was approved that was considered an important step in enhancing cooperation between government and society in developing educational system.

Another strategic program, Comprehensive Development Bases, specifies on short- and mid-term objectives in democratization of school education in Kyrgyzstan. The key objectives of this program are provision of free education to children from poor families, orphans and people with special needs, however, the educational goals of this program was never finalized. The priorities for education system’s 2000-2005 midterm and 2000-2010 long-term development periods were highlighted in the Education Development Concept 2010. (Government resolution on education, 2002:37-55) To address problems of rural school education, a complex program entitled, "Rural School" was elaborated (Concept of Education development: 2002) in 2002. This program highlights the scope of measures concerning organizational and pedagogical development of rural school education, curriculum and education administration in rural area.
The same year, “Education for All” National Plan of Action was articulated and approved. It contained wide-range of actions aimed at improving the quality of basic education for all. These actions are formulated to comply with six goals of the Dakar Framework of Action - Education for All adopted at the World Education Forum. The mid-term evaluation of the ten-year period assessed the government and private educational programs, their activities and services, curricular and extra-curricular activities directed to meet basic demands in educating children, youth and adults.

To guarantee equal access to higher education and to eradicate corruption, the national testing was launched in 2002 with the financial support of the United States Agency for International Development (USAID) while the American Councils for International Education (ACCELS) provided the technical expertise. It is indispensable to remark that the national testing has positive results in general. Statistics says that in 2005 alone, 5,705 students were enrolled to public universities based on the national testing results, when “62% of fellowships were provided to students coming from rural schools. Totally, 32,809 schoolchildren participated in the national testing». (Kutbilim, 2003:5)

The changes in educational sector largely demanded legislative amendments. The Law on Education became "too tight" for all changes undergoing in education sector. (Dobayev, 2003:5) Therefore, it was decided to prepare a new version of the Law on Education, which came into force on April 29, 2003. Among legislative acts articulated by the Ministry of Education and Science within the last three years, the following strategic documents should be highlighted:

In 2008, the Education Development Strategy was amended for a period of 2009-2011 and it became a component of the National Development Strategy. (Progress report, 2011:1)

In 2010, a draft Concept for Education Development for a period of 2012-2020 was designed along with a draft Education Development Strategy for the same period to ensure continuity of reforms reflected in the Education Development Strategy for years of 2009-2011. (Progress report, 2011:3)

Implementation of current education reforms is now based on the Mid-Term Budget Forecast for Education Sector as well as key economic and financial indicators designed for 2010-2012. There was a rise in financial resources invested in education sector during last years. For example, the government expenditures for education in 2008 amounted to 9, 6 billion Kyrgyz Som, 11, 5 billion Kyrgyz Som in 2009 and 12, 5 billion Kyrgyz Som in 2010. Consequently, such a distribution mechanism, on the one hand, deprives the Ministry of Education and Science of the economic management instruments. On the other hand, as demonstrated by regular assessments of village councils accounting capacity conducted by the Education Workers’ Trade Union, transfer of schools under the financial management of municipal authorities had a negative impact on how labor legislation is implemented and particularly, how salaries, social subsidies and bonuses are calculated both to schoolteachers and pre-school institutions staff. J The Education Unit of the Trade Union constantly informs such discrepancies to governors, heads of provincial and district financial departments with view to maintain order in this domain. (Progress report of Labor Union, 2005:3)

In fact, in 2010, the Ministry of Education and Science distributed only 9% of funds allotted for education, which is 1, 1 billion Kyrgyz Soms out of 12, 4 billion Kyrgyz Soms meant for
educational institutions. To undertake reforms in education sector, international donors such as DANIDA, USAID, Soros Foundation-Kyrgyzstan, EC, Asian Development Bank, UNDP and UNICEF “provided consultancy and technical expertise in terms of loans and grants for a total amount of USD27,260,000”. (Regional study, 1998:3) UNESCO’s financial assistance to Kyrgyzstan ranges from USD 247,000 to USD730, 000.

The largest donor among non-governmental organizations is the Aga Khan Foundation. This foundation “financed the Initiatives of Early Childhood Development and allocated USD2 million within 2005-2012 to increase coverage and quality of kindergartens in some mountain areas of Osh province”. (UNICEF, 2008) This evaluation was carried out in 1998 within "Regional Study of Educational Trends, Challenges and Policy" that outlined positive impact of donors’ activities on education development system in Kyrgyzstan.

At the initial education reform stage, the Kyrgyz government pursued policy related to financing priority areas. Consequently, compared with 2001, the government expenditures for education sector by 2009 had increased four times, having outpaced overall trends of national economic development and government expenditures rate.

Currently, overall government expenditures for education exceed 11, 5 billion Kyrgyz Som or represents nearly a quarter of all public expenses. Out of this amount, 7, 5 billion Kyrgyz Som or 67% are spent for school education. "Over 62% of funds assigned for schools come from the republican budget. It covers salaries of school employees, food supply of 1-4 grades schoolchildren, school renovations, textbooks supply and a larger part of public utilities.

The vivid indicator demonstrating the decline of education quality in Kyrgyzstan was the results of the Program for International Student Assessment (PISA) in 2006. According to this study, local schoolchildren received the lowest scores and Kyrgyzstan was ranked the last among 57 countries.

Despite all efforts made by Kyrgyzstan, the PISA results in 2009 were again negative. Having analyzed the average indicators for each country, results of Kyrgyzstan were again the lowest under all three subjects among 65 countries involved in the study. “Totally, 4,986 fifteen year-old schoolchildren from 173 schools took part in this study. The assessment findings show that about 83, 2% of schoolchildren in Kyrgyzstan did not reach the minimal international standards in reading, 86, 6% in mathematics and 82% in science”. (Slovo Kyrgyzstana, 2010:27) Pursuant to the PISA regulations, in addition to the assessment of students’ skills, the OECD determines major factors influencing students’ learning abilities and results. It has been found out that these critical factors are as follows:

- GDP per capita of Kyrgyzstan. It is the lowest among all 65 countries involved in this study. In Kyrgyzstan, the GDP per capita is equivalent to USD 1,994 per year while it is USD 5,340 in China ranked the 1st in this study;
- Government expenditures per capita rate in absolute terms for students aged from 6 to 15 years. In Kyrgyzstan, these expenditures are the lowest among all participated countries and amount to around USD3,000 while in Russia it is equal to USD17,500;
- Salary amounts of schoolteachers. It is the core element. Those countries that invest much in teachers’ salaries have the highest results on education quality. (Sadykov, 2010)

One of the serious challenges in school education in Kyrgyzstan is the lack of capacity to assess students’ learning skills. School certificates do not reflect the real skills and risk to become simply a formal document confirming the graduation from school. In order to
tackle this problem, ensure "equal access" to higher education and particularly, to make
government fellowships accessible to youth coming from rural and mountainous areas, the
Education Minister has signed a decree to set up the National Testing Center. This center
introduced the testing technique in order to assess skills and knowledge of graduates of
secondary schools. As another achievement, we can indicate the National Curriculum
Framework that was developed and later approved by the Board of Education Ministry on
This document has become the foundation background for development of curriculum for
different subjects.

Higher education of Kyrgyzstan is represented by network of 52 universities of which 36
are state and 16 are private. Currently, over 218,000 students are enrolled in Kyrgyzstan's
universities. In 1990, there were 130 students per 10,000 people in the country, but now
this figure stands for 410 students. (Kutbilim, 2006) Thanks to open and adaptive higher
education system, the number of foreign students has sharply increased in the country
while many students from Kyrgyzstan study in overseas universities, including countries of
the CIS and Shanghai Cooperation Organization. (Www.24.Kg/News-Stall/Print:Page)

There are international universities in the country such as American University of Central
Asia, Kyrgyz-Russian Slavonic University, and Kyrgyz-Turkish "Manas" University, Kyrgyz–
Russian Academy of Education, Kyrgyz–Uzbek University and others. The list of foreign
universities include the Kuwaiti University named after Mahmud Kashgari-Baraksani and
International “Ataturk-Alatoo” University”.

In 1991, universities in Kyrgyzstan as well as education of students (their tuition and living
expenses) were fully funded by the government. However, in 2005, the percentage of
students whose education was covered by public budget fell to 12.1% of total number of
students. The average annual expenses per one student receiving government fellowship
amounted to 5,400 Kyrgyz Som, but the actual annual costs incurred by universities for
training of a student were two-three times higher.

The government financing of higher education was declining year by year, and became
dramatically insufficient. According to estimates of some universities, the government
funding covers only 15-20% of universities’ expenses required to train a specialist.
Therefore, the remaining expenses are compensated by students’ tuition fees. This means
that they co-finance training of students receiving government support. (Kutbilim, 2006)

Based on the analysis of reforms undertaken in educational sector of Kyrgyzstan, the
following conclusions can be made:
First, the government educational policy of sovereign Kyrgyzstan mostly focused on
addressing strategically important questions of education sector and respectively, on
improving socio-economic well-being of the country. The lack of continuity as well as
insufficient financing of state programs, have negatively affected effectiveness of
educational reforms, many of which were never finalized.

Secondly, to enhance effectiveness of educations reforms, it is necessary to:
- conduct monitoring and assessment of effectiveness of newly accepted programs,
doctrines and concepts;
- grant more autonomy and authorities to the heads of educational institutions in
distributing internal funds. Meanwhile, schools have to involve parents and boards of
trustees to planning processes;
o develop education system management capacity;
o the state needs to develop a precise mechanism of providing schools with highly qualified human resources. The state needs to increase the prestige of a teacher’s profession;
o actively attract investments into education sector. (Zharkynbaeva, 2008:174)

Thirdly, one of factors impeding the development of education system in Kyrgyzstan is the lack of economic control levers available to the Ministry of Education and Science. As it has already been mentioned, budget funds allocated for education are not distributed by the Ministry of Education and Science, but by the Finance Ministry that sends money directly to the village authorities and only then schools receive funds.

TAJIKISTAN

Tajikistan After gaining independence, Tajikistan pursued a policy to reform its economy and social sector, including education. During the period of independence, Tajikistan adopted the Law on Education on December 27, 1993 and its amendment on May 17, 2004, the Law on Primary Education and Law on Higher Professional and Post-Graduate Education, the National Education Concept, over 150 legislative and normative acts as well as regulations stipulating activity of educational institutions.

To introduce modern technologies and techniques into education process, State Programs on Computerization of Primary and Secondary General Education and Enhancement of Teaching and Learning Russian and English Languages for a period of 2004-2014 have been adopted. Introduction of the Law on Education on December 27, 1993 was an outstanding step in the process of creating a democratic legal secular state in Tajikistan. Since adoption of this law, the education system of Tajikistan underwent significant changes. (Law on Higher and Postgraduate Education, 2003)

At the initial stage of reforms, the school and higher education system remained by enlarge the same as it was during the Soviet period. The only change, which was introduced as an experiment in higher education institutions, was the creation of a multi-level structure to receive higher education. As the norms stipulated in the Law on Education passed in 1993 were executed, the country was able to ensure openness of education system as well as enabling the environment for growth of quantitative and qualitative indicators of educational institutions. This had also contributed to the reformation of education based on the world trends in the sector. The Law on Education established the structure of educational institutions ensuring a uniform system of continuous education through general education, vocational and special education, higher education and professional development.

The general nine-year education is obligatory. According to the Concept of National School Development accepted in 1995, transition to compulsory eleven-year education does not fully consider the national features such as the early marriages allowed in Tajikistan and other factors. This hinders the fulfillment of provisions specified in the Law on Education providing for exclusion of students, who reach 15 years, from education institutions. Many young men and women, who got married at the age of 17, can encounter difficulties in continuing professional education. According to the law, the minimum age and education duration at each cycle in a three-level of comprehensive school are defined by Statute on Comprehensive School and State Educational Standards on General Education. (Abrorov, 2013)
The structure of educational institutions set up by the law includes pre-school, general, specialized, extra-curricular and professional (primary, secondary, higher and internship) education institutions as well as bodies providing additional educational services.

The multi-level structure of higher education in Tajikistan foresees:

- Implementation of continuous education model with consecutive assignment of relevant qualifications such as junior specialist and specialists with Bachelor’s and Master’s degrees. These qualifications are awarded in accordance with the regulations approved by the Tajik government and the State Classifier of Higher Education Occupations;

- Integration of vocational education with higher educational institutions that creates additional opportunities for academic career and leads to education quality enhancement;

- Development of academic mobility seeking to consider specific features of students;

- Possibility of coupling education program in Tajikistan with subsequent training in higher education institutions in CIS and other foreign countries.

Actions taken to improve education system and enhance education quality have stimulated the demand for highly qualified specialists with higher education in Tajikistan and the rise in number of university students by more than 30%. The number of higher education institutions has also increased from 11 to 24. The Law on Education founded the governance principals over education sector where functions of Education Ministry, various ministries and departments having teaching and educational institutions as well as local municipal bodies are stipulated.

Ministries, government bodies and local authorities can create, re-organize and liquidate their departmental educational institutions. These bodies can appoint or dismiss the heads of these institutions, approve their general provisions and ensure observance of state standards by these educational institutions. They can also develop, approve and publish curriculum, programs and textbooks.

Management of educational institutions, which by law are independent legal entities, is carried out based on charters by their heads, who are appointed by the relevant public educational authorities. The heads of non-governmental educational institutions are appointed by their founders.

The state educational standards define basic requirements of education level for graduates of educational institutions, and are divided into national and regional components. The procedures for introduction of standards are defined by government while observance of these standards is carried out by those ministries and departments, which have educational institutions within their structures. To implement the state higher educational standards and in particular, requirements regarding ensuring continuity of higher education programs, the government decided to include a number of vocational institutions – colleges- into higher education institutions. This has allowed having continuity in receiving higher education at various levels, i.e. junior specialist, Bachelor, certified specialist and Master degree specialist. This was done not only to meet requirements of economy, but also to meet individual capacities of students. This also allows having academic freedom at the first level of higher education lasting two years.
Educational process in a college and university is carried out based on uniform curriculum and rating system assessing student’s knowledge. Based on the assessment results, a decision is made to either transfer a student to the next level of higher education or terminate his study. (Atakullaev, 2001) The government also sets up procedures for certification, accreditation and licensing of educational institutions.

Financing of education:
Basic principles of the Law on Education declare free general education and any first level professional education. At the same time, entire educational system of Tajikistan, including higher education, faces a number of chronic problems. The key one is insufficiency of government funds allocated for education. However, there are positive factors such as increase in number of sources of financing due to the attraction of funds from individuals and legal entities, including foreign ones, expansion of paid services, overcoming of demographic factor conditioned by dominance of school aged youth that is 40% of population. Overall, people younger than 30 years compose 70% of population.

The problems mentioned have not enabled Tajikistan to fully meet indicators of development in education sector. Integration of new financing mechanism, allowing educational institutions to attract additional sources of funding using market approaches, leads to renewal of substance and elements of education. Within recent years, curriculums at comprehensive schools have been exposed to change four times. Moreover, without any reason, new subjects and courses have been introduced. As a result, the number of subjects and academic hours have increased, but without the necessary teaching programs, textbooks and qualified teachers. So far, schools with Tajik language of education alone lack 57 types of textbooks. In particular, textbooks for 10th -11th grades are of extreme shortage. Those textbooks, which are printed abroad, have massive grammatical and factual typos.

From 1997 to 2005, 4,450 girls were admitted to higher education institutions from remote mountainous areas due to presidential quotas. However, only 383 of them received higher education diplomas. Studies demonstrate that there are serious shortcomings in selection and choosing programs for candidates receiving presidential quotas. Practices of selecting candidates based on nepotism and regionalism have not been eliminated. Due to unwillingness of students to study, their knowledge is poor. Moreover, 276 students who received presidential funding have been expelled because they missed classes. This figure is valid for a whole program period. More than 50% of students interviewed are not satisfied with how classes are delivered, and 60% of them are unhappy with their knowledge, abilities and skills.

Another very important reason of poor knowledge of schoolchildren and students is that selection, appointment and dismissal of heads of education departments, education units as well as principals of secondary schools are decided by local authorities. This is executed in accordance with the Law on Self-Governance. As a result, senior positions at regional, urban and regional departments of education and directors of schools are occupied by incompetent people, who do not have the required pedagogical education. Moreover, in a number of cases, directors of schools and their deputies have only general secondary education.

Overall, the main features of education sector in Tajikistan are as follows:

- Status of education as well as level of knowledge of schoolchildren at secondary schools do not meet the state educational standards;
- Education system needs radical reformation; the major factors and reasons of poor status of education are the shortage of teachers, student seats, textbooks and training aids, inactive research and methodical activity, lack of communication between public, parents, parents’ committees and association of teachers;
- Effectiveness of reform in education system largely depends on increase of government funds to be allotted for development of comprehensive schools and allocation of financial resources by regional and local authorities (Hukumat).

Since the independence, education functions have been considerably expanded and changed in Tajikistan. These functions are to ensure social stability and national unity, such as inclusion of cultural heritage, i.e. culture of ancestors, preservation and augmentation of moral, physical and psychological health of younger generation. Moreover, breeding creativity, active citizenship and responsible attitude towards citizens are also the key values to be promoted. In order to accomplish these state objectives, education sector and in particular, the general education needs to revise its values in the new system of education as well as upbringing and new understanding of functions and substance of education. Moreover, it is needed to explore, develop and exploit the advanced, progressive and effective pedagogical techniques and to have flexible democratic organizational forms of education, humanist values, democratic interaction, mutual understanding and creativity of faculty members and students in the training process.

TURKMENISTAN

During the last years, the education system in Turkmenistan underwent considerable changes that led to mixed results. The Law on Education adopted in 1993 stipulated that a nine year school education is obligatory in the country and is provided free of charge in public educational institutions (law on Education, 2009). Compulsory general secondary education has two steps: (i) Sovat (1st-3rd grades for schools teaching in Turkmen language and 1st-4th grades for schools teaching in Russian, Uzbek or Kazakh languages) and (ii) Bilim (4th-9th grades for school teaching in Turkmen language and 5th-10th grades for schools teaching in Russian, Uzbek or Kazakh languages).

Primary and secondary education underwent drastic changes during 2007-2012. Particularly in 2007, primary compulsory education was expanded from nine to ten years and since 2013, a twelve-year education became compulsory secondary education. Such actions were taken in order to harmonize education system of Turkmenistan with international standards and enable Turkmen students apply to foreign educational institutions. Yet, the problem is that changes in education sector were carried out quite rapidly in Turkmenistan. Nine-year and twelve year curriculums were changed without simultaneous development of corresponding textbooks or teaching methods. As a result, national school programs at senior grades often simply repeat and generalize materials of junior programs. Construction of new schools is the most visible result of reforms in education of Turkmenistan. In 2012, opening of 114 new schools both in cities and remote rural areas was declared. Nevertheless, the cost of construction and reconstruction is often overestimated. (Amendment to the Law on Education, 2007)

Equipment is often distributed selectively to schools. Many still lack equipment while the majority of them does not receive any equipment at all. Nevertheless, many teachers and school heads are afraid to damage equipment and therefore, they do not allow to use it during classes, or they expose it only during inspections or official visits. Furthermore, school instructors do not have a proper training in IT as a whole and especially, in software
and hardware use. Internet access is not available in all provinces most importantly, constant electricity shortage makes use of information technologies challenging. Even in the cities, Internet access is at low speed and censored by the government, which authorizes only certain websites. Thus, the idea of IT use in schools remains generally on paper and is far from improving the education system.

Chronic problem of Turkmen education system is lack of school textbooks. Nevertheless, some improvements are noted since 2007. New textbooks are published every year and shortage is partially covered. Teachers often complain about the quality of substance and unequal distribution of textbooks. New textbooks are often written by inexperienced authors or teachers without appropriate practical experience. Moreover, insufficient time (only 3-4 months) is given to develop new textbooks. As a result, many teachers are not in a position to use new textbooks in their classes and they still use the old Soviet textbooks published in 1990-1992. Education is often interrupted by such seasonal events as cotton picking. Although children from elementary schools are not obliged to work on the fields, teachers are not exempted from these works.

By the beginning of 2013 academic year, the standard school curriculum was developed and approved in order to correspond to the Concept of Secondary Schools Transition to the Twelve-Year System. Unfortunately, the expected de-ideologization of education has not happened. Studying "Rukhnama" regarded as "The Sacred Book of the First President" is still included into the list of obligatory topics for exams at secondary schools and universities. It is also an obligatory subject to pass in order to legalize foreign diplomas in the country. Nevertheless, since 2011 "Rukhnama" is no more a subject included into final examinations at secondary schools. Instead of this phenomenon, the cult of the second president Berdimuhamedov is being introduced now.

Although the president declared learning of foreign languages as one of the key priorities, in reality the situation has worsened within the last two years. The number of classes where education is provided in Russian language has remained the same, i.e. it has not increased. There were approximately 30 Russian classes in 2011 where only 750-1,000 out of 100,000 first graders could study. These classes are largely meant for ethnic minorities, but due to the great demand from parents, some Turkmen children also study in Russian classes., the re-institution of Russian schools seems extremely problematic in the future due to the shortage of teachers and immigration of Russian-speaking population as a whole.

At the outset of reforms, classes in English language increased in number because of decline of classes in Russian language. The number of classes in English language has increased and English has become an obligatory subject for all twelve classes since 2013. Programs of primary and secondary education in ethnic minority languages are largely absent.

The only foreign schools existing among elementary and secondary schools are Turkmen-Turkish schools, the Turkmen-Russian school in Ashkhabad and the International School of Ashkhabad where teaching is rendered both in English and Russian languages. There is also a small Sunday school sponsored by the Ukrainian Embassy. However, the Turkmen-Turkish schools started to be banned since 2011 as they were accused of teaching Islam in classes. At last, corruption is viewed as one of the main obstacles in improving primary education. Due to the shortage of vacant places in "prestigious" classes, which are generally Russian classes, bribes have become the norm. Moreover, teachers have to pay a
fine for being exempted from seasonal works on cotton fields, repairing of classes and purchase of materials such as chalk, papers, pens, markers and so on. These expenses are subsequently endured on shoulders of parents. Moreover, the practice of small bribes, in terms of food or livestock such as goats or sheep in order get higher grades is still widespread. The problem is that schoolteachers continue having low salaries. Teachers are often obliged to bribe the principal as well to keep their jobs. In return, school principals offer bribes to senior administrators in order to keep their position.

Higher education: Until 2007, Turkmenistan’s higher education was one-level. All higher education institutions have only five-year fulltime program where students are enrolled from secondary schools. Special secondary schools are the first tier of professional education. After declaration of independence, the number of higher educational institutions within had increased from 9 to 15.

Education in all universities is mainly conducted based on programs developed in the Soviet Union only with some additions reflecting the national features. During 1995-1996 academic year, there were about 32,000 university students, which is 1.3 times less than it was in 1990-1991 academic year. It is explained by the closure of evening and part-time programs where around a third of all university students studied.

Since 2007, universities were subject to large reforms. Extension of university programs to five year program (six year education is only applicable for medical schools) and exclusion of compulsory military service for young men as well as requirement to have work experience before the enrolment into university were the first and logical steps taken by the new president.

In 2012-2013, some preliminary talks, concerning opening of Turkmen-American University in Ashkhabad took place. If this project is successfully implemented, there will be opportunities to attract faculty members from abroad and in particular, from European, Turkish or Russian universities for the highly needed occupations such as lawyers, engineers, education specialists, IT officers and others. Opening of private universities planned for 2013-2014 could stimulate competition and attract highly qualified teachers both from Turkmenistan and abroad. This will give a chance for the young generation to gain high quality education.

Although university programs were expanded to comply with the international standards, it became clear that dismissal of former faculty members and researchers from universities during the last two decades has created a shortage of highly qualified staff. It will be difficult to fill this gap.

In 2011, the official statistics registered about 2,000 students who left the country to study abroad under the government’s financial support. In 2011, President Berdimuhamedov also permitted recognition of foreign diplomas, but it suspended in 2004. Nevertheless, students still need to verify their foreign diplomas in Turkmenistan, passing the exam on "Rukhnama", among others. Pursuant to inter-governmental agreement of 2009, graduates of Russian universities are exempted from this requirement.

However, there were problems in this area that damaged an overall positive picture. In 2009, students planning to study at American University in Central Asia in Bishkek, Kyrgyzstan and other universities abroad were banned to depart the country and some measures were initiated against those who study in "politically incorrect places".
Kyrgyzstan was included into a black list for Turkmen students and in 2011, the government of Turkmenistan introduced departure visas for this country. Authorities explained it by availability of universities in Turkmenistan and lack of demand for some programs in the country. Yet, students demonstrated their reasonable discontent while foreign embassies negatively assessed such steps. As of today, the situation remains unresolved and it is “forbidden” for many students to leave the country.

Foreign universities very often reflect a real level of secondary education of Turkmenistan in order to be enrolled in such universities; candidates need to take preparatory courses either at universities or secondary schools and/or to seriously prepare for exams by doing large-scale independent work or hiring tutors.

Meanwhile, situation with universities in Turkmenistan has worsened. After several incidents with students and criticism expressed by the president during 2009-2012, control at universities has become tougher. Due to the widespread fear of the rectors to lose their job, students were officially prohibited to drive cars or come to university by taxi. They were also forbidden to visit clubs, bars, and restaurants after some incidents where students were involved. On contrary, students are compelled to visit sporting events, holidays, conferences and other activities.

Corruption is one of the main problems in higher education. Although in 2012 President Berdymuhamedov ordered to install video surveillance equipment during entrance exams, such a measure has not helped to reduce bribes given to rectors and teachers by students. On the contrary, according to informal data, the amount of bribes paid in order to successfully pass exams to prestigious universities such as Medical Institute or Law Program of Turkmen State University had reached $40,000 and even $70,000 last year. Besides these expenses, students also need to incur official and unofficial expenses for obligatory medical certificates, translation of documents and notary services if they wish to enter a foreign university.

At present time, the main financial source of education system is the state budget. Additional sources are funds from public foundations, cooperatives, private enterprises and individuals, who pay for some types of educational services. According to the Turkmen legislation, the state, private and mixed educational institutions can exist. In late 1990-s, eleven joint Turkmen-Turkish schools and one Turkmen-Turkish university were opened.

Since 1993, the fiscal policy has been foreseeing decentralization of financing of social and cultural spheres, including education. Educational institutions began to be financed by local authorities. As a result, the share of expenditures for education in local budgets increased from 74% in 1991 to 83% in 1995. Financing of education through local budgets had to provide a more rational use of funds and meet local needs more precisely. However, although decentralization of financing did democratize the process, it also led to irrational use of government funds due to low qualification of local authorities. Annual amount of expenditures for education sector is defined by the Ministry of Economics and Finance, which considers proposals of the Education Ministry, State Association of Professional Education, Senate and other ministries and departments being in charge of educational institutions. After that, public budget is approved by the parliament.
After election of Gurbanguly Berdymuhamedov as the second president in February 2007, education has nominally become one of the priority sectors. New reforms were initiated to eliminate consequences of regressive policy of the first president Niyazov. During the last several years, the education system in Turkmenistan underwent considerable changes that led to ambiguous results. Expansion of coverage of schools and universities and rise in number of university students studying both in the country and abroad signifies a serious shift from policy of the first president. The statistics depicts that the number of university students accounts for about 24,000 people and around 10,000-15,000 people study abroad. This figure is getting similar to those indicators that were known in late 1980s when 40,000 students studied in universities of the Turkmen Soviet Socialist Republic.

Moreover, the main eccentric measures of former regime have been dismantled, including non-acceptance of foreign diplomas and the requirement to have work experience for enrollment into university. Many regard the latter requirement as the forced labor.

Some of the existing serious problems are highlighted below:

1) Corruption. As a whole, high level of corruption is inherent in all segments of education and it increases the cost of education. Moreover, promotion of a cult of president’s personality signifies that people, who are loyal to the president, are often appointed to senior positions instead of more or less independently thinking people.

2) Lack of human capital. Teachers with poor education and ideological stereotypes are not able to fill the gap originated after dismissal of former teachers. Faculty members and school principals always fear about their possible dismissal if they refuse execute instructions "from above". Poor prospects about possible enhancement of teacher’s capacity also harm the improvement of primary education. Moreover, the system of knowledge transfer from more experienced colleagues to less skilled cadre, which was accepted in the Soviet times, has stopped or is used selectively.

3) More equipment, but less substance. Although President Berdymuhamedov likes to speak about achievements in education, he prefers showcase and superficial reforms than having sincere attempts to make things better.

4) Growing distrust to foreign influence and in particular, to western one, high level of nepotism as well as bureaucratic and administrative barriers to students departing to study in "wrong overseas universities" are serious obstacles for reforms.

Despite the aforesaid, it would be a mistake to consider that all recent attempts of reforming have been unsuccessful. In fact, despite considerable obstacles many efforts have been made to somehow improve the situation in education sector in the country.

**UZBEKISTAN**

A state education policy and the Education Reform Concept in Uzbekistan have been reflected in the Law on Education as well as in the National Human Resources Development Program on August 29, 1997 by Oliy Mazhlis, the Uzbek parliament. The National Human Resources Development Program envisages replacement of the Soviet eleventh year secondary education by a nine year training at a secondary school plus three years in a college. After his re-election as the president in 2000. Only 20 cities and districts have shifted to a new education system covering only 40% of children. The Education Reform Concept developed in Uzbekistan pursues the following major purposes: (i) re-orientation of education system to market economy and open society; (ii) creation of equal
opportunities for education as a way to improve the living standards of population; (iii) betterment of financing mechanisms of education in order to ensure stable and high-quality educational services and to improve efficiency of resources use and (iv) advance management in education sector. (Law on Education, 1997) Nowadays, the education system of Uzbekistan consists of 10,790 different types of educational institutions where more than 7,3 million students are educated. Reforms touched upon all education levels.

Pre-school education: At the beginning of 2005, pre-school education system was represented by 6,603 various types of pre-school educational institutions, which covered 575,100 or 18, 4%, of children aged from 1 to 6 years. To guarantee continuity of pre-school and primary education, 193 kindergarten-school complexes and 73 home kindergartens with a capacity of 1,249 children were created. Pre-school educational institutions employed 62,200 workers and 20% of them have higher education.

General secondary education: Uzbekistan has established a significantly new system of nine-year general secondary education ensuring continuity for pre-school, secondary, vocational and higher education. Up to date, general secondary education is represented by 9,794 daily and 41 evening schools where 6,130,500 and 20,900 students are studying respectively. Out of these schools, there are 92 gymnasiums with 66,600 students and 284 lyceums with 93,700 students. One of the widespread teaching methods introduced in schools is teaching subjects in intensive and in-depth way. In 2004-2005 academic year, 2,853 schools introduced this teaching method with coverage of 473,000 students. The specialized schools covered 18,800 children with special needs. Moreover, secondary schools practiced compensatory education. Last academic year, 60,000 children were trained there. In 2004, secondary education in the form of external education was received by 4,844 schoolchildren.

Vocational education: According to the accepted model of education, specialized secondary professional (vocational) education ensures continuity of secondary education. Over 56% of graduates of the 9th grade continue their education in colleges and lyceums on voluntary base while the remaining students continue their education at secondary schools at 10-11th grades. Vocational education is represented by 65 lyceums with 30,500 students and 827 colleges with 757,600 students. Lyceums employ 2,600 teachers while colleges have 40,000 instructors. Out of total number of these teachers, nearly 93% of them have higher education.

Higher education: There are 63 universities (higher educational institutions) where 263,600 students study. The number of higher educational institutions systematically grows and since 1999, there has been rise in number of university students. Pursuant to the Decree No. 307-F of the Uzbek Cabinet dated July 20, 1996, the paid education system was introduced in the country.

Post-graduate education: Post-graduate education in the country is provided by 60 higher education institutions and 83 research centers. The Law on Education adopted on August 29, 1997 had provided the legal basis for re-structuring education and articulation of midterm measures seeking to ensure radical change in education system. Soviet system until 1997. That is, after 9 years of compulsory education at schools, students continued their preparation for universities at 10th and 11th grades or at vocational schools. Upon completion of 11 years of education, students studied at universities, which had more intensive character and were full of purely professional content. According to the Law on Education amended in 1993, since 1995 education in universities had shifted to a 2-level
system - a Bachelor’s degree (4-5 years of education) and Master’s degree (term of training is 2 years).

At the same time, the outdated methodical base of education system, incapability to have timely and high-quality substance of education, high drain of teaching personnel and low prestige of professional education were the foremost reasons that had led to reforms in education sector. Another central reason was the early marriages when 15-16-year-old young mothers were an additional demographic challenge in the country.

The Law of on Education adopted on August 29, 1997 had provided the legal basis to re-reform education at the national level and determined the midterm actions designed to significantly change the education system in Uzbekistan. After adoption of this law, relevant regulations and norms were developed to clearly define the essence of a new multi-stage education system highlighted in the National Human Resources Development Program. (www.uzbekistan.at/publish/rus) The stage-by-stage transition to a compulsory nine-year education has been taking place in the country since 1997 that coincides with the adoption of the last edition of the Law on Education.

In 1997, there were 9,627 secondary schools out of which 221 were primary schools, 1,896 secondary nine-year schools, 6,996 high schools, 85 specialized schools and boarding schools for children with special needs. The initial plan of authors of the reforms had envisaged training of students in lyceums for 97 occupations. The demand for labor force in a certain occupation has to be regulated by market in Uzbekistan while training of students is based on future prognosis featuring the nation-wide and regional demands in labor force. This is accomplished taking into consideration the structural transition being made in economy.

However, even within the new system, conditions at schools remain poor. Many students refuse to continue education in colleges or lyceums because they regard tuition being very high and unaffordable. The application for educational grants and fellowships remains very bureaucratic while vocational schools do not give the opportunity to receive free education. As students say, "informal" payments are the highest expenses they incur. First of all, it is conditioned by low salaries. Even working full-time, teachers are hardly able to pay their bills for utilities. Therefore, there is no need to speak any more about desire of teachers "to fully devote themselves to the work with students".

Moreover, the newly created colleges have no sufficient number of experienced faculty members. They lack textbooks as well as functional curriculum that could prepare students for enrollment into higher education. Therefore, many parents, who think that the old Soviet system was better, transfer their children to schools still practicing eleven-year education system. There is also shortage of rooms in colleges. The funds allocated for construction of new colleges are insufficient. As a result, some construction sites are often simply frozen.

In higher education, the systematic transition to multi-stage education system was undertaken in 1997-2000 known as a transitional stage and 2001-2005 as large-scale implementation stage. This multi-stage education system envisages the following programs featuring continuous education:
1) Bachelor's degree is a basic higher education that lasts for not less than four years of education. Bachelor's degree is based on general secondary education (12 years of education) or professional education at colleges and lyceums;

2) Training of certified specialists is training on a certain program or occupation for a period of at least one year. This training is based on basic higher education, i.e. Bachelor's degree. This education level has a functional character and is directed at the certain economic sectors. Yet, for some of occupations, it is not obligatory to have this education.

3) Master's degree is higher professional education for concrete occupation with a training period of not less 2 years one the basis of the Bachelor's degree and not less than 1 year if one is a certified specialist. Master's degree is pursued after the State Qualification Exams are taken and Master Thesis is defended.

By the time of adoption of the Law on Education and the National Human Resources Development Program, some elements of multi-stage education system were put into practice. For example, the Bachelor Diplomas were handed over to graduates of Business Administration Program, a program created at the Tashkent State Technical University based on the Agreement between the Ministry of Higher and Secondary Professional Education and "Renong Berhard". Malaysian Corporation Enrollment of students into universities is either commercial or provided by the government fellowships. Allocation of higher education fellowships started in 2001. Education in universities in Uzbekistan is now delivered in Uzbek, Russian, and Karakalpak languages. Certain programs are taught in Kazakh, Tajik and Turkmen languages.

In Uzbekistan, higher education is provided by 61 universities, in present time, 11,226 faculty members work in universities and 47, 1% of them have doctoral degrees. The introduction of a test system for entering into a bachelor degree program has become one of new noteworthy elements in higher education system in Uzbekistan. Administration of tests is carried out by the State Testing Center under the Uzbek Cabinet. The tests consist of of 5 sections: (i) native language and literature; (ii) foreign language; (iii) mathematics; (iv) history and (v) founding principles of statehood and rule of law.

At the second reformation stage, the following processes took place: In 2002-2003 academic year, an International Westminster University in Tashkent was opened, which was founded by Umid Foundation and the London Westminster University. The language of education in the university is English. The Uzbek-American Academy on Faculty Members Retraining was also established in the country. Thanks to foreign grants, projects, bilateral agreements and Ustoz Foundation, capacity of teachers is enhanced in the country. The World Bank, Asian Development Bank, OECE, GTZ, TACIS, USAID and ACCELS render financial and technical assistance for education reforms. Their assistance is provided in the form of investments, projects and grants. In 2002 alone, around USD 5, 8 million of foreign investments were attracted.

The following results are a few examples of reforms in education sector:
- Acquisition of electronic books for libraries.
- pursuing state policy to support gifted children and university youth.
- approval of the state educational standards of higher education as well as the standard curriculum for 131 and 664 for in Bachelor's and Master's degree majors consequently

However, despite all steps taken by the Uzbek government, the number of university students has been reducing within the last years as opposed to the growth of population. The number of students accepted for universities either under government fellowships or on a paid basis is defined within quotas annually established by the Uzbek Cabinet.
According to the current legislation, higher education institutions have no right to independently accept students over the quota established. By 1997, the education system in Uzbekistan was fully financed by the state budget. Education in the majority of schools and universities was provided at the expense of government budget. The paid education services are delivered by 22 lyceums created with assistance of the Education Ministry of Turkey and Silm Company. In paid lyceums, teaching of many subjects at senior grades is rendered in English language.

The large-scale measures undertaken by Uzbekistan within the National Human Resources Development Program foresee relevant public financing. To reform professional vocational education system and to establish colleges, it is planned to spend 90 billion Uzbek Sums from the public budget. Besides, to develop education system, Uzbekistan receives USD150 million loans from the Asian Development Bank as well as USD200 million loan from Japan, which needs to be returned within 40 years.

At the same time, the National Human Resources Development Program provides for the increase in funds from non-government sources by rendering paid educational services to individuals and legal entities. In this regard, restrictions on enrollment of students to universities on paid basis were lifted by the Cabinet’s Decree on Admittance to Higher Educational Institutions of Uzbekistan in 1997-1998 academic years. In 1997-1998 academic years, the enrollment on a paid system had no limitations for any major as the state grant was introduced due to the long-term loans released by banks.

Payments received for education in universities from foreign students under a paid system is regulated by universities themselves under "Regulations on Admission of Foreign Citizens to Universities in Uzbekistan". The Ministry of Higher and Secondary Specialized Education has published a list of 61 universities where admission of foreign citizens can be done on a commercial basis. The Ministry has also articulated the payment procedures for education of foreign citizens depending on the education level. Uzbekistan will not be able to create effective and competitive education system of the European model without cardinal changes of status of faculty members, increase in fellowship amounts, development of private universities, eradication of corruption in the education system, and increase in admission quotas.

CONCLUSION

The break-up of the Soviet Union has led to disintegration of the united titanic Soviet education system. In a historically new context, when post-Soviet Central Asian countries - Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan and Turkmenistan - had obtained independence and owing to the new objectives to be achieved in education sector, it was required to develop a national educational policy. The education system in each of the Central Asian countries has its own distinctive characteristics, depending on political and socio-economic developments. However, the common Soviet legacy rather unites than separates the majority of contemporary education systems of these countries.

Changes in requirements for knowledge, skills and competences have predetermined the new tasks such ensuring equality in access to education, adaptation to continuous changes and uncertainties, enhancement in resources us efficiency, attraction of investments, management improvement and betterment of education quality. Therefore, these
objectives drive national, regional and universal changes that focus much on inclusion of these countries into a global educational domain, including the Bologna process. The innovative development of education as a phenomenon of modern culture is directed towards consolidation of competitiveness and improvement of international prestige of educational institutions and consequently, each country as a whole. Expansion of educational services, close and effective interaction between market of educational services and labor market, and academic mobility of faculty members, students and graduates of secondary and higher educational institutions would lead to the rise of the intellectual capacity of a country, ensuring its national security, preservation of its best historical and cultural traditions, including those available in education system.

The reforms in education system commenced in 1990s in post-Soviet Central Asian countries have not been completed yet, but are carried on.

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HOME-SCHOOL PARTNERSHIP: SCHOOL AND FAMILY COOPERATION IN THE GLOBALIZATION PROCESS OF SOCIAL AND ECONOMIC RELATIONS

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Abstract: Activity of parents and teachers in the interest of child may become successful only in case of collaborative efforts. This will help them to get to know the child, to see him in various environments, furthermore, the alliance of parents and teachers will lead to deep study of child’s individual nature, to formation of valuable benchmarks, and it will help to overcome negative behavior and its appearance in actions. It is highly important for teachers to establish partnership relations with the family of every pupil, and to create atmosphere of mutual assistance and harmony of interests. Moral values and guidelines for building sound life are initially instilled by the family. This article covers these issues in the context of the process of globalization.

Key Words: Moral values, e-learning, education technology, spiritual education, human values, social and economic indicators, psychological formation, cultural backgrounds, dialog with parents, mutual plans, educational environment, personality analysis, arena of self-realization.

Introduction. The accelerated development of science and technology has brought extraordinary changes and updates to the life and activity of people. According to the data [1] approximately 3.270.490.584 of world’s population use the Internet (June, 2015). Taking into consideration that world’s population is 7.260.621.118; it becomes obvious that 45% among them are Internet users. This service develops globalization process in rapid pace, and as a result with the assistance of the Internet people have wide possibilities to prune down their activities in all aspects of the life. One of the most significant structures in this sector is education and science.

Modern age dictates new requirements for the education of the younger generation. Today e-learning becomes important education technology. In analyzing features of e-learning can be found following [2]: by means of this technology, in 2011 users spent 35,6 billion $ for education; in 2013 the sum was 56,2 billion $; and in 2015 is predicted double consumption if this sum (Pic.1.). Moreover, the frequency of passing online courses by the students has also increased. According to statistics, 46% of students have taken at least one online course in 2013.
This kind of technology saves time and resources; it became popular because of ecological aspect. On the other hand, it should be mentioned that classic form of education always keeps its actuality. The reason is that moral and spiritual education can be achieved only by real interaction between teacher and student.

Figure 1. Expenses on Education

With the aid of virtual methods knowledge deepens, scientific researches facilitate, but the most effective method is a live communication between people. In kindergarten, primary and secondary schools the forming phase of children cannot take place in the virtual space.

About the necessity of connection between school and family.

The main task of today is the formation of a prototype of the person who knows and respects the human values. By forming a human quality can be realized creating a human value. The most important problem of today which worries the world community is the poverty of moral and spiritual world. For the personality is not enough high qualitative training and forcing knowledge. Today for the personality is important professional skill with a combination of moral and spiritual preparation, his awareness to be responsible for the actions. As the great Kyrgyz writer Chyngyz Aitmatov said: “The most difficult thing for human is being human every day.” Accordingly, the factor of educating of the human in the community stays as a main issue for all pedagogues.

School as a social institution has to adapt to new realities, to seek new ways and forms of interaction with other social partners, such as family. Convergence of school and family increases the effectiveness of educating the growing generation. Undoubtedly, school is one of the active subjects of educating the children. Its effectiveness is unquestionable; its influence on the growing generation in terms of personality of its formation is evident fact. However if the
school affects one more important aspect of pedagogical activity – increase of educational potential of a family, efficiency of joint educational activity of school and a family will repeatedly increase.

Changes in the social and economic life in the community lead us to the great turns in the system of education of Central Asia. The changes are also seen in the institute of the family. The monotony which is established at the Soviet schools is changed by a modern variety of gymnasiums, lyceums and other types of schools. There are levels and profiles of educating and developing activity inside one educational institute expanding the scope of services of additional education. This has increased the interest to the education system, provided the family with the real opportunities to choose the educational institution and a set of educational services.

At the same time, there was a noticeable stratification of society on social and economic indicators. Parents started comprehending specifics of their educational requirements and to form own requirements to education and training of children, according to their material and social possibilities. In certain sections of society, the social and educational level was higher from magisterial. As a result, the school was caught in the center of highly critical attention of parents, mass media and society at large. On the other hand, in the days of independence many families had left their children and went on earnings to other countries. Children in such families were left almost without guardianship and attention.

All this leaded to objective need of revision of roles in the relations of a family and school, for system of their interactions for educational and training process. Now it becomes more and more obvious that solving problems of education and training and socialization of the child can be achieved only in the integration of efforts of a family and school. Reduction of relationship and interactions of a family and school on the level which is adequate to new requirements and opportunities, is an actual task for any educational institution.

Role of parents in training.

An important factor in training pupil is society, a family in society. Medicine proves that an important stage in psychological formation is the age of the child from 3 to 6 years. As this age passes in the family, then in the kindergarten, the main responsibility at this time belongs to parents and tutors. The same conditions appear at elementary and high school. Exactly these two spheres of training have significant importance in the process of interrelation between family and school. The different ways of training in family and school lead to psychological distinction and have a negative impact to results of training process. The research revealed the main factor in discrepancy of pupils with high risk of low success in education is the weak support and attention of the parents. Cruel treatment of parents, irreconcilability are big risk of factors in educational achievement.
The environmental influence increases in the process of passing of children from kindergarten to elementary school, from elementary school to secondary, from secondary to senior while family’s influence weakens. However, a child spends much time in a family and by that, the influence of a family on a child is not lost. Therefore, the influence of parents on a child is strong. Here in the beginning it is possible to speak about a genetic factor. From the birth till 6 years parents solve all needs of children, and they are their first teachers. The period defining future character of the child is considered the period of a child development until 6 years. The status occupied by the child in a family, respect from parents and personal qualities of the child defines his future status and public position. The famous psychologist Bovlbi John who investigated the influence of absence of mother in a family proved that the children who grew up without mother may have physical and moral devolution, and its private life can appear in a certain threat. Such adverse attitudes towards the child in a family as a carelessness of parents, cruelty, lack of warm relationship or an excessive pampering of the child are the reason of disinterest of the child in study, his fear and nervousness. On the contrary, natives from a good family differ with good progress, with the persuasive speech, ability to make compound sentences and with the level of the question posing.

On the contrary, children from good families differ with good progress, with convincing speech, with skill to make compound sentences and a level of profound questions.

Now, alongside with the problems of child progress, existing in family, there are the questions requiring urgent decisions in kindergarten, in primary and high school. In the modern development society, in one class it is possible to meet children from different nationalities, different religious and cultural backgrounds. To talk about sequence of the program, it is important to reflect not on integration but on their adaptation. It is widely known that at each school, in each class, the finding of common language with children, who have been brought up in different psychological aura, requires significant pedagogical skill.

The areas of joint activity of school and family.

For solving above mentioned problems, it is necessary for close communication between school and family, and teachers with parents. By means of the profound communication of school and family it is possible to create an atmosphere of the real education. Friendship between the teacher and the parents, constructed on the basis of respect and understanding, allows to influence on reception of development and education effectively.

School is the educational establishment, one of which main functions is teaching (to give knowledge of the world, to teach to put them into practice, that the child after leaving school has been socially adapted, i.e. child is able to find the place in life, also to demonstrate capabilities and opportunities). Is school able to carry out this function without parents’ participation? The today’s situation shows, that it cannot. Therefore the family should establish
lasting communication with school and become a valuable part of school community. The family should become the participant of educational process, showing positive vital examples and cultural values and aiding in development of the individual, its socialization.

*In our opinion, the joint activity of family and school can be carried out in the following guidelines:*

1. The formation of harmonic requirements to pupils in family and at school.
2. Acquaintance of parents with the laws of protecting family and child.
3. Creation of the universal educational environment, which should be created by authority of parents and teachers. In such environment, there is no place left for all negative influence of street, mass media.
4. Correction of shortcomings during formation of child personality. Work with children who are in difficult vital conditions with a possibility of psychological support.
5. Increase of pedagogical literacy of the parents providing knowledge of children’s psychological features.

A teacher has to build a continual dialog with the parents. Getting the information about children’s psychological state, health, and behavior from the parents is a precondition for development of upbringing and educational process at school. In the beginning of the dialog with parents, the teacher should give positive information about pupils’ behavior and knowledge level at first, only then he may continue to speak about children’s weak sides. Parents do not like teacher’s direct statement about their children’s mistakes. It is known, that criticism as discrimination or jeers are not optimally taken by parents. In such cases parents’ reaction to the remarks is negative, and they relay responsibility on the teacher. For this reason the criticism must be constructive. In the created situation the teacher should show the ways and methods of solving the problem. The teacher must not look at parents from above and consider himself better. Careful listening and perception of the parents’ questions and requests will help in co-working. Recommendations given to the parents must be realizable. The teacher also should remember that the family status in community and its lifestyle can be different. It is natural that not all the parents equally welcome the teacher’s willingness to the dialog. As a symbol of tolerance and hope, the teacher in this situation, without giving up, considers the ways of close relationship with the family and he should be informed about the family’s home life and views. Mutual plan of the types and methods of work must be made together with the parents, keeping in mind that each child is a unique world, and it is necessary to take into account his needs. In order to resolve these issues in the world practice of tutors assigned to each class or class advisers’ certain methods can be considered.

**The teacher and the parents.** Essential role in upbringing and education, in preparing the pupils for life, in the formation of their active life position belongs to the teacher. The teacher is always a moral example and loyal attitude to own work for students. From this it follows that
the essence of a morally educated person is not only in the learned knowledge, ideas, experience, social behavior, but also in collectively developed personality relationship to reality. The teacher and the class adviser may discuss with pupils’ parents the following questions:

- Assessment of student’s achievement;
- Lessons learned well by the student, reasons;
- The organization of meetings with teachers of core subjects, that are difficult for the student;
- Teaching the student ethical behavior in society;
- Getting to know the student’s close friends and his circle of friends;
- The study of psychological, physical condition of the child, the personality analysis;
- Place of methods to promote and their timely application;
- Comparison of the student’s formation and tracking depending on the period;
- The search for methods of self-training, that are interesting for the student and the implementation of them;
- Mark and control of student’s attendance of the learning process;
- The student’s behavior at home and self-preparation for the classes;
- Motivation of the student, age psychology, health and important event;
- Give the direction to the student, which may contribute to the personal development of extracurricular cultural and intellectual level, etc.

In 2014-2015 academic year A. B. Beyshenaliyev and N. M. Sodikov conducted research on the subject "Educational changes of Central Asia from Independence Up to Now". Survey conducted by authors showed that there are topical issues connected with a subject. For example, since 1991 there are certain changes among pupils of Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. The greatest part of weak schoolchildren was made by children of the migrants who were going abroad (especially to Russia), because of unemployment in Central Asia, or because of a low wage. Second reason: there were problems connected with early involvement of children of migrants to work, cohabitation with grandfathers and grandmothers, or with close relatives, shortcomings of control and mercy from parents, etc. As a result of poll it became clear that 96% of children confirmed a rupture of communication of parents with children. The phenomenon of such character, unfortunately, remains actual in the countries of the second and third world.

Support of education.

One of the important issues of In the lagging countries or countries with new ways of development is the lack of material and moral support of schools and education. Today education
system in the majority of continents doesn't work well enough. It is possible to consider that education needs support from the public. In this issue would be useful to study experience of the levers known as Waqf in the Islamic zone, Fund in the West and to follow an example of these organizations. Considering all above, it would be useful to study ways to support schools and to study experience of collaboration with parents. In many countries meeting of parents and their active participation in seminars is adjusted.

Stating an essence of support of education it is possible to allocate an active role of a family:

1. The family provides physical and emotional development of the person. In infancy and in the early childhood the family plays the defining role which can't be compensated by other public institutes. At children's, younger school and teenage age its influence remains to leaders, but stops being the only thing when influence of school increases.

2. The family plays the leading role and in intellectual development of the child. The American researcher Howard Blum at the end of the XX century made an interesting hypothesis that distinction in coefficient of intellectual development of the children who grew up in safe and dysfunctional families reaches twenty points, influences the relation of children to study, in many respects defining its success. At all stages of socialization the intellectual level of a family, interests of its members affect on intellectual development of the child, formation of its internal culture, aspiration to continuation of education and self-education.

3. The family is of great importance in mastering the person public norms in the course of his social development. It is connected by that approval, support, indifference or condemnation of relatives affect interests of the child, help or prevent it to look for exits in difficult situations, to adapt for the changed circumstances of life, to resist in the changing social conditions.

4. Family dorms the fundamental valuable orientations of the person which are shown in the social and interethnic relations. Style of his life, the sphere and level of claims, vital aspirations, plans and ways of their achievement is defined in the family. Values and the atmosphere of a family define also as far as it becomes the environment of self-development and the arena of self-realization of its members.

Conclusion.

Family and school are the key links in the education system of a rising generation. These social institutions have to deal with crucial tasks related to the moral training of the younger generation involving them in the life society in the terms of globalization, the moral destruction and devastation. This requires bringing a parenting practices that will meet life’s demands.

If in the process of education and upbringing, parents do not forget that they are initial educators and if a teacher, observing a certain subordination, will be able to let the student feel the love and parental care, it can be assumed that better conditions are created for a student.
Family, school and society, as a three prime factors of educative process, must feel their responsibility and take care of fulfilling and obtaining the results. If there are certain created conditions for studying at home, the house turns into a school, if warm relationships are established in a school, teachers become our second parents. Results of education and upbringing are the model of adequate and studious personality. As Kyrgyz government leader Ishak Razakov said: “If you are pure, if I am pure, then the society will be pure”. School-like house and house-like school is necessary for the establishment of bright future.

References:

COMMUNICATION FACTORS IN FACILITATING EDUCATIONAL ACCREDITATION: THE CASE OF SELECTED HIGHER EDUCATION INSTITUTIONS IN LAGUNA AND CAVITE, PHILIPPINES

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Abstract

This research aimed to 1) describe the communication structures and systems of selected colleges and universities in Cavite and Laguna; (2) determine the different communication factors affecting educational accreditation of selected HEIs in the research locale in terms of the following: individual communication orientation; team (departmental, interdepartmental, and management) communication orientation; and organization communication orientation; and 3) formulate a framework that would facilitate the educational accreditation process using the above mentioned communication factors. The researcher was able to develop the proposed communication framework for educational accreditation that could be used by higher educational institutions as a basis for planning and implementation of accreditation activities. The framework highlights the need to meet the accreditation requirements through identified inputs and outputs which shall be processed using communication activities such as person-to-person exchanges, meetings, visual materials i.e. bulletin boards and newsletters and guided by the communication quadrants.

Keywords: individual communication orientation, communication structure and system, organization communication orientation, team (departmental, interdepartmental, and management) communication orientation, educational accreditation
Preservice Teacher Candidates’ Perceptions of Differentiated Instruction (DI): Pre and Post Student Teaching

Abstract

Prior research on differentiated instruction (DI) in higher education has focused on individual courses (Ernst & Ernst, 2005; Hirsch, 2013; Mok, 2012; Varsavsky & Rayner, 2013), predominantly within teacher education (Chamberlin & Powers, 2010; Huss-Keeler & Brown, 2007; Griess & Keat, 2014; Joseph et al., 2013; Sands & Barker, 2004; Santangelo & Tomlinson, 2009). Limited research has considered the position of student teaching as a means for learning and practice of differentiation in student teaching (Brimijoin, 2002; Dee, 2011; Edwards, Carr, & Siegel, 2006; Tomlinson, Callahan, Moon, Tomchin, Landrum, Imbeau, Hunsaker, & Eiss, 1995). This study looked to link preservice teacher candidates’ perceptions of differentiation, pre and post student teaching, as well as note the role mentor teachers play in impacting preservice teachers’ plans for future use of DI in their own classrooms. A total of 135 preservice teachers were surveyed prior to student teaching as well as post student teaching to obtain information regarding their level of familiarity with differentiation and their plans for use of DI in their future classrooms.

Introduction

In the ever-changing world of education, diversity of student needs and learning has given birth to differentiated instruction. In order to meet the needs of student, differentiated instruction (DI) allows teachers to design lessons centered on individual student needs. Tomlinson, a leader in the field of differentiation, has stated that DI is a means by which teachers are able to meet the needs of students by “develop[ing] classroom routines that attend to, rather than ignore, learning variance in readiness, interest and learning profile” (Tomlinson, Brighton, Hertzberg, Callahan, Moon, Brimijoin, Conover, & Reynolds, 2003, p. 121). It has been suggested for students including those identified as gifted (Tomlinson et al., 2003; Tricarico & Yendol-Hoppey, 2012), as well as for special education students (Dee, 2011).

2011; North Carolina, 2013; Ohio, 2005; Texas, 2014; Virginia, 2012; Washington, n.d.), the same does not hold true for higher education. Many authors have argued that the practices associated with differentiation are needed in higher education (Chamberlin & Powers, 2010; Gould, 2004; Lightweis, 2013; Pham, 2012) and that in some instances it is occurring (Huss-Keeler & Brown, 2007; Griess & Keat, 2014; Sands & Barker, 2004; Santangelo & Tomlinson, 2009). The research, however, supporting and documenting the intentional design of differentiation in higher education remains small and is often only in reference to course work within a given class (Chamberlin & Powers, 2010; Huss-Keeler, & Brown, 2007; Griess & Keat, 2014; Joseph, Thomas, Simonette & Ramsook, 2013; Sands & Barker, 2004; Santangelo & Tomlinson, 2009; Mok 2012: Varsavsky & Rayner, 2013), and not in student teaching.

Student teaching is often completed during the last year or term of an education program. It has been viewed as the “most widely accepted component of teacher preparation” (Guyton & McIntyre, 1990, p. 515). Teacher candidates are placed in a classroom with a mentor teacher and using a phase-in process, the candidate takes over the role of teacher in the classroom with the cooperating teacher mentoring and supporting the candidate. Conderman, Morin and Stephens (2005) suggest that student teaching is the initial time for candidates to begin the professional thinking of an educator and engage in hands on practice. As a handful of authors have suggested, differentiation is a theory that is best taught hands-on with students and lessons, making student teaching the ideal placement for candidates to expand their knowledge and understanding of DI.

Participants within this study completed fifteen weeks of student teaching during the Spring 2015 term. All students started their student teaching placement in the third week of January. Middle Childhood (MC) and Adolescent and Young Adult (AYA) teacher candidates completed their student teaching in one placement. Intervention Specialist (IS) candidates completed one placement for their student teaching while IS candidates who also enrolled in the preschool special needs (PKSN) endorsement split their time between two placements; ten weeks in an IS placement and five weeks in a PKSN placement (preschool). Those in the Early Childhood Education (ECE) program with an additional endorsement of PKSN split their time with ten weeks in a primary (grade 1-3 classroom) and five weeks in a pre-kindergarten special education classroom. Candidates enrolled in ECE only, with no PKSN endorsement, completed all fifteen weeks in a grade 1-3 classroom. During student teaching, the candidates were required to solo a minimal of six weeks with all responsibilities of the classroom teacher as their role. Students also attended a seminar course on campus one night a week to support their student teaching and lay the groundwork for submitted nationally scored performance assessments (edTPA).

Literature Review

Two areas of research must be considered in light of preservice teachers’ level of familiarity with differentiation and their plans for using differentiation in their future classrooms. First, the role of differentiation in higher education and the use of differentiation in higher education was examined. In reviewing the works of
authors in the field, two themes are consistent: that differentiation must be taught in k-12 teacher education programs and supported by examples of mentor teachers in the field modeling differentiation. The second theme is that differentiation must be modeled by professors in higher education. Prior research has considered the use of differentiation as modeled to college students (Chamberlin & Powers, 2010; Ernst & Ernst, 2005; Hirsch, 2013; Huss-Keeler & Brown, 2007; Griess & Keat, 2014; Joseph et al., 2013; Mok, 2012; Sands & Barker, 2004; Santangelo & Tomlinson, 2009). Within multiple majors, research has been conducted with faculty documenting and modeling their instruction using a differentiated approach. A large abundance of the research has been conducted in teacher education (Chamberlin & Powers, 2010; Huss-Keeler & Brown, 2007; Griess & Keat, 2014; Joseph et al., 2013; Sands & Barker, 2004; Santangelo & Tomlinson, 2009). Only a few studies have been documented in other majors (Ernst & Ernst, 2005; Hirsch, 2013; Mok, 2012; Varsavsky & Rayner, 2013). The second area in which differentiation must be evaluated is within the student teaching experience (Brimijoin, 2002).

In regard to DI in higher education, one item that is consistent in the research is the type of course. In all instances, regardless of the content, DI in higher education is occurring in a standard classroom, not in the context of a practicum or student teaching experience. To date, only four studies have focused on DI in student teaching (Brimijoin, 2002; Dee, 2011; Tricarico & Yendol-Hoppey, 2012; Tomlinson et al., 1995).

Starting off the research in the field, Tomlinson et al. (1995), looked at three groups of undergraduate students and their learning of DI. The first group of students were taught DI in a workshop while the second group was taught DI in the workshop and also worked with supports during student teaching. A third group of preservice teachers was given no intervention, that is, the students did not attend any additional trainings on DI or have a coach. Tomlinson et al (1995) found that students who attended the workshop were different from those who did not attend based on their ability to state why differentiation was necessary in the classroom. Differences were also identified in how participants in the treatment group of workshop and coaching viewed advanced learners and struggling learners. With all three groups, a decline was documented, “all three groups were less positive after intervention in their attitudes toward differentiation than prior to intervention” (Tomlinson et al., 1995, p. 25).

In 2002, qualitative research was conducted to develop a theory in regard to the role of differentiation in student teaching. Brimijoin (2002) used a case study approach to consider the experiences of a preservice teacher candidate and a practicing teacher in regard to differentiation. Themes identified in the research that require further investigation include the role of DI in teacher preparation programs and long term studies of preservice teachers with differentiation. Building off Brimijoin’s (2002) study, this study will look to explore the level of familiarity of preservice teacher candidates with DI, pre and post student teaching, as well as their future plans for teaching.
In 2006, Edward and associates surveyed teacher candidates and teachers using a pre/post test design to determine the needs of preservice teaching candidates and their growth in regard to DI training. Considering both undergraduate and graduate special education candidates, Dee (2011) looked at the work samples (lesson plans) of preservice teachers. Dee found limited evidence that the participants were successfully planning for instruction that included differentiated instruction. Tricarico and Yendol-Hoppey focused their research on graduate students apprenticing in elementary classrooms. Through professional develop and support, Tricarico and Yendol-Hoppey (2012) found that with feedback and support, students were able to self-regulate and make improvements to their practice of differentiating instruction.

Stronge and Hindman (2003) reviewed research to identify what key attributes make for effective teachers, they found that “effective teachers differentiate instruction” (para. 14). For candidates studying to become teachers, national assessments require candidates to plan for diverse students and calls for differentiation (edTPA). Within the profession, standards for practicing teachers, as written by individual states, make reference to differentiation. Multiple states use the exact term, differentiated instruction, directly within their standards for the teaching profession (Alabama, 2014; Connecticut, 2014; Hawaii, 2014; Massachusetts, 2014; Missouri, 2013; Montana, 2013; Nebraska, 2011; New York, 2011; North Carolina, 2013; Ohio, 2005; Texas, 2014; Virginia, 2012; Washington, n.d.) While other states make reference to differentiation (Arizona, 2014; Arkansas, 2011; Colorado, 2000; Iowa, 2010; Kentucky, 2008; Maine, 2014; Michigan, 2001; Minnesota, 2014; New Jersey, 2014) within their standards for the teaching profession. Stronge and Hindman (2003) reviewed research to identify what key attributes make for effective teachers. They found that “effective teachers differentiate instruction” (para. 14). As we move forward in preparing teacher candidates, one must consider the current profession that calls for teachers to differentiate, the assessment of preservice candidates that requires differentiation (edTPA), and the teaching of the differentiation both in theory in higher education as well as modeling in the higher education classroom and in student teaching experience.

Building off of those areas in past research, the role of differentiation in teacher education and position of differentiation within the student teaching experience, this study was framed by two research questions. In order to establish the baseline of understanding of DI, candidates were asked their level of familiarity of DI prior to student teaching. Because student teaching is a hands-on practicum and the current standards of teaching call for teachers to differentiate, candidates were asked post student teaching about their level of familiarity with DI. The second research question was designed to determine if candidate’s plans for use of DI in their future classroom changed from pre student teaching to post student teaching. That is, did the experience of student teaching impact their view and future plans to use DI?

1. What is the difference in candidates' level of familiarity pre and post student teaching?
2. What is the difference in candidates’ future plans for differentiation pre and post student teaching?

Methods

A total of 135 preservice teacher candidates were surveyed during the first week of student teaching and then again during the last week of student teaching, Spring 2015. Candidates were from four different major programs of teacher licensure; Early Childhood Education (ECE), Middle Childhood Education (MC), Adolescent and Young Adult Education (AYA) and Multiple age grouping Intervention Specialist (IS). Breakdowns of the participants are presented in Table 1.

Table 1
Preservice teacher candidates by licensure group

<table>
<thead>
<tr>
<th></th>
<th>ECE</th>
<th>MC</th>
<th>AYA</th>
<th>IS</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre Student Teaching</td>
<td>50</td>
<td>21</td>
<td>23</td>
<td>26</td>
<td>120</td>
</tr>
<tr>
<td>Post Student Teaching</td>
<td>54</td>
<td>24</td>
<td>36</td>
<td>21</td>
<td>135</td>
</tr>
</tbody>
</table>

During the first week of student teaching, candidates were surveyed on two main areas; their level of familiarity with differentiation (on a scale of one to ten), and future plans of use with differentiation (one a scale of one to four- with one reflecting never plan to differentiate in my future classroom, two indicating plan to often differentiate in my classroom, three being rarely plan to differentiate in my future classroom, and four representing I plan to always differentiate in my future classroom). A total of 135 candidates were contacted to participate. Of the 135 who agreed to participate, 120 of the pre student teaching surveys were complete and used for analysis.

Post student teaching, candidates were surveyed again on the two questions. First they were asked to rate their level of familiarity with differentiation (on a scale of one to ten). In previous research, statements have been suggesting that preservice teacher candidates have limited experience and exposure to the concept of DI (Brimijoin, 2002; Dee, 2011). Second, they were asked to determine how often they plan to use differentiation in their future classroom. In her research on a preservice teacher, Brimijoin (2002) found that the candidate planned to differentiate in her own classroom following her student teaching experience that focused on DI. Using a Likert scale, candidates selected between never, rarely, often or always. A total of 135 candidates were contacted to participate. All surveys were completed and used for analysis. Finally, demographic questions were used to determine their licensure program (ECE, MC, AYA, or IS), see Table 1.

Data Analysis

For the two questions asked in both the pre and post student teaching survey, responses were compared using an independent sample t-test. As data was not originally coded with identifiers making a paired matched t-test possible, the independent t-test became the logical choice for comparison. Frequencies were obtained for the two research questions asked of candidates post-student teaching, by licensure area (ECE, MC, AYA, IS).

Findings
Candidates' Level of Familiarity Pre and Post Student Teaching

For the first research question, what is the difference in candidates' level of familiarity pre and post student teacher, the independent samples t-test revealed a significant difference between pre and post student teaching candidates' level of familiarity with differentiation, \( t(212)=3.52, p < .05 \). The standardized effect size was moderate (\( d = -0.45 \)). Pre-student teaching, candidates' level of familiarity with differentiation (\( M = 8.13, SD = 1.65 \)) was lower than the post-student teaching, candidates' level of familiarity with differentiation (\( M = 8.77, SD = 1.18 \)). That is, candidates reported feeling more familiar with differentiation post student teaching.

Frequencies of pre and post student teaching level of familiarity with differentiation by program are presented in Table 2

Table 2

| Level of familiarity means by program pre and post student teaching |
|--------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                    | ECE             | MC              | AYA             | IS              | Total           |
| Pre Student Teaching | \( M= 8.56 \)  | \( M= 8.23 \)   | \( M= 7.08 \)   | \( M= 8.54 \)   | \( M=8.13 \)    |
|                     | \( SD= 1.47 \)  | \( SD= 1.22 \)  | \( SD= 1.97 \)  | \( SD= 1.02 \)  | \( SD= 1.65 \)  |
| N= 50               | \( N= 21 \)     | \( N= 23 \)     | \( N= 26 \)     | \( N=120 \)     |                 |
| Post Student Teaching | \( M= 9.11 \)  | \( M=8.7 \)     | \( M= 8.25 \)   | \( M= 8.9 \)    | \( M= 8.77 \)   |
|                     | \( SD= .86 \)   | \( SD= 1.08 \)  | \( SD= 1.44 \)  | \( SD= 1.30 \)  | \( SD= 1.18 \)  |
| N=54                | \( N=24 \)      | \( N= 36 \)     | \( N=21 \)      | \( N=135 \)     |                 |

Candidates Future Plans for DI Pre and Post Student Teaching

The second research question, what is the difference in candidates' future plans for differentiation pre and post student teaching, the independent samples t-test failed to detect a significant difference. That is, there was no significant difference in students' future plans to differentiate before and after student teaching. Table 3 includes candidates' future plans for differentiation by program, pre student teaching, and Table 4, post student teaching.

Table 3

| Future Plans for Differentiation by Program Pre-student teaching (N=120) |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                 | Never           | Rarely          | Often           | Always          | Total           |
| ECE             | 0               | 0               | 40              | 10              | 50 (41.6%)      |
| MC              | 0               | 0               | 12              | 9               | 21 (17.5%)      |
| AYA             | 1               | 6               | 14              | 2               | 23 (19.1%)      |
| IS              | 1               | 0               | 8               | 17              | 38 (31.6%)      |
| Total           | 2 (1.6%)        | 6 (5%)          | 74 (61.6%)      | 38 (31.6%)      | 120             |

Table 4

| Future Plans for Differentiation by Program Post-student teaching (N=135) |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                 | Never           | Rarely          | Often           | Always          | Total           |
| ECE             | 0               | 0               | 28              | 26              | 54 (40%)        |
| MC              | 0               | 1               | 14              | 9               | 24 (17.7%)      |
| AYA             | 1               | 4               | 24              | 7               | 36 (26.6%)      |
| IS              | 0               | 0               | 8               | 13              | 21 (15.5%)      |
| Total           | 1 (0.7%)        | 5 (3.7%)        | 74 (54.8%)      | 55 (40.7%)      | 135             |
Discussion

Past research has highlighted the need for teacher candidates to be taught the concept of differentiation in higher education classes (teacher education) (Gould, 2004). As Sherman (2009) points out, teachers that differentiate create “worthy teaching that responds to students individuality” rather than focusing on the masses and missing opportunities for learning (p. 57). The findings of the first research question support that candidates are aware of differentiation and that prior to student teaching they are familiar with the concept, thus supporting that DI is being taught in higher education. Post student teaching, the participants in this study reported that their familiarity was on average, $M = 8.77$, which was significant higher than their reported level of familiarity pre-student teaching ($M = 8.13$). In their 2011 research, Casey and Gable surveyed first year teachers and found that the majority felt their teacher education programs prepared them to differentiate instruction. This is in contrast to past statements regarding novice teachers’ understanding of DI pre and post student teaching. Tomlinson et al., (1994) felt that candidates’ drop in confidence level in regards to DI was due to their understanding of the complexity of DI post student teaching, as compared to pre-student teaching. Gould (2004) suggests that novice teachers can differentiate if they are given the opportunity to learn in settings that model and promote differentiation. That is, schools and more importantly classrooms selected for student teaching must contain cooperating teachers who are differentiating instruction to meet the needs of diverse learners (Tomlinson et al., 1995).

The second research question addressed the candidates’ plans for use of DI in their future classrooms. The findings were not significantly different between pre and post student teaching. That is, prior to student teaching, a total of 93.2% of the candidates planned to either differentiate often or always while post student teaching, a total of 95.5% fell into the two categories. In prior research of a student teacher learning to differentiate, Brimijoin asked the question of the preservice candidate, would she differentiate in her own classroom (2002, p. 232). In both this study and Brimijoin (2002) it was found that preservice candidates plan to differentiate. This study asked the frequency and again found that the majority planned to differentiate often or always.

Gould (2004) argued that for candidates to be successful at differentiation, learning must first occur in teacher education programs, with education professors “talk{ing} the talk and walk{ing} the walk” (para. 8). In contrast, past research (Richardson-Koehler, 1988) has found that candidates take on the dispositions and attributes of their cooperating teacher regardless of their university course work or training. If this is the case, then closer attention must be paid to the role of the cooperating teacher in modeling differentiation and their dispositions related to instruction. Prior research (Brimijoin, 2002) suggests that that there are instances in which candidates have been exposed to DI in student teaching. In Dee (2011), the argument was made that candidates need to be exposed to experiences in which mentor teachers are modeling and using differentiation.

Limitations
Multiple limitations exist with this study including the design as an independent t-test rather than a paired or matched t-test. Due to the lack of planning on the researcher's part, future research should plan to match participants' individual responses pre and post student teaching. Secondly, the t-test demonstrates that a difference does exists between the pre and post student teaching candidates' level of familiarity however the explanation of what the students felt impacted their increase in familiarity of DI is not stated. That is, future studies should consider a qualitative approach to develop a theory of what is occurring during student teaching to cause this increase. Finally, the assignment of students to mentoring teachers could also play a role in the findings but this study does not give background on the experience of the mentor teachers or their use of DI in their classroom. As Guyton and McIntyre (1990) state, it is necessary for “congruence between the on-campus courses and the experience of student teaching” as both must support the teaching of the theory and practice of DI (p. 516). Consistency is needed but that must start with higher education courses that model DI and follow with student teaching experiences that include cooperating teachers who support the teaching of diverse learners through differentiation. Tomlinson et al, (1995) state that “cooperating teachers can do little to guide student teachers in addressing students’ diverse academic needs if they, themselves, do not provide differentiated instruction in their classes” (p. 10). It is suggested that more studies be conducted to determine and connect mentor teachers’ classroom structure and instructional style and the impact it has on the student teacher (teacher candidate) in the classroom.

References


Proposal Title:
Engagement is more than just eye contact: How to get students engaged in learning

Presentation Format:
Workshop

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Title:
Increasing student engagement in higher education classrooms

Abstract:
Student engagement is just as important in higher education as it is in the elementary classroom! This paper highlights a research study on the engagement of students in higher education classrooms. Results of the study will be shared as well as implications for instruction in higher education classroom. This paper describes the methods of making classrooms more student-centered as well as the benefits to learning in a student-centered higher education classroom.
Learning mathematics is a complex process that requires a variety of theoretical lenses for understanding. Researchers from many disciplines (e.g., mathematics educators, applied linguists, educational psychologists, learning scientists) have investigated central questions of their discipline using a unique collection of videos on students’ learning. In this Panel Session, we discuss four papers that report research from the examination of a unique collection of video recordings from a longitudinal study of students’ learning mathematics.
Organization

Each paper illustrates a research application from the collection, which is housed on the Video Mosaic Collaborative (VMC) and is hosted by Rutgers University. Three of the papers employ the newly released tool, the RUAnalytic, which allows for the construction of a multimedia narrative by editing and annotating videos from the VMC collection. New VMCAnalytics created in one’s workspace are eligible for peer review and potential publication. The video collection and corpus of published VMCAnalytics are available to teachers, teacher educators, and researchers worldwide (see www.videomosaic.org).

The use of videos to promote teacher knowledge of student learning and improving practice is central to all the papers in this session: (1) Using video to study spontaneous transfer of mathematical ideas in problem solving; (2) Pre-service teachers in an educational psychology course creating VMCAnalytics to showcase their interpretations of cognitive and social development as young students work on mathematical tasks; (3) Using the VMCAnalytic to provide a case study of one bilingual adolescent's solving an algebraic problem; and (4) Studying in-service teachers’ (general education and special education) growth in recognizing students’ reasoning from video and teachers’ change in beliefs. The applications derived from this work have potential to improve practice.

The organization of the Panel Session is as follows: First, the introduction, background and rationale for the work presented are given. Then, the four individual research papers will follow; the concluding element of this Panel Session consists of concluding remarks and then an open session for questions and discussion from the audience.

1 Development of Video Mosaic Collaborative and the RUAnalytic tool, and research using these resources and the tool, has been supported by two grants from National Science Foundation (DRL-0822204 and IIS-1217087). The views expressed in this paper are those of the authors and not necessarily those of the NSF.
Introduction, Background and Rationale: The VMC Collection and RUAnalytic Tool

Carolyn A. Maher (5 minutes)

In order to make records of children's learning behaviors in mathematics more accessible and permanent, mathematics education researchers have, for decades, used videotaping of learning in classrooms. Careful examination of video recordings allows us to not only study how mathematical ideas are built by learners, but also to learn about the subtleties of student thought processes, to trace student cognitive growth in a social setting, and gain insight into how social processes influence personal cognitive development. The Robert B. Davis Institute for Learning (RBDIL) at Rutgers University has amassed a unique and massive longitudinal video data set (4,000 hours) that traces students learning mathematics over extended periods of time and situated in classroom or informal settings where conditions promote the development of reasoning, problem solving, and justification.

Using Video to Identify the Work of Transfer

Cindy E. Hmelo-Silver, Joshua Danish, Andrea Gomoll, Whitney Novak, Asmalina Saleh, Alejandro Andrade, Branden Bryan, Indiana University (15 minutes)

This paper presents the VMCAnalytic of Brandon, a fourth grade student, as he works on a mathematics problem and then discusses it during a clinical interview. Brandon transfers ideas about combinatorics from a problem involving towers of unifix cubes selecting from two colors to combinations of topping on a pizza. To reveal how this occurs, we analyzed how Brandon works to accomplish and recognize this—with a focus on how this was mediated by the unifix cubes, hand-drawn representations, and the interviewer.
Pre-service Teachers’ Investigations of Children’s Cognitive and Social Development as Revealed in their VMCAalytics

Marjory F. Palius (15 minutes)

This paper presents an exploratory study conducted in an Educational Psychology course, in which pre-service elementary teachers engaged in an intervention to study VMC videos and create a VMCAalytics. The purpose was to investigate how these activities might serve to deepen their understanding of school-aged children’s cognitive and social development. The intervention design featured a selection of videos from the primary grades, in which focal groups of children could be observed engaging in group work on mathematical tasks, beginning in first grade and extending to grade four. As an online module of the course, participants studied the videos and reflected on them with their peers via threaded discussions in small groups. This intervention was layered onto the regular course activities, which included readings and seminar-style discussion of the course text. The intervention continued with an introduction to the RUAnalytic tool and a hands-on training session in a computer lab. Participants selected a topic for their course project to create a VMCAalytics as a scholarly, multimedia paper on child development. After the course ended, participants were interviewed to reflect on their experiences and their learning through the intervention activities. This paper reports on the VMCAalytics created by the pre-service teachers and their perceptions of what they learned through constructing them.

Revealing Ariel's Algebraic Problem Solving: A Study of the Growth of Cognitive and Language Knowledge

Louise C. Wilkinson and Robert Sigley (15 minutes)

This paper presents a VMCAalytics featuring one adolescent's learning to solve an algebraic problem at the same time he acquires in tandem the mathematics register. The mathematics register refers to the specialized language used in mathematics teaching and learning; it is characterized by precision and linguistics in both oral and written language. This VMCAalytics presents an open-ended problem-solving task that requires Ariel to determine how many Cuisenaire rods are needed to build a
ladder with different number of rungs and to justify his solution. Over the course of 18 months, we see how Ariel first approached the problem, and then built his algebraic knowledge. His justifications increasingly utilize elements of the mathematics register. Ariel's success is revealed in the elegance of his solution, the understanding of his earlier work, and his confidence in offering clear, well-articulated oral and written justifications.

General and Special Teacher Learning from Video

Carolyn A. Maher and James A. Maher (15 minutes)

Videos have served as a powerful tool for tracing the students' development of mathematical ideas over time. Furthermore, teachers’ studies of videos of student learning provide knowledge about how students, under certain conditions of exploring open-ended problems and collaborating about solutions, learn mathematics. These studies have the potential to shed light on the complex set of challenges that special education students face in learning mathematics. These students are challenged by both the intricacy of the discipline and alternative styles of engagement with the discipline that constitute their preferred modes of learning. A four-month intervention, consisting of three cycles, provided opportunity for participants to work on mathematical tasks, study videos of students working on these same tasks, and implement the tasks with their own students. The special and general-education, middle-school teacher participants then analyzed their student work and shared student solutions with each other. Pre and post-test video and belief assessments showed that both groups grew and were equally successful in recognizing student reasoning from video, with 50% growth from each group. Further, about 67% of the special education teachers and 20% of the general education teachers exhibited growth in recognizing complete argument description of an induction argument to support reasoning. This growth rate difference between these two groups of teachers is statistically significant (p=0.0549). The results have important implications for professional development.

Audience Engagement

Questions, Discussion and Implications for Practice (20 minutes)
Advantages/Disadvantages of the Mathematics Modular System at Eastern Kentucky University

Topic Area of Submission: Mathematics Education

Presentation Format: Paper Presentation

2-3 Sentence Description: Accelerated programs (such as the Modular System) abandon the traditional, semester-based model in favor of a compressed or self-paced curricular framework (McTiernan, Palmer & Fulton, 2012). Accelerated and compressed programs make particular sense for mathematics, given students’ low success rates for completing a developmental sequence and advancing to and succeeding in college-level math courses (McTiernan, Palmer, & Fulton, 2012). These accelerated programs seem to help students to master the content in a shorter time frame.

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Advantages/Disadvantages of the Mathematics Modular System at Eastern Kentucky University
By: Dr. Antoinette M. Davis

In most colleges and universities, mathematics is a subject that should be taken during the matriculation process. Some students can breeze through math courses while other students tend to get stuck on certain topics (such as: fractions and square roots). For students who need more time and assistance with these topics, the students would enroll in a developmental math course that uses the Modular System. The courses that utilize the Modular System at this institution are: MAT 090 (Pre-Algebra) and MAT 095 (Introductory Algebra).

“Effective with the Fall 2012 semester, the University’s two developmental math classes, MAT 090 and MAT 095 were each divided into three one-credit modules, with students progressing from one module to the next only upon successful completion of each module. Only the modules not successfully completed needed to be re-taken in a subsequent semester (EKU, 2013)”.

Accelerated programs (such as the Modular System) abandon the traditional, semester-based model in favor of a compressed or self-paced curricular framework (McTiernan, Palmer & Fulton, 2012). Accelerated and compressed programs make particular sense for mathematics, given students’ low success rates for completing a developmental sequence and advancing to and succeeding in college-level math courses (McTiernan, Palmer, & Fulton, 2012). These accelerated programs seem to help students to master the content in a shorter time than would be used in a normal semester course.

But the Modular System seems to be working at other institutions around the United States. Anne Arundel Community College in Maryland used a $40,000 Changing the Equation grant from the National Center for Academic Transformation to redesign its developmental math courses (Ashford, 2011). Students work on online math modules at their own pace (Ashford, 2011). The ability to work at their own pace is helpful to students so that they don’t feel rushed to learn a concept. In mathematics, it is better for students to learn over time in comparison to learning everything in one session. The ability to spend a longer time on the units where they have the most difficulty and retake the exam until they pass “reduces their anxiety,” said Alicia Morse, chair of the math department (Ashford, 2011).

Virginia’s community college system is adopting a modular approach to developmental math as part of a “systemic re-engineering” of the entire system to raise completion rates (Ashford, 2011). Instead of having to take a full developmental math course, Virginia’s modular initiative will allow a student who needs help in a particular area—such as fractions or proportions—to take an individualized, self-paced module on that topic (Ashford, 2011). These self-paced modules will be helpful to the student so that they can work on mastering the topic and move forward towards completing the course.

In contrast to Anne Arundel Community College, EKU does not allow students to work at their own pace. Each module (A, B, and C) is four weeks long and students must prove their mastery of the content in each of the modules by passing a Module Exam with 70% proficiency or higher. Each
semester is 16 weeks, so a student could pass Module A, B, and C in just 12 weeks (4 weeks x 3 Modules = 12 weeks). If a student does not pass Module A (for example), the student will remain in A for another four weeks. If the student does not pass Module A (or any other Module) for the second time, they will stay in that Module until they have mastered the content.

Here are some advantages to the Modular System at EKU:
- Students can complete all of the Modules in as little as 12 weeks.
- Students are able to complete their homework in an online format.
- Students have access to an instructor who can answer questions after the lecture.
- Students are able to utilize group work in order to work together to complete class problems.
- After completing all of the Modules, students have a chance to sign up for another course or they can use the extra four weeks to work on their other courses.
- Tutoring is available for students who need help after class.
- A Learning Contract is set up for students who do not pass the first time. This is a contract that is set up between the teacher and the student so that the student can work to be successful the second time around.

Here are some disadvantages of the Modular System at EKU:
- Students who do not pass the Module the first time tend to get discouraged with trying again.
- When students fail a Module a second time, they tend to withdraw from the learning process.
- The Modular System does not benefit students who need more than four weeks to learn the information. A separate System should be set up for students who need more time.
- The Modular System is set up on a Pass/Fail Scale. There is no in-between area in this System.
- Some students will stay in the Modular System for many semesters because many of them refuse to ask for help through difficult topics and some topics are just not understood by the student for many reasons.

As an MAT 090/095 instructor, I understand the fact that every student may not enjoy this System of developmental mathematics. However, as noted above, there are advantages and disadvantages of the Modular System at EKU. Each item should be considered from the instructor and student’s point-of-view. The Modular System has been useful in getting students out of developmental mathematics and into college-level mathematics. “Two-semester pass rates for MAT 090 and MAT 095 climbed to 91 percent and 83 percent, respectively, for 2012-13 (EKU, 2013). The main objective of this paper is to note that the Modular System has worked for the past three years at EKU and in the future, other options will be made available for students who need more time to pass the Modules. Lastly, the main goal is to help students get through the topics that they struggle with so that they can pass the Module Exam in each Module with a 70% or higher so that they can move forward in other college-level mathematics courses.
References


Increasing Mathematics Proficiency in College Math Courses: Ending the “I hate math” Syndrome

Topic Area of Submission: Mathematics Education

Presentation Format: Paper Presentation

2-3 Sentence Description: Before students enter college, they already know whether they “like” math or they “hate” math. The sad part is: The students who hate math will have to find ways to conquer their fears so that they can pass the required amount of math courses in their college curriculum. In any event, their fear of math did not begin in high school; it began during their formative years of learning.

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Increasing Mathematics Proficiency in College Math Courses: Ending the “I hate math” Syndrome
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Before students enter college, they already know whether they “like” math or they “hate” math. The sad part is: The students who hate math will have to find ways to conquer their fears so that they can pass the required amount of math courses in their college curriculum. In any event, their fear of math did not begin in high school; it began during their formative years of learning. Research shows that the development of mathematics skills early on may be an even greater predictor of later school success (Clements & Sarama, 2013).

Often times, these students do not have access to the resources that are needed to increase their mathematics proficiency. Too many children not only start behind, but they also begin a negative and immutable trajectory in mathematics, with insidious long-term effects (Clements & Sarama, 2013). All of the parts of a child’s mathematics experience can shape their mindset as it relates to mathematics learning in future years. A study that followed 273 students through their first year of middle school, found that students described math as less valuable and that they were investing less effort and persistence in the subject (Pajares & Graham, 1999). As time goes on, students with this mindset will have a negative view on mathematics and its use in their overall life. These negative effects are in one of the most important subjects of academic life and also affect children’s overall life course (Clements & Sarama, 2013).

Given the importance of mathematics to academic success in all subjects, all children need a robust knowledge of mathematics in their earliest years (Sadler & Tai, 2007). The question is: How do we increase mathematics proficiency in the younger years so that students will feel more confident about mathematics in their college years? The National Council of Teachers of Teachers of Mathematics (Principles and Standards for School Mathematics) (2015) outlines what each child should learn at each grade level:

**Pre-school - Kindergarten**

During this stage, children should begin to:
- count aloud
- compute the number of objects in a group
- understand that a particular number of objects has a fixed value despite the size or nature of those objects
- understand relative size and be able to sort objects by size and shape
- follow a sequence of two- and three-step commands
- be able to perform simple addition and subtraction computations

*Grades One to Three*

During this stage, children should:
- begin to perform simple addition and subtraction computations efficiently
- master basic math facts (such as, $3 + 2 = 5$)
- recognize and respond accurately to mathematical signs
- begin to grasp the concept of multiplication (grade three)
- understand the notion of measurement and be able to apply this understanding
- improve their concepts of time and money

*Grades Four to Seven*

During this stage, children should:
- recall basic mathematical facts, including multiplication tables, with ease
- become competent with fractions, decimals, and percentages
- begin to understand the relationships among fractions, decimals, and percentages
- develop facility with word problems
- be adept at estimating quantities and rounding off numbers
- develop basic computer skills

*Grades Eight to Twelve*

During this stage, children should be able to:
- employ an increasingly high level of abstract, symbolic thinking
o perceive relationships and make translations among decimals, fractions, and percentages
o deal easily with a wide array of equations, formulae, and proofs
o explain and illustrate mathematical concepts, rather than simply apply them
o plan and self-monitor during multi-step problem solving
o use calculators and computers with facility

In college, students should be able to demonstrate their knowledge of the NCTM material that was covered in all grade levels. There are various reasons why students have not retained this information. Many students either did not do well in math in high school, or are older and have forgotten what they learned (Rosin, 2012). It is essential for students to review each grade levels’ work all throughout the year so that students will be prepared to add to their current knowledge at the beginning, middle, and end of the school year.

In the drive to improve community college success rates, most attention has been focused on students taking the remedial or “developmental” courses they need just to be eligible to take college-level math courses (Rosin, 2012). When students complete these developmental courses, they will have the foundation that is needed in order to go into other mathematics courses. Sadly, many students stay in developmental math for a while because their foundation was not properly built in their K-12 years. At the college level, more than in many other subject areas, students approach math with high anxiety, which interferes with their learning; many delay taking a math class until they are too far along in their studies, while others are eager to get the math requirement over with, and end up taking classes beyond their capabilities (Rosin, 2012). If we can find ways to help students to overcome this anxiety (extra tutoring, working in small groups, etc.), then we can get students through these math classes and on to other classes so that they can complete their college degrees in a timely fashion.

In college, the students have various backgrounds such as: high school graduates with no kids, single parents with children, married parents with children, etc. Due to the varying degrees of students, many resources need to be made available so that these students can
succeed in their mathematics classes at the college level. Various resources are available (such as: TRIO) so that students can have access to tutoring and extra assistance with passing their college courses. Most of these programs offer progress reports so that students can find out where they are in each class at the midterm mark. This information can help students to improve their grades as they round the end of the term.

In college, students have the option of taking traditional and online mathematics courses. Chao and Davis (2001) found that there are many facets to the online success of mathematics courses such as: paying attention to the design and utilization of effective online pedagogy, maintaining active communication between students and the instructor, encouraging interaction between students in the classroom, and using computer programs like Excel as a way to illustrate statistical concepts in the classroom. These concepts can be used in the traditional classroom as well. Overall, research-based suggestions on online instruction emphasize establishing study groups early, modeling and reinforcing effective communication, identifying potential problems, and designing a plan for dealing with these potential problems (Tallent-Runnels et al., 2006).

According to Siadat, Musial, and Sagher (2008), students enter into a continuous dialogue with the instructor through a specific medium—the mathematics tests—where the instructor conveys his or her expectations and policies, and students respond through their performance. On these exams, students have an opportunity to show their proficiency of the information that is presented on the test. When students do well on exams, the instructor may feel that the students have a grasp on the information that was presented. However, when students do not perform well on these exams, it is an indicator to the instructor that more time should be spent on the material that was covered. Student performance, on the other hand, provides vital feedback to the instructor to adjust the pace and content of instruction (Davis, 2014).

In college-level mathematics courses, mathematics proficiency can be demonstrated by completing the following items:

- Receiving high-quality instruction in the classroom (Clements & Sarama, 2011).
- Instructors can allow students an opportunity to explore mathematics in a way that they understand it. A verbal understanding will be helpful in the mental understanding of the material.
- Instructors can ask students prompting questions that will show their mathematics competency of what is being studied.
- Instructors can allow students to work in groups on small projects so that they can use their knowledge to help other students in the group. Group work tends to be a great way to get shy students to speak out as they will not speak out in a large group discussion.
- Over time, students sense that they are competent and able enough to solve math problems; teachers can foster the sense that math is important and relevant by demonstrating the usefulness of math in the real world; teachers can find math problem challenges that are well-matched to the student’s skill level with clear goals and feedback; lastly, teachers can help students deal with math anxiety when taking tests (Muesse, 2014).

Overall, each student will enter the college mathematics classroom at a different level. Our goal as educators is to make sure that these students are able to demonstrate mastery of the mathematics information so that they can use it in real-world settings. The moment that students are able to demonstrate proficiency in our math courses, then the “I hate math” syndrome will leave and they will feel more comfortable in other settings where mathematics is used.
References


Career Planning Integration with Health and Life Skills, Language Arts and Social Studies Curriculum at the Grade 3 Level

1) Title of the Submission: Career Planning Integration with Health and Life Skills, Language Arts and Social Studies Curriculum at the Grade 3 Level

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Abstract

This article presents on the effectiveness of having a grade 3 class participate in a career planning unit consisting of various learning activities. Students and the teacher evaluated the unit by utilizing both quantitative and qualitative data. This career planning unit integrated Alberta Education Curriculum outcomes from the following programs: Health and Life Skills, Language Arts and Social Studies. The unit itself is outlined with clear descriptions of the activities that the students participated in and also includes the resources and templates that were used for evaluative purposes. This career planning unit was delivered to a grade 3 class in a small rural community located in Southern Alberta, consisting of 20 students from a small town and surrounding farming households. Objectives of this unit were met with 60% of the students reporting that the unit plan helped them to learn a lot about themselves; 75% stating that this unit plan helped them to learn a lot about careers; 80% noting that this unit plan made them excited about what they could do with their life and 75% reporting that this unit plan made them want to learn more about different careers. Career planning is demonstrated to be successful at the grade 3 level by utilizing activities that teach and allow the students to explore their uniqueness in skills, assets and responsibilities in contrast with not only their classmates, but also with students from other countries around the world. Future research of a longitudinal nature is needed in order to collect data on the career paths of students with whom career planning units of this nature
have been attempted. This future data would prove useful in analyzing the long-term benefits and outcomes of career planning initiatives within the K-12 system.

Career Planning Integration with Health and Life Skills, Language Arts and Social Studies at the Grade 3 Level

Introduction

Increasingly teachers are being asked to incorporate learning activities regarding the world of work with other core curricular objectives. Nonetheless, the process by which this is to be accomplished is slowly beginning to be introduced into the K-12 level by linking career planning with other curricular outcomes. This movement is a positive one given the increasing evidence through research indicating that career development is a lifelong process that begins in childhood (Magnuson & Starr, 2000). Unfortunately, there have not been any evaluative studies on the effectiveness of linking career planning with other curricular outcomes at the grade 3 level.

Specifically, this paper will outline how career planning can be integrated into grade 3 classroom curricula. Throughout this unit, students were tasked with exploring the different skills and assets they possess and as they shared their results with the larger group, they were able to see the variety and unique attributes that other classmates possessed. The second half of the unit had students explore their responsibilities as students, and as contributing members of not only their families but also within their community. The class discussed how different skills, assets and responsibilities related to the careers that their parents held and to those represented in the various stories and literature they read. Students were not only considering their own identity in
terms of their individual skills, assets and responsibilities, but also to how these aspects relate to career development. Although structured for third grade, the unit is easily adjustable to instruction in any of the other levels by appropriately modifying the curricular outcomes.

**Context of Teaching Environment**

This career planning unit was implemented in a Grade 3 classroom located in a small town in Southern Alberta with a population of about 7,500 people. This school was an elementary school consisting of students from Kindergarten to grade four with a relatively equal distribution of town and farm based students. The mixture of backgrounds of the student body was beneficial when students participated in the career planning activities, as it expanded what each student’s experience was and what they could share, as many of their parents were employed in areas much different from one another.

The grade 3 classroom demographics and developmental level was varied. Half of the students were rural students, many coming from families who owned and worked on farms. There was quite a difference in the socio-economic status of the students’ families, with many of the students being from low-income families and some families were wealthier. Much like the distribution between town and farm based students, this difference between the socio-economic backgrounds added to the effectiveness of this unit as it assisted in showing the students a wide variety of different career paths when parental occupations were discussed.

Developmentally, there were also vast differences among students even though all of them were the same age. Select students in the class were weaker at reading and comprehension and received extra help throughout the week. When including literature into the lessons the content was always read out loud to the class and the connections to the lesson outcomes were
discussed together as a group. This approach was particularly beneficial to the students who struggled with individual reading tasks. One of the students in this classroom had severe autism and while he did not follow the same day-to-day schedule as the other students, he was present at the times during story readings throughout the entire career planning unit. His presence in the classroom was beneficial to the overall success of the unit as it also helped to illustrate the concept of student responsibilities in the class and community. A responsibility of the students was to act as appropriate role models for social interactions when relating to the student who had autism.

The goal of this unit was to be as cross curricular as possible, bringing in literature from different areas to help the students connect the curricular outcomes of the Health unit while also creating a fun and engaging project. The Social Studies unit that was being taught at the same time as the career planning activities were implemented was focused on three particular countries: India, Tunisia and the Ukraine. Connecting the Health unit with the Social Studies unit was meant to optimize the students’ opportunity to compare their lifestyle to those of children from around the world. This helped the students understand the different responsibilities of students from these other communities and emphasized the differences that are present in career planning among different communities and cultures.

The context of this unit falls under the Alberta Elementary Health and Life Skills curriculum and was produced to meet the Life Roles and Career Development outcomes. This unit fits into the Health curriculum due to its focus on observing and exploring student skills, assets and responsibilities. The various pieces of literature that were included throughout this unit were strategically chosen to meet the Health outcomes by supporting students in exploration
of their skills, assets, responsibilities and careers. Particularly, the following objectives in the Alberta Health curriculum included:

- **Relationship Choices**: Students will develop effective interpersonal skills that demonstrate responsibility, respect and caring in order to establish and maintain healthy interactions.
  - R-3.1 recognize the effects of sharing positive feelings on self and others;
  - R-3.2 demonstrate safe and appropriate ways for sharing and/or expressing feelings through words and behavior; and
  - R-3.8 develops skills to work cooperatively in a group.

- **Life Learning Choices**: Students will use resources effectively to manage and explore life roles and career opportunities and challenges.
  - L-3.5 examine personal skills and assets (ex. physical, verbal, intellectual); and
  - L-3.6 examine the responsibilities associated with a variety of age appropriate roles (ex. family member, friend) (Alberta Learning, 2002).

The inclusion of literature structured the unit in a way that exposed students to the six Language Arts strands: reading, writing, listening, speaking, viewing and representing. Particularly, the following Language Arts outcomes were covered:

- **1.1 Discover and Explore**: Express ideas and develop understanding:
  - Connect prior knowledge and personal experiences with new ideas and information in oral, print and other media texts; and
  - Explore ideas and feelings by asking questions, talking to others and referring to oral, print and other media texts.
• 2.1 Use Strategies and Cues: Use prior knowledge:
  o Share ideas developed through interests, experiences and discussion that
    are related to new ideas and information.

• 3.1 Plan and Focus: Focus attention:
  o Identify facts and opinions, main ideas and details in oral, print and other
    media texts.

• 5.1 Respect Others and Strengthen Community: Celebrate accomplishments and
  events:
  o Use appropriate language to acknowledge and celebrate individual and
    class accomplishments (Alberta Learning, 2000).

The unit also fit with the Social Studies curriculum by including comparisons to
communities around the world. Students were required to explore their own skills, assets and
responsibilities in relation to career planning and were expected to be able to compare their
experience with the communities of India, Tunisia and the Ukraine. The particular curriculum
outcomes achieved were:

• GLO 3.1 Communities in the World: Students will demonstrate an understanding
  and appreciation of how geographic, social, cultural and linguistic factors affect
  quality of life in communities in India, Tunisia, Ukraine and Peru.
  o 3.1.2 examine the social, cultural and linguistic characteristics that affect
    the quality of life in communities in other parts of the world by exploring
    and reflecting upon the following questions for inquiry:
      ▪ What determines quality of life?
How does daily life reflect quality of life in the communities (e.g., employment, transportation, roles of family members)?

- GLO 3.2 Global Citizenship: Students will demonstrate an understanding and appreciation of Canada’s role and responsibilities in global citizenship in relation to communities in India, Tunisia, Ukraine and Peru.
  - 3.2.2 explore the concept of global citizenship by reflecting upon the following questions for inquiry:
    - How are the rights, responsibilities and roles of citizens in communities around the world the same or different than those of Canadian citizens? (Alberta Education, 2005).

This career planning unit allows students to participate in activities that guide their exploration into the skills, assets and responsibilities that they already possess. A paramount focus of this unit was to illustrate how each student was unique. Through sharing the skills, assets and responsibilities that the students discovered about themselves, awareness was increased regarding the differences that existed amongst classmates. This unit not only presented how students were unique from one another, but also how each career was unique in the different skills, assets and responsibilities that it required. This unit made use of adaptations of the pride story, guided fantasy and meaning activities that were used to help meet the career development needs of the students. Most importantly, this unit emphasized that a career was not mainly a job; it also was part of a person, incorporating their personal interests, choices, skills and assets. By making this unit cross curricular there is no limit to where other teachers could successfully implement this type of career planning unit and/or activities, thus enhancing the student’s
experience. This paper will now provide a detailed description of the learning activities within
the career planning unit.

Detailed Description of Learning Activities

This career planning unit was taught once a week and lasted for 10 classes spread
amongst 13 weeks (3 classes were lost due to Professional Development days and one snow
day). The availability of two weekly computer classes gave the class the opportunity to provide
more class time for students to work on the career planning activities. The unit began with a
student interest survey. The bulk of the unit focused on meeting the Life Roles and Career
Development outcomes for the Health curriculum. Students explored their own skills and assets
and through comparison to Dr. Seuss’ *The Sneetches*, discussed how different skills/assets make
all people unique from one another, and a questionnaire was sent home for their parents to
answer.

After gathering information from their parents and discussing their parental
responsibilities along with the responsibilities of people from other cultures and communities,
the students were able to write sentences and pride stories about their own responsibilities. The
final lessons of the career planning unit focused on helping the students to discover what was
meaningful to them in their lives through the use of a guided fantasy and a written assignment.
The students were to describe one thing that they believed was important to them. The unit
concluded with a mini guitar and vocal concert performed by the teacher.

The career planning unit is divided up into 9 activities that will now be described in more
detail, it should be noted that most of the activities were completed in one class, but some do
require potentially two classes to complete.

Activity one – Unit Introduction and Student Interest Survey
The first activity of this unit was taught during the first class of grade 3. To start the activity the teacher introduced himself by reading an acrostic poem to the class. This poem went through the letters of the teacher's name and described interesting facts about himself and portrayed some of the meaningful elements in his life. Some examples could be “T” for travel or “H” for harmonic as both travel and music may both hold meaning for someone. The students were then given a student interest survey to fill out titled *Me, Myself and My Name* (see Appendix A for survey used).

**Activity two – The Sneetches**

This activity does require more than one class period to cover. The purpose of this activity was to have students explore their own skills and assets and to establish themselves as unique individuals. Before reading *The Sneetches*, definitions for skills and assets were established with the students. The definitions that were used were:

**Skill:** the ability to do something well (e.g. carpentry)

**Asset:** is a useful or valuable quality about you that would help others (e.g. hard working)

The students were asked to observe the cover and predict what kind of people the creatures in the book would be. The activity continued with the reading of Dr. Seuss’ *The Sneetches* (see Appendix G for Resources used) a story about two social classes; Sneetches with star belly badges (the elite) and Sneetches without (the downtrodden). The social prejudice between the two groups allows for a new comer, Sylvester McMonkey McBean (an entrepreneur of sorts) to enter onto the scene and take advantage of the Sneetches. The Sneetches have to work together to solve their problems, regardless of class. Mr. McBean teaches the Sneetches about the cost of pointless prejudice. Following the story, the students were asked the following discussion questions:
• What feelings emerged as you listened to the story?
• What are some things that can be learned from the Sneetches?
• What is the moral of this story?
• How did the children Sneetches learn to act?
• Are we like the Sneetches? Is it difficult to tell each other apart?

After the class discussion students were given the Sneetches handout (see Appendix B for worksheet used) and were given the task of writing three sentences that described two skills and one asset they had. After completing the sentences, students were asked to draw a symbol on the Sneetch’s belly that represents something important to them. After all the Sneetches were finished, the students read their sentences aloud to the class. While the students read their sentences, the teacher, recorded on a whiteboard the skills and assets that they indicated. After all the students had shared the class discussed the list of assets and skills with the following questions:

• Are there skills/assets on here that you have that were not in your sentences?
• Did everyone have the same skills/assets as you?
• Did this activity help you see how we are unique?
• Why is it helpful to know our skills and assets?

After the discussion, the class revisited The Sneetches story. Students were asked if the Sneetches in the story were unique and whether they showed different skills and assets? The characters in the story did not show any unique skills or assets and the only way they distinguished themselves was with the presence (or absence) of the star on their belly.

Activity three – Is There Really a Human Race?
This activity began with reading the story, *Is There Really a Human Race*, written by Jamie Lee Curtis (see Appendix G for resources used). Continuing with the discussion of skills and assets from *The Sneetches*, the class discussed what skills and assets were needed in common careers such as a police officer, firefighter, teacher and a doctor. The Jamie Curtis story assisted in this discussion as it helped to further the idea that we are all unique. The moral of the story was that people are not all racing each other to get to the same end goal. Connections to skills and assets can easily be made with this book, one page, for example, shows babies in their cribs, each one is holding objects that show the skill or asset that they will grow up to have. The closing illustration was useful during the class discussion as it showed a ‘World Yearbook’ with faces and names of the occupations the individuals depicted held. This activity concluded with a statement that reinforced the idea that not everyone is working towards the same career, that all people are unique and everyone has different skills and assets that assist in determining what careers are a best fit for each person.

**Activity four – Responsibility Around the World**

This activity was conducted on a Friday. At the beginning of the week students had been given the responsibility questions (see Appendix C for questions used) that they were to take home and answer with their parents. Students were asked to find out what their parent’s job was and a responsibility that they had at their job, at home and in the community. When the students had collected all the information, students were given an opportunity to share their answers with the class. Meanwhile, the different jobs and responsibilities mentioned were recorded on a whiteboard. Students were asked to think back to the *Is There Really a Human Race* story and were asked if their parents were all racing against each other for the same jobs. Students were
then asked to look at the recorded jobs and responsibilities and say whether or not all the jobs had the same responsibilities.

At this point in the Social Studies class the students were learning about Tunisia and on the same day as the aforementioned discussion of parental employment, the class discussed the responsibilities of men and women in Tunisian farming. Farming is a common occupation in Tunisia and many of the students in this grade 3 class also had parents who were farmers. The discussion regarding the responsibilities of men and women farmers in Canada and Tunisia was interesting because students were able to see the major differences between our two cultures and the way that farming as a career was treated. The class also looked at the responsibilities that students of similar ages from communities in India and Tunisia had. Many of the students in these communities have the responsibility to help out their parents on their family farm and cannot attend school as a result. The purpose of this comparison was to show that students in other communities often grow into the careers that their parents have and it was important for the students to realize the freedom that is available to them in Canada, with respect to career choice, is unique and something that they need to be grateful for.

Activity five – The Top Job

To strengthen the connection between learning about responsibility and career development the teacher read the class the story *The Top Job*, by Elizabeth Cody Kimmel (see Appendix G for resources used). This story is about a girl who is telling her class about the Career Day she spent with her dad who replaces light bulbs. When none of the other students seem interested in her father’s job, she still continues to tell her story, slowly gaining the students’ interest as she slowly retells the changing of the Empires State Building’s giant light bulb. Reading was paused with every new introduction of an occupation within the story, the
class would then brainstorm some of the responsibilities associated with each one. This book was great at showing how every occupation, even if it seemed dull at first, has a person that finds it fascinating and fulfilling.

**Activity six – Responsibility Sentences and Pride Stories**

The previous activities focused on the responsibilities of other people from around the world and their jobs. This activity allows students to explore their own responsibilities. During a computer lab time, students were tasked with first typing three sentences about responsibilities they had at home, in school and in the community. Then students were asked to think of a time when they were proud of themselves because they were being responsible, along with this they were asked to type a couple of sentences describing the moment and how it made them feel.

**Activity seven – Guided Fantasy**

For this activity, students spread out around the classroom to lie down and close their eyes. First, they were asked to think about the conditions in Tunisia and India that created obstacles for students and their career development. Some conditions mentioned to them as they thought about things were the poverty conditions in India and the high unemployment rates in Tunisia. Before beginning the guided fantasy activity, it was stressed that the students need to keep their minds open and to think about what they really want in their futures. A script was read (see Appendix D for script used) to the class to lead them through the guided fantasy process. After the class had completed the exercise they wrote what they had imagined on cue cards and had them share with the class their thoughts. Although there was initial concern that this activity may be too difficult for students this young, the responses that the class gave on their cue cards and how they contributed to the class discussion afterwards was a pleasant surprise. Many of the
students were able to describe the careers they saw themselves in and the lifestyle that they were living.

**Activity eight – Meaning Activity**

For the final assignment the students were asked to further explore what was meaningful to them. The class was asked to pick one thing to describe about themselves that they believed was important in describing who they were. For example, students could discuss an activity, a value or a relationship. Students had to describe their choice in written sentences and also explain why it was important to them (see Appendix E for worksheet used). After completing this written portion, students were to visually represent their writing. To assist in clarifying this activity the students were read a selection from *Bridge to Terabithia*, by Katherine Paterson (see Appendix G resources used) and were shown a clip from the film version of the book where Leslie reads to the class about SCUBA diving and Jess is afraid to write about his love of drawing.

**Activity nine – Wrap up Concert**

This particular unit was drawn to a close with a teacher performance. Two songs were performed for the class by the career planning unit teacher. Songs were chosen that had lyrics related to the concepts that had been emphasized throughout the unit. The first song was *Firework*, by Kay Perry (see Appendix G for resources used) as it is a song with a message that every individual has a chance to shine if they are willing to work for it. This particular song was sung with the intention that students would leave with the belief that they can achieve their goals with hard work and perseverance. The second song that was sung to the class was *Colorful*, by Verve Pipe (see Appendix G for resources used) and was the first song that the teacher had learnt to play on the guitar and sing simultaneously and because of this it was an example that music is
something that is meaningful to the teacher. They lyrics of this song also provided the message that reinforces self-confidence and choices.

**Data on the Career Planning Unit**

Throughout the unit, the data that was collected included surveys, written assignments, visual representations, cue cards and word-processed assignments. The first piece of data collected was the student interest survey and this proved to be essential to the career planning unit as it enabled the teacher to learn about the students and establish a rapport with them. The numerous activities were all centralized around meeting the Life Roles and Career Development outcomes from the Alberta Health Program of Study. While assignments like the written and typed sentences were used for summative assessment, cue cards (functioning as exit slips) were used to give the teacher a sense of how the activities had been received. The cue cards were particularly useful with the Guided Fantasy activity, because it showed that the majority of the students were taking the activity seriously and thoughtfully. Aside from the cue cards, the student evaluation forms were extremely helpful in determining the effectiveness of the overall career planning unit (see Appendix F for forms used).

Out of the 20 students in this class 75-100% of the students participated in all eight of the career planning activities. During the Me, Myself and My Name activity many of the students were absent and this can account for the 25% that did not complete the activity (see Table 1).

Table 1

*Completion of Activities*

<table>
<thead>
<tr>
<th>Activity</th>
<th>I didn’t do it</th>
<th>I did it</th>
</tr>
</thead>
<tbody>
<tr>
<td>My, Myself and My Name</td>
<td>5 (25%)</td>
<td>15 (75%)</td>
</tr>
<tr>
<td>The Sneetches (worksheet)</td>
<td>0 (0%)</td>
<td>20 (100%)</td>
</tr>
<tr>
<td>Is There Really a Human Race? (Story)</td>
<td>0 (0%)</td>
<td>20 (100%)</td>
</tr>
<tr>
<td>Take-Home Responsibility Questions</td>
<td>3 (15%)</td>
<td>17 (85%)</td>
</tr>
<tr>
<td>Responsibility Sentences and Pride Story</td>
<td>2 (10%)</td>
<td>18 (90%)</td>
</tr>
</tbody>
</table>
The Top Job 0 (0%) 20 (100%)
Guided Fantasy 1 (5%) 19 (95%)
Meaning Activity 1 (5%) 19 (95%)
Wrap-Up Concert 0 (0%) 20 (100%)

Note: On average 93% of the students participated in all of the activities.

As noted in Table 2, 95% of the students rated all of the activities as either ‘Good’ or ‘Great’. These students especially liked the Wrap up Concert, the Guided Fantasy and the story *The Top Job*. The benefit of using the stories in the career planning unit was further substantiated by the amount and quality of classroom discussion that followed each story. These stories were helpful in keeping the students engaged during the lessons. It is difficult to determine if the 10% of the students found the story *The Sneetches* ‘not good at all’, or the worksheet that accompanied the story, as the two activities (story and worksheet) were listed together in the Activity List on Table 2.

Table 2

*Perceived Helpfulness of the Activity*

<table>
<thead>
<tr>
<th>Activity</th>
<th>Not good at all</th>
<th>Good</th>
<th>Great</th>
</tr>
</thead>
<tbody>
<tr>
<td>My, Myself and My Name</td>
<td>0 (0%)</td>
<td>6 (40%)</td>
<td>9 (60%)</td>
</tr>
<tr>
<td>The Sneetches (worksheet)</td>
<td>2 (10%)</td>
<td>8 (40%)</td>
<td>10 (50%)</td>
</tr>
<tr>
<td>Is There Really a Human Race? (Story)</td>
<td>1 (5%)</td>
<td>7 (35%)</td>
<td>12 (60%)</td>
</tr>
<tr>
<td>Take-Home Responsibility Questions</td>
<td>2 (12%)</td>
<td>6 (35%)</td>
<td>9 (53%)</td>
</tr>
<tr>
<td>Responsibility Sentences and Pride Story</td>
<td>1 (6%)</td>
<td>7 (39%)</td>
<td>10 (56%)</td>
</tr>
<tr>
<td>The Top Job (Story)</td>
<td>1 (5%)</td>
<td>3 (15%)</td>
<td>16 (80%)</td>
</tr>
<tr>
<td>Guided Fantasy</td>
<td>1(5%)</td>
<td>2 (11%)</td>
<td>16 (84%)</td>
</tr>
<tr>
<td>Meaning Activity</td>
<td>1 (5%)</td>
<td>9 (45%)</td>
<td>10 (50%)</td>
</tr>
<tr>
<td>Wrap-Up Concert</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>20 (100%)</td>
</tr>
</tbody>
</table>

Note: Of the 93% that completed the activities, 95% of the students rated the activities as either Good or Great.

In the *What did you like about the Life Roles & Career Development* unit question on the student evaluation form, students were able to mention some of the activities and aspects of the unit that they liked. Throughout the student evaluations many of the responses mentioned that
they liked the wrap-up concert and the guided fantasy activities. Some other common comments were that students liked the Sneetches activity, learning about responsibilities, learning about other people’s careers and they appreciated the fact that they were able to write about themselves.

In the *How could this unit be made better* question on the student evaluation form many students took the initiative to be honest and thoughtful in their responses. One response suggested that there should be more art themed activities; this could easily be implemented should the unit be used again, and in this way elements of the Art curriculum would be achieved as well. Many of the students appreciated the guitar playing and suggested that there be more music included in the unit. Other suggestions included improving the take-home question sheets, providing more time for the unit and including more action (more activities).

Overall the students agreed with the given statements of evaluation in Table 3. For the first statement, “This unit helped me to learn a lot about myself” 60% of the students answered “I Agree” and 40% replied “I’m Not Sure”. As a suggestion for future improvement more emphasis should be placed on the personal interests of the students so they may learn more about themselves through this exploration. 75% of students agreed that “This unit helped me to learn a lot about careers”. 75-80% of the students agreed to the final two statements, “This unit made me want to learn more about different careers” and “This unit made me excited about what I could do with my life” (see Table 3 for results).

**Table 3**

*Evaluation of Career Planning Unit*

<table>
<thead>
<tr>
<th></th>
<th>I Don’t Agree</th>
<th>I’m Not Sure</th>
<th>I Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>This unit helped me to learn a lot about myself</td>
<td>0 (0%)</td>
<td>8 (40%)</td>
<td>12 (60%)</td>
</tr>
</tbody>
</table>
The student evaluations forms were worthwhile as they specified to the teacher what the strengths and weaknesses of the unit were and would allow a teacher to modify the unit accordingly before it was used again. The suggestions for future improvement were very helpful and it was surprising how much thought some of the students gave when composing their responses. For example, the suggestion to add more art activities to the unit was particularly interesting as it would be beneficial to expand this unit into other program areas. The other helpful suggestion was to increase the time spent on the unit; this would allow the teacher the flexibility to branch out into other curricular areas such as Art.

The most effective element of this career planning unit was expanding it across curricular areas and this was successfully accomplished. Branching the unit into Social Studies and Language Arts assisted in keeping the students engaged. Students are most engaged when they see the relevance in what they are being taught. When students perceive a linkage between Health, Language Arts, Social Studies and their eventual careers and relationships students become more engaged. An example of this is when one student reported how her father (a drafter) helped her build a model chair at home. When she shared her model with the class the students were able to take a moment to discuss the different skills, assets and responsibilities that her father would have in his career as a drafter.

**Implications of the Unit Plan and Future Directions**
The final Meaning activity (wherein students were to write sentences and draw a picture about what is meaningful to them) could have been executed more effectively. Specifically, a smoother transition between the discussion on responsibilities and meaning needed to occur. However, during the wrap up concert student responses for the meaning activity were revisited. This allowed them to understand the importance of meaning in career. For example, during this activity the teacher was able to demonstrate how using music in the classroom was meaningful to him.

The main improvement that could be made to this career planning unit was to work on and enhance the overall cohesiveness. By improving transitions between the three main topics of the unit, skills and assets, responsibilities and meaning, would help the students to understand the connections between each topic. Another improvement would be to widen the curricula that were covered by the unit. As previously mentioned Art would be included next time, and with some creativity Science could easily be incorporated. It would be interesting to take some time to find a way to bring Math curriculum/outcomes into the unit as well.

One positive implication of this unit was that it focused on showing how everyone is unique. Through exploring our skills, assets and responsibilities and sharing them with the larger group, students were able to see that each of them was unique from one another. Through the process of sharing and stressing the importance of respecting the responses of one another, students were able to gain comfort in themselves as well as with others.

Another positive implication of this career planning integration unit was that it not only required students to think from a Health class point of view, it required them to also view the unit outcomes from Language Arts and Social Studies perspectives as well. Each school subject area establishes a different approach to viewing and thinking about new information. Through
the implementation of this unit students were able to see the connection between career development and how it has a place in all subjects and all points of view.

**Conclusion**

While deciding on how to create this career planning unit it was easy to establish a link with the Health curriculum as it fit into those curricular outcomes directly, but in order to increase effectiveness and interest, other areas of study were also included. When analyzing the Health outcomes it was interesting to see how limiting they were when thinking about creating activities around career development. In truth, career development can be used to meet many of the Health outcomes.

Career development does and should encompass all aspects and subjects in school. Each subject has something to add to career development and students should be able to experience it in a variety of ways in which the core subjects can present. Such units that introduce students to the world of work and assist them in understanding the connection between what they are learning in school and what will be expected in the workforce are essential in promoting not only life long learning, productive classroom environments but also future successes in transitions from school to work life (Palladino Schultheiss, 2005).

While instructing this unit one may find that it creates an atmosphere for not only student learning but also for teacher learning as well, one cannot help but to learn something more about themselves while participating in these activities. It is important that while teachers instruct students about careers they should keep in mind that they are also continuing to develop their own careers. Even experienced teachers find that there is still much to learn about the way they continue to develop their careers as they teach students. Throughout the experience of teaching this unit one could not help but to learn more about what they value and what is meaningful to
them. If this unit is taught with the attitude that the teachers own career development is complete and stagnant, the results would not be effective and potentially skewed. The great thing about teaching is that learning is continuous for both student and teacher; this unit is not an exception to this experience. It is an intriguing feeling knowing that not only are students learning from the teacher but the teacher is also learning about the different potentialities of their own future career path.

Appendix A – Me, Myself and My Name worksheet
ME, MYSELF, AND MY NAME

My name is ________________________________.

I am ___________________________ years old.

My birthday is ________________________________.

The people in my family are ________________________________

______________________________.

My pet(s) is/are ________________________________.

My nickname is ________________________________.

My favorite game is ________________________________.

My favorite movie is ________________________________.

My favorite book is ________________________________.

My favorite television show is ________________________________.

My favorite animals are ________________________________

______________________________.

My favorite kind of food is ________________________________.

My favorite color is ________________________________.

Appendix B - Sneetches Worksheet
Appendix C - Take Home Responsibility Questions

Dear Parents,

In Health class we are continuing our Life Roles and Career Development unit and we are starting to discuss responsibilities in the workforce, at home, and in the community. I have asked students to take home this list of questions to ask at least one parent and record the answers.

Take you for your help and time,

Name

Questions:

What is your parent’s job?

________________________________________________

What is one responsibility that they have at work?

________________________________________________

What is one responsibility that they have at home?

________________________________________________

What is one responsibility that they have in the community?
Appendix D - Guided Fantasy Script

GUIDED FANTASY: IDEAL LIFESTYLE
SCRIPT:

This is your fantasy. It will help you to dream of what you “really” want in your career and lifestyle. Try not to put up barriers for yourself. You will have a chance after the fantasy to come back to reality. For now, let yourself enjoy!!

Close your eyes and allow yourself to get as comfortable as possible. Take some deep breaths and relax. Let go of the tension. Notice if you are holding tension anywhere in your body. Tighten that muscle and then relax.

Think of yourself, somewhere 20 years in the future! This will be enough time to take further education towards the career you want.

See yourself waking up in the morning. Look around the room, before you even get out of bed . . . Now it is time to get up. Look around your home as you go to the kitchen for breakfast. Is there anyone there?

Now it is time to get ready for work. Return to your bedroom and look through your wardrobe considering what you will wear today. Is it something quite casual or will you wear a business suit, maybe you have a uniform to wear. See yourself getting dressed for work.

You leave now to go to work. Before going in, look around at your place of work. Is it a large or small building? Do you work inside or outside? Is it an institution, such as a school or a hospital that you are going into? As you go in, see who is there. What is the atmosphere like? . . . Is it fast paced and hectic or slow and relaxed? Are there lots of people or just one or two others or are you alone? Who greets you? Who do you talk to?

As you start your day’s activities, think about what you will do at work that day. Think of the kind of skills you will be using and the tasks you will be doing . . . Will you work with people: teaching, helping, curing? . . . Are you designing, writing, working with your hands, drawing? . . . Do you work with numbers? . . . Do you work on a computer? . . . Do you work alone or is there a group of people working with you? Imagine yourself going through your morning activities.

Now it is time for lunch, how will you spend your lunch hour? . . . Consider the ways you could spend your time. Have you brought a lunch or will you meet someone for lunch? . . . Maybe you are so busy that you work right through your lunch hour or do you have an activity that you do over the lunch hour? Imagine yourself enjoying your lunch time.

The afternoon is here. Will you return to work? Will you return to the same place of work? If not, consider what you will do and where you will go. Do you do the same activities in the afternoon as you did in the morning? . . . Do you have a major project that you are completing or do you do different tasks in the afternoon? Think about who you are working with . . . are they young or old? . . . mostly males or females? . . . What is your supervisor like or are you the supervisor? See yourself going through the afternoon’s activities.

It is the end of the working day. See yourself getting ready to leave. Think back over your day and think of one thing you did that gives you a sense of accomplishment.

How will you spend your evening? Will you go out to dinner or go home? . . . Do you spend your time with others or are you alone? Think about the activities that you could do in the evening. Have you brought work home? . . . Will you take a course or maybe teach a class? . . . Imagine yourself enjoying the evening’s activities.
Now it is time for bed. As you turn off the lights in your home, have one last look around. Just as you drift off to sleep, think of one thing you are really looking forward to doing tomorrow.

Now the fantasy is over. Take a few minutes to become oriented to the room again. When you are ready open your eyes and write what you imagined in your ideal fantasy.
Appendix E - Meaning Activity Page

Name: __________________________

Health: Meaningful Activity

This is what is meaningful to me . . .

Rachel Dawes: Deep down you may still be that same great kid you used to be. But it’s not who you are underneath, it’s what you do that defines you.
Appendix F - Student Evaluation Form

**Life Roles and Career Development: Student Evaluation Form**

Thank you for participating in this unit! I would like to know if it was helpful and how it could be made better. Please answer the questions on this page to help me with this.

**Part 1: Please let me know if you did the activities.**

<table>
<thead>
<tr>
<th>Activity</th>
<th>I didn’t do it</th>
<th>I did it</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Me, Myself, and My Name</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. The Sneetches (worksheet)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Take-Home Responsibility Questions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. Responsibility Sentences &amp; Pride Story</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E. Guided Fantasy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F. Meaning Activity</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Part 2: Please let me know if you thought the activity was helpful by circling whether you thought it was “not good at all”, “good” or “great”**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Not good at all</th>
<th>Good</th>
<th>Great</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Me, Myself, and My Name</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. The Sneetches (story &amp; worksheet)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Is There Really a Human Race? (story)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. Take-Home Responsibility Questions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E. Responsibility Sentences &amp; Pride Story</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F. The Top Job (story)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G. Guided Fantasy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H. Meaning Activity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I. Wrap-Up Concert</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
What did you like about the Life Roles & Career Development unit?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

How could this unit be made better?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Part 3: Please tell me how much you agree with the following statements by putting a checkmark in the box that best tells me how you feel:

<table>
<thead>
<tr>
<th>Statement</th>
<th>I Don’t Agree</th>
<th>I’m Not Sure</th>
<th>I Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>This unit helped me to learn a lot about myself</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This unit helped me to learn a lot about careers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This unit made me excited about what I could do with my life</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This unit made me want to learn more about different careers</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Thank you very much for your help!!
Appendix G

Resources


References


1) **Title of the Submission:** Career Planning Integration with Spanish Language and Culture and Information and Communication Technology at the Grade 8 Level

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**Abstract**

This article presents a combination of qualitative and quantitative data regarding the effectiveness of integrating a career planning unit with the Alberta grade 8 Spanish curriculum. This unit combined Alberta Education Curriculum outcomes from Spanish Language and Culture program of studies and Information and Communication Technology, with aspects of career planning. The career planning unit is clearly laid out with descriptions of its activities along with the resources and evaluation templates that were utilized. This particular career planning unit was delivered to a small grade 8 Spanish class of 9 students, in an urban working class community located in Southern Alberta. Students evaluated the unit favorably with 89% reporting that this unit assisted them in learning a lot about careers, and 78% reporting that the unit both excited them about what they could do with their lives and made them want to learn more about different careers. The integration of career planning with the grade 8 Spanish curriculum is proven to be effective by combining the acquisition of a second language with increased student self awareness, goal setting ability, appreciation for different cultures and understanding of how a second language may assist in attaining future employment. Further longitudinal studies following the academic and career paths of students who have participated in this sort of career planning/curriculum integration would be beneficial in understanding the long-term outcomes associated with it.
Career Planning Integration with Spanish at the Grade 8 Level

Introduction

Linking curricular objectives and learning activities to the world of work has been a task increasingly assigned to teachers over the last few years. Nonetheless, schools are just beginning to create and incorporate career planning units across the K-12 level, integrating career planning activities with curricular objectives. As such, few studies have attempted to identify and examine how children explore the world of work and develop their initial, tentative occupational goals by focusing on their personal interests, beliefs and values (Hartung, Porfeli and Vondracek, 2005). This paper will demonstrate how student interests, values and beliefs can be incorporated and developed in a career planning capacity through the use of a career planning unit in a Grade 8 Spanish class.

Career planning encompasses more than just selecting an occupation. Rather, it is a lifelong journey consisting of self-discovery and insight along the way. One could utilize the terms career planning and life planning interchangeably. One key element of the career planning process is to assist individuals in learning about themselves; this self-awareness is fundamental to successful life planning. Therefore, it is important for the career planning process to begin early on in a student’s life. Hartung, Porfeli and Vondracek (2005) suggest there is evidence that steady progress in vocational exploration, awareness, aspirations and expectations, interests and adaptability in the early school years assists the development of personal identity and
connections with the social and interpersonal world. Students of all ages should be exposed to elements of the career planning process throughout their school years.

As teachers, we can assist students in their recognition and development of their unique interests, traits, skills and talents. Children need to know and recognize that he or she has something unique to contribute to their community. Activities to assist students in gaining awareness and appreciation for individuals within their classroom and other cultures are presented in this paper. This career planning unit will outline how to integrate career counselling practice with Alberta Education’s grade 8 Spanish curriculum. The activities summarized in this paper are not meant to replace curriculum, but to supplement existing curricular outcomes. These activities may assist teachers in pre-assessing the readiness of a Spanish class to discover their interests and to gain perspective on their individual learning styles, while simultaneously providing a relevant and engaging second language-learning environment. Throughout the career planning activities students learned self-exploration techniques and were encouraged to consider and discuss their personal interests, thus increasing self-awareness, but also increasing the meaningfulness of the Spanish grammar and vocabulary that they were also learning. This paper describes the context of the teaching environment, provides a detailed description of the learning activities, presents data on the effectiveness of these learning activities and concludes with ideas on the implications and future directions for integrating career planning activities into grade 8 Spanish classrooms.

**Context of Teaching Environment**

The Spanish career planning integration unit was implemented in a middle school located in an urban center in Southern Alberta, in a comparatively more working class area of the community. This community had a population of about 88,000 people, and the school, in
comparison with other middle schools in the community, had a much higher population of students with Individualized Program Plans (IPP’s) as well as a large number of students learning English as a Second Language (ESL). The multicultural student body at this school provided an excellent setting to promote the global citizenship aspects of the Spanish curriculum. In this particular class, there were not any ESL learners, however there was a student with a learning disability who struggled to focus throughout the class period.

The Spanish 8 class at this school was an introductory course; therefore students were all beginning with no prior, or limited, Spanish language knowledge, aptitude or experience. Consistent with many language classes in Alberta, the enrollment was fairly small, with only 9 students in this class. The small size of this course was initially thought to be an advantage, giving the teacher more time to spend with individual students as they navigated the process of self exploration; however with this particular group, the small student numbers tended to have a tranquilizing effect. Students were not extremely willing to share their goals in such an intimate setting; this phenomenon will be discussed later in the future implications section of this article.

Socioeconomically, the majority of the students in this class came from working class homes. While discussing careers and quality of life, almost all of the students admitted that their parents were not happy with their current careers. This was a meaningful discussion that occurred, as students were able to realize that they too could quite easily end up in a dissatisfying job like their parents. The hope was that from this unit, students would be motivated to dream big and to make smart decisions in their lives currently that could assist them in being successful later in life.
The Grade 7-9 Spanish Language and Culture Program of Studies has a clear and specific learning outcome of Personal and Career Opportunities under the general outcome of Global Citizenship (Alberta Education, 2010), specifically:

- Identify aspects of the history of the cultures of the Spanish speaking world that are of personal interest;
- Explore aspects of different cultures that are of personal interest;
- Explore personal reasons for learning Spanish;
- Explore personal reasons for learning additional languages and experiencing other cultures.

There were also many outcomes under the General Learner Outcomes of Application in the Spanish curriculum that was met through the use of this career planning unit. Specifically, that student’s will use the Spanish language to:

- Impart and receive information
  - Students will be able to:
    - Understand information, such as definitions, comparisons and examples;
    - Provide simple explanations; e.g., an enchilada is a Mexican food.

- To get things done
  - Students will be able to:
    - Respond to and make suggestions in a variety of situations and state personal actions;
    - State personal actions in the present;
    - Manage group actions;
- Express appreciation, enthusiasm, support and respect for contributions of others;
- Offer to explain or clarify (Alberta Education, 2010).

Career development outcomes for students were met through their participation in this unit as they had the opportunity for self-exploration, introspective reflection to assist in their identification of the true meaning of their interests, and motivation to complete and excel in the career planning activities. The students also utilized blogs, PowerPoint and other electronic resources to conduct research and present material in projects, which also achieved outcomes from the Information and Communication Technology Program of Studies learning outcomes:

- Students will use electronic research techniques to construct personal knowledge and meaning (Alberta Learning, 2003).

This paper will now provide a detailed description of the learning activities within the career planning unit.

**Detailed Description of Learning Activities**

The career planning activities were designed to engage any Spanish language learner, regardless of ability, background or familiarity with the language. These activities could easily be adapted to any level of Spanish, with the main alterations being made around increasing the amount of reading and writing done in Spanish representative of the level required for the course. Each learning activity will now be fully described.

**Activity One – La Fiesta (the party)**

Students are asked to imagine they are at a fiesta (a party) that has six different rooms containing certain types of individuals within each room. It was explained to the students that the people within these groups/rooms all share interests and personality types according to the
Holland’s Occupational Themes (see Appendix A for handout used). It should be noted that the names of the themes have been changed to the infinitive forms of the verbs that represent them, thus making comprehension at a beginner’s Spanish level more achievable.

The students were shown different posters that represented the different fiesta (party) rooms (see Appendix B for posters used). These posters were placed in different areas around the classroom. It was important that the students understood that the images and sentences outlined on the posters were only a sample of the many possible examples for those particular occupational themes; the themes were not restricted to the poster depictions. Students were allowed to move freely around the room to examine each poster and then to choose which room they would consider being a part of. If the students did not understand some of the words on a poster they were encouraged to look up the terms in a Spanish-English dictionary.

After selecting the fiesta (party) rooms that they felt suited them the best, the class participated in a discussion about how personality types can influence the types of jobs that people find interesting. For example one girl in the class was very artistic and the teacher discussed some potential career options that fit with an artistic personality type, for example an artist, cartoonist, photographer etc. This led into a discussion of how a person who has one personality type may not be interested in or well suited for careers that other people were. The teacher asked the students what they thought would happen if one of them was interested in art and one was interested in computers, but were in careers that were suited for the other person’s interests. The students discussed how the artistic person would probably hate working with computers and vice versa. The class then discussed why it was that some adults may dislike the their current jobs, and how interests and personalities may be a reason for this dislike. It was emphasized how knowing their interests and likes can assist them in choosing a career that they
will enjoy as adults. Choosing classes and programs that allow them to work towards a career in
the area of their interests was also discussed, along with how second language classes, like
Spanish, could assist in enhancing their career options.

**Activity Two – Los Próximos 10 años (The Next 10 Years)**

Students were asked to reflect and dream about possibilities as they thought about what
they would accomplish over the next ten years. The purpose of this exercise was to assist the
students in finding out what is truly meaningful to them, as well as allowing the teacher to see
what the students’ individual interests were. The teacher used this information to create options
for future learning activities according to those interests disclosed by the students. Students were
told to imagine that it was the year 2020 and after 10 years without seeing each other, they had
come to visit their teacher. The teacher (in 2020) asks the student’s future self, “What have you
done in the last 10 years?”

A discussion was started by the teacher, hoping to have students share some of their
insights and dreams, but it was apparent that the students had reservations about sharing and
discussing these personal ideas with one another, so students were asked to write down what
their response to the teacher would be (see handout provided in Appendix C). There were no
rules associated with this activity, students could write about their job, relationships, and
activities they engaged in, dreams or even nightmares. Students were asked to be open, honest
and sincere in their responses, and upload their completed assignments using Moodle (a learning
management system utilized by this school).

**Activity Three – Me Gusta (I like it)**

In order to assess comprehension of “me gusta” (I like it) sentences, a listening activity
assisted students with internalizing the significance of the phrase “me gusta” (I like it), as well as
enable students in distinguishing it from its negative “no me gusta” (I do not like). To practice this before hand, the teacher would say a verb to the class in Spanish (with actions to assist in comprehension) and have the students respond with ‘me gusta’ (I like it) or ‘no me gusta’ (I do not like it) according to their own interests.

The students were then given a quiz to assess their ability to distinguish a negative phrase from a positive one. This was a very basic and easy comprehension assessment (see Appendix D for assessment used). To adjust the quiz for students in higher-level Spanish courses, an instructor could administer the quiz in a dictated style, where the sentences were spoken and the students would record the dictated speech. As students noticed their responses to the ‘me gusta’ (I like it) quiz they were able to form a clearer picture of what their particular interests were, thus enhancing their self-awareness.

**Activity Four – Mi Día Ideal (My Ideal Day)**

In this activity students were asked to describe their ideal day. The Mi Dia Ideal (My Ideal Day) activity was initiated after a lecture on tense conjugation and telling time. The students were asked to describe their perfect day by writing 5 things that they would do throughout the day and at what time they would do each of them. This activity was completed twice, the first time in English in order to expedite the thought process, allow them to dream freely and to come up with meaningful responses without being concerned about how to state them in Spanish.

After the students had clarified, in English what their Mi Dia Ideal (my ideal day) was the teacher assisted the students in choosing Spanish verbs to appropriately describe their chosen ideal day activities. The teacher showed the students the infinitives for their responses and encouraged the class to try and conjugate them using the patterns that were discussed in the
lecture. When the students were ready to put their information into their activity table (see activity sheet used in Appendix F), the class used an interactive website (see Appendix H for resource used) as a reference to assist them in determining the difference between *de la mañana*, *de la tarde*, and *de la noche* (in the morning, in the afternoon and at night). Students created their timeframes by searching for clipart on the computer and inserting graphics to represent the different things they would do throughout the day.

When the class had completed their timeframes of their ideal day, they discussed within small groups how their days differed from one another’s. The discussions were held in English, as it was important for the students to have quality discussions, this was not going to be possible with their limited Spanish language capabilities at this time. The teacher asked the students to think about how it was they could make these ideal days a reality, by thinking about what choices they could make now, what planning they could do that would assist them in taking steps towards achieving the goals outlined in their ideal day.

**Activity Five – Choose Your Own Adventure**

As a culminating activity students were given a ‘Choose Your Own Adventure’ assignment. This assignment was meant to assist the students in continuing to discover their personal interests, while learning about Spanish culture and important Spanish speaking figures throughout history.

Students chose their Adventure from a list of options that the teacher generated to reflect the various Holland’s Occupational codes. The topics were generated from the teachers reading of their Me Gusta (I like) and Me Dia Ideal (my ideal day) activities, these more personalized topic choices created enhanced meaning to the students as individuals. Students could pick any of the options, but tended to choose the assignment that involved a topic linked to the theme they
had previously identified with in the earlier activities. The topics (Adventures) that students could choose from were:

- **Doer**: Report on the World Cup and team Spain. Tell the class about the World Cup finals game. Who won? How did the game go? Who was the best player on the winning team? Share some reactions of people from the country that won. Write a “me gusta” (I like) sentence about soccer or the World Cup.

- **Thinker**: Find stats on Spanish speakers. Tell the class how many Spanish speakers there are in the world? Which countries have the most? What are the main industries, foods and/or famous people in these Spanish-speaking countries? Write a “me gusta” (I like) sentence about Spanish speaking countries, people or about finding stats and information.

- **Helper**: Have a meeting during lunch or after school with your teacher to prepare questions to ask a Spanish-speaking student about how difficult it has been to move to a new country. Ask him/her questions about their life, personality, likes and dislikes. Get to know them a little bit and then write a report on how the class can help him feel more at home here at our school. Write a “me gusta” (I like) sentence about getting to know people or helping people.

- **Conviner**: Write a speech that you could give convincing other students they should take Spanish. Talk about why it is important to learn Spanish. What benefits could it bring to their life? Why you took Spanish? Why is Spanish important even here in our city? Write a “me gusta” (I like) sentence about learning Spanish.

- **Organizer**: Report on the geography of Spanish Speaking countries. How many Spanish-speaking countries are there? Tell the class about the different regions of Spanish speaking countries, for example Central America, the Caribbean, the Cone etc. Show the
class on a map where these countries are. Tell the class about the different landscapes such as: important mountains, rivers, lakes or oceans that are in Spanish speaking territories. Write a “me gusta” (I like) sentence about geography, organizing or working alone.

- **Artist:** You can pick to report on music (reggaeton), art (Frita Kahlo, Picasso or Diego Rivera), or literature (Neruda). Feel free to choose to do them all if you like. Tell the class where the chosen Artist was from and what their work or style was. Give some examples of their work (i.e. A reggaeton song, a painting from Kahlo or a poem by Neruda.) Tell what you think about the art and then write a “me gusta” (I like) sentence about art.

Students were asked to complete their chosen Adventure over the next week. After the week was up, students would then present to the class what they had worked on. Students were instructed that they must write one sentence that explains to the class something that they liked about their individualized assignment. For example, if the task was to draw the Mexican flag, a student could write and say: *Me gusta dibujar* (I like to draw). All students would be expected to share with the class what their task was in a 1-2 minute oral report in English. Students would explain what their task was and what they did or did not like about the task. Then the student would teach their ‘me gusta’ (I like) sentence to the class. The written report to accompany this assignment was expected to be ½ - 1 page in length (in English) (see Appendix E for student handout/template used).

After all of the presentations were completed the class discussed how having a choice in topics and being able to choose to work on something they were personally interested in changed their learning experience and interest in learning about Spanish cultures. The teacher discussed
how there is something for everyone when learning about Spanish and other cultures of the world, like in Canada other counties have hobbies, histories and other interesting facts that are comparable to what we enjoy here. Researching topics that are of interest to the students creates more dedication, passion and interest. Having the flexibility to choose their area of focus also created more autonomy and further enhanced their self-awareness. Ultimately, this unit taught students that learning is more enjoyable when we are learning about things that are of interest to us. Similarly, working in a job that is of interest to us is more enjoyable than working in a job that is not of interest to us. Simply put, students learned that they must think about their likes, dislikes and interests and to plan accordingly to ensure a happier future.

**Data on the Career Planning Unit**

The career planning activities were assessed by an evaluation given to the class at the culmination of the unit. Students were given a *Career Coaching Across the Curriculum: Student Evaluation Form* to complete. This form had three sections on it where students could evaluate different aspects of the unit: completion of activities, perceived helpfulness of the activities and overall evaluation of the career planning unit (see Appendix G for the evaluation used). The results from each section of the data collected will be discussed individually.

As indicated in Table 1 the majority of the students, on average 89%, completed all of the activities within the career planning unit, with the exception being the *Choose Your Own Adventure* activity where 3 of the 9 students were absent. It should be noted here to keep in mind the small sample size of this class when interpreting the results of the feedback.

**Table 1**

*Completion of Activities*

<table>
<thead>
<tr>
<th>Activity</th>
<th>I didn’t do it</th>
<th>I did it</th>
</tr>
</thead>
<tbody>
<tr>
<td>La Fiesta (the party)</td>
<td>1 (11%)</td>
<td>8 (89%)</td>
</tr>
</tbody>
</table>
Students perceived the individual activities positively with the majority, 98%, indicating that the activities were either Good or Great (see Table 2). Only one student indicated that they did not find the Los Próximos 10 años (the next 10 years) activity good at all. It should also be noted that La Fiesta (the party) and Los Próximos 10 años (the next 10 years) data was calculated out of 8 students total, as one student was missing from each of those activities and the Choose Your Own Adventure was calculated out of 6 students as 3 were missing the day that this activity was completed.

These activities helped to differentiate the learning within the classroom as the students had the opportunity to explore personal interests while learning Spanish vocabulary. Students were engaged and participated well in classroom activities and discussions, which all had a clear purpose to the Spanish that they were learning, and allowed them the opportunity to consider their individual interests and reflect on how they were different from others within the class.

**Table 2**

*Perceived Helpfulness of the Activity*

<table>
<thead>
<tr>
<th>Activity</th>
<th>Not good at all</th>
<th>Good</th>
<th>Great</th>
</tr>
</thead>
<tbody>
<tr>
<td>La Fiesta (the party)</td>
<td>0 (0%)</td>
<td>6 (75%)</td>
<td>2 (25%)</td>
</tr>
<tr>
<td>Los Próximos 10 años (the next 10 years)</td>
<td>1 (13%)</td>
<td>4 (50%)</td>
<td>3 (38%)</td>
</tr>
<tr>
<td>Me Gusta (I like)</td>
<td>0 (0%)</td>
<td>5 (56%)</td>
<td>4 (44%)</td>
</tr>
<tr>
<td>Mi Dia Ideal (my ideal day)</td>
<td>0 (0%)</td>
<td>6 (67%)</td>
<td>3 (33%)</td>
</tr>
<tr>
<td>Choose Your Own Adventure</td>
<td>0 (0%)</td>
<td>3 (83%)</td>
<td>3 (17%)</td>
</tr>
</tbody>
</table>

*Note: Of the students that completed all of the activities, 98% of the students rated the activities as either Good or Great.*
When evaluating the entire career planning unit as a whole (Table 3), students agreed very much that the unit helped them to learn a lot about careers, made them excited about what they could do with their life and made them want to learn more about different careers with 67% of the students on average agreeing that all four unit outcomes had been met. Interestingly, only 22% agreed that the unit “helped me to learn a lot about myself” and 67% were not sure if they had learned a lot about themselves. This teacher perceived these students at the beginning of the unit, as confident in what they thought they liked, didn’t like and what their interest and future directions were. However, these activities challenged the students to reconsider all this. This left the students in a state of disequilibrium and therefore when asked to evaluate the degree to which these activities helped them learn more about themselves, their ratings were poorer (22%) than expected. The activities may have created a sense of not being so sure of who they thought they were or what their future path should be, thus influencing the greater number of students indicating that they were not sure if they had learned a lot about themselves (67%). Students may not have realized that this self-awareness and questioning did in fact increase their knowledge about themselves, even if it initially had generated a sense of uncertainty. Essentially, this state of disequilibrium eventually forced students into a process of adaptation regarding their view of themselves.
Table 3

Evaluation of Career Planning Unit

<table>
<thead>
<tr>
<th></th>
<th>I Don’t Agree</th>
<th>I’m Not Sure</th>
<th>I Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>This lesson, unit plan or school wide intervention helped me to learn a lot about myself</td>
<td>1 (11%)</td>
<td>6 (67%)</td>
<td>2 (22%)</td>
</tr>
<tr>
<td>This lesson, unit plan or school wide intervention helped me to learn a lot about careers</td>
<td>0 (0%)</td>
<td>1 (11%)</td>
<td>8 (89%)</td>
</tr>
<tr>
<td>This lesson, unit plan or school wide intervention made me excited about what I could do with my life</td>
<td>1 (11%)</td>
<td>1 (11%)</td>
<td>7 (78%)</td>
</tr>
<tr>
<td>This lesson, unit plan or school wide intervention made me want to learn more about different careers</td>
<td>0 (0%)</td>
<td>2 (22%)</td>
<td>7 (78%)</td>
</tr>
</tbody>
</table>

*Note: On average, 67% of the students Agreed that the career planning unit met the four objectives.*

**Implications of the Unit Plan and Future Directions**

When the career planning unit was introduced to the class, unexpectedly the students were not enthusiastic. This could have been due to a tendency for middle school aged students to
equate discussions about careers to the not as popular Health class. The unit had to be explained and ‘sold’ to the students to assist in changing their initial perspectives about the proposed career planning unit.

As was previously mentioned, there was a student who had some learning difficulties and as such tended to give up on tasks very quickly if they were perceived as difficult. For example, the student was not willing to participate in the Choose Your Own Adventure activity when it was presented in class. The student was not willing to choose any of the options given within this activity (this is most likely indicative of the lack of appealing options for this particular student). This student ended up missing the deadline for the assignment, but when offered to come up with his/her own topic, the student eagerly chose a video game as an area of interest. With some hesitation (due to the irrelevance it had to Spanish culture) the teacher allowed the student to pursue this option. This topic had the most meaning to the student and as such they were able to complete the task by writing a ‘me gusta halo’ (I like halo) sentence.

This particular obstacle was evidence of how important it is for students to find meaning in the activities and tasks that they are asked to complete. Finding meaning was the main objective of the career planning activities. It was difficult at times to assist students in finding meaning in studying Spanish and in finding interesting or diversified tasks for students to complete that held importance for them individually, however, it was not impossible. Once students worked collaboratively with the teacher to discover what their interests were, meaning for the students was infused into the activities. By utilizing some creativity, a teacher can modify any activity or curricular item to enhance meaningfulness for their students.

Another obstacle encountered while administering this career planning unit was the minimal amount of spoken Spanish that was used throughout the activities. For optimal second
language acquisition, the target language should be used as much as possible, preferably exclusively, but throughout this unit students had to build a bank of phonemes with significance in Spanish. The challenge in the unit and activity execution was in explaining the exploration process in Spanish in a way that the students were able to understand well enough to precede with the activity. In this particular class activities were explained in English, but with careful planning it could be accomplished in Spanish with the use of a combination of conjunction and gestures, visual aids and simplified language.

Another purpose for this career planning unit was to achieve relevant and motivating second language learning opportunities. Second language acquisition is most effective and significant when put into as real and as relevant of a context as possible. This Spanish class used the Spanish language to express their personal interests and preferences, making the learning relevant and authentic as the majority of the material and activities were completed in Spanish. This Spanish utility provided a meaningful context by which students were motivated to learn the necessary vocabulary and grammar needed to express their individual interests.

More focus could have been placed on the ‘dreaming big’ idea to allow students to engage in the career planning process and in potentially breaking away from their perceived social reality of what others have told them to do. In class discussions allowed a space for students to recount their dreams and to express or create goals and aspirations for their futures. Again, not only were these discussions personally meaningful for the students themselves, but at times they did not even notice how effective it was to teach Spanish through a career planning process.

In the future these career planning activities could also include lessons on how to write e-mails in Spanish to allow students the opportunity to communicate with local Spanish speaking
professionals who have careers in which the students were interested. There is a possibility to enhance and practice networking skills and talent pooling as some ‘experts’ could team up with others to work on group projects that would enlist all of the participants collective expertise to complete. It would also be beneficial to the effectiveness of the career objectives for this unit to explore the possibility of having a Spanish-speaking community member in as a guest speaker to talk to the class about their career, life, and experiences as someone who has emigrated from another country. This was in fact a suggestion from one of the students on one of the evaluation forms.

**Conclusion**

Student learning and engagement is exponentially enhanced when the material and activities are of relevance to the learner. This career planning unit provided meaningful activities that lead to engaged discussions and independent learning. Tasks were purposefully differentiated throughout the unit in order to cater to the individual learning styles and interest profiles of each student, thus allowing every student, regardless of developmental level or Spanish proficiency, the opportunity to excel on each assignment.

Through participation in a career planning process at a comparatively young age, these students increased their self-awareness and understanding of what their futures may look like. They became better equipped to make decisions concerning things like course selection and how this affects their future academic careers and thus employment opportunities. Students were encouraged to do what is natural to them, to investigate their interests, to dream and understand what it is that motivates them and what is needed in order to achieve those dreams.

The students who participated in this career planning unit gained an appreciation of and an increased ability in the Spanish language and associated culture, which only increased with
the acquisition of genuine Spanish communication skills. Through discussions students were able to recognize the presence and importance of hard working immigrant professionals within their community, and as such became better global citizens as they enhanced their appreciation for the interconnection of cultures and nations. The benefits of obtaining a second language to enhance opportunities in future employment situations were also realized.

Appendix A

La Fiesta (the party) Activity

You are at a party and you see that there are 6 different groups of people hanging out. You listen in on what they are saying and this is what you hear. Each group is talking about things they are interested in. You need to choose the one group that you would be most interested in hanging out with as well as one group that you would NOT like to be a part of.
Appendix B

Hacer – (to do)

Me gusta jugar deportes.  (I like to play sports.)
Me gusta trabajar con mis manos.  (I like working with my hands.)
Me gusta campear  
(I like camping.)

Me gusta hacer ejercicio. 
(I like to exercise.)

¡Soy activo! 
(I’m active)
Pensar (to think)

Me gusta hacer matemáticas y ciencias.  
(I like to do math and science.)

Me gusta mirar el cielo.  
(I like to watch the sky.)

Me gusta pensar.  
(I like to think.)

Me gusta investigar.  
(I like to investigate.)

Soy inteligente  
(I am intelligent)
Crear (to create)

Me gusta pintar.
(I like to paint.)

Me gusta hacer diseños.
(I like to make designs.)

Me gusta la música.
(I like music.)

Me gusta la moda.
(I like fashion.)

Soy creativo
(I am creative)
Ayudar (to help)

Me gusta enseñar
(I like to teach.)

Me gusta ser voluntario.
(I like to volunteer.)

Soy popular
(I am popular)
Convencer (to convince)

Me gusta vender cosas.  
(I like to sell things.)

Me gusta debatir.  
(I like to debate/discuss.)

Me gusta hablar.  
(I like to talk.)

Yo soy un líder  
(I am a leader.)
Organizar (to organize)

Me gusta trabajar sólo. 
(I like to work by myself.)

Me gusta la computadora. 
(I like computers.)

Me gustar organizar. 
(I like to organize.)

Me gusta limpiar. 
(I like to clean.)

Estoy organizado 
(I am organized)
Appendix C

Los próximos 10 años (the next 10 years) 2010

Es el año 2020 y después de 20 años sin vernos, tu vienes a visitarme. Te hago la pregunta ¿qué has hecho en los últimos 10 años?

Ahora, escribe lo que me responderías. No hay reglas. Puede tener que ver con el trabajo o no. Puede tener que ver con relaciones, actividades, sueños o pesadillas. Lo que tu quieras. Lo único que pido es que sea sincere.

It’s the year 2020 and after 10 years without seeing each other, you come to visit me. I ask you the question, what have you done in the last 10 years?
Now, write what you would respond. There are no rules. It can have something to do with a job or not. It can be about relationships, activities, dreams or nightmares. Whatever you want. The only thing I ask is that it be sincere.

¿Qué has hecho en los últimos 10 años? (What have you done in the last 10 years?)
Appendix D

Nombre (Name): __________

Listening Activity

Listen to the following sentences and decide whether the speaker said that they like the activity or not. Write “me gusta” (I like) or “no me gusta” (I do not like) in the box to the left of the verb when appropriate.

*I.e. If the speaker says that they like eating*
*Me gusta comer.*

<table>
<thead>
<tr>
<th>Pintar (painting)</th>
<th>Enseñar (teaching)</th>
</tr>
</thead>
<tbody>
<tr>
<td>trabajar con mis manos (working with my hands)</td>
<td>Hablar (talking)</td>
</tr>
<tr>
<td>jugar al basquetbol (playing basketball)</td>
<td>Limpiar (cleaning)</td>
</tr>
<tr>
<td>escuchar música (listening to music)</td>
<td>Campear (camping)</td>
</tr>
</tbody>
</table>
Choose Your Own Adventure

Select one of the following tasks to accomplish within the next week. The following Wednesday everyone will present to the class what they did the week previous.

You MUST write one sentence that tells the class about something in your assignment that you like. I.e. If your assignment was to draw the Mexican flag you could say: Me gusta dibujar (I like to draw)

Everyone will have the opportunity to share with the class what they did in a 1-2 minute oral report where you will explain what you did and what you liked or did not like about it. Then you will teach your “me gusta” (I like) sentence to the class.

Your report should be ½ to 1 page long (in English). You will have a title and your name at the top of the sheet and the first line will be indented. At the bottom of the page you will write your “me gusta” (I like) sentence.

You will not have time to work on the assignment on Monday so if you have questions about how to do the assignment you must come see me at lunch or after school any day.

<table>
<thead>
<tr>
<th>Neat</th>
<th>¡Excelente! (Excellent) 3</th>
<th>Está bien (Good) 2</th>
<th>Ponte las pilas (Poor) 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Title centered. Name in right margin, indented paragraph, word processed or written legibly.</td>
<td>Title not centered, No indent, written semi-sloppily.</td>
<td>Hard to read writing. Missing title or name. Margins not lined up.</td>
</tr>
<tr>
<td>Complete</td>
<td>At least ½ page of writing</td>
<td>A little less than ½ page</td>
<td>1 or 2 sentences</td>
</tr>
<tr>
<td>Interesting</td>
<td>Provide information that is new to you, include your opinion, be convincing, and show that you are interested.</td>
<td>Regurgitate information without adding your opinion.</td>
<td>Make no effort to show any interest in the topic. Put in false or made up information.</td>
</tr>
<tr>
<td>“me gusta” (I like) sentence</td>
<td>Capitalized at beginning and period at end. Spelled correctly. Verb is in the infinitive. (ar, ir or er at the end)</td>
<td>Grammatically correct but no capital or punctuation. Maybe a slight spelling error on new words.</td>
<td>Spelling error of “me gusta” (I like) spelling error of new word learned.</td>
</tr>
<tr>
<td>Speaking</td>
<td>Show interest and enthusiasm in your project. Pronounce the “me gusta” sentence correctly.</td>
<td>Show less interest in your topic. Slight pronunciation mistake.</td>
<td>Show disinterest in your topic without explaining why. Make no effort to pronounce correctly.</td>
</tr>
</tbody>
</table>
Adventures
Choose ONE

Doer: Report on the World Cup and team Spain. Tell the class about the World Cup finals game. Who won? How did the game go? Who was the best player on the winning team? Share some reactions of people from the country that won. Write a “me gusta” (I like) sentence about soccer or the World Cup.

Thinker: Find stats on Spanish speakers. Tell us how many Spanish speakers there are in the world? Which countries have the most? What are the main industries, foods and/or famous people in these Spanish-speaking countries? Write a “me gusta” (I like) sentence about Spanish speaking countries, people or about finding stats and information.

Helper: Have a meeting during lunch or after school with your teacher to prepare questions to ask a Spanish speaking student about how hard it has been to move to a new country. Ask him/her questions about their life, personality, likes and dislikes. Get to know them a little bit and then write a report on how we can help him feel more at home here at our school. Write a “me gusta” (I like) sentence about getting to know people or helping people.

Convincer: Write a speech that you could give convincing other students they should take Spanish. Talk about why it is important to learn Spanish. What benefits could it bring to their life? Why you took Spanish? Why is Spanish important even here in our city? Write a “me gusta” (I like) sentence about learning Spanish.

Organizer: Report on the geography of Spanish Speaking countries. How many Spanish-speaking countries are there? Tell the class about the different regions of Spanish speaking countries, for example Central America, the Caribbean, the Cone etc. Show the class on a map where these countries are. Tell the class about the different landscapes such as: important mountains, rivers, lakes or oceans that are in or on Spanish speaking territories. Write a “me gusta” (I like) sentence about geography, organizing or working alone.

Artist: You can pick to report on music (reggaeton), art (Frita Kahlo, Picasso or Diego Rivera), or literature (Neruda). Feel free to choose to do them all if you like. Tell the class where the chosen Artist was from and what their work/style was. Give some examples of their work (i.e. A reggaeton song, a painting from Kahlo or a poem by Neruda.) Tell what you think about the art and then write a “me gusta” (I like) sentence about art.
Appendix F

Mi Día Ideal (My Ideal Day)

It’s time to design your ideal day and write it down **en español (in Spanish)**! Tell me at least five things you would do on your ideal day, and tell me at what time you would do it. Then draw, paste or use clipart to illustrate your action.

<table>
<thead>
<tr>
<th>La hora (the time)</th>
<th>El accion (the activity)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ex. A las 6 de la mañana (it is 6 in the morning)</td>
<td>juego al futbol (playing soccer)</td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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<td></td>
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</tbody>
</table>
Appendix G

Career Coaching Across the Curriculum:

Student Evaluation Form

Thank you for participating in this unit plan! I would like to know if it was helpful and how it could be made better. Please answer the questions on this sheet to help me with this.

Part 1: Please let me know if you did the activities.

<table>
<thead>
<tr>
<th>Activity</th>
<th>I didn’t do it</th>
<th>I did it</th>
</tr>
</thead>
<tbody>
<tr>
<td>La Fiesta (the party)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Los proximes 10 anos (the next 10 years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Me gusta (I like)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mi dia ideal (my ideal day)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Choose your own adventure</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Part 2: Please let me know if you thought the activity was helpful by circling in whether you thought it was “not good at all”, “good” or “great”.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Not good at all</th>
<th>Good</th>
<th>Great</th>
</tr>
</thead>
<tbody>
<tr>
<td>La Fiesta</td>
<td>😞</td>
<td>😞</td>
<td>😞</td>
</tr>
<tr>
<td>Los proximes 10 anos</td>
<td>😞</td>
<td>😞</td>
<td>😞</td>
</tr>
<tr>
<td>Me gusta</td>
<td>😞</td>
<td>😞</td>
<td>😞</td>
</tr>
<tr>
<td>Mi dia ideal</td>
<td>😞</td>
<td>😞</td>
<td>😞</td>
</tr>
<tr>
<td>Choose your own adventure</td>
<td>😞</td>
<td>😞</td>
<td>😞</td>
</tr>
</tbody>
</table>
What did you like about this unit plan?
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

How could this unit plan be made better?
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

Part 3: Please tell me how much you agree with the following statements by circling in the face that tells me how you feel:

<table>
<thead>
<tr>
<th>Statement</th>
<th>I Don’t Agree</th>
<th>I’m Not Sure</th>
<th>I Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>This unit plan helped me to learn a lot about myself.</td>
<td>😞</td>
<td>😞</td>
<td>😊</td>
</tr>
<tr>
<td>This unit plan helped me to learn a lot about careers.</td>
<td>😞</td>
<td>😞</td>
<td>😊</td>
</tr>
<tr>
<td>This unit plan made me excited about what I could do with my life.</td>
<td>😞</td>
<td>😞</td>
<td>😊</td>
</tr>
<tr>
<td>This unit plan made me want to learn more about different careers.</td>
<td>😞</td>
<td>😞</td>
<td>😊</td>
</tr>
</tbody>
</table>

Thank you very much for your help!!
Appendix H

Resources

Que Hora Es Website used in the Mi Dia Ideal activity: http://www.spanishspanish.com/time/clock_web.html
References


The adjustment of internationally adopted children from Ethiopia: Parents' perspectives on issues of race, culture, identity and education

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The adjustment of internationally adopted children from Ethiopia: Parents' perspectives on issues of race, culture, identity and education

Nathalie Piquemal, Barbara Lebow, Tatiana Galetcaia, Carolyn Warkentin

Abstract:
Drawing upon the multifactorial model of parenting lens (Belsky & Vondra, 1989), this paper reports on findings from a funded study which, through qualitative interview data, explores the risk and protective factors that either hinder or enhance parenting in international adoption, with special attention to children internationally adopted from Ethiopia and to issues of intercultural/interracial parenting, race and culture, as well as attachment. The findings are organized around the following themes: Parenting characteristics; cultural and racial issues in schools and within family settings; and attachment. While findings suggest that parents feel unprepared to properly deal with loss and grief related trauma experienced by their children, findings also show that adoptive parents exhibit characteristics of resilience, commitment and proactive engagement, particularly in areas of heritage culture, attachment, and social support. Our findings also suggest that parents exhibit topic avoidance or remain, overall, unresponsive to issues of race. This study sheds light on the need to better prepare adoptive parents to issues of race in transracial families and to grief related trauma in international adoption.

Key words: International adoption, parents, parenting, qualitative research, race, culture, education, attachment, social supports, transracial

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Introduction and research context

Despite widespread findings from studies around Romanian orphans adopted into Canada showing significant adjustment difficulties for children who have spent a large period of time in institutional care (Chisholm, 1998; Morison, Elinor, Ames & Chisholm, 1995), much of the research on international adoption shows, with consistency, that there is strong evidence of recovery and improvement following adoption (Welsh & Vianna, 2012; Palacio et al., 2011; Morison & Ellwood, 2000; Roby & Shaw, 2006; Trolley, 1994; Bartholet, 2006). Much research has shifted away from a deficit model focused on disabling factors to a social constructivist model that includes enabling factors.

Specifically, research shows that adoptive parents and children do better if they have stable, supportive relationships with extended family members and friends, have the support of a spiritual/religious community (Brodsky, 1999), receive respect of their heritage, and their cultural identification is a source of pride (Geissler, 1998). However, more research is needed on the factors that promote and support parenting in international adoption, as very few studies have focused on the experiences of adoptive parents themselves. Among those studies that do focus on adoptive parents, there is evidence to support that adoptive parents feel “less prepared for psychological and emotional challenges with their child, while they were most prepared for financial and cultural issues” (Paulsen & Merighi, 2009, p. 13). Studies also point to the need for more support during the post-adoption period, particularly in the area of mental and emotional health (McKay et al., 2010). However, studies also suggest that stress is not necessarily higher for adoptive parents as it is for biological parents, and, in fact, is even found to be lower (Gavin et al., 2005; Goodman, 2004; Mayberry et al. 2007), thus making the need for nuance between families through birth and families through adoption explicit.
Within the public arena, international adoption has been the topic of much public debate, ethical and, sometimes, political controversies. These debates and controversies, pervasive in public and social media, range in focus from a romanticized view of international adoption as a humanitarian undertaking to corruption and deception, thus pointing to the need for better informed discussions and debates, all of which ultimately influence decisions about those who are most vulnerable, namely orphaned children.

This paper reports on findings from a SSHRC funded study which, through survey and interview data, explores the risk and protective factors that either hinder or enhance parenting in international adoption, with special attention to children internationally adopted from Ethiopia through a Canadian international adoption agency. Reasons why adoptive parents deserve research attention is three-fold: (1) there is a dearth of research focusing on the factors that affect parenting in international adoption; (2) Adoptive parents’ experiences and perceptions present unique and significant challenges, particularly when positioned in a trans-racial context; (3) Notwithstanding the uniqueness of the adoption experience, there is transferability to be found in issues of displacement, race and cultural identity, attachment, and intercultural/interracial relationships.

**Research questions and methodology**

The purpose of the study is to identify the factors that either hinder or promote positive family adjustment, with special attention to personal factors (identity, beliefs, personal experiences) as well as contextual factors (support system, family context, social and
cultural context) and through the experiences and perceptions of adoptive parents. The specific questions that guided this study are as follows:

1. How do parents make sense of their adoption journey, with special attention to beliefs and strategies about parenting an adopted child, perceptions of their own adjustment to cultural and racial issues, attachment issues, as well as experiences with, and perceptions of, support networks?

2. What are parents’ experiences and perceptions of their adopted children’s process of adaptation, with special attention to attachment and sense of belonging to family, race, cultural identity, and heritage culture? Specifically, what are the factors, both contextual and personal, which, according to parents, have either facilitated or hindered their family’s adjustment? Last, to what extent have parents developed strategies to support such adjustment?

A qualitative approach using a semi-structured interview was used to collect data. Specifically, 16 families who have adopted children from Ethiopia, were recruited as research participants. Qualitative analysis began with verbatim transcription of interview tapes. Data was examined systematically to reveal patterns, which was then coded for in-depth analysis in the three groups of factors outlined in the theoretical model, namely child factors, parent factors, and social support factors.

At the time of interview, research participants were between 29 and 54 years of age, with most of them in their forties. Most of the research participants were married (13) while three (3) adopted as single parents. Two-third of the participants had one or two biological children before adopting. Research participants had been adoptive parents for two to ten years. In the interviews, they were asked to focus on those children of
theirs who were school-aged.

**Theoretical framework**

The multifactorial model of parenting was used as a theoretical lens (Belsky & Vondra, 1989). This model assumes parent and child behaviour is influenced by three groups of factors – child factors, parent factors, and contextual sources of support and stress that interact with each other. A research overview of these factors follows.

**Child factors.** Research hints that adopted children have a somewhat more complicated process of identity formation than non-adopted children, although the process is not necessarily more stressful, but depends, in part, on the parents’ understanding and support. If parents have openly acknowledged children’s adoptive status from their early years and have been open and responsive to questioning, then relationships will be predicated on truthfulness and trust, thereby enhancing development (Steinhauer, 1991). A survey of the research literature identified several factors that are related to unsuccessful adoption. Child characteristics include a higher number of previous placements, longer periods in care prior to adoption, high levels of aggression, previous diagnoses of conduct disorder, and a strong attachment to biological mothers. Characteristics of adoptive parents that increase risk of placement breakdown include low levels of self-esteem, flexibility, and capacity to manage their own anger, as well as poor relationships with their own parents (Steinhauer, 1991). The research frequently cited reviewed outcomes of Romanian orphans adopted into Canada, finding generally that early-adopted children under four months of age at adoption had fewer long-term problems than those adopted after spending more than eight months in an orphanage. As
a result, parents of later-adopted children must attend not only to their children’s medical problems, such as parasites and malnourishment, but also to their complex, ongoing psychological needs, especially difficulties with attachment. When examined after approximately three years in their adoptive homes, all children who had been adopted after spending eight months or more in an orphanage were found to have formed attachments with their new parents — a third displayed secure attachments, a third displayed insecure patterns typical of Canadian-born children, and a third displayed atypical insecure patterns. The children with atypical insecure patterns of attachment had lower IQs and more behavior problems, and their adoptive families had somewhat lower socio-economic status, although differences in income were not large and none of the adoptive families were living in poverty. The research speculates that, in general, children fared better if families had the emotional and financial resources to respond to their special needs. This study suggests that many factors interact to eventually contribute to the adoptee’s developmental progress (Ames, 1997).

**Parent Factors.** Research identifies a number of factors that contribute to positive parenting: the neighborhood, the parenting role, financial status, family, friends, personal characteristics, and spirituality (Reder & Lucey, 1995). The most studied parent characteristics that contribute to poor parenting are a childhood history of abuse and neglect, mental health, family conflict and spousal abuse, being an adolescent parent, and poverty.
Social Support factors. Regardless of the physical circumstances, social supports are a factor that can ease or exacerbate the normal difficulties and stresses of parenting. Emotional support includes love, caring, and empathy, while instrumental support encompasses both the material and behavioral assistance given to families. Cognitive support involves information, guidance, or feedback that is useful in problem solving in child management situations, and appraisal support is information provided to parents relevant to their self-evaluations. Social companionship involves spending time with others in various leisure or recreational activities. Parents and children do better if they have stable, supportive relationships with extended family members and friends, have the support of a spiritual/religious community (Brodsky, 1999), receive respect of their heritage, and their cultural identification is a source of pride (Geissler, 1998).

Findings and discussion
The findings are organized around specific themes, beginning with general parenting characteristics, then looking more specifically at cultural and transracial issues within family and school contexts, as well as attachment and bonding. The findings are presented within the context of each theme’s associated scholarly context.

General parenting characteristics. Research suggests that successful adoptive parents have the following characteristics, namely that they: Understand the ambivalent or strong feelings they may experience parenting a child with special needs; Attempt to develop an immediate relationship with the child; Take charge of their parental role, having an ability to delay the gratification of their parental needs; Find happiness in small
increments of improvement; Have a systems view of their family, develop support networks, share their parental role with other key adults, and practice self-care (Katz 1986; Paulsen & Merighi 2009). Adopted children with conflict and negative behaviors can bring surges of anger and unpredictable fluctuations in affection for a child that are upsetting for normal, healthy parents, which can lead to painful guilt and shame (Gill 1978).

Our findings indicate that adopted children had well prepared parents, who managed not to judge themselves too harshly for their negative feelings but accepted their inevitability given their child’s circumstances. One mother stated: “He was a very challenging young child – getting into everything – he was very fast and busy. I don’t think I coped well in the beginning. I yelled at him, and he was two and no part of me thinks that was appropriate. If I could go back… I wouldn’t do that. I’d be a lot calmer, but as a first time parent to a very busy child, it was…challenging.” This mother’s frustration with her son lessened when she recognized that “many kids do this…The more I communicate with him; even using joking and humor, the easier it gets.” Another research participant said, “For the first 6 months to a year I’d think what a horrible parent was I. I didn’t know what I was doing. He was into everything. It felt like an invasion of your space. I took a year off. It was important to me that I spend as much time with him as possible because soon he’d be at school full days.” This mother tried to help him cope by spending time together, recognizing his need for affection and for a predictable routine: “I developed a lot more patience and grace; things don’t really bother me anymore unless they’re things that are serious that need to be dealt with immediately. I
don’t have unrealistic expectations of myself anymore. I had a total transition as a parent.”

Research indicates that successful adoptive parents persist in loving behavior in the face of rejection, seeing their child’s behavior for what it is—a fear of needed closeness (Greenspan & Pollock, 1991). Our study participants stated that they knew their child’s rejecting behavior had nothing to do with them as parents, proceeding with the nurturing their child needed. One couple realized from the beginning that their daughter’s rejection was “not just to piss us off.” The mother explains: “She’s behaving this way for a reason. I don’t get offended by her behavior. I draw her closer and closer and work on good communication. Her behavior indicates fear and insecurity. I am getting skilled at getting the parental role back, without confrontation.” Our study participants did not equate their own lack of gratification to failure in parenting, having the ability to postpone their rewards for a long time—months, even years. The following two quotes speak to this: “For a long time she did not cuddle but I knew attachment would come. I said to myself that it will take a long time and we’ll work at it for as long as it takes. It took a long time to develop and we’re still working on it. She’s learned to trust adults and realized they can be fun;” “Emotional attachment wasn’t there at the start. To get through the hard times, I stepped back and got my own emotional expectations out of the way.” The families in our study report being active with their adopted children, assuming control, trying to anticipate behaviors, interrupting behavior-spirals early, providing praise, positive reinforcement, and physical affection. The adults took the lead in the relationship and were not deterred by the child’s protest or withdrawal.
Our study supports the research finding that successful parents are not focused on end goals, abandoning the hope of being ideal parents, striving only to help the child achieve success in small daily tasks (Younes & Klein 2014). The following parent’s testimony illustrates this point well: “We recognized that at first he was confused and scared, looking distant and detached, keeping to himself. We knew he would change over time. We empathized with him, saying it’s not that he doesn’t love us, it’s that he’s going through so much change. You want all this love when you see them, hoping for all this affection, but that takes time to build. We savor the moments of connection and increments of attachment.”

Research identifies that social support networks contribute to positive parenting (Reder & Lucey 1995). Parents and children do better if they have stable, supportive relationships with extended family members and friends, have the support of a spiritual/religious community and receive respect of their heritage, with their cultural identification being a source of pride (Brodsky 1999; Geissler 1998, Gill, 1978). All families in this study had a combination of family, friend, church, and adoption support networks, being successful creating, engaging, and mobilizing these networks. A research participant explains, “When family members were not available I reached out to my friends for emotional support and understanding. They helped me realize I was not failing as a parent – just struggling with change and adjustment. They helped me through this period.” The families report receiving emotional support that includes love, caring, and empathy; instrumental support, both material and behavioral assistance; cognitive support, involving information, guidance or feedback useful for solving problems in child management situations, appraisal support information relevant to their self-evaluations;
and social companionship involving spending time with others in various leisure or recreational activities.

**Adoptive parents and transracial issues.** Demographic trends show a rise in transracial adoptions, pointing to a significant percentage of ethnic minority children adopted by White parents. Research on transracial adoption has primarily focused on the extent to which White families may be able to support a healthy cultural identity development for their children, particularly when these children are ethnically identified as Black (Jackobson et al., 2012; Padilla et al., 2010). More specifically, research shows how White families can be ill-equipped to deal with systemic racial issues (Patton, 2000), further highlighting parents’ tendency to be colourblind (Simon & Alstein in Jackobson et al., 2012) and to speak along the lines of culture rather than race. The notion of colorblindness has been articulated in much scholarly work, particularly in the fields of Education and Social Work, as part of the construct of *White Privilege* (Leonardo, 2004; Schick & St. Denis, 2003; Neville et al., 2001). As such, the tendency of White dominant culture individuals to dismiss race (in order to dismiss privilege and systemic inequalities) appears to be a pervasive systemic tendency that is not the issue of just adoptive parents.

Overall, studies show that adoptive parents’ cultural engagement is more prevalent than, and often used in lieu of, racial consciousness. Our findings show that while adoptive parents can be quite proactive in terms of pre-adoption preparation around cultural and race issues, the reality of race and transracial issues can still come as a shock: “The other day when she said ‘I’m the only brown girl’, that shocked me,” explains a parent. When prompted further on the issue of racial incidents, most
respondents, when aware of such incidents, have a tendency to adopt a colourblind attitude, in that they explain these incidents as accidental, rather than as systemic. The statements “it’s just kids being kids” or “it’s not really an issue” are not uncommon. When prompted further, some participants would then recall an incident but almost seemed to mention it casually and as incidental: “Well, I guess there was that one day…” followed with “it’s really not a big issue.” When parents do integrate the notion of race in their conversation with their children, they do not necessarily understand race as socially constructed; rather, they talk about it in terms of shades of colours (pink, brown, etc.) potentially leaving children to make sense of race as social divides on their own. In one situation, a parent recalled her child initiating a conversation on racial issues (“I am the only brown kid in my class”) and when prompted about the context of the conversation, or about any follow-up, the parent reported not remembering and not knowing why the child made that comment. From the data collected, it appears that only traumatic events recognized as such by the parent, leads to an acknowledgment that their child has experienced actual racism rather than simply a dispute. A parent reports: “He was not going to stand beside a girl that is Black. This boy came after her right away with a skipping rope behind her and put it around her throat and cut off the air and she couldn’t get him off. And it’s because she was Black. She knows that.” This example is further explored in the following section on racial issues in schools.

**Race, culture and social inclusion in school.** Adoptive parents’ attitudes towards race and culture become more explicit and visible in the way in which they story their children’s socialization experiences at school. Research participants recognize the importance of a culturally diverse school environment for the purpose of the development
of a sense of belonging. However, the participants are quite divided in how they make sense of the importance of racial representation in their children’s school. Among those parents whose children attend an ethnically diverse school, some feel that their school is adequately diverse, that different ethnicities are respected, and that adoption stories are honoured, while others report incidents of discrimination or difficulties to fit in. Among those parents whose children attend primarily White schools, few see it as a deficit in the sense that they contend that it is up to their children to fit in, which happens at the cost of culture loss: “It’s not multicultural. They have to act white to fit in. I don’t think there’s any support for multicultural people really. That’s my view on it. They lose their culture because they have to act white to fit in,” explains a parent looking at assimilation as an unfortunate consequence of being a minority. In both culturally diverse and non-culturally diverse schools, data shows evidence of the difficulty that some adoptive parents have to acknowledge the reality of race in a way that does justice to the complex and often painful stages of identity development of transracially adopted children: “There is no difference. (…). Generally, it’s kids being curious kids, so it’s not anything being a really big issue,” which on several occasions appears to be the message given by parents to their children who express a concern about being a minority, or “the only Black person in class.” Our findings are consistent with the research cited earlier, in that adoptive parents appear comfortable and proactive around issues of culture but less so around issues of race. At times, it appears that it is the children who educate their parents about race by making the issue visible where parents want it to remain invisible: “We were grocery shopping and she said that woman is staring at me and I say that’s because she’s so cute. I’m belittling it right and she goes ‘no mom, it’s because I’m brown’ and I say
'yeah it’s kind of hard isn’t it?’” (mother of a 7 year old daughter). However, incidents of racism were reported and one was particularly traumatic: “Everybody in my class heard him—that he was not going to stand beside a girl that is Black. He made a big deal because she’s Black. (...) And then, this boy came after her right away with a skipping rope behind her and put it around her throat and cut off the air and she couldn’t get him off. And it’s because she was Black. She knows that.” The parent further reported that the school didn’t handle it well, in that they “put on a program that wasn’t racially correct.” When such traumatic experiences happen, parents realize they can no longer avoid the topic of race.

Despite this testimony, overall, in terms of school support for their children, most parents speak positively about schools and report feeling grateful and satisfied with the supports (academic, social/emotional) provided for their child. Research contends that caring school staff are essential in accommodating and supporting the unique issues surrounding adoption (Stroud, Stroud & Staley, 1997; Scarvelis, Beverly, Crisp, Beth, Goldingay, 2014; Schooler, 2014). While many parents reported academic struggles, they were often more concerned about social/emotional and behavioural issues. As a result, findings show a strong tendency of adoptive parents to position themselves as advocates in the areas of racism, classroom placement, belonging/fitting in, academic struggles, particular needs of child (routine, attachment, home-school, private school, behavioural), and identity. Parents advocated through communication with the school administration and teachers, volunteered in the classroom and offered resources and presentations to the school population as well as parents.
Adoptive parents’ cultural engagement. Research shows, with consistency across the board, the importance of adoptive parents’ cultural engagement, meaning the promotion of birth culture and traditions, language, as well as opportunities for bi-cultural socialization, for the successful development of adopted children’s identity and self-esteem (Song & Lee, 2003; Johnson et. al. 2007). A study conducted in the US (Paulsen & Merighi, 2009) posits that families’ cultural engagement may depend on available resources and cultural activities, meaning that those families with more cultural involvement are those whose children’s heritage culture is represented through social practices in the community. A combination of both cultural engagement and racial consciousness is necessary for the development of a healthy cultural identity (Samuel, 2010).

Our findings point to the evidence of cultural engagement for the majority of participants. Parents’ cultural engagement begins as they enter the adoption process, generally through readings as well as an educational seminar mandated by the Province and offered by the Adoption agency. Once the children are home, cultural events are intentionally sought where available, and include activities such as Ethiopian dance classes, multicultural events such as Folklorama, or specific holidays (Ethiopian Christmas and Ethiopian New Year), and language: “I made an effort to make sure that we were in an environment where people would speak Amharic,” confides the mother of an 8 year-old child. However, for a few participants parenting is the building of a family regardless of race or culture: “I think when you’re a parent it doesn’t really change anything whether that person is from a different cultural background or a different area.” Yet, even in this case, efforts are made to ensure that some cultural integration happens.
As this same parent further explains, “We incorporate the holidays that would be celebrated there. Like, we’re very aware of the Ethiopian Christmas and making sure we celebrate that.” Parents interviewed were also aware of the cultural loss that their children go through: “They lose their culture because they have to become White to fit in.” At times, parents believe that cultural loss takes the form of cultural resistance (against heritage culture) as a result of their children wanting to fit in and be accepted by peers. For example, parents report that their children do not always wish to participate in Ethiopian cultural events.

Within these layers of complexities in the development of the children’s cultural identity, parents interviewed overwhelmingly agreed with the importance of honouring Ethiopian culture and demonstrated evidence in making that happen: “We very much felt the need to incorporate his culture here,” explains a parent. While there is much evidence of culture integration, cultural socialization is less prevalent, as few parents actively seek socialization within members of Ethiopian backgrounds, a finding that is consistent with Quiroz’ s research (2010, p. 203). Rather, adoptive parents tend to seek other adoptive families when seeking cross-cultural experiences, with some explaining that they don’t always experience a sense of belonging within the Ethiopian community: “We went to the event at the park with the Ethiopian group and that did not go well. Our kids said that those children from Ethiopian families didn’t tend to include them. So we didn’t continue with that,” explains a research participant. The integration of culture into the family’s life extended to the inclusion of birth family, when it was possible: “We actually had a picture of their birth family on both of their walls by their bed in their bedrooms for a long time,” recalls a parent. A number of participants interviewed reported that the
connection with birth family was not encouraged by the Adoption Agency, further disclosing that they wish it were.

**Adoptive parents and attachment.** While adoptive parents’ problematic attitudes towards race issues should not be dismissed, what needs to be pointed out is the importance of the strength of the parent-child relationship, namely, attachment issues, in the successful adjustment of the child. In this area, our participants all show evidence of resilience and strength, having taken proactive measures when needed. Research shows that ethnic identification is not necessarily key to the adjustment of adoptees (Friedlander, as cited in Castle et al. 2011). Rather, attachment would appear to be the key factor in successful adjustment, and would even lead to positive identity development: “Although ethnic identity was not always found to be indicative of improved psychological adjustment, the role of familial factors including variations in adoptive family socialization and the strength of the adoptive parent-child relationship, appear to play an important role in facilitating the development of ethnic identity and positive psychological outcomes for this population” (Castle et al, 2011, p. 320).

Children of adoption have experienced multiple losses. The first and, arguably greatest, traumatic event would be infant separation from the birth mother and for older children, separation from birth mother or primary caregiver, extended family and community (Verrier, 1993; Bowlby, 1960). Families in this study have adopted children as young as 6 months old up to 8 years old. These children have all had unique background experiences; some lived with birth families for several years while others were raised by extended family or community members before relinquishment. In addition to suffering grief and mourning, these children had already experienced
fragmented care, multiple disruptions in attachment to a primary caregiver, thus had established various attachment disturbances. Additional circumstances include abandonment, institutionalization and foster home placements. Multiple caregivers were the norm up until joining their permanent families.

Our data around attachment leads to findings that are two-fold, one being parents’ perception of the child’s attachment, and the other one being parents’ perception of their own attachment to their children. Research participants reveal falling in love with referral photos, preparing special bedrooms, gathering information about birth country, connecting with other adoptive families, and researching the attachment process. Some even consulted an attachment specialist before meeting their children. Adoptive parents share diverse experiences that require infinite patience, optimism and time and the journey of attachment unfolded differently for each family. The literature states that, contrary to one of the most common misconceptions, successful development of attachment involves shifting a focus from closeness as the naturally happening product of the relationship dynamic to actual learning how to effectively regulate feelings between family members (Holmes, 1993). In other words, instead of focusing on how to build up a sense of being attached strategically, so to speak, parents may often take negative responses of their adoptive children to emotive prompts as absence of attachment. The awareness of this approach is particularly important when the child has been separated from the family of origin (Moore, 2006), had multiple caregivers and was not adopted in her early infancy. Our findings are consistent with Moore and Homes’ research. The study participants confirm that they had to recognize difficulties arising from the child’s removal from his birth parents or siblings, or learning about traumatic family events. The
uncertainty of what lies ahead for the child is combined with the uncertainty of the parent on how to help the child form new attachments. This proved to be particularly difficult for parents of children who could not make sense of “Why me?” As such, the statement “Why did they take me away from them?” was a recursive reaction from children that almost half of the participants had to work with as parents. The new parents in that case may become the victims of the situation where each side has its right to be hurt. By all accounts, the adopted child in the previous case compensates his hurt by aggressive actions, while his parents blame themselves for not knowing why and when some important part of their so much awaited journey went wrong. In the worst case scenario, an image of the relatives left behind can haunt the child for quite a while. Talking about her daughter’s hurtful memories, a participant explains: “I think she was grieving the loss of everything she had and still grieving the death of their mother. I think so very much. The death of her mother happened six months before she came.” This echoes the account of how leaving behind a sibling may compromise the ‘happily ever after’ that parents may have been hoping for, particularly when the sibling has been left behind in one of the birth country’s orphanages: “He has a half brother, but he called him brother and he often wonders, ‘why me and not him?’ So that's really difficult, because he's still there. He says, ‘I think it was because he was older and older kids can take care of themselves better”’ (the parent of an 8 year-old child).

The difficulties arising from the lack of experiences on how to overcome grief and sorrow related to the child’s past may be quite traumatic not only to the child herself but to her new parents too. Learning how to accommodate the child’s needs in her coping with the traumatic past requires much patience and understanding from adoptive parents.
as explained in what follows: “Anything that reminded him of the foster home was difficult for him. Going to bed was a difficult thing for him. The second night we put him to bed, turned out the lights, and left, all of a sudden we heard this screaming from down the hallway and he was crying and terrified of being in this room alone because he was used to sleeping with five or six boys. (...) Bedtime was probably an issue for the first year. Even then, bedtime was a negative thing... Not that he resisted it but he would cry.” The participants, whose journey took that dramatic turn, recognized that the grieving process may take years.

In terms of expectations and outcomes related to attachment, the majority of the research participants mention that they find themselves in the situation when, even prepared in theory, they lack skills of actually applying them in real life situations. The parents’ responses show how dramatically this can affect their parenting journey. The majority of the participants, even those with very happy family stories, mention that the family adjustment happens slowly, with ups and downs, through pain and uncertainties. Yet, the parents’ eagerness to get better prepared for the journey brings positive outcomes. Indeed, overall, our research participants overwhelmingly show proactive and positive attitudes toward attachment issues. Support actively sought by adoptive parents in this regard range from self-education through personal readings, to reliance on peers and professionals, and attendance at workshops. Even when attachment problems were reported, growth and positive developments were noted. A fierce mutual desire to have a family has been described to be a significant factor in establishing a strong bond: “With all the people that I know who have adopted, is the fact that the kids and families stay
together longer, because we wanted each other” (a single mother of two adopted children).

Children have been described according to a range from securely attached to still struggling with attachment, with positive attachment through resilience and growth being the most common denominator: “She is as attached as any of our children,” states a parent. Those few parents who report difficulties with their child’s attachment note that the child’s attachment is stronger with peers while more challenging with parents. The following testimony of the parent of an 8 year-old child is very explicit:

“It was challenging and it still is challenging. When we got home, very quickly we knew it was going to be very tough. In terms of attachment. I mean, we're in a course right now learning a lot more about this. But, very angry and lots of lashing out. Very very hard to comply with any requests. I mean, he didn't know the language either at that point in time. Very difficult to get him to attach. That's still an issue. He actually has attached, in terms of a parental relationship, more to his big brother and to us as parents. He's not as aggressive anymore. We literally had to hold and restrain him. He would kick and spit. So we've had to turn that into hugs.”

In this case, school is sometimes described as not conducive to healthy attachment to adults, leading parents to consider partial home schooling, which was the case of three families.
Recommendations and concluding remarks

Our findings suggest, that, overall, adoptive parents exhibit characteristics of resilience, commitment and proactive engagement, particularly in areas of heritage culture, attachment, and social support. However, our findings point to the need to better prepare and educate parents to issues of race, as well as to issues of loss and grief related trauma. Adoptive parents have a tendency to view race through a colourblind lens, meaning that many view racial incidents as accidental or interpersonal issues, rather than as social constructions and systemic issues. Only an extremely traumatic event involving physical harm appeared to have triggered an understanding that race is indeed an issue for their child. As such, educational seminars mandated by the Province and typically organized by adoption agencies or Social Service need to place a stronger emphasis on race and ethnicity in their “cultural diversity” section of these seminars, to better enable prospective adoptive parents to grasp the systemic differences between race and culture, with special attention to issues such as: How might race affect my child? What is my own positioning in a transracial relationship? How do I enter in a dialogue about race with my child in a way that helps build and acknowledges, rather than dismisses, who my child is? How may I help my child work through potential racial issues at school, with other family members or with friends?

In addition, while our research participants showed proactive engagement in the area of attachment, our data suggest that adoptive parents struggle when determining ways to best help their children through grief and loss. They would benefit from more
pointed workshops in two areas: (1) The varying degrees of grief and expressions of grief related to loss and displacements that their child will likely experience (particularly older children); (2) The resources, particularly of a professional nature (Counseling, specialized support at school, online support groups), that are available to them, and the likelihood that these resources will be needed.

This study presents the following limitations. First, research participants were recruited via an Adoption Agency, which could potentially suggest that only those with positive experiences volunteered to participate. Having said this, our research participants’ responses were nuanced showing both the pain and the joy in their adoption journeys. Second, the positioning of the authors needs to be teased out. One of the authors is a private practitioner who contracts with the adoption agency through which the research participants were recruited. Likely, a number of research participants volunteered because of a trusting relationship with this person. Two of the authors are adoptive parents themselves, which likely created a sense of intimacy and comfort during the interviews. The remaining author had no affiliation with the adoption world, providing the team with an external viewpoint. Further research should focus on the stories of adjustment of adopted children, which could be carried out through focus group or individual interviews.


A Perceptive Study on E-Learning With Physical Education in Chinese Universities: What Are The College Courses That Students Want To Take Via E-Learning?

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Abstract: By reviewing the history of e-learning literature, it is not difficulty to observe how successful of e-learning courses and programs across the subject matters of science, language, history, and many other scientific oriented courses. However, questions such as “Is e-learning platform suitable for college level Physical Education, Kinesiology, Sport Study, Recreational, and Leisure Study?” and “What are the courses that students want to take on those subject matters?” etc. are still largely unknown questions for many educators. In the information age today, we are experiencing a variety of demands for physical wellness and health education from many sources. How an e-learning educational programming for Kinesiology and Physical Education can be adequately developed to meet such challenges is still one of the widely discussed topics today among educators. This paper describes a concept e-learning model based on an international survey result and the taxonomy of physical education.
Introduction

E-learning is one of the most referred learning platforms for distance education via the Internet, which also is a very popular means to reach students in anywhere at anytime. By reviewing the history of e-learning literature, it is not difficult to observe how successful of e-learning courses and programs across the subject matters of science, language, history, and many other scientific oriented courses. However, questions such as “Is e-learning platform suitable for college level Physical Education, Kinesiology, Sport Study, Recreational, and Leisure Study?” and “What are the courses that students want to take on those subject matters?” etc. are still largely unknown questions for many educators. In the information age today, we are experiencing a variety of demands for physical wellness, human performance, and health education from college level institutes as well as public wellness and fitness centers. How an e-learning educational programming for physical education can be adequately developed to meet such challenges is still one of the widely discussed topics today among educators. This paper suggests a concept e-learning model, including preferred subject areas and courses based on an international survey result and the newly formulated taxonomy of Kinesiology/Physical Education. The scopes and strategies of e-learning program that address the human performance and wellness topics are also described and discussed.

Background

In order to design academic e-learning programs for Kinesiology, Physical Education, Sport Study, Recreational and Leisure Study as the traditional study for human performance as well as emerging wellness and quality of life studies, a comprehensive concept model should be first defined and described, from which a better understanding of its scopes, attributes and characters of such program could be theoretically formulated. Is it important to define an e-learning model for Kinesiology/Physical Education? The answer is worth pursuing. A well-defined model will not only reveal the characteristics of Kinesiology/Physical Education, but it will also provide guidance for the development of new, or modify existing, online or in-classroom educational courses and programs. By doing so, the Physical Education profession will also stand to benefit in two-fold: first, by clarifying the vagueness of the definition of Kinesiology/Physical Education, and secondly, by identifying the attributes and characters for e-learning as well as in-classroom courses.

Since its emergence as a distinct discipline more than six decades ago, Physical Education has been broadly and narrowly included in many college’s curricula. This interdisciplinary field is expanding in response to the increasing demands from the various education and research institutes for skilled personnel in Kinesiology, Sport Psychology, Recreation and Leisure Study, Wellness and Health. The development of dedicated e-learning academic programs for such areas has become one of the major discussion topics among many colleges and universities.

“How is the scope of a curriculum for Physical Education defined?” “How to set up standards for accrediting such academic programs?” and “What are the career paths for the graduates majored in Kinesiology/Physical Education?” are the some of the most frequently asked questions.
Comprehension of such a diverse discipline like Physical Education requires a paradigm shift when attempting to define its attributes and characters. A simple approach would be to tolerate a reasonable amount of imprecision and uncertainty in defining a contemporary e-learning model for Physical Education. The results may not be perfect; nevertheless, a reasonable concept model may lead to a theoretical resolution for the understanding of Physical Education. With a clear described e-learning model, academic programming may also easily adopt the evolving new trends into the curriculum for applying new disciplines into a broad sphere of the real world reality of human physical wellness.

**A Theoretical Taxonomy of Physical Education**

In order to appreciate e-learning for Physical Education, it would be beneficial to first take a look at the attributes and characters of Physical Education. By doing so, we will have a better perception for the scopes of Physical Education, which will help us envision the upcoming challenges and prospective outcomes for the educational adventures via e-learning.

Although there is a variety of definition for Physical Education, they are comparable at their root level since they are all dealing with the principles of human physical wellness. Generally speaking, there are six attributes that Physical Education normally deals with. They are (in Figure 1):

- **Principles of Sport Skills and Techniques (P1)**
- **Principles of Human Advanced Performance (P2)**
- **Principles of Physical/Nutrition Wellness and Health (P3)**
- **Principles of Mental/Spiritual Wellness and Health (P4)**
- **Principles of Game Management and Social Promotion (P5)**
- **Principles of Adventures and Relaxation (P6)**

![Figure 1: The Attributes (Principles) of Physical Education](image)
The above Taxonomy is the foundation for the study of Physical Education. This taxonomy does not only illustrates the system of Physical Education:

\[ \text{i.e. upe} \in \{\text{uP1} \ \text{uP2} \ \text{uP3} \ \text{uP4} \ \text{uP5} \ \text{uP6}\} \]

The Taxonomy also depicts the scopes of the six attributes. Each of the attributes is a distinct subject area for study, which should be the emphasis for the academic courses and curriculum for e-learning.

Furthermore, each of these six attributes has five possible quantum characters in terms of purposes for human to participate in physical activities. They are (in Figure 2):

![Figure 2: Five Characters in Each Attributes of Physical Education](image)

These five characters delineate the ingredients of e-learning course for each attribute of Physical Education as shown in Figure 2, i.e.:

1) For Cognitive Understanding (Mind)
2) For Physical Health (Body)
3) For Mental Health (Spirit)
4) For Challenges and Achievements (Passion)
5) For Social Bonding and Connection (Social)
Methods and Results

(1) Instrument: Semantic Differential Survey Methodology

The Semantic Differential method will be utilized to construct the surveys scales in order to determine college students’ perspective toward the attributes and characters of Physical Education via e-learning. Semantic Differential scale is one of the most popular methods for assessing human perspective toward a subject matter in the field of human psychology, which is very similar to the pain assessment in nursing, in which 10 is the most painful and 1 is the least pain by patient’s self rating. The self-rating offers individual’s own feeling and perspective toward his/her pain. In the same fashion, when the subjects about Physical Education via e-learning are presented to the individual, the self-rating will reflect the feeling of this individual toward the asked subject matter.

There are two parts in Semantic Differential Scale: part one is a statement that tests the targeted participant’s feeling toward it; and part two is a series of paired bipolar adjectives with seven-point scale. The scales measure subject’s feeling toward polarized adjectives, which will be quantified from 1, the most negative, to 7 the most positive feeling toward the statement. Point 4 represents neutral perspective toward the statement. The average of the scores represents the overall feeling toward the assessed statement and is used for statistical analysis (Baumgartner & Jackson, 1987).

For this study, the paired bipolar adjectives were chosen according to three major factors of Semantic Dimensions: Evaluation, Potency, and Activity as the following:

- **Evaluation**
  - Good – Bad
  - Valuable – Worthless

- **Potency**
  - Deep – Shallow
  - Strong – Weak

- **Activity**
  - Happy – Sad
  - Active – Passive

Eight perspective statements will be constructed for assessment of student’s perspectives toward e-learning. Appendix A illustrates the survey instrument.

(2) Survey Results

Study participants were students enrolled in Physical Education classes in two universities in China. The students completed the survey for their attitudes toward taking online courses in
Physical Education (4 questions) as well as the purposes for taking Physical Education classes (5 questions). Using semantic differential rating scale 1 to 7 (1 is least and 7 being more favorable). Overall attitude toward taking online courses in Physical Education was calculated by summing the four area-specific attitude questions. The students also provided background information on gender, years in the university, level of computer competence, and majors of study.

A total of 370 students (77% females) completed the survey (94% response rate) from the two participating universities. Majority of the study participants (91%) were freshman or sophomore. Only 8.9% of the participant reported having above average computer competence. Most of the participating students are majored in Science (69.2%) and Engineering (24.6%). Table 1 shows the characteristics of the study participants.

<table>
<thead>
<tr>
<th>Variable name</th>
<th># of students</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total participants</td>
<td>370</td>
<td></td>
</tr>
<tr>
<td>Participating University</td>
<td></td>
<td></td>
</tr>
<tr>
<td># 1</td>
<td>134</td>
<td>36.2</td>
</tr>
<tr>
<td># 2</td>
<td>236</td>
<td>63.8</td>
</tr>
<tr>
<td>Subject Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>286</td>
<td>77.3</td>
</tr>
<tr>
<td>Male</td>
<td>84</td>
<td>22.7</td>
</tr>
<tr>
<td>Subject Years in college</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freshman</td>
<td>185</td>
<td>50</td>
</tr>
<tr>
<td>Sophomore</td>
<td>151</td>
<td>40.8</td>
</tr>
<tr>
<td>Junior</td>
<td>20</td>
<td>5.4</td>
</tr>
<tr>
<td>Senior</td>
<td>14</td>
<td>3.8</td>
</tr>
<tr>
<td>Subject self-reported computer competence</td>
<td></td>
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</tr>
<tr>
<td>Beginner</td>
<td>174</td>
<td>47</td>
</tr>
<tr>
<td>Average</td>
<td>163</td>
<td>44.1</td>
</tr>
<tr>
<td>Above average</td>
<td>33</td>
<td>8.9</td>
</tr>
<tr>
<td>Subject’s majors</td>
<td></td>
<td></td>
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<tr>
<td>Economics/Business</td>
<td>2</td>
<td>0.5</td>
</tr>
<tr>
<td>Engineering</td>
<td>91</td>
<td>24.6</td>
</tr>
<tr>
<td>Science</td>
<td>256</td>
<td>69.2</td>
</tr>
<tr>
<td>Education</td>
<td>2</td>
<td>0.5</td>
</tr>
<tr>
<td>Architecture</td>
<td>3</td>
<td>0.8</td>
</tr>
<tr>
<td>Other</td>
<td>16</td>
<td>4.3</td>
</tr>
</tbody>
</table>

The survey results on student's attitude for taking online courses in Physical Education in comparing with the difference based on students’ background information show the following summarized significant findings:

1. Male students had more favorable attitude on taking online Physical Education courses on mental health as well as overall attitude toward taking online Physical Education courses than female students.
2. Students in Science majors had more favorable attitude on taking online Physical Education courses on wellness and nutrition, and mental health as well as overall attitude toward taking online Physical Education courses than students in Engineering and Non-Science majors.

3. Sophomore students had more favorable attitude on taking online Physical Education courses on mental health as well as overall attitude toward taking online Physical Education courses than other students.

4. Finally it is important to notice that the attitude on taking online Physical Education courses did not differ among self-reported levels of computer competence in the students.

The survey results on the comparisons between student’s purposes for taking courses in Physical Education and their background information shows the following summarized significant findings:

1. Students with average computer competence reported taking Physical Education courses for the purposes of improving physical health and mental health compared to the students with above average computer competence, and taking Physical Education courses for the purposes of developing habits compared to students with beginner computer competence.

2. Students in Science majors reported taking Physical Education courses for the purposes of improving mental health, developing habits, and developing social bonding and connections compared to students in Engineering majors.

3. Sophomore students were more likely to take Physical Education courses for the purposes of improving mental health and developing habits than other Junior/Senior year students.

4. Overall the students were less interested in taking Physical Education course for purpose of learning sport and exercise skills.

The survey results on the correlations between the purposes of taking Physical Education courses and attitude toward taking online courses in Physical Education shows the significant finding:

1. Students reported taking Physical Education courses for the purposes of learning sport and exercise skills, improving mental health, developing habits, and developing social bonding and connections had more favorable overall attitude toward taking online courses in Physical Education.

2. Students reported taking Physical Education courses for the purposes of improving mental health seemed to have more favorable attitude toward taking online courses in Physical Education.

3. Students interested in taking Physical Education for improving physical health has less favorable attitude toward taking online courses in Physical Education.
Discussion

Although Figure 2 illustrates the equal balanced knowledge and skill sets among the five possible characters of Physical Education, the survey results suggest that student with different gender, experience in college, and their majors show different favoritism toward certain area of e-learning study in Physical Education: such as most of college students are in favor of taking Physical Education courses for improving physical and mental health and for the purposes of developing active habits, and not for learning sport skills. Therefore, the e-learning curriculum for Physical Education should address these needs, and to offer more courses to reflect these needs among Mind, Spirit, Passion, and Social wellness. As illustrated in the Table 2, male students had more favorable attitude on taking online Physical Education courses on mental health as well as overall attitude toward taking online Physical Education courses than female students; Students in Science majors had more favorable attitude on taking online Physical Education courses on wellness and nutrition, and mental health as well as overall attitude toward taking online Physical Education courses than students in Engineering and Non-Science majors; and Sophomore students had more favorable attitude on taking online Physical Education courses on mental health as well as overall attitude toward taking online Physical Education courses than other students. Therefore, the e-learning curriculum for Physical Education should address more on wellness, nutrition, and mental health.

Surprisingly, the survey result reveals that college students with different self-reported computer competence all have the favorite attitude to take online Physical Education courses.

Applying F-expert system (if-then) rules, a well-known concept in the field of knowledge-based systems, to the concept model of e-learning for Physical Education, the proportion of the knowledge from the five characters of Physical Education could be skewed to construct different scenarios to that college students have more favoritism.

Conclusion

This study proposed a newly constructed concept model for e-learning in Physical Education. The survey results suggest that college student have favorite attitude toward certain areas of Physical Education, especially for physical and mental health and knowledge in wellness and nutrition. The survey also indicates that college students have least favorite attitude toward learning physical activity course online.

References


APPENDIX

Semantic Differential Scale

Introduction:

请先默读下面框内的语句，然后根据你对语句的感觉和形容词意思在五组成对形容词之间打分。请不要留空白，例如：

“Sports always create excitement for me.”
“体育运动总是使我感到兴奋。”

How do you feel about this statement?
你对上面的句子感觉如何？

If you feel good about it, you score your feeling based on the meaning of adjectives below: 7 highest score and 1 lowest score.
如果你感觉很好，可在每对形容词之间根据你的感觉和形容词的意思打分：7 最高，1 最低。

Valuable:   |___ 7 ___|___ 6 ___|___ 5 ___|___ 4 ___|___ 3 ___|___ 2 ___|___ 1 ___| :Worthless
Shallow:    |___ 1 ___|___ 2 ___|___ 3 ___|___ 4 ___|___ 5 ___|___ 6 ___|___ 7 ___| :Deep
Sad:        |___ 1 ___|___ 2 ___|___ 3 ___|___ 4 ___|___ 5 ___|___ 6 ___|___ 7 ___| :Happy
Strong:     |___ 7 ___|___ 6 ___|___ 5 ___|___ 4 ___|___ 3 ___|___ 2 ___|___ 1 ___| :Weak
Bad:        |___ 1 ___|___ 2 ___|___ 3 ___|___ 4 ___|___ 5 ___|___ 6 ___|___ 7 ___| :Good

Please Circle Facts Related to You: 请在下面有关于你个人的信息上画圈：

(1) Your Gender is:     Female  Male
    你的性别是：       女       男
(2) Your Year in College is:   1 year   2 years  3 years  4 yours
    你在校年数是：       1年       2年       3年       4年
(3) Your Computer Skill is:  Beginner  Average Level  Above Average Level
    你用计算机能力是： 初学者       平均水平       高于平均
(4) Your Major Area is:    Arts Business Engineering Sciences Education Sports Design Others:
    你的专业领域是：      文学       经济       工程       科技       教育       体育       设计       其它：______________________________
----- Survey Question Begin -----
———调研问题开始 ———

Sport skill courses taught online via the Internet.
在网上学习运动技术课程。

How do you feel about this statement?
你对上面的句子感觉如何？

Valuable: | 7 | 6 | 5 | 4 | 3 | 2 | 1 | :Worthless
Shallow:  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | :Deep
Sad:      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | :Happy
Strong:   | 7 | 6 | 5 | 4 | 3 | 2 | 1 | :Weak
Bad:      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | :Good

Physical Wellness and Nutrition courses taught online via the Internet.
在网上学习体育健康和营养学课程。

How do you feel about this statement?
你对上面的句子感觉如何？

Valuable: | 7 | 6 | 5 | 4 | 3 | 2 | 1 | :Worthless
Shallow:  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | :Deep
Sad:      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | :Happy
Strong:   | 7 | 6 | 5 | 4 | 3 | 2 | 1 | :Weak
Bad:      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | :Good

Mental and Spiritual Health courses taught online via the Internet.
在网上学习心理和精神健康课程。

How do you feel about this statement?
你对上面的句子感觉如何？

Valuable: | 7 | 6 | 5 | 4 | 3 | 2 | 1 | :Worthless
Shallow:  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | :Deep
Sad:      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | :Happy
Strong:   | 7 | 6 | 5 | 4 | 3 | 2 | 1 | :Weak
Bad:      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | :Good
### Game Management and Social Promotion courses taught online via Internet.

在网上学习运动管理和推广大众体育课程。

| Valuable: | 7 | 6 | 5 | 4 | 3 | 2 | 1 | :Worthless |
| Shallow:  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | :Deep     |
| Sad:      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | :Happy    |
| Strong:   | 7 | 6 | 5 | 4 | 3 | 2 | 1 | :Weak     |
| Bad:      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | :Good     |

### Study Physical Education is for cognitively understanding of sport skills.

学习体育是为了理解运动技术。

| Valuable: | 7 | 6 | 5 | 4 | 3 | 2 | 1 | :Worthless |
| Shallow:  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | :Deep     |
| Sad:      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | :Happy    |
| Strong:   | 7 | 6 | 5 | 4 | 3 | 2 | 1 | :Weak     |
| Bad:      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | :Good     |

### Study Physical Education is for physical health.

学习体育是为了身体健康。

| Valuable: | 7 | 6 | 5 | 4 | 3 | 2 | 1 | :Worthless |
| Shallow:  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | :Deep     |
| Sad:      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | :Happy    |
| Strong:   | 7 | 6 | 5 | 4 | 3 | 2 | 1 | :Weak     |
| Bad:      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | :Good     |
### Study Physical Education is for mental health.
学习体育是为了心理健康。

How do you feel about this statement?
你对上面的句子感觉如何？

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### Study Physical Education is for self-passion.
学习体育是个人爱好。

How do you feel about this statement?
你对上面的句子感觉如何？

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### Study Physical Education is for social bonding and connection.
学习体育是为了社交活动。

How do you feel about this statement?
你对上面的句子感觉如何？

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The Challenges Facing School Autonomy:
Why parents are silent?

Sangkyu KIM

Introduction
In recent years, increasing interests of school autonomy has been linked to the crisis of the school. Although school autonomy is not a tradition in schooling (Eurydice 2007), however, school governance which have associated with parents and community members have become a critical way to shift school performances and share measures on the solution of student problems.

The functions of school autonomy have been designed differently in every country, the notions of school autonomy can also be interpreted variously. For instance, countries which have guaranteed schools’ discretion traditionally may enshrine a high degree of autonomy and accountability as well, while countries which have administered strong school management by state may allow discretion narrowly within frameworks of legislations.

With respect to involving parents, some countries including the US and the UK consider this as measures to improve educational results, while Republic of Korea (hereinafter ‘Korea’) and Japan consider this as deregulation to alleviate strong bureaucratic management. According to literatures, however, parental involvement in education is ascribed as “poor neighborhoods” (Henry 1996), “the passive players as an educational team.” (Kim 2014). Moreover, Fullan (2007) estimates, parents pursue finding meaning in activities related to “their own children rather than in school or system wide.” Compared to these arguments, as if Buchen (2005) found more successful cases, school governing bodies were to be committed to developing “the engagement of parents and community resources.”

In England, although school governing bodies performed critical role in school leadership on the one hand, vacancies of school bodies continue to be an issue on the

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1 Doctoral Program in Graduate School of Education, WASEDA University. The author was in charge of high school policy and local education autonomy policy until 2013 in Ministry of Education of S. Korea.

2 Like Eurydice (2007) states “the school autonomy movement did not really become widespread until the 1990s,” European countries also do not have a tradition.
other hand (the House of Commons 2013). And then the role and responsibility of school governors have been confusing and unhelpful as well. According to reviewing Korean cases, school boards have challenges in terms of appropriate skills and representative characters as well (Kim 2007), especially the existence of ‘yes-man’ caused by confusing their indigenous roles (Kim 2014). In Japanese literatures, also poor operation and the presence of silent members are argued as issues at this time (Nakata 2010).

The study aims to explore on effectiveness of school boards in Korea and Japan. Two countries have criticisms which are commonly strong intervention by state, although their educational systems have less similarities than differences. For example, two countries have similarities in basic education system, in particular, school boards of two countries were effected by school governing body of the UK. Therefore, the criticisms on school boards may exist commonly in Korea, Japan and the UK. This study will try not only to propose keywords for an effectiveness on school autonomy as improving school performance but to help developing good educational governance.

Research Questions
To examine an effectiveness of school governing bodies, the study have set three research questions as followings:

First, what will take to mobilize for participating in parents?;

Second, how do schools reach out to parents and community for school improvement?;

Third, which changes have taken place in schools through school governing body?

Research Methodology

With respect to the methodology of the study, the three types of method will be introduced.

First, an interest of parent and community involvement in schools has been cited in hundreds of academic journal articles over the past decades. To examine the previous studies will be crucial work to understand current conditions of school autonomy obviously.

Second, in Korea and Japan, some questionnaires have been conducting on a nationwide scale by university and research groups. The author analyzes previous

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3 Center for Family-School Partnership policy Research at Seoul National University in Korea conducts surveys and interviews on a nationwide scale
questionnaires. However, considering paper surveys elicit a great amount of nonresponse items (Fleming et al, 2014), and interview will be introduced complement to these items.

Third, interview includes members of parents, community and teachers. According to meta-analysis by De Leeuw (1992), “generally greater for telephone surveys than paper surveys.” Therefore, interviews will be conducted mixing telephone and face-to-face.

**Implication and Conclusion**

School boards can be crucial agents for school improvement, in addition, they are expected significantly to improve parental right in education. Regardless of these expectations, school boards have weak points and poor roles as follows. The one will be problems that concern system. In legislations, two countries have granted broadly to them as school autonomy and school governance as well. On the contrary, however, they are poorly designed accountabilities. Therefore, educational authorities will be crucial points in the issue of how school boards secure accountabilities to parents and communities. The other will be problems that concern their operations. In previous studies, poor operations were argued in two countries, e.g., board members has received little preparation and training for their roles, and/or parents and community members tend to be dealt with not as largely untapped resources who have expertise but as existence who fills in the spot. The study could explore similar results through analyzing questionnaires and interviews. Obviously, parents are significant as their children’s very first educators. Furthermore, considering the fact that school boards are mandated the complete schools kindergarten through high schools regardless of public and private in Korea, they are prospected greatly effective and good governances to make for improving school performance.

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4 In Korea, equal funding and treatment of private (excluding private elementary schools) and public education is enshrined in laws and regulations pertaining to education. In this respect, Korean private school policy is similar to the Netherlands.
Reference


1. Title of the submission: **Integrating Pedagogy and Technology: Preparing 21st-Century College Faculty**

2. Name(s) of the author(s): **Dr. Jim Bernauer, Dr. Anthony Moretti and Dr. Larry Tomei**

3. Affiliation(s) of the author(s): **Robert Morris University**

4. Address(es) of the author(s): **6001 University Blvd., Moon Township, PA 15108**

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6. Abstract and/or full paper:
Integrating Pedagogy and Technology: Preparing 21st-Century College Faculty

The Integrated Readiness Matrix (IRM) began as a dialogue between Larry Tomei and Jim Bernauer regarding that “age old question of how you successfully integrate technology and pedagogy in higher education? What emerged was the IRM that is designed to allow faculty to confidentially assess where they believe they currently reside in terms of pedagogical and technological classroom skills. The pedagogical axis of the IRM is based on the levels of Bloom’s Taxonomy() and the technological axis is based on Tomei’s Technology Taxonomy() See fig. 1. Based on this IRM assessment, faculty will have a foundation upon which to build their own improvement strategies (Bernauer & Tomei, 2015).

While we believe that every faculty member can make progress on their own based on their self-assessment, we also believe that without ongoing organizational support, self-improvement efforts tend to lose momentum as time and circumstances move inexorably forward. Therefore, the challenge is to develop the organizational capacity to assist faculty efforts to move beyond their current pedagogical and technological levels in a way that meets their self-identified goals and in way that is more akin to an independent study model rather than one where the organization decides what is to be learned, when it is to be learned, and how it is learned.
Before we move forward with our discussion regarding the need for organizational support, we state that it is important to provide some additional background regarding both the reason for integrating pedagogy and technology as well as a brief description regarding theories of learning, domains of knowledge, and how the IRM incorporates these critical components.

Why Is the Integration of Pedagogy and Technology Necessary?

It is generally accepted that higher education faculty must develop and demonstrate expertise in scholarship, teaching, and service. Ideally, there should be strong connections among these three strands especially between teaching and scholarship. What we read and write should inform what we teach, and what we teach should help us to read and write more effectively. However, while these goals of the professoriate are interrelated, there is still much that is unique in each one of these components. When we enter a classroom and find ourselves front and center of a group of students, we are in many ways onstage just as if we are in theater. And while there are many similarities between acting and teaching, actors generally have specific lines that they memorize and recite while they are performing their part. Professors also need to perform but their script is typically an ad-lib. Props are generally not expertly introduced at just the right time as a faithful stage crew standing in the wings!

While the need to follow cues and a script give us greater flexibility in what and how we teach, it also puts a heavier burden on us in terms of how we can best impart knowledge to our students. We as teachers need to understand our subject matter deeply, and just like actors, we need to engage our student-audience in such a way that they want
to listen and learn and continue learning after they leave our classroom. Engaging students is basically the art of pedagogy, or androgogy, where the former is used to connote teaching children and adolescents while the latter term is used to refer to teaching adults. In a nutshell, teaching requires that we know not only our content but also how to share this content with our students in ways that engage them and that they can understand.

While teachers in higher education are hired primarily based on their content expertise, teaching students in the classroom requires much more than content knowledge. As discussed above, pedagogy is the art of engaging students in what it is that we are teaching. Socrates, Aristotle, and many others from ages ago engaged in pedagogy and explored different ways of teaching and the challenges faced by teachers of the past are shared by us today here in the 21st century. That is, although the knowledge explosion and the passage of time has certainly resulted in a tremendous increase in what is known as well as a recognition of what yet still needs to be learned, we are still faced with the basic challenge of how should we educate people in our society. In addition, the pervasive presence of technology in all its manifestations in our society, while it offers us the potential for expanding and enriching how we teach, it often brings with it not a small amount of confusion.

In recognition of these challenges, there appears to be a pressing need to help faculty figure out how to disseminate content expertise and ways of looking at phenomena with their students by drawing on learning theory and developing innovative pedagogical approaches that include the creative use of technology. And so, we begin our
discussion by looking at theories of learning and what they offer us in terms of developing effective pedagogical approaches.

Primer on Theories of Learning and Implications for Teaching

Bernauer and Tomei (2015) describe five schools of learning theory that underlie our current understanding of how students learn. These five schools are as follows with their brief conceptions of learning:

- **Behaviorism**: Observable changes in behavior -- not what goes on “in the head”
- **Cognitivism**: Input-process-output information processing model
- **Humanism**: Concerned with the person “as a whole” including emotions
- **Constructivism**: Must be “constructed” by each learner -- student-centered
- **Connectivism**: Networking that extends beyond the “curriculum” to cyberspace

While educational psychologists and sociologists have dissected learning into these five approaches, as Woolfolk (2013) indicates, “because learning is a complex cognitive process, there is no single best explanation of learning” (p. 9). While we support this contention, we think that it is not quite complete and so we offer the following revision-- “because learning is a complex cognitive process, there is no single best overall explanation of learning; however, specific desired learning outcomes match best to specific theories of learning.” This revised statement requires that we are clear about what we want students to actually achieve in terms of growth and accomplishments when they walk out of our classroom doors at the end of the term. Identifying goals and objectives based on what we judge to be of most value provides the necessary foundation for both what we should teach and how we should teach it.
The next section describes one possible configuration of the domains of learning around which we can develop our goals and objectives as well as a selected taxonomy that helps us understand these domains. It should be noted that because technology is so pervasive and important in our society, it is listed as a domain of learning. Technology is also a critical aspect of an expanded definition of pedagogy that includes other approaches such as cooperative learning, projects, and problem-solving.

**The Integrated Readiness Matrix: Matching Theories and Domains of Learning**

Here we list six domains of learning in alphabetical order with a selected taxonomy that seeks to address the specific domain --

Cognitive: Bloom’s Taxonomy
Identity: Marcia’s Concept of Human Identity
Moral: Kohlberg’s Stages of Moral Development
Motivational: Maslow’s Hierarchy of Human Needs
Psychosocial/Emotional: Erikson’s Theory of Psychosocial Development
Technological: Tomei’s Taxonomy

While we are cognizant of the importance of all of the above domains, Bernauer and Tomei (2015) focus specifically on the cognitive and technological domains (Chapters 3-5) in the Integrated Readiness Matrix (IRM). Our rationale was that we thought it important to first focus on the “core” mission of higher education that relates most directly to cognitive development and how technology and pedagogy can be integrated with this domain to assist the professoriate in promoting valued student learning outcomes across curricular areas from the liberal arts to engineering. However,
because human beings and human learners are complex and of “one cloth”, effective instructors recognize that the need to artistically and thoughtfully integrate the motivational, emotional, and moral needs and capacities of students with the act of teaching. In this sense, the IRM is incomplete and awaits further development.

The Integrated Readiness Matrix in Action

The IRM was designed to help college faculty confidentially self-assess where they place themselves in terms of pedagogical and technological expertise. It is then eminently possible for faculty to individually develop an enrichment plan that addresses any perceived weaknesses and therefore to move up to higher quadrants of the IRM. However, social and organizational support go a long way to help us achieve our goals, whether these goals relate to losing weight or gaining expertise in any field of endeavor. Therefore, while we believe that individual faculty can use the IRM to benefit their teaching and their students’ learning, we also think that organizational support coupled with individual initiative offers the most promising and enduring results.

In the next section, we offer a brief description of how we have begun to lay the groundwork for incorporating the IRM into a faculty development initiative at Robert Morris University. In the final section, we invite you to join us in this effort by collaborating with us as you seek to do the same at your own universities.

Robert Morris University launched its Center for Innovative Teaching and Directed Engaged Learning (CITADEL) in 2014. The Center offers programming, resources and support to all full- and part-time faculty at the institution. This fall, the CITADEL established a Learning Community for all interested faculty who were
teaching on the campus for the first time, regardless of whether they were new to higher
education (and therefore had not taught anywhere before) or had previous teaching
experience at other institutions before they joined RMU.

In September, the cohort was offered the chance to take the IRM. The data are to
be used to determine if the instrument needs further refinement. It also is available at any
time to any RMU faculty member, no matter no many years he or she has been in higher
education. Once a faculty member establishes where he or she stands on the matrix, a
series of recorded programs – generally ranging in length from 5-7 minutes – are
available to assist in moving the instructor to the next quadrant and ultimately to the
upper levels of pedagogy and technology.
*Taxonomy of educational objectives. The classification of educational goals.*


Kohlberg, L. (1963). The development of children’s orientations toward moral order:

Sequence in the development of moral thought. *Vita Humana, 6,* 11-33.


Conference Proceedings Submission
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Title: Continuing Professional Education (CPE) and Self-Directed Learning (SDL) in a Digital Age: Implications for Adult Learners and Providers

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**Topic:** Adult Education

**Format:** Paper Session

**Description:** The purpose of this presentation is to discuss the preliminary findings from studies which are exploring the self-directed learning (SDL) experiences, habits, needs and perceptions of a purposive sample of adult learners in a digital age. The presentation will include an overview of key concepts/principles of continuing professional education (CPE), SDL, digital, social and mobile learning. A summary of findings from semi-structured interviews with a purposive sample of health professional adult learners (rural and remote physicians) pertaining to
their SDL habits and the use of digital technologies will be summarized. Key implications for the field of adult learning and CPE providers will be discussed.

Abstract:

Continuing professional education (CPE) is a form of lifelong learning that involves maintaining competence to practice by updating knowledge and skills related to one's professional life. Mandatory CPE has expanded in recent years as a regulatory mechanism and is now quite common across many professional fields. Self-directed learning (SDL) activities are a widely recognized type of informal adult learning across many CPE systems. SDL can be explained as a way in which individuals plan, manage and evaluate their own learning, with or without the help of others. It has been shown to be as effective or better in learning in areas of knowledge, skills and attitudinal domains. Despite this, adult learners report a number of barriers to SDL, including concerns with their access to information (including the Internet) and the ability to use systems effectively to search and locate information relevant to their needs. The latter is particularly important given the increasing use of digital technologies such as the Internet and social media by adult learners. While the use of social media and mobile technologies in adult learning is growing, its value in supporting life-long learning is not well understood. There are limited models describing the SDL habits of adult learners in a digital age and there is limited evidence surrounding the use of social media and mobile technologies in mandatory CPE delivery systems. Further, little research has explored the unique contexts of health professional adult learners working in rural and remote areas, their patterns and habits of SDL and the effect of barriers to SDL on feelings of professional isolation. The presentation includes preliminary data collected from a scoping review and semi-structured interviews with a purposive sample of health professional adult learners. The study findings have implications for informing both post-secondary and adult education to improve the SDL skills of adult learners and enhancing CPE systems to better integrate SDL in a digital age.
What is Expected of Tomorrow’s World Citizens? 
–Rethinking cosmopolitanism and patriotism in global education

The trend of globalisation reinforces the interconnection and competitiveness of modern economic and social reality. The first two decades of the 21st century saw the announcement of a series of policy documents on global education in England and Taiwan. Concerning the terminology for global education, “global dimension” has been a widely employed term in England (e.g. DCSF, 2008; DfES, 2004; DfES, 2005; QCA, 2007) while “international education” is preferred in Taiwan (e.g. MOE, 2012). From these two governments’ policy documents on global education, it is found that they both consider global education as an approach to promote national economic competitiveness within the globalised world (DfES, 2004; MOE, 2012). However, in addition to economic consideration, a more fundamental normative question which has to be taken into account is what characteristics and capacities consist of an ideal world citizen. A dispute underlying the above question is whether it is appropriate to cultivate partial patriotism as the opposite of universal cosmopolitanism within global education. The question arises from potential tensions between the responsibility for others beyond national boundary which is emphasised by cosmopolitanism and the loyalty to and identification with one’s own country which is stressed in patriotism. It is said that partial patriotism will impede the development of universal cosmopolitanism.

A comprehensive debate on the tensions between cosmopolitanism and patriotism can be seen in the volume For Love of Country edited by Cohen (2002). In his reply
to Nussbaum’s (2002) arguing for cosmopolitanism over patriotism, Appiah (2002) proposed “rooted cosmopolitanism” or “cosmopolitan patriotism” (p.22) in order to reconcile the above tensions between cosmopolitanism and patriotism in the same volume. As Kymlicka & Walker (2012) put it, a feasible concept of cosmopolitanism for modern world has to recognise global citizens’ rights to local autonomy. Hence, it is of significance to integrate cosmopolitanism with patriotism which emphasise local autonomy and identities. Since Appiah’s rooted cosmopolitanism integrates both cosmopolitanism and patriotism into his theoretical framework, it is regarded as a relatively comprehensive framework to analyse the two governments’ policy documents on global education.

This paper will first introduce Appiah’s “rooted cosmopolitanism” as an analytical framework for the research. What follows is the comparison of the images of ideal world citizen between England and Taiwan by analysing both governments’ policy documents on global education. The findings will then be presented and discussed, and concluding remarks will be provided at the end.

**Appiah’s Rooted Cosmopolitanism: A conceptual framework**

The fundamental idea underlying Appiah’s rooted cosmopolitanism is that “a world of cultural and social variety” is a “precondition for the self-creation that is at the heart of a meaningful human life.” (Appiah, 2005, p.268). There are three key axes consisting of the conceptual framework of rooted cosmopolitanism: (Appiah, 1997)

1.**liberalism**

Embedding in the core of liberalism is the value of the individual. Appiah (2005) adopted Mill’s concept of individuality which is a necessary part of a well-lived life as the ultimate end of cosmopolitanism he defends. In his reply to Gracia (2006), Appiah (2006b) concludes three senses of individuality: to take responsibility for one’s life (i.e. to exert oneself to live well), a life of individuality (i.e. “who one is”), and the capacities a person exercises and develops in pursuing one’s ideal life. The last one has particularly fertile implications for global education.
2. cosmopolitanism

For Appiah, there exist many values worth living by and we cannot live by all of them. Hence, it is hoped and expected that different people and societies will realise different values. And cosmopolitans commit themselves to pluralism. As Appiah puts it, “[c]osmopolitans think human variety matters because people are entitled to the options they need to shape their lives in partnership with others.” (Appiah, 2006a, p.104) In other words, the variety of human forms of life provides individual choices to create oneself.

3. rootedness / patriotism

Rootedness refers to the loyalty to one local society that is counted as home. Appiah believes that people live best on a smaller scale such as the state, the county, the town, the street, the family as communities. This is because the freedom of creating ourselves requires a variety of socially transmitted ready-made local identities which are constituted by norms, expectations, demands, rights and obligations (Appiah, 1997).

Patriotism means the celebration of the institutions of the state within which an individual lives (Appiah, 1997). The importance of state manifests in its regulation of our lives through forms of coercion which require moral justification. Besides, state institutions are necessary for meeting many modern human needs and have great potential for abuse (Appiah, 1997; 2005). Appiah argues that all of citizens should respect for liberal political culture and the constitutional order it entails. He then defines liberal culture as “respect for the dignity and autonomy of individual persons” (Appiah, 1997, p.634).

Comparisons of Global Education Goals between England and Taiwan

In this section, the researcher will examine two official documents to compare global education goals between England and Taiwan according to Appiah’s framework of rooted cosmopolitanism. The comparison will focus on primary and secondary education.
1. England’s Global Education Goals

England’s global education goals are described in *Putting the World into World-Class Education* published by the Department for Education and Skills (DfES) in 2004. Compared to Taiwan’s white paper on international education focusing on primary and secondary education, the scope this document touches on is much more extensive, including higher education and development education in developing countries. There are three goals indicated in DfES’s (2004) global education document. Amongst the three goals, the first one is most related to primary and secondary education. The three goals and their sub-goals are listed as below.

Goal 1: Equipping our children, young people and adults for life in a global society and work in a global economy

1-1 To instil a strong global dimension (GD) into the learning experience of all children and young people. (There are eight key concepts students need to learn in global dimensions: citizenship, social justice, sustainable development, diversity, values and perceptions, interdependence, conflict resolution, human rights)

1-2 To transform our capability to speak and use other languages.

1-3 To equip employers and employees with the skills needed for a global economy.

   Generic skills for a global economy include:
   1-3-1 The ability to work comfortably in multinational teams
   1-3-2 Knowledge of different business methods, legislation and ways of working
   1-3-3 Understanding and appreciating different cultures
   1-3-4 Feeling confident when working in and with other countries

1-4 To move towards the international mutual recognition and improved transparency of qualifications.

Goal 2: Engaging with our international partners to achieve their goals and ours

2-1 To benchmark our own performance against world-class standards, drawing on best practice everywhere.
2-2 To develop our capacity to engage strategically with a wide range of partners across the world (including promoting international awareness and understanding, and developing an ability to learn from others).

2-3 To work with our European partners to realise the Lisbon goal that the EU should become “the most competitive and dynamic knowledge-based economy in the world”.

2-4 To share expertise and resources in support of the improvement of education and children’s services worldwide, particularly in Africa.

Goal 3: Maximising the contribution of our education and training sector and university research to overseas trade and inward investment

3-1 To promote further expansion in the number of international students at further education (FE) and higher education (HE) institutions, including increasing quality assured overseas outlets.

3-2 To make the UK an international leader in the creative and supportive use of ICT for education.

3-3 To promote the role of our universities as international hubs for learning and research.

3-4 To encourage education and training providers to work internationally in partnership with business.

2. Taiwan’s Global Education Goals

Taiwan’s global education goals are stated in Developing 21st Century Competencies for Our Next Generation published by the Department of Education in 2011 (English version in 2012). The competence indicators of international education for primary and secondary schools were developed based on the four goals and announced in 2012. The four goals are listed as the following.

Goal 1 – National identity

It is our goal, through the exposure of international education, that our youth will be able to further develop a strong national identity. Securely grounded in their own cultural history, our young people will be able to relate to their historic and cultural roots, which make them so unique. Becoming more aware of Taiwan’s place, in
history and within the international community, will enable them to better understand the responsibilities that they have regarding Taiwan and its future.

Goal 2 – International awareness

It is our goal to educate students to become globally literate and proficient citizens, especially in their understanding of the various cultural and global issues that they will have to face. We would like them to respect and appreciate cultural diversity and to be equipped with knowledge and skills needed for effective and successful cross-cultural communication.

Goal 3 – Global Competitiveness

It is our goal that through cross-cultural and international education learning opportunities, students will be able to make cross-cultural observations and to reflect on cultural diversity and cross-cultural communication.

Through the promotion of international education, schools will be able to assist their students with foreign language learning and proficiency, multicultural knowledge and effective cross-cultural communication skills.

Goal 4 – Global Responsibility

It is our goal to promote among Taiwan’s primary and secondary students, respect towards diverse ethnic, geographic and cultural population through an international education. Schools can assist students in cultivating a sense of responsibility towards the global community. Our primary and secondary students should be aware of their responsibility to assist and to maintain world peace, support and protect human rights, and to conserve our natural resources.

3. Comparisons of Global Education Goals between England and Taiwan

After reviewing both governments’ policy documents on global education, the research compares England’s global education goals with Taiwan’s according to Appiah’s framework of rooted cosmopolitanism consisting of liberalism, cosmopolitanism, and rootedness/patriotism. The result is demonstrated in Table 1.
<table>
<thead>
<tr>
<th></th>
<th>England</th>
<th>Taiwan</th>
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<tbody>
<tr>
<td>liberalism</td>
<td>• GD key concepts (Goal 1-1)</td>
<td>2-3-3 具備跨文化的溝通能力 (gaining intercultural communication competence)(Goal 2)</td>
</tr>
<tr>
<td></td>
<td>- Citizenship</td>
<td>3-2-1 檢視個人在全球競爭與合作中可以扮演的角色 (finding roles one can play in global competition and cooperation)(Goal 3)</td>
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<td></td>
<td>- Social Justice</td>
<td>3-2-2 具備參與國際交流活動的能力 (gaining the competence for international exchange activities)(Goal 3)</td>
</tr>
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<td></td>
<td>- Human right</td>
<td>3-3-2 具備解讀全球勞動市場的能力 (gaining the competence of understanding global labour market)(Goal 3)</td>
</tr>
<tr>
<td></td>
<td>- Conflict resolution</td>
<td>4-1-1 認識世界基本人權與道德責任 (knowing basic human rights and moral responsibility in the world)(Goal 4)</td>
</tr>
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<td></td>
<td>• Capability to speak and use other languages (Goal 1-2)</td>
<td>4-1-2 瞭解並體會國際弱勢者的現象與處境 (understanding and realising the phenomena of disadvantage and disadvantage groups’ situation)(Goal 4)</td>
</tr>
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<td></td>
<td>• Generic skills for a global economy (Goal 1-3)</td>
<td>4-2-2 尊重與維護不同文化群體的人權與尊嚴 (respecting for and maintaining different cultural groups’ human rights and dignity)(Goal 4)</td>
</tr>
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<td></td>
<td>- ability to work comfortably in multinational teams</td>
<td>4-3-1 辨識維護世界和平與國際正義的方法 (identifying methods for maintaining world peace and international justice)(Goal 4)</td>
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<td></td>
<td>- Knowledge of different business methods, legislation and ways of working</td>
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<td></td>
<td>- Feeling confident when working in and with other countries</td>
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</tr>
<tr>
<td>cosmopolitanism</td>
<td>• GD key concepts (Goal 1-1)</td>
<td>2-1-2 體認國際文化的多樣性 (realising the diversity of international culture)(Goal 2)</td>
</tr>
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<td></td>
<td>- Diversity</td>
<td>2-1-3 具備學習不同文化的意願與能力 (obtaining the willingness and competence for learning different cultures)(Goal 2)</td>
</tr>
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<td></td>
<td>- Values and perceptions</td>
<td>2-2-2 尊重與欣賞不同文化的價值 (respecting for and appreciate the values of different cultures)(Goal 2)</td>
</tr>
<tr>
<td></td>
<td>• Generic skills for a global economy (Goal 1-3)</td>
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<tr>
<td></td>
<td>- Understanding and appreciating different cultures</td>
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</tbody>
</table>
Findings and Discussions

1. In the axis of liberalism, the concept of individuality as capacity to create one’s own life is emphasised by both governments. Individuals’ capacities to participate in global economic competition and labour markets are taken into account. In order to participate in global society, the importance of intercultural communication competence is also recognised by both governments. These capacities can facilitate individuals obtain and utilise each potential options and resources provided in a global world to creatively construct their lives. Furthermore, both governments paid much attention to the value of each individual. This can be found in both governments’ emphases on the learning of the concepts of social justice and human rights.

2. In the axis of cosmopolitanism, both governments stress the concept of cultural diversity. Knowledge of other cultures, ability to learn from other cultures, respecting for other cultures, and willingness to learn other cultures are all important competence elements with which both governments attempt to equip future generations for cultural diversity of the world through global education. The more one learn from the diverse cultures of the world, the more options and resources he or she can choose and utilise to create individual life.
3. A significant discrepancy between England and Taiwan is in the axis of rootedness/patriotism. In Taiwan’s policy document on global education, national identity and awareness are prioritised as a most fundamental and important competence which students should obtain in global education. This can obviously observed by the fact that national identity is officially designated as the very first goal amongst the four. However, the case of England is completely opposite to Taiwan’s. There is no clue to the emphasis on the development of students’ national awareness or identity in England’s official document on global education.

4. Even though Taiwan’s government especially emphasises the importance of cultivating students’ national awareness and identity, it should be carefully noted that there is no clear hint of explicit stress on patriotism in its policy document on global education. In other words, what Taiwan’s government stresses is rootedness, which is defined by Appiah as loyalty to one’s local society, rather than patriotism which refers to the respect for liberal political culture and the constitutional order liberal political culture entails in Appiah’s sense. Having said that, the respect for liberal political culture and the constitutional order is included in the curriculum of social studies in Taiwan (please refer to the Grades 1-9 Curriculum Guidelines – Social Studies Learning Area). In England, the respect for liberal political culture and the constitutional order is included in the citizenship programmes of study for key stage 4 (DfE, 2013).

5. To say that there is no emphasis on national identity in England’s official document on global education does not mean that overall English education system neglects the development of students’ national identity. As indicated in a global education document Developing the Global Dimension in the School Curriculum published by DfES (2005), the first aim of the National Curriculum which has a linkage to global education includes not only global dimension of students’ lives but also Britain’s heritage in order to develop students’ sense of identity. The original statement reads as follows:

The school curriculum should contribute to the development of pupils’ sense of identity through knowledge and understanding of the spiritual, moral, social and cultural heritages of Britain’s diverse society and of
the local, national, European, Commonwealth and global dimensions of their lives. (DfES, 2005, p.3)

The above statement suggests that England government does take national identity into account when setting its educational goals. However, it is also clear that England government does not give national identity priority amongst a variety of identities and educational goals. It is multi-layered identity from the local to the global which is emphasised in the National Curriculum instead.

**Concluding Remarks**

According to the above analysis, the ideal image of a world citizen portrayed by the global education goals set by England government is a person who has the sense of moral responsibility for universal values, such as human rights and social justice, the capacities for participating in global society and labour markets in order to extend the options and resources one can select and employ to create his or her life, and a willingness to recognise, respect for, learn, choose and utilise the diverse cultures of the world which are regarded as important resources for the construction of an individual life project.

The same ideal image of a world citizen also represented in Taiwan’s global education goals. More than that, Taiwan’s government especially emphasises the importance of national identity, including one’s own responsibility to the state, local identity, and national awareness. And the national identity is based on cultural identity and regarded as an ultimate end of global education. By contrast, the lack of the emphasis on national identity is not only found in the policy document by England government, but also can be discovered in educational practitioners’ perceptions of global education. Pike’s (2000) observation of British global education practitioners’ understanding of global education indicates that the term is perceived to be in the common interests of all people and the planet, and their nation, United Kingdom, is rarely mentioned.

It is worth making a deeper inquiry into the reason why Taiwan’s government emphasises the priority of national identity. At first glance, the term “international
“education” employed by the government reveals a hint of the rationale for the prioritising of national identity. As Frey and Whitehead (2009) put it, different from global education which seeks to investigate common human problems that transcend national boundaries, the essential concern of international education is the interest and action within nation-states. To put it differently, in terms of international education, the best point of departure to understand the world is own country as yardstick by which others’ countries’ similarities and differences are compared. This own-country-centred awareness might be an aftermath of anxiety for the homogenizing power exerted by globalisation, or without its ideological mask, Americanization or Westernization (Waters, 2001). Another reason for prioritising national identity could be attributed to Taiwan’s unique relationship with the People’s Republic of China (PRC). Due to the lack of recognition of its “nationhood” from the international community after losing its membership in the United Nations to the PRC in 1971, Taiwan’s government is actively and determinedly constructing and reinforcing its national identity through education (Law, 2004).

The prioritising of national identity also invokes a contention about how to reconcile a kind of universalism stretching our obligation to others beyond state border with a form of partiality limiting our obligation to those whom we share some sense of community and collective memory. According to Appiah (2005), the equal treatment of all is the responsibility of state, and states are appropriate domain of moral concern narrower than the human horizon. Hence, what all citizens in their own countries have to do is to respect for liberal political culture (i.e. the respect for individuals’ dignity and autonomy) and the constitutional order it entails. This is what Appiah calls “patriotism”. In short, cosmopolitan’s moral universalism can be achieved through the mechanism of state. If Appiah’s idea is desirable and feasible, global education should have a close cooperation with citizenship education.

References:


Designing Effective Clinical Partnerships

A Workshop Presentation for

The 14th Annual Hawaii International Conference on Education

Submission Number: 138

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Honolulu Hawaii
Abstract

The Marietta College Education Department has designed and implemented a successful clinical partnership model that has aided in them being named one of the top teacher education programs in the state of Ohio. This model reflects changes in teacher preparation, k-12 student needs, and best practices for teacher candidates placed in the schools for clinical internships. Presenters will share the various partnerships created, involvement of mentor teachers, sharing of resources between the schools and Marietta College, as well as the manner in which Marietta College faculty are embedded within the partnership schools. Presenters will also share information regarding how these partnerships have positively influenced the local schools.

Keywords: School Partnerships, Clinical Internships
Executive Summary

The Professional Learning School Partnership program at Marietta College has yielded numerous opportunities for teacher candidates, Marietta College faculty, and K-12 educators at the partnership schools. Activities such as resource sharing, planning and decision-making, modeling best practices, and developing programs to meet the needs of public school students and pre-service teachers have provided valuable opportunities for growth and enrichment. Each individual partnership has a unique focus, meeting specific needs and fostering opportunities for the teacher candidates, public school students, K-12 educators, and faculty involved. The individual partnerships focus on early childhood education, fourth and fifth grade endorsements, literacy, intervention, middle school methods, and early field experiences in the freshmen year. Highlights of each partnership will be discussed, including the planning process, opportunities and challenges, the role of mentor teachers and embedded faculty, on-site course meetings, resource sharing, and training opportunities. Finally, initial information regarding the positive influences of the partnership program on the local schools will be discussed.

Partnership Overview

The early childhood education partnership with Harmar School is one of the first programs implemented as part of the clinical partnership model. Dr. Cathy Mowrer, serves as the embedded faculty member at this school and will examine the creation of this partnership, partnership growth throughout the past few years, special programming and resource sharing, and the creation of a year-long pre-internship/internship experience for early education majors at the school.
Literacy education coursework for Marietta College pre-service teachers has been held at two local elementary schools, Washington and Phillips. Both are within walking distance of the college, allowing pre-service teachers to work with students in both large and small groups throughout their literacy coursework. Dr. Carole Hancock serves as the embedded faculty member for literacy. In addition to coursework, methods, and diagnostics the literacy partnership includes a local Literacy Night in which pre-service educators prepare materials for students and parents. In addition, the Phillips partnership is hosting the first year field students for the freshmen initial field experience beginning in the 2015-2016 school year.

Dr. Bill Bauer serves as the embedded faculty member at the Beverly Center School for the Marietta College intervention licensure program. Coursework including diverse learners, behavior management, and instructional methods occurs in conjunction with this partnership. Pre-service teachers participate in the school-wide intervention program, inclusion settings, and professional development offered by the school. The embedded faculty member in turn delivers both formal and information staff professional development.

Middle school methods coursework is taught in conjunction with Jackson Middle school. Dr. Amanda Knapp-Witt serves as the embedded faculty member at the middle school, teaching coursework on-site in conjunction with mentor teachers who allow students to apply theory learned in coursework directly into the classroom. Middle school methods students interact with a variety of educational professionals in the school in addition to classroom teachers and interventionists, including administrators, the counselor, the school nurse, and the media specialist to learn about the unique needs of emergent adolescents and how the middle school team concept supports those needs.
The fourth and fifth grade endorsement for elementary education takes place at Belpre Elementary. Dr. Cathy Mowrer serves as the embedded faculty member at Belpre, working with K-12 educators to implement the necessary experience to prepare early childhood majors to obtain the fourth/fifth grade endorsement for their licensure. Dr. Mowrer teaches coursework and supervises clinical experience at Belpre as well as Harmer to provide elementary pre-service educators with as much experience as possible in the classroom setting.

**Partnership Components**

Components of these successful partnerships will be discussed, beginning with information regarding the planning process, assessing partnership development, and characteristics of successful partnerships. The importance of a memorandum of understanding to clarify the roles and expectations of both the higher education and public education parties with regard to resource sharing, pre-service teacher placement, and professional development opportunities will also be discussed. The individual roles of mentor teachers and embedded faculty with regard to pre-service educator responsibilities, on-site course meeting locations, interactions with K-12 students, professional development for school staff, and opportunities to work as part of the school community will be examined.

Clinical partnerships provide numerous benefits for all parties involved, but as with any program there are challenges associated with implementation as well. Challenges common to the partnership implementation process in general will be discussed, as well as unique challenges associated with each partnership, since each school has a specific focus with inherent opportunities for growth and development. Finally, initial information regarding the positive influences of the clinical partnership program in the K-12 partnership schools will be examined.
Increasing Student Engagement in Higher Education

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Abstract

Teachers in higher education are faced with the challenge of engaging their students. The role of the teacher is to help students interact with the content, and have them create their own knowledge. Research shows that using effective teaching methods can stimulate student engagement, and that student engagement is associated with positive learning outcomes.

Consequently, the purpose of this study is to learn more about student engagement, and what can be done to increase student engagement in higher education. Current literature was reviewed, and focus groups were held to gain further insight. This study offers numerous solutions to increase student engagement including a framework of principles, and effective teaching methods.

*Keywords:* student engagement, higher education, teaching methods
Introduction

One of the challenges teachers face in higher education is that of engaging their students. Teaching requires not only a command of the subject matter, but just as important, effective teaching methods that are necessary to engage their students. However, some beginning teachers entering higher education are not prepared to teach (Lail, 2009). They use methods based on certain principles from what they have been exposed to, or by how they were taught, influencing the way they teach their own students. These methods are not necessarily effective for teaching and engaging students in higher education. Research has shown that using effective teaching methods can stimulate student engagement, and that engaged students are good learners (Bryson & Hand, 2007; Jang, 2008; Troisi, 2014). Knowing more about student engagement, and what can be done to increase student engagement might be useful to those individuals new to teaching in higher education.

In the spring semester of 2015, focus groups were held among college students to seek their perspective on student engagement. These groups agreed that there is more teachers can do to increase student engagement. Consequently, the purpose of this paper is to understand and learn what teachers can do to influence, and therefore, increase student engagement. First, a comprehensive literature review will be provided on the concept of student engagement including instructional methods and techniques. Second, results from the focus groups will be shared. Last, an action plan for increasing student engagement in higher education will be presented based on analysis of the literature, and results from the focus groups.

Area of Focus Statement

The purpose of this study is determine effective teaching methods to increase student engagement in higher education. Student engagement has been defined as involving students in
meaningful academic activities (Delialioğlu, 2012). The teacher’s role is to help students engage and interact with the course material so that students can create their own knowledge (Lumpkin, Achen, & Dodd, 2015). Results from the 2008 National Survey of Student Engagement at one university found that high levels of student engagement positively contributed to cumulative GPA and students’ perception of their overall academic experience (Webber, Krylow, & Zhang, 2013). Teachers in higher education are faced with the challenge of engaging their students. Therefore, by answering the following research questions, successful teaching methods should be uncovered that would aid in increasing student engagement for teachers in higher education.

**Research Questions**

1. How is student engagement perceived among college students?
2. What can teachers do to influence student engagement?

**Literature Review**

Researchers have described student engagement as a multidimensional phenomenon. Most definitions have included at least both behavioral and affective components (Handelsman, Briggs, Sullivan, & Towler, 2005). Others have noted student engagement as an interpersonal component where interactions with teachers, and other students were found to be an important part of the learning experience (Lumpkin et al., 2015). Hendelsman et al. found evidence of four dimensions of student engagement: general learning skills, emotional involvement with class material, participation/interaction with faculty and peers, and performance. Ahfeldt, Mehta, and Sellnow (2005) characterized student engagement as being actively involved by asking questions, or working collaboratively with other students.

Wittrock’s (1990) generative theory of learning states that students learn better when they are engaged during the learning experience. Answering questions and receiving feedback
increases students’ attention so they are more likely to encode the presented course material. By answering questions students are better able to gauge their level of understanding. Campbell and Mayer (2009) found that students who were engaged during a lecture performed better in the course compared to those students who were not engaged. Students who were engaged answered questions that were poised by the teacher who in return provided feedback. Based on these results, they suggested that teachers should consider using a questioning procedure during college lectures to promote student engagement in which a few lecture-related questions are asked by the teacher, answered by the students, and then feedback is given from the teacher.

Webber et al. (2013) used Astin’s theory of involvement (1993) and Pace’s theory on quality of effort (1987) as their theoretical framework in their study on student engagement. Astin’s theory of involvement (1993) and Pace’s theory on quality of effort (1987) address the issues of student involvement and engagement. The idea is that students will have a greater experience from college based on the time and effort they devote to their college activities. Time refers to how often a student engages, and effort consists of how fully the student devotes into the activity. Webber et al. found that students who reported more frequent engagement in academic and social activities earned higher grades, and reported higher levels of satisfaction with their college experience. They indicated that students may benefit with increased academic knowledge as well as personal and social skills in a collaborative learning environment that is both challenging and supportive.

Schlenker, Schlenker, and Schlenker (2013) viewed student engagement from a psychological perspective. They used the triangle model as their theoretical foundation. The triangle model was developed to deal with the nature and implications of accountability in interpersonal relations. According to the triangle model, student engagement is a direct function
of the strengths of three factors: prescription clarity, personal control, and personal obligation. They found that setting clear goals, teaching learning strategies, and encouraging students to believe in themselves, along with stressing the importance of personal obligation contributed to predicting academic engagement. Engagement, in turn, predicted academic success.

Bryson and Hand (2007) proposed that there are different levels of student engagement that lies on a continuum from disengaged to engaged, and that the same student can experience different degrees of engagement. Based on focus group discussions, student engagement was comprised of various levels of active participation in class activities. Enjoyment, enthusiasm, reading for pleasure of learning itself, and reading more than required about a subject were described as elements of student engagement. The disposition of the teacher appeared to influence the disposition of the student. The teacher’s enthusiasm about a subject, and teaching process increased student engagement. They concluded that students are more likely to engage if their teachers are engaged with them, and the teaching process.

Troisi (2014) investigated whether student management teams (SMTs) would be effective in increasing student engagement, and academic performance. A student engagement team is comprised of a group of three to five students who serve as liaisons between students in the course, and the teacher. The SMTs regularly meet with the teacher to improve the learning environment within a course. They work collaboratively with the teacher by improving communication, course content, evaluation, and assessment techniques. Students are either selected by the teacher, or they volunteer to be a member of the team. Troisi found that members of the SMTs were more engaged, and performed better in their courses.

According to the identified regulation model, teachers can increase student engagement by providing them with a rationale that they can identify with, and is of use to them. Studies have
shown that students will tend to invest more effort, and achieve more when a lesson is perceived
to have personal importance to them (Miller & Brickman, 2004; Shell & Husman, 2001). Jang
(2008) found that students’ engagement, motivation, and overall learning experience was
increased by providing a rationale in a supportive way.

Zeeman and Lotriet (2013) described a teaching approach based on the theoretical
framework of Heathcote’s (Heathcote & Bolton, 1995) ‘mantle of the expert.’ The ‘mantle of the
expert’ stresses the importance of allowing students to take part in making decisions in order for
them to become invested in the learning experience. The learning experience is based on a
partnership of generated knowledge and understanding. They demonstrated that by careful
reframing of the learning environment, students are not only engaged, but they can achieve a rich
learning experience.

Zhang, Shi, Yun, Li, Wang, He, and Miao (2014) investigated the role that self-regulation
plays in college students’ academic engagement and burnout. Self-regulation was defined as
being comprised of two kinds of process-oriented motivation styles: locomotion mode and
assessment mode. Locomotion mode was described as being goal-oriented, and assessment mode
referred to evaluation of alternatives in order to maximize progress once the activity has begun.
When students are making critical evaluations, and assessing where they are at in reaching that
goal, they are in the assessment mode. When students are focused on a goal, and making
progress, they are in the locomotion mode. Zhang et al. found that locomotion mode was
negatively associated with academic burnout, and positively related to academic engagement,
while the assessment mode was positively related to academic burnout, and negatively associated
with academic engagement. They suggested that teachers might be able to prevent burnout and
promote student engagement by encouraging students to apply goal-setting strategies, and have them focus on the learning experience, and not the final grade.

According to Doyle (2008) creating learner-centered environments can sustain, and promote student engagement. In learner-centered environments, students become active in their learning experience, and are now responsible for their own learning. Through an active research project, Lumpkin et al. (2015) assessed how students perceived active learning strategies that included working in pairs, writing a variety of exploratory assignments, and having small group discussions. Quantitative and qualitative data revealed that students valued participating in engaged learning activities. These students believed that working in pairs and having small group discussions positively impacted their learning. These students indicated that in-class writing, and small group discussions facilitated their willingness to answer questions in class. Lumpkin et al. suggested that teachers should incorporate a variety of more active learning strategies, and approaches to meet the academic needs of their students. Furthermore, they believed that soliciting anonymous student perceptions provided valuable insight for ways to improve course design and instructional approaches.

Hourigan (2013) developed a simple, and flexible model of active learning that promotes student engagement, known as ARC (application, response, collaboration). ARC encourages students to be present and engaged, and allows teachers to experiment with pedagogy. The key principles behind ARC were to have students make connections, respond and reflect, and collaborate with their peers. Activities, planned and unplanned, are weaved into the course that allow students to apply concepts or theories. Individually students would think through a theory, then collaborate in small groups, and discuss in class. Students would also apply the theory with real-world examples. Using a multitude of stimuli, such as an audio clip, or simply art, the
teacher would ask students to react, and reflect. This method had a positive impact on student engagement. Furthermore, syllabus are designed to recognize, and reward active student engagement. Students would receive small amounts of credit for active engagement, but in total would account for a substantial portion of each student’s grade.

Chickering and Gamson (1987) presented a framework that could be used to increase student engagement. According to this framework, students are more engaged when the instruction (1) increases student-teacher interaction, (2) stimulates cooperation among students, (3) encourages active learning, (4) provides timely feedback, (5) requires students to invest time in their assignments, (6) establishes high expectations, and (7) respects diverse talents and ways of learning.

Blended learning has incorporated these seven principles. Based on the literature, the most popular definition of blended learning is the combination of face-to-face, and online learning environments (Delialioğlu, 2012). These mixed modes of learning environments have potential to increase student engagement. For instance, Neumann, Neumann, and Hood (2011) examined the integration of technology during lectures in statistics from within a blended learning framework. They incorporated the use of technology that was comprised of online access to lecture notes, multimedia presentations, computer based simulations of statistical concepts, animations, and the use of SPSS statistical software package during the lectures. The results showed three global effects on student learning and engagement: practical application, understanding, and positive attitudes.

Junco, Heibergert, and Loken (2011) also used Chickering and Gamson’s (1987) framework in promoting student engagement. Their study examined the effect of using Twitter as part of an educational intervention on student engagement. They found that Twitter improved
contact between instructor and students, encouraged collaboration, promoted active learning,
provided prompt feedback, aided in completing tasks on time, communicated high expectations,
and showed respect for diversity. Students and instructors were active participants and highly
engaged in the learning process.

An additional promising method that has been effective in increasing student engagement
is active learning. With active learning, students become actively involved searching for
information to increase their comprehension of the course material. Delialioğlu (2012) found that
students were more engaged with active learning strategies when they were working in a
problem-based learning environment in comparison to the lecture-based learning.

Schrand (2008) encouraged educators to use technologies for active forms of student
learning, and not as “shovels” of passive learning in presenting course content (p.78). He created
interactive multimedia exercises that promoted active learning. Previous in-class exercises
required students to take slips of paper with different phrases, and assign them into one of two
categories: U.S. cultural value and non-U.S. cultural value. He used animation software in
creating exercises, in which all moving parts were digitalized, and programmed to be dragged,
and dropped on the computer screen. These exercises contributed to lively classroom
participation, sense of student ownership, element of play, and public display of student
performance. Student engagement was viewed as active collaborative participation in which
students practice, build, and create.

Teachers who use technology as a tool appeared to experience success in promoting
student engagement. Chen, Lambert, and Guidry (2010) investigated the impact of Web-based
learning technology on student engagement, and self-reported learning outcomes in face-to-face,
and online learning environments. Data for this study came from the 2008 National Survey of
Student Engagement (NSSE). Based on 17,819 respondents, they found that there is a positive relationship between students who engaged in course-related technology, and learning outcomes, and that the use of technology has a stronger impact earlier in the college experience. Williams and Chinn (2009) also found that online assignments using Web 2.0 technologies increased student engagement, and contributed to the level of connectivity.

Based on the review of literature, student engagement appears to have many meanings, and it is clear there are a variety of methods that teachers can use to increase student engagement. Research has shown that student engagement is positively associated with learning outcomes (Delialioğlu, 2012; Schlenker et al., 2013; Troisi, 2014; Webber et al., 2013). In order to obtain a deeper understanding of student engagement in higher education, college students were asked to provide their personal accounts of student engagement, and what teachers can do to promote student engagement.

**Data Collection/Data Sources**

In the spring semester of 2015, two focus groups were held among college students to seek their perspective on student engagement. A convenience sample of undergraduate students was selected from a private university in the western United States. The participants were told that any information that is obtained with this study, including their identities, will remain anonymous, and that their participation was voluntary. They were willing, and interested to provide their viewpoints. No harm was done to these participants.

A total of 10 participants participated in the focus groups. There were two freshmen, one sophomore and seven graduating seniors. The two focus groups were conducted at different times and locations. The author conducted the first focus group with six of the participants, and her teaching assistant conducted the second focus group comprised of the remaining four
participants. Each of the sessions lasted approximately 30 minutes. Participants in the first focus group were asked the two research questions: what is student engagement, and what can teachers do to influence student engagement. Participants in the second group were only asked the second research question. Data from the focus groups were taken directly from notes that each of the facilitators recorded at the time of the sessions. The researcher then reviewed the transcriptions, and generated the results based on the participants’ responses to the research questions. Summary of these findings were given to the participants to validate. The participants agreed with the findings.

**Data Analysis and Interpretation**

The definition of student engagement among these participants was not that different from the literature review. These participants characterized student engagement in terms of behavioral, interpersonal, and affective components. From the behavioral perspective, student engagement was described as being present and attentive. Students who are pre-occupied on their computer, or phone are definitely not engaged. These students are not present or attentive. They indicated that eye contact was a telling indicator whether students are engaged, or not. From the interpersonal perspective, both focus groups mentioned that the relationship and interaction among the teachers and their peers have a positive impact on student engagement. These same participants indicated that students who participated and contributed to the classroom discussion were definitely engaged in the learning experience. From the affective perspective, enjoyment was added to the definition. In their words, student engagement is “liking what you are doing.” As one participant indicated, student engagement is “what you make it to be.”

When the participants were asked what teachers can do to influence student engagement, the responses were similar to the suggestions made by contemporary scholars. These participants
indicated that teachers need to get students involved. Teachers should not rely on just one teaching method. They should use a variety of teaching methods. In addition to lectures, teachers should incorporate interactive, and fun activities that are related to the course material. For example, one participant mentioned the use of multimedia that has students using “clickers” to answer questions relating to the topic. A few participants indicated that teachers should teach from their hearts, and not the textbook. The textbook should be used as a resource. Teachers should create group, and project-based activities that promote active and collaborative learning. Another participant indicated that setting up the classroom in a u-shape structure can promote student engagement. Teachers can also make student participation a part of the student’s grade.

Both groups agreed that there is more teachers can do to increase student engagement. They stated that teachers need to involve, motivate, and challenge their students. They also need to create a safe environment for learning. Teachers need to remain stern, but positive. For example, participants from the first focus group referred to one particular teacher who “expects” involvement from her students. She promotes participation among her students by asking a lot of questions. She is clear about the assignments, and her students know that all of the readings need to be completed prior to class. She provides feedback, and makes learning fun, and interactive. As Bryson and Hand (2007) indicated, students are most likely to engage if their teachers are engaged with them, and the teaching process.

**Action Plan**

The findings from this study suggest that in order to increase student engagement in higher education, teachers need to get students actively involved in their learning experience by incorporating relevant, and enjoyable activities that promote student-teacher interaction, and student teamwork. Teachers need to create a safe learner-centered environment that respects
diverse talents, and ways of learning. They need to set clear goals, establish high expectations, and provide timely feedback. These recommendations are based on the review of literature, and results from the focus groups.

Teachers should also recognize that there are different components of student engagement, and that there are a variety of teaching methods that can increase student engagement. Behaviorally, teachers can provide a rationale behind the lesson that is being taught to engage students (Jang, 2008). Hourigan (2013) suggested that student engagement could account for a portion of each student’s grade. According to Campbell and Mayer (2009), incorporating a questioning procedure during lectures, and providing immediate feedback would also aid in increasing student engagement. From the interpersonal perspective, there were quite a few recommendations. Troisi (2014) suggested creating student management teams. Zeeman and Lotriet (2013) recommended allowing students to become stakeholders in the learning experience. Finally, Junco et al. (2011) introduced Twitter as a tool that teachers can use to promote collaborative learning, and increase student engagement. Addressing student engagement from the affective perspective, Schrand (2008) recommended incorporating interactive multimedia that is not only fun, but promotes collaborative learning.

Engaging students in higher education does not need to be challenging. Chickering and Gamson (1987) proposed seven principles for good practice in higher education, all of which are related to student engagement. A framework of principles, and suggested teaching methods have been presented in this paper. Research has shown that student engagement is associated with positive learning outcomes, and there are effective teaching methods available to those individuals new to teaching in higher education (Handelsman et al., 2005; Zeeman & Lotriet,
These teaching methods are based on certain principles that are effective in increasing student engagement.

This study is only a beginning. Some teaching methods may be less effective than others depending on the learning environment and course content. Additional research should be done to explore the degree of effectiveness of these proposed methods. The selection limitation of focus group participants may pose some constraints for students’ perceptions, values, attitudes, and personal account of student engagement. Including participants with varying degrees of motivation may reveal additional findings. Future researchers should continue to explore additional teaching methods that not only increase student engagement, but has a positive influence on the students’ overall academic experience. Teaching is an art, and requires an inventive mind (Berliner, 1993).
References


Motivating Students through Cooperative Projects in General English Classes
Abstract:

The purpose of this paper is to find out the effect of cooperative project in English class. Freshmen are eager to improve their English. In the General English classes, students are encouraged to make cooperative projects. This is an ongoing project so that the result of this study can be found at the end of the semester. While they are making their video or audio projects with their group members, they can use English to communicate with each other. Group projects can be the great chance to create new interpersonal relationship. Most students do not interact with students from the different majors in the elective classes.

1. Background of the Study

At H University in Korea, General English is three hour class per week. This is an elective subject however most students take General English 101 and 102 in each semester. In English class, students are supposed to develop their communicative competence. In the global society, they need to communicate with other people around the world. The medium of communication is English. Students are encouraged to improve four language skills.

There are around 30 students in each class. The purpose of General English is to provide an atmosphere for students to use English to communicate with each other. The academic ability of the students is relatively low; however, most of the students are motivated to improve their English. At the end of the semester, students are supposed to express their thoughts and ideas in English. The researcher/instructor tries to use various effective methods to motivate students. It is three hour class once a week. During the first two hours, students do ice breaking activities, cooperative work and presentation. In the last one hour, students do their individual work and the researcher/instructor goes around the classroom to monitor and help students. I particularly concentrate on shy students who need more help. Professors’ special attention is very important to the students. One piece of warm remarks by the professor can make a lot of difference to the students.

They are encouraged to discuss their projects with their group mates. Students can form the group of three or four to complete their group project. During the class, students can work together with their group members to complete certain task.

Students are supposed to meet the instructor at least once during the semester. Having a conference with the students is necessary to figure out students’ progress and problems. I would like to provide the best atmosphere to study and learn English.
2. Advantages of cooperative work

Students can develop interpersonal communication skill through cooperative work. Group members will have responsibility while they are doing cooperative project. The purpose of cooperative work is to enhance learning.

3. Requirements of the class

a) 1 video or audio project

Students are required to produce one video or audio project with their group members. They have to present their work at the end of the semester.

b) Visiting English speaking zone once a week or taking extracurricular classes

Students are encouraged to spend some time at English speaking zone where native speakers are around to help them. There are a couple of extracurricular classes run by native speakers such as cooking classes. Some students enjoy making projects and visiting English speaking zone. The more time students spend at English speaking zone, the better they can speak English.

4. Research

The following questionnaire will be used to find out students’ reaction about the class.

a) Do you like to visit English speaking zone?

b) Is visiting English speaking zone helpful for you to improve your English?

c) Are you able to communicate with native speakers?

d) Do you like to do cooperative project with your group members?

e) What are the advantages of cooperative project?

f) Do you like to make video projects?

g) Do you prefer to make audio projects rather than video projects?

5. Discussion

The deadline of the each project is the end of the month. Students can submit their recording or video project through kakao which is a smartphone application. The purpose of
the group project is to make students use more English in the comfortable atmosphere. The researcher tried to interview everyone after the class. Some students were shy to express themselves in the classroom. When they had a conference with the researcher, they expressed their opinion freely. The purpose of the English class is to make students more comfortable so that students will have lower affective filter.

Instead of forcing students to study English, I rather wanted for students to enjoy using English. When they try to communicate with English speakers successfully, that can fulfill the purpose.

6. Conclusion and Implementation

The outcome of the cooperative project is to develop students’ communicative competence and enhance interpersonal communication skill.

References


Title: Oh, the Humanities: Divergent Learners and Inter-Disciplinary Work

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ABSTRACT

This study was conducted to determine the impact of interdisciplinary projects on divergent learner’s grades and interest/enjoyment of social studies and English/language arts. For each major unit taught in social studies, students were reading connected literature in English/language arts and then completing a connected project in both classes. At the end of the first semester, 52 divergent learners were identified through the Divergence Ranking Guide (Taylor & Johnson, 1999). Those student’s grades, surveys, and feedback forms gave a clear picture of the impact of this curriculum. These students saw an improvement in their English/language arts grades and an improvement in writing skills. There was not a quantifiable difference, however identified in their social studies grades. The study determined that curriculum could be more effective if the related projects were smaller, more connected literature was used, and daily lessons with interdisciplinary connections were made.
Peanut butter and jelly, language arts and social studies, some items are just made for each other. Last year, a language arts colleague and I piloted an interdisciplinary program focusing on connecting our English/language arts and social studies classes together through projects and literature. Students were be able to make connections and work across disciplines, which research proves is a needed skill in the twenty first century. Students should be able to draw connections and make inferences using all their subject matter.

In recent years interdisciplinary teaching and integrated units in education have increased. Beginning in 1994, the National Council for the Social Studies began a push for a strong integrated curriculum in schools (Lee, 2007). Now that our nation is well into the 21st century there has been a renewed interest in interdisciplinary research and education. Recent surveys of the future of jobs show an increase in the need for individuals who can understand, employ, and integrate knowledge and collaborate across disciplinary teams. This has led to the American Association of Colleges and Universities (AACU) to call for more interdisciplinary learning with a focus on working with interdisciplinary teams and knowledge integration. An example of this is St. John Fisher College in New York, which has conducted research on using interdisciplinary teaching by connecting British History with freshmen writing. Two professors noticed a lack of writing skills of incoming freshmen so they began to incorporate writing to learn exercises with each history reading and lecture (Dotolo & Nicolay, 2008). When children grow up and get their first job, they will be expected to transfer and integrate information across disciplines. This type of education gives students the skills they will need to be successful in these jobs (Boix et al., 2009).

Not only does the future show a need for the increase in interdisciplinary education, but the diversity of the students in our classrooms demand it. Students today do not respond to
conventional teaching methods due to year after year exposure to the same type of teaching (Seo, 2009). Interdisciplinary education gives students the ability to see links among different disciplines and enables them to use these skills and knowledge to relate their learning to real life situations. Students must relate to the material before they can begin to work with it. As they become connected with what they are learning, they can begin to personalize their learning by bringing in ideas and knowledge from other areas of their life (Lee, 2007). Putnam and Rommel-Esham (2004) concluded that, “by making relevant connections students begin to appreciate the past” (p. 347). When students are interested and relate to the topic that is taught in more than one area, they are more likely to pay attention and have the desire to learn (Lee, 2007). The National Middle School Association discusses the need for relevant and integrative curriculum. “Relevant curriculum creates new interests, opening doors to new knowledge and opportunities for ‘stretching’ students to new levels of learning” NMSA, 2003, p. 21). They continue by mentioning that a curriculum that is integrative helps students to understand the work around them and make it meaningful. “Since real life issues are by nature transdisciplinary, attention to them integrates the curriculum in natural ways” (NMSA, 2003, p. 23).

Interdisciplinary teaching appears in many different formats in schools across the nation. On the topic of integration of language arts and social studies, there are many different approaches from full co-teaching of the class to the use of literature in the social studies classroom. According to Turk, Klein, and Dickinson (2007), interdisciplinary teaching has a positive impact in the social studies classroom. Teachers are also affected positively by having an opportunity to collaborate, experiment, and try new strategies in disciplines that they may not be comfortable (Lee, 2007).
Interdisciplinary teaching can be approached in a variety of ways. The success of interdisciplinary teaching is based on the looseness or tightness of the teaching (Nikitina, 2006, para. 2). How the teacher approaches the integration determines the success of the student. Nikitina proposed that it was not the bond between disciplines but the focus on the individual disciplines and how each guides the other. Her proposal is that there are three interdisciplinary strategies; contextualized, conceptualized, and problem solving. All three approaches differ in the way knowledge is generated and the way connections are made among ideas (Nikitina, 2006).

There are different levels of interdisciplinary or integrated curriculum in schools. In his book on integrating language arts and social studies, Kellough (1995) argued that there are five levels of integration. His scale moves from level one, the least amount of integration to level five, the most integrated. Level one is the more traditional classroom where an individual teacher plans and conducts his/her classes and makes little attempt at cross curricular connections. It is Kellough’s belief that teachers should aim for levels four to five in their classroom to have disciplines boundaries begin to disappear (Kellough, 1995).

To assist teachers in achieving levels four to five of Kellough’s (1995) integration scale, cooperative learning is a strategy that must accompany instruction. In an integrated or interdisciplinary environment, cooperative learning can allow for rich discussions and engaged students. “Allowing students to partner on a particular assignment can engage them in the subject matter they are studying, help them improve their skills, and teach them the value of teamwork” (Bennett, 2015). Cooperative learning also allows for more student based research to occur. Through a cross-curricular environment, more topics can be explored and large-scale research with complex questions can be assigned (Tucker, 2015).
Literature used in social studies is a powerful tool to bridge the gap between past and present. In today’s classroom, many teachers argue over having enough time to teach state mandated standards. This study argues that using literature could help teachers adhere to time constraints by using engaging literature that pushes students’ critical thinking skills. Students find themselves wrapped up in the stories of history rather than the facts (Turk et al., 2007). Teaching writing skills can also help students develop skills needed in all subjects that include recall, summarization, evaluating choices, and extend new ideas. Social studies teachers can design writing assignments that have students think deeper about social studies concepts or events. By adding a combination of content literature and writing activities teacher can begin to fade subject borders (Graham et al., 2007).

The key to success of any curriculum is that it is relevant and challenging. The research clearly shows that there are essential guidelines for the success of an interdisciplinary curriculum. It is essential that this curriculum have clear goals and variety to be successful. Students need to be at the forefront of the curriculum by allowing their input, giving them adequate time, and promote cooperative learning (Lee, 2007). The other key to success is teachers must be willing to collaborate, encourage, and grow professionally. They need to create a safe and caring environment where students can collaborate and share work (Strahan et al., 2009).

Method

The study was conducted with 128 seventh graders (75 males and 53 females, 3 African Americans, 2 Hispanics, and 123 Caucasians) in heterogeneously grouped classes for social studies and homogeneously grouped for English/language arts. There are three levels in language arts: honors, advanced, and on grade level based on teacher recommendations and
standardize test scores. The social studies content for the seventh grade year is world history from the year 1600 to the present day.

Students began the year by taking a survey about their interest level, previous class performance, and learning preferences in language arts and social studies (See Appendix A—Beginning Survey). The survey consisted of ten rating questions with each having five choices from “Always” to “Never.” Past grades for each student in language arts and social studies were used to compare with the data received on the surveys to form a profile of each student in both subjects. As the year progressed, students were given a chance to provide feedback on their interests and performance after each nine weeks. This feedback was received through survey forms and student interviews. Grades were checked and compared with last year’s grades. One final time at the end of the first semester students were given a similar survey to the one used at the beginning of the year (See Appendix B—First Semester Survey). At that point students had been involved in two major projects and read many content connected literature pieces including novels, primary sources, picture books, and short stories.

The design for the first nine weeks interdisciplinary project centered on the topic of colonization. Students created a multi genre portfolio about a mock voyage of discovery and colonization. The main focus of the project was the writing of historical fiction journals that were based on the history learned in social studies class and the novel studied in English/language arts class. Along with the historical journals, students also created maps of their journey along with designing flags and writing their own charter to be signed by the king. In English/language arts, students read Blood on the River by Elise Carbone to parallel the study of the time in social studies. The book focuses on the Jamestown settlement and their relationship with the natives.
The project design for the second nine weeks centered on the study of the Age of Reason and Enlightenment. During the study, the students focused on philosophers and the question of what constitutes philosophy. Students created mock Facebook pages for major philosophers and scientists of this time period. They researched and decided who the philosophers and scientists friends would be, what they would have been doing, and what they would have liked. In English/language arts class, students worked on personal philosophy essays and learned to develop writing skills through multiple revisions that ended with a creative representation of their beliefs. This unit culminated with students attending Salon Day. In the model of the salons of the French philosophers and the Socratic seminar, teachers took their classes to the media center and students sat in groups and discussed their Facebook pages, philosophy essays, and current events. Teachers monitored the process and recorded the process where students comment and share.

Results

At the conclusion of the first semester, fifty two students were identified as divergent learners. The Divergence Ranking Guide, developed by Taylor and Johnson (1999), was used to assist in determining each participant’s level of divergence in the classroom. A divergent learner is recognized as an individual who does not relate to traditional curriculum, methods, school regulations or values. Perhaps the most critical overarching statement to be made is that whereas traditional learners can reach a level of comfort in a traditional classroom, thereby allowing upward movement in the motivational levels and true cognition, the divergent learner is stifled and anxious in the traditional classroom, preventing cortical activity from ensuing at an appropriate rate” (Taylor & Johnson, 1999, p.7). After all data was collected, including student
surveys, independently given feedback, and grades from social studies and English/language arts classes, there appeared to be no clear answer to the true impact of Humanities based projects on divergent learners. In regards to grades, the greatest improvement occurred in English/language arts classes where there was a 75% increase in the student’s semester grades in the 52 identified divergent learners. There was only a 9% drop in grades while 15% stayed within one to two points of their previous grade. In contrast, social studies saw a 29% decrease in student grades while 42% of students stayed within one to two points of their previous grade. The positive impact in social studies showed only a 29% increase in student grades.

Student feedback and survey results revealed student opinions and feelings about the Humanities program. Of the 52 identified divergent learners, twenty students provided written feedback that they enjoyed the Humanities classes, while ten claimed they did not like it. In the beginning of the year ranking survey, a high percentage of students “agreed” to “strongly agreed” with the statement that they do better on projects than on tests. Student end of the semester survey showed those numbers had greatly shifted to “not sure” to “disagree.” Three fourths of students ranked Humanities as helping their knowledge in social studies between “agree” and “strongly agree”, while 80% ranked that Humanities has helped their writing skills. On the topic of Humanities helping their time management skills, the data was split almost evenly with 60% ranking it between “agree” and “strongly agree” and 40% ranking “disagree” and “strongly disagree.”

Discussion

The data on the impact of Humanities projects and literature leaves room for discussion and improvement. At the simplest level it appears that the Humanities projects have improved student grades more in English/language arts than in social studies classes. In retrospect, the
study showed that the writing component of most of these projects is where the strongest impact was made. Both English/language arts teachers in the study attributed the 75% increase in grades to the writing aspects of the projects. Students worked on the writing aspects of the projects in both classes, but the grade only counted in the English/language arts class. Well over three fourths of the students said that they “agreed” to “strongly agree” that Humanities has helped their writing. The research showed that a strong interdisciplinary program can help students develop writing skills that can be used across content lines. Effectively designed writing assignments will begin to help students fade the border between disciplines (Graham et al., 2007). Developing student writing skills may well stand as the best facet of this Humanities program.

One of the down trends that was illuminated in the student surveys was a decrease in higher achievement on projects than on tests. This can be attributed to more work and rigorous expectations on these projects. Several students received low grades on the first project of the year, but have since shown improvement. In years past students have stated that the first projects of year shows them the expectations for Humanities. A high number of students wrote in their feedback that Humanities was hard work and very challenging. Lee (2007) stated that the success of any curriculum is based on it being relevant and challenging to students. This curriculum has aspects that the data show is definitely working, but there is much room for improvement. Major unit projects and connected literature is not enough to have a true impact on students. On Kellough’s (1995) scale of five levels of integration, in the researcher’s opinion, this curriculum is reaching a three, but has potential for level four to five. The program needs to move away from large scale, nine weeks long or longer projects, to smaller day by day or week by week interdisciplinary lessons that include connected literature. A portion of students mentioned that they were still working on the language arts part of an old project while they
were starting the next one in social studies. Part of this problem can be equated to this school having social studies every other day and having to move through material faster than the everyday English/language arts classes. If, as expected, this school moves to everyday social studies next year, this problem could corrected. Often times the projects are so extensive that English/language arts class’s end up doing more work for longer periods of time because they meet everyday. The writing assignments need to be continued because they are having an impact on the students. An interdisciplinary curriculum is key to the 21st century student. “Curriculum is integrative when students explore their own agendas and make meaningful decisions about their learning, often defying ‘arbitrary subject boundaries’” (Stevenson & Bishop, 2005, p. 104). They will be living and working in jobs that need individuals who know how to integrate, transfer, and collaborate across disciplines (Boix et al., 2009)
References


Contributing educators who helped developed the humanities curriculum used in this research were: Sarah Gams, Roselyne Thomas, Kristin Turner, and Jessica Bower.
Appendix A
Beginning of Year Survey

1. I enjoyed Social Studies last year.
   5. Strongly agree
   4. Agree
   3. Not sure
   2. Disagree
   1. Strongly disagree

2. I am normally interested in Social Studies.
   5. Strongly agree
   4. Agree
   3. Not sure
   2. Disagree
   1. Strongly disagree

3. I made good grades in Social Studies last year.
   5. Strongly agree
   4. Agree
   3. Not sure
   2. Disagree
   1. Strongly disagree

4. I usually enjoy Social Studies.
   5. Strongly agree
   4. Agree
   3. Not sure
   2. Disagree
   1. Strongly disagree

5. I do better when I hear the same information in multiple classes.
   5. Strongly agree
   4. Agree
   3. Not sure
   2. Disagree
   1. Strongly disagree

6. I enjoyed English / Language Arts last year.
   5. Strongly agree
   4. Agree
   3. Not sure
   2. Disagree
   1. Strongly disagree

7. I am normally interested in English / Language Arts.
   5. Strongly agree
   4. Agree
   3. Not sure
   2. Disagree
   1. Strongly disagree

8. I made good grades in Language Arts last year.
   5. Strongly agree
   4. Agree
   3. Not sure
   2. Disagree
   1. Strongly disagree

9. I usually enjoy English / Language Arts.
   5. Strongly agree
   4. Agree
   3. Not sure
   2. Disagree
   1. Strongly disagree

10. I usually do better on a project than on a test.
    5. Strongly agree
    4. Agree
    3. Not sure
    2. Disagree
    1. Strongly disagree

Please feel free to add any comments about your experiences in Social Studies or English/Language Arts on the back. Any feedback is encouraged and welcome.
Appendix B
First Semester Survey

1. I have enjoyed the Social Studies content more this year than last year.
   5 4 3 2 1
   Strongly agree  Agree  Not sure  Disagree  Strongly disagree

2. I have found Social Studies interesting so far this year.
   5 4 3 2 1
   Strongly agree  Agree  Not sure  Disagree  Strongly disagree

3. I have made good grades in Social Studies this semester.
   5 4 3 2 1
   Strongly agree  Agree  Not sure  Disagree  Strongly disagree

4. The Humanities projects have helped me understand information in S.S.
   5 4 3 2 1
   Strongly agree  Agree  Not sure  Disagree  Strongly disagree

5. The Humanities projects have helped me understand information in ELA.
   5 4 3 2 1
   Strongly agree  Agree  Not sure  Disagree  Strongly disagree

6. Being able to work on projects in S.S. & ELA has helped with time management.
   5 4 3 2 1
   Strongly agree  Agree  Not sure  Disagree  Strongly disagree

7. I have made good grades first semester in ELA.
   5 4 3 2 1
   Strongly agree  Agree  Not sure  Disagree  Strongly disagree

8. The Humanities projects have helped my writing skills.
   5 4 3 2 1
   Strongly agree  Agree  Not sure  Disagree  Strongly disagree

9. I think the Humanities teachers helped me learn more than the projects.
   5 4 3 2 1
   Strongly agree  Agree  Not sure  Disagree  Strongly disagree

10. I think having ELA & S.S. connected everyday would help me learn more than just being
    connected on major projects.
    5 4 3 2 1
    Strongly agree  Agree  Not sure  Disagree  Strongly disagree

On the back please tell me what assignments you have liked this year in Social Studies and
English/language arts and which ones you have not. What is your honest opinion of the
Humanities projects? Give me the good and the bad! What would make Humanities better?
Title:
Urban School Closure Across the United States: The Case of a Community-University Response in the Urban Midwest

Topic Area:
Educational Policy and Leadership

Presentation Format:
Paper Session

Description of paper:
The purpose of this study is to examine urban school closures across the United States and how leaders across a community in the Midwestern U.S. took action to reopen a high school that was closed. Findings suggest these leaders leveraged networks to negotiate a community-university social contract, took strategic actions, and formed a community-driven education task force. This study offers implications for educational leaders and concludes with implications for future research.

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Abstract

After decades of educational and social inequality, many urban school districts face fiscal deficits, low-test scores, and declining student enrollments that have resulted in massive school closures. However, some urban communities are organizing against school closures to reopen public, neighborhood schools as community schools. The purpose of this study is to examine how leaders across a community in the urban Midwest took action to reopen a high school that was closed by its district. Using case study methodology, this study draws on interviews and document data. Concepts from social capital theory and social networks are used to theoretically frame this study and guide the analysis. Findings suggest these leaders leveraged networks to negotiate a community-university social contract, took strategic and socially connected actions, and formed a community-driven education task force. This study offers implications to guide leaders in similar urban contexts and concludes with implications for future research.
D. President Obama’s recent bid to increase the federal minimum wage from $7.25 to $10.10 has divided businesses and economists. Policy supporters generally argue that an increase in the minimum wage will support job growth, while opponents contest that it will not eliminate the root cause of poverty. This paper will engage in a policy analysis of guiding arguments both supporting and opposing an increase of the minimum wage.

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I. Introduction of Minimum Wage Law & Current Status

The Obama Administration has submitted a legislative proposal to increase the federal minimum wage from $7.25 to $9.00 an hour in 2015. While individual states and cities have varying individual minimum wages that presently exceed the federal minimum wage, this proposal will set a floor on wages nationally, which will require many states to increase their current minimum. There is much debate among economists about whether or not minimum wage rates influence employment rates, poverty rates, and increase costs across the economies. This paper will discuss the policy development and emergence of history of minimum wage labor law, agenda setting and policy actor arguments supporting an increase, and policy actor arguments opposing its increase.

Policy Actors advocating for an increase in the minimum wage suggest that it increases the standard of living for the poor and will increase the growth of the middle class. Supporters also argue that it decreases the need for government support of the poor and drives productivity of the workers because employers demand a return on their increased contribution for labor.

Policy actors against the increase argue if there were no minimum wage then the market would drive wages, the cost of goods produced, the cost of goods sold, and thus a prevailing wage would come about naturally throughout different sectors of the economy. Employers would be able to hire people at whatever rate people were willing to do the labor. The theory is that the market would drive the price of the labor.

In many parts of the United States, local governments and states have set different minimum wages as the prevailing costs to live and work in the respective markets drive the wage. Government has stepped in to scale the wages according to their economies. Debates exist about the cost and benefits of minimum wage. Employers may choose to lower employment as the wages increase in order to offset the higher cost of employment. Overall,
the debate to increase the minimum wage has seen a bevy of mixed emotions, as employees would like an increase in the cost of living, but they fear that an increase in the hourly minimum wage will not solve the overarching problem of eradicating poverty.

II. Policy Development & Emergence of Minimum Wage Labor Laws

A. Organizational Implications for Creating a Minimum Wage

Minimum wage is part of a series of labor laws and ideas that both economists and governments have proposed as a way to support an efficient labor force and economy. This efficiency applies to business, not to the workers, and often benefits business bottom-line. When the law was first proposed, the intention of minimum wage was to increase the standard of living of workers, reducing poverty, and ideally increasing worker compensation while improving business efficiency. Before the law became a national fiat, Massachusetts had started non-compulsory ordinances for women and child labor. These ordinances started the conversation early in the twentieth century, and by the time of the Great Depression working conditions and wages were at all-time low. The society was ready to enter into a dialogue of change. Around the world other nations were beginning to debate the issue, and Australia was the first to offer a minimum wage.

B. Minimum Wage Debate- early 1900’s

The United States was not first to come up with a minimum wage for its labor pool, and federal laws are not universal throughout the country. In some states, the minimum wage rates are higher than the federal rate with some cities in those states having even higher wages. Most states and territories have minimum wage rates at the same rate as the federal rate. But in some states there may be no state minimum wage law, or the state may have wage rates lower than the federal rate. (Gramlich, 1976)

The minimum wage law was part of a greater movement of change and progress after the Great Depression. Workers were left with little or no support as the nation was recovering
Policy Analysis of Raising the Minimum Wage

from massive unemployment, child labor, poor working conditions, and a very long work week. President Roosevelt was committed to making the necessary changes through a number of bills. Legislation was created to address these and many other issues facing the nation’s labor force. Roosevelt believed that minimum wage was a way to guarantee a minimum wage that workers could rely on to support their families and get the nation working again. (Gramlich, 1976)

C. Minimum Wage Debate- 1930’s- present day

Roosevelt drafted the Fair Labor Standards Act of 1938 (FLSA) which included many different protections for labor and created the Wage and Hour Division (WHD) of the United States Department of Labor. This legislation came after many fights of judicial opposition; the FLSA had survived, not unscathed, after more than a year of Congressional altercation. In its final form, the Act applied to industries whose combined employment represented only about one-fifth of the labor force. (Roosevelt, 1937)

In these industries, it banned oppressive child labor and set the minimum hourly wage at 25 cents, and the maximum workweek at 44 hours. In order to get businesses to follow the new law, businesses were encouraged to sign an agreement and display a "badge of honor," a blue eagle over the motto: "We do our part." Patriotic Americans were expected to buy only from "Blue Eagle" businesses. In the end, only those businesses that supported minimum wage were patronized. Today, the WHD is responsible for the administration and enforcement of a wide range of laws which collectively cover virtually all private and State and local government employment.

III. Agenda Setting- Policy Actor Arguments Supporting Increases to the Federal Minimum Wage

A. Raising the Minimum Wage Promotes Economic Growth
Policy Analysis of Raising the Minimum Wage

Policy Analysts argue that opposing theories surrounding an increase in minimum wage and the population segment it affects have glaring inadequacies. Rather, evidence suggests that an increase in minimum wage does not negatively affect the economy, and in some cases may even increase economic growth. (Fox, 2006) Early economy theorist Paul A. Samuelson concluded that there was a “tremendous amount of certainty and doubt” concerning even the most elementary parts of wage determination and labor economics (Cunningham & McClure, 2005).

Many economists follow the standard neoclassical model regarding the minimum wage. This standard states that each employee is paid his or her marginal product, which is defined as the contribution he or she makes to the firm’s revenue. (Card & Krueger, 1995). Card and Krueger’s *Myth and Measurement: The New Economics of the Minimum Wage* continues the explanation that if a worker is earning $3.50 per hour and contributes the same amount to the firm’s revenue, and the government imposes a minimum wage rate of $4.25, then it is no longer profitable to employ that worker. The authors conclude that there are flaws in this standard neoclassical model.

Social economic revisionists argued that it ignores the human element. Kaufman (2012) wrote that prominent economist Gommons rejected parts of neoclassical theory because labor is human, and this model does not factor in work motivation, morale, unfairness, and inequity. In addition, it incorrectly assumes that employers always operate at peak performance and exploit every opportunity for profit. Card and Krueger discussed that higher wages could actually reduce worker turnover and increase productivity. Consequently, this would provide a shock effect, leading management to have better labor practices. As a result, this could lead some business to hire more people due to more output (Card & Krueger, 1995). Alan Greenspan has endorsed this “shock theory” and stated that positive
policy analysis of raising the minimum wage

productivity affects low inflation, and low inflation causes businesses to become more efficient because they cannot raise their prices (Card & Krueger, 1995).

Analysts studying Card and Krueger’s work conclude that state and federal increases in minimum wage meant that workers were taking home more pay, but employment rates did not decrease (Whitaker, Herian, Larimer, Lang, 2012). Rather, the authors stated that additional research supported that increasing the minimum wage was effective in reducing poverty than earlier wage increases, at least for dropouts and teenagers (Whitaker, Herian, Larimer, Lang, 2012).

B. Raising the Minimum Wage Increases Employment

Wessel (2004) continued the discussion surrounding Card and Krueger’s analysis and noted that they ran many regressions across states using as the dependent variable the change in the teenage employment-population ratio between 1989 and 1992. All of these regressions confirmed Card and Krueger’s results that in states where more workers were affected by the minimum wage hike, more workers did not lose jobs. Card and Krueger’s (1995) difference-in-difference study of the 1990–1991 federal minimum wage hikes compared states by the proportion of workers directly affected by the minimum wage and they found that employment losses were not higher in states with more affected workers. Card and Krueger interpreted these results as showing that the minimum wage did not decrease employment. (Wessel, 2004).

Dreir and Cohen’s (2013) Huffington Post article “Raising the Minimum Wage Is Good for Business (But the Corporate Lobby Doesn't Think So)” discusses that in 2003, San Francisco increased its minimum wage, however, the Golden Gate Restaurant Association called it a job killer that would "bankrupt many restaurants." In addition, the Association of Realtors said that many hospitality industry workers were "likely to receive pink slips and join the ranks of the unemployed." The article cites a 2007 study by University of California
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economists, that in the aftermath, restaurant growth was higher in the city than in neighboring East Bay cities. Studies also show that in December 2012, the city's unemployment rate was 6.5 percent, well below the statewide average, and job growth in bars and restaurants has led the region's post-recession recovery.

C. Raising the Minimum Wage Increases Wage Dispersion, Reverses Rising Trend of Wage Inequality

The concept of the minimum arose from the idea that workers should be able to earn a “living wage.” Lawrence Glickman’s book *A Living Wage: American Workers and the Making of Consumer Society* defines it as “a wage level that offers workers the ability to support families to maintain self-respect and to have both the means and the leisure to participate in the civic life of the nation” (Glickman, p. 66). In the mid-1990s, organizers tied the modern living wage standard to the federal government’s official poverty line; they set the living wage at least high enough to enable a full-time worker to maintain his or her family above the official poverty line (Pollin, 2007).

While contemporary scholarship continues to find minimum wage increases are unrelated to poverty rates overall, analysts noted that job growth is higher in states that adopt more generous wage floors, and proponents increasingly emphasized the minimum wage as a way to reduce income inequality rather than poverty. (Whitaker, Herian, Larimer, Lang, 2012). As Pollin (2007) notes, the poverty line is deficient because it does not reflect the actual for providing for basic needs other than food, such as housing, health care, and child care. Pollin (2007) concludes that official poverty benchmark for the country is probably about 40 to 50 percent too low. In high-cost urban areas such as Boston or Los Angeles, that figure should rise by roughly an additional 25 percent.

Also, it can be argued that increases in minimum wage are necessary to reverse wage disparity and keep up with rising inflation. The real value of the minimum wage reached its
Policy Analysis of Raising the Minimum Wage

high water mark in 1968, peaking at approximately 56 percent of the average hourly wage. Since then, the real value has eroded due primarily to inflation and the sporadic nature of federally mandated increases (Whitaker, Herian, Larimer, Lang, 2012). The rate of inflation between 1997 and 2009 is likely to be about 3 percent per year. This means that the buying power of a $5.15 minimum wage will have fallen by about 40 percent over these years (Pollin, 2007).

IV. Agenda Setting- Policy Actor Arguments Resisting Increases to the Federal Minimum Wage

A. Minimum Wage Recipients Live Below the Poverty Line

Opponents who vehemently argue against raising the minimum wage state that a portrayal of Americans who earn minimum wage as poverty-stricken individuals is largely untrue, as the average family income of minimum wage above 150% of the poverty line. Opponents consistently quote this data directly from the US Census Bureau and Current Population Survey (CPS). Analysts also note that many minimum wage earners are ethnic minorities is also false—as 78% of minimum wage earners are White, 15% are African American, and 3% are Asian.

<table>
<thead>
<tr>
<th>Demographic Characteristics of Minimum-Wage Workers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Female</strong></td>
</tr>
<tr>
<td>All Employees</td>
</tr>
<tr>
<td>White</td>
</tr>
<tr>
<td>Black</td>
</tr>
<tr>
<td>Asian</td>
</tr>
<tr>
<td>Married</td>
</tr>
<tr>
<td><strong>WAGE AND INCOME CHARACTERISTICS</strong></td>
</tr>
<tr>
<td>Working Part-Time</td>
</tr>
<tr>
<td>Average Family Income</td>
</tr>
<tr>
<td>At or Below Poverty Line</td>
</tr>
<tr>
<td>Above 150% of the Poverty line</td>
</tr>
<tr>
<td><strong>EDUCATIONAL ATTAINMENT</strong></td>
</tr>
<tr>
<td>Less than High School</td>
</tr>
<tr>
<td>High School Graduate</td>
</tr>
<tr>
<td>Some College</td>
</tr>
<tr>
<td>Bachelor’s Degree</td>
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<tr>
<td>Graduate Degree</td>
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</tbody>
</table>

Source: Heritage Foundation calculations based on data from U.S. Census Bureau, Current Population Survey (CPS), 2011 and 2012 monthly surveys. Poverty and family income data are from the March Supplement to the 2011 and 2012 CPS. Minimum wage workers are those who report hourly earnings of $7.25 an hour or less.
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The Bureau of Labor Statistics reports that only 4.7% of the entire workforce in America earns minimum wage or less, and more than half of them are young people who live with their parents while attending school. Additionally, nearly 19% of all minimum wage earners are employed in the hospitality and food service business, where their wages are supplemented by commissions and cash tips.

B. Raising the Minimum Wage Will Not Address Root Cause of Poverty

Opponents also argue that an objective of decreasing poverty by increasing the federal minimum wage is misguided, as it does not address the root cause of poverty. Quite simply, most of those who live in poverty are not minimum wage earners, but actually people who do not work at all. The chart below, with 24 years of data from the US Census Bureau, clearly shows unemployment and underemployment as the foundation of poverty. In essence, a decrease in poverty would occur by increasing the number of people working.

Common questions posed by policy actors address issues such as who is helped or aided by increasing the federal minimum wage, and whether there are any consequences of
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increasing the federal minimum wage. Opponents conclude that an increase in the minimum wage would only help those who are already working now, and it would accomplish nothing for those who do not have a job. A majority of those looking toward minimum wage occupations are young workers, usually in school, and older workers who have left school. (Sherk, 2013)

A common argument is that an increase in the federal minimum wage would cause many of these young and low-skill/low-productivity workers with a high school education or less, to not be hired. This is due to the fact that many small businesses cannot afford to keep workers at higher wages. A 2012 study of the 2004-6 New York State minimum wage increase showed a 21% reduction in employment for less-skilled, less-educated workers, particularly those aged 16-24. A common phrase used among these policy actors is that a job with low wages is better than no job and no wages. (Sabia, Burkhauser, and Hansen, 2012)

V. Conclusion

Every day, the media is filled with headlines news articles of a declining middle class. Many are interested in solving the overarching problem of poverty, yet the heated debate emerges as to whether an increase in the federal minimum wage is a solution to this problem. This debate cannot be answered until we as a society come to a common agreement as to the purpose of the minimum wage. Is it meant to be a living wage, enough to support a family? Or, is it meant to supplement the income of high school teenagers, or those who have other primary breadwinners in the family?

Keynesian economics calls for more money in the hands of citizens, to consume more and stimulate the economy. For businesses that raise their prices to offset the higher minimum wage, that cost is passed onto consumers who will now have less disposable income to spread throughout the economy. Utilizing data and case studies provided by economists and researchers, two opposing perspectives on the Obama Administration’s
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proposed legislation to increase the federal minimum wage were examined. Strong arguments for and against, and outlining benefits and consequences of increasing the federal minimum wage have been suggested by numerous researchers. However, there is yet to be overwhelmingly conclusive evidence to support either a boon or a detriment to the economy or labor market.

No absolute and definitive evidence can be shown to be injurious to the economy or labor market. While an overarching objective of increasing the federal minimum wage is to reduce poverty, any policy attempt that strives to decrease inequality, increase wage dispersion, equity, self-respect, and the morale of many working Americans should be supported by policy actors.
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Reference List:


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A New Internet Ethics Class based on Making an Internet Ethics UCC

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Abstract
Internet ethics is one of the liberal arts courses in college. In order to effectively communicate with the students in the internet ethics course, we gave demonstration practice lectures by taking advantage of internet ethics related videos. Video presentation and its discussion helped students to recognize the internet ethical issues. However, simply watching the video was not enough, since the students just watched the content passively. Thus, we also assigned a group project. Each group, consisting of three students, was to make a user created content on an internet ethics topic. This team project based class methodology was effective for the students who proactively participated in class and helped them understand the concept. We have confirmed from a survey that the students’ understanding of internet ethics has been increased.

Keywords: internet ethics, video presentation, user created content, team project

1. Introduction

In the knowledge and information society where the Internet is used as a routine, various ethical problems have been happened more than in industrialized societies. Internet ethics, a branch of applied ethics, copes with internet related problems for the purpose of ethical inquiry defined by D. Langford. Internet ethics has evolved; from the seventies’ and eighties’ computer ethics to the nineties’ information ethics, and finally to cyber ethics or internet ethics in the twenty-first century. Internet ethics offers various views at the new difficult issues such as accessibility, censorship, privacy, and digital rights management facing internet users today. The subject, internet ethics, has developed due to the internet having the following characteristics; anonymity, non-face-to-face, collectivity, violence, altruism, pornography, and so on [1]. Because of the negative consequences that sometimes come with those qualities, society has felt the need for students to be educated in internet ethics. Internet ethics education is not only targeted on students of elementary, middle and high schools; it is also provided as a liberal arts course for university students.

Internet ethics teaching resources are being provided in textbooks and through the use of bulletin boards, as well as through the use of the internet and other multimedia technology. Videos and social networking services (SNS), such as Facebook, Kakaotalk and Snapchat, make it convenient for us to collect and share our resources. With the help of online resources and technology based application programs, students have become familiar with their class environment. Teachers can use online videos as class resources, and assignments, notices or FAQs can be posted or carried out using SNS or blogs. In addition, students and teachers are able to communicate through the use of instant messaging. According to a study done in the U.S., incorporating videos in the classroom leads to increased retention of information by students and helps them comprehend the material quicker than students who are not exposed to videos [2].

The following study was focused on university students, whom have attended internet ethics lectures, for several years. In order to increase the students’ learning habits, the students were given an assignment, in which they had to produce a video relevant to internet ethics. The students autonomously formed teams of three and produced an internet ethics related User Created Contents (UCC). In the students’ final report, the students were to include the project title, motive and the scenario or story of the project, along with how the UCC production class helped them proactively immerse in theory classes and video incorporated classes. To figure out if the UCC producing experience had learning effects on students, we compared the difference, between previous teaching methods and this new video producing method, through conducting a survey. The results are outlined in section 3. We present this new practice in hopes of this becoming an educational model for helping students proactively engage themselves in their studies.

In section 2, we outline the current situation of internet ethics education; in section 3, we focus on
the learning effects of the video production assignment in internet ethics education and analyze the results of the survey directed towards the students; and in section 4, we conclude the paper.

2. Related works

In 2001, information ethics education was implemented in elementary and middle schools to prevent information dysfunction in Korea. Now, most schools enact information communication ethics or internet ethics education. According to a study focused on schools and the government, as well as families and society, people feel the need for teenagers to be educated in terms of internet ethics [3]. Choi et al. applied media literacy, which has the ability to independently understand various types of media, to internet ethics education. In other words, they presented a teaching method where we teach students how to correctly use the internet, rather than completely blocking the internet from students. They wanted to promote the positive side of the internet by presenting this new and original method [4].

Meanwhile, there were studies where multimedia technology was incorporated into classes. Han conducted a study on information ethics lecture methods, including a UCC production project class. The experiment group’s change in attitude towards the topic, information communication ethics, proved the effectiveness of the method [5]. Ju et al. conducted a study on middle school students for the analysis of internet literacy effect through education of producing and using multimedia UCC [6]. Internet ethics education has been performed globally. Dadzie gave an overview of the various aspects of the subject. And he recommended the introduction of information ethics as a university required course for all freshmen and a stand-alone course covering plagiarism and SNS abuse in information ethics at department of information studies in Ghana [7].

In Korea, the Korean ethics council on internet published the most universally used internet ethics textbook [1]. The textbook [1] is directed towards adults or college students, and the author teaches students using this book. The teaching content, directed towards students, deals with the internet and daily life, legal issues such as copyright violation and internet dysfunctions such as cybercrimes. The textbook particularly explains to students how to avoid becoming a victim or an attacker by describing the pre/post response plan for any situation. Meanwhile in U.S. universities, the topic, computer ethics, is solely for students majoring in computer science related subjects. Classes in the U.S. target more professional ethical issues and have a different curriculum. The textbook used [8] covers privacy, freedom of speech over the internet, intellectual properties, cybercrimes and the responsibilities of a computer professional or specialist.

After looking at both viewpoints [1] and [8], it becomes clear that the two countries focus on different people and subjects. While the U.S. focuses on educating mostly computer related workers on specific computer ethics topics, Korea educates general internet ethics subjects to all adults and students to foster a better internet citizenship. In this paper, we propose a method, concerning the latter approach, to enhance internet ethics education effectively.

3. Enhancing Internet Ethics Understanding by Creating a UCC

When using only lecture materials for class, the university students couldn’t fully digest the information properly and were overruled by boredom. Thus, with the help of other professors and students, we collected videos related to the course. We tried a different method of teaching where we showed the parts of the videos and explained them briefly to the students. The results of this new method of guidance, shown in the lecture evaluation [9], were mostly positive; the students’ understanding of the course as well as the class satisfaction improved. However, since we used old fashioned videos that were collected long ago, the students’ interest rate was not too high. The students seem to need more independency, and just relying on videos made by unknown figures was not enough for better class effectiveness. Therefore, we developed a new procedure; the students now had to get into teams themselves and produce an internet ethics UCC. The impact in class effectiveness that came from the UCC project will be shown below:

During the first class, we briefly explained the course syllabus. We then notified the students of what their term project was going to be – the UCC production project. We also informed them that they would have to explain and write a report on what learning effects came from doing that project. The students who felt that the course work was too much of a burden, which was approximately 10%, dropped out of the course. We figured that producing a UCC individually would be too much to bear so we let the students split into teams of 3 and carry on with their project. By making this assignment a group project, the students’ doubts about the project reduced, and the project quality was at least up to the point of being average.

The assignment was, “Choose an internet ethics related topic and produce a video. Then write a report on how producing the video made an impact on your learning.” The assignment was collected in CD form, and it contained the outline and internet ethics UCC video. In the outline, the students were to include the project title, motive and the scenario or story of the project, along with how the UCC production class helped them proactively immerse in
theory classes and video incorporated classes. Interestingly, the students found the section where they had to write about the learning effects that the project had harder than actually creating the video. This was because they had to compare the difference between the usual class and the UCC project included class. In any case, if the video was a lot longer or shorter than the recommended length, a minute and forty seconds, we deducted points in accordance with the predetermined time range. We showed the students the evaluation criteria (Table 1) for reference.

Table 1. Evaluation criteria for UCC project

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idea’s novelty to choose topic</td>
<td>15%</td>
</tr>
<tr>
<td>Scenario or story deployment</td>
<td>25%</td>
</tr>
<tr>
<td>UCC production level</td>
<td>35%</td>
</tr>
<tr>
<td>Logical explanation on learning effects</td>
<td>25%</td>
</tr>
<tr>
<td>Score sum</td>
<td>100%</td>
</tr>
</tbody>
</table>

Out of the 105 students, 38 teams submitted their projects. A few teams were composed of either 2 or 4 members. From all the UCCs submitted, we’ve chosen one as an example.

Case: Cyber violence reduction

The project title was, “Proper commenting on the internet.” Cyber bullying is a major issue on the internet as a majority of the population uses the internet daily. Cyber bullying and harassment through the internet sometimes even lead to suicide. Thus, the students were motivated to make their video on the reduction of cyber violence. Through their UCC, they wanted to spread awareness on the benefits of leaving nice comments on the internet and promote this action. The project comprises of three scenes, which are as follows.

In the first scene, one of the students posts a picture of her doing community service work and receives negative comments. She is hurt from all the negativity. This emphasizes the importance of writing positive comments. Figure 1 illustrates a captured image from this scene. In the second scene, a student having a hard time finding a job asks for advice on SNS. Many of her SNS followers gave her courage and wished her the best of luck in getting a job. This demonstrates how positive comments give students courage and hope. In the third scene, a student asks for help on finding her lost dog. As soon as she posts on SNS, she receives attention and useful information from many of her followers and finds her dog. These examples show the positive effects of leaving good comments on SNS.

The learning effects from completing this project are as follows. Before taking this internet ethics course, the students did not regard cyber culture highly. They only thought about handling internet ethics in the ubiquitous society. After completing the course, however, they attained a better knowledge of the ethical concept, cyber space. They could now judge what is the right and wrong thing to do on the internet. In addition, they realized there is much more to netiquette than V. Shea's The Core Rules of Netiquette that netizens should keep [10]. From making the UCC and looking at the many hurtful comments on the internet, they realized that they need to set an example of proper internet commenting in order for internet commenting culture to change and develop positively.

Figure 1. An example of leaving nice comments instead of bad comments on the internet

From the above, the students discovered from taking the course that there is much more to internet ethics than what they knew, beforehand. First of all, they learned that there is a more diverse range of internet ethics topics than what they thought, originally, and gained more interest in the subject. In addition, they attained concrete knowledge from watching the videos and began to regard internet ethics highly. Finally, from letting the students form the UCC videos, hands-on, they experienced more pro-active learning effects. The last point was especially important for this paper as it proved that the project was beneficial towards achieving class goal.

The description of the questionnaire items and its analysis are provided below. A survey was conducted at the final class day. To make a survey analysis for the Internet Ethics lecture, the author collected 7 questionnaire items from 99 students who, as volunteers, attended his internet ethics class during spring semester in 2014. All questionnaire items are as follows. Questions 1-1 and 1-2 are the same questions but were asked at different times.

Question 1-1: Do you expect internet ethics to be an easy course?

Question 1-2: Do you still think that internet ethics is an easy course?

Question 2: Was class effective without watching internet ethics related video?

Question 3: Did watching the internet ethics videos aid your understanding of internet ethics?

Question 4: Did the UCC production assignment aid your understanding of internet ethics?

Question 5: Was the UCC production assignment easy?
Question 6: Was the producing the UCC, compared to just watching the videos, more helpful for understanding the concept of internet ethics?
Question 7: Will you use the internet ethically, in the future, because of this course?

Each answer has 5 scales such as 1(= Strongly Disagree), 2(= Disagree), 3(= Neutral), 4(= Agree), and 5(= Strongly Agree). We performed frequency analysis for the survey using Statistical Package for the Social Sciences (SPSS). SPSS is the most widely used package programs by survey companies, marketing divisions of industry, government and education researchers, and others for statistical analysis [11]. From the frequency analysis of the survey responses, we could understand the distribution of responses. The bolded numbers in Table 2 show the highest percentages excluding the neutral responses.

<table>
<thead>
<tr>
<th>Question</th>
<th>Scale 1</th>
<th>Scale 2</th>
<th>Scale 3</th>
<th>Scale 4</th>
<th>Scale 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1-1</td>
<td>0.0%</td>
<td>1.1%</td>
<td>37.2%</td>
<td>45.7%</td>
<td>16.0%</td>
</tr>
<tr>
<td>Q1-2</td>
<td>4.3%</td>
<td>25.4%</td>
<td>50.0%</td>
<td>16.0%</td>
<td>4.3%</td>
</tr>
<tr>
<td>Q2</td>
<td>7.4%</td>
<td>39.4%</td>
<td>39.4%</td>
<td>7.4%</td>
<td>6.4%</td>
</tr>
<tr>
<td>Q3</td>
<td>1.1%</td>
<td>2.1%</td>
<td>41.5%</td>
<td>45.7%</td>
<td>9.6%</td>
</tr>
<tr>
<td>Q4</td>
<td>4.3%</td>
<td>10.6%</td>
<td>33.0%</td>
<td>43.6%</td>
<td>8.5%</td>
</tr>
<tr>
<td>Q5</td>
<td>7.4%</td>
<td>27.7%</td>
<td>39.4%</td>
<td>20.2%</td>
<td>5.3%</td>
</tr>
<tr>
<td>Q6</td>
<td>3.2%</td>
<td>12.8%</td>
<td>29.8%</td>
<td>46.8%</td>
<td>7.4%</td>
</tr>
<tr>
<td>Q7</td>
<td>2.1%</td>
<td>4.3%</td>
<td>35.1%</td>
<td>46.8%</td>
<td>11.7%</td>
</tr>
</tbody>
</table>

As seen in Table 2, before taking the course, 61.7% of students thought that internet ethics would be an easy course; however, after the course, the percentage dropped to 20.3%. This is probably because there are many topics that need to be covered in the course. In classes without watching the videos, 46.8% of the students responded negatively to the course. 55.3% of students answered that watching the videos aided the process of learning. And 52.1% of students responded positively with the UCC project. Thus, it is clear that watching the videos and producing the UCC played a big role in helping the students understand the subject better. More students found producing the video hard by 9.6%. But despite the difficulty level of producing the UCC, it was found that the project did help the students understand the course curriculum. In fact, 54.2% of students found the project helpful – which was 3 times greater – compared to the 16% of students who did not. This study shows the positive learning effects that the UCC project had on the students. As seen on the table, many students have answered in question 7 that the course will help the students use the internet positively in the future.

4. Conclusions

This paper introduces the effective method of letting students independently form teams, produce a video on internet ethics, and write a report on how the project helped them to understand the subject better. As seen in one of the students’ examples, letting the students independently select a topic, create a story, and produce a video, was much more effective, in terms of achieving proactive learning effects, than simply showing videos created outside of class, to the students. This is further shown in the questionnaire results, above. If the government or public facilities were to offer interactive programs that would raise awareness and educate the public on internet ethics, in the future, the problems in society that come from the internet would decrease and a better cyber community would be formed.

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5. References

Exploring foreign language teachers’ identities development: A case study of a transnational native English-speaking teacher in China

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Abstract

Language teacher development has been regarded as central to ensuring the quality of learning experience of many students around the world. In recent years, an increasing number of NES teachers have been recruited in English as a foreign language setting. One vital consideration is how well these teachers have coped with working conditions in foreign lands and developed over time. The present study investigates this pivotal concern by exploring the identities development of NES teachers in tertiary schools in mainland China. Drawing upon Wenger’s (1998) theory of identity formation and Bucholtz and Hall’s (2010) indexicality principle, this study examines participating NES teachers’ identities formation and transformation. A qualitative case study approach was employed and findings from one case were reported in this paper. Data were collected through questionnaires, life history interviews, non-participant classroom observation throughout six-month period of time. Results trace the trajectory of participating teacher’s identities formation from his educational and socio-cultural experiences as well as previous career his engaged in prior to entering teaching, to his engagement as an English language teacher with students and colleagues in local schools and in wider society. Findings highlight the complex effects of cultural, linguistic, social, personal and interpersonal elements on teachers’ ongoing identities transformation and the intertwined relationship between teachers’ identities development and their changing classroom practices. Findings contribute to the global efforts in better understanding language teachers’ professional development, and implications for attracting and retaining language teachers in EFL contexts and language teacher education around the world will be discussed.
Introduction

During the past two decades, more and more native English speaking (NES) teachers have been recruited in English as a Foreign Language (EFL) settings. These NES teachers are employed under national schemes initiated by governments, such as the JET (Japan Exchange and Teaching) program in Japan and EPIK (English Program in Korea) in Korea, or under institutional regulations and policies such as is the case in mainland China.

These cross cultural encounters have brought new questions to the changing landscape of the language teaching profession. One vital point of consideration is how well the significant amounts of NES teachers have coped with working and living conditions in foreign lands. However, a review of literature reveals that the experiences of NES teachers working in EFL settings remain under-investigated, as compared to the recent upsurge of research on NNES teachers (e.g. Braine, 2010; Kamhi-Stein, 2004; Llurda, 2005). A great proportion of the existing studies focused on examining students’ perceptions of and attitudes towards NES teachers (e.g. Liu & Zhang, 2007; Rao, 2010). It should be noted that understanding the reality of teaching involves exploring the meaning it has not only for students, but also for teachers (Tudor, 2001). Of the few studies that did give voice to NES teachers, most are one-shot interview or survey studies that provide hardly any indication of the day-to-day challenges they face and their professional growth. In essence, what is needed is in-depth, longitudinal study of NES teachers’ identities of how they understand themselves and their work, which is considered as a crucial component in the sociocultural landscape of classroom and in teachers’ professional development.

Theoretical framework

“Identity” is, in itself, a concept that defies easy definition. Overall, conceptions of identity have evolved from essentialist perspectives which located a static and fixed self metaphorically within a person to post-structuralist and postmodern understandings that view the self as constantly in flux, multiple, situated, and conflicting (Hall, 1996; Norton Peirce, 1995; Thesen, 1997). In addition, the notion of agency, as the ability of human beings to make a difference in the world (Giddens, 1984) is recognized as crucial to identity construction (see Day et al. 2006; Parkinson, 2008). A sense of agency empowers individuals to move ideas forwards, to reach goals, to maintain or further shape their identities and attend to tensions among them (Beauchamp & Thomas, 2009). In the present study, identity is seen as “being in continuous becoming” (Roth, 2004, p.8, as cited in Cross & Gearon, 2007), and adopted Norton’s definition of identity as “how a person understands his or her relationship to the world, how the relationship is constructed across time and space, and how the person understands possibilities for the future” (2000, p.5).

In much studies on teacher identities, researchers are increasingly recognizing the relationship between identity and language as an important conceptual tool in understanding the processes of identity formation and transformation (e.g. Alsup, 2006; Breckenridge, 2010; Clarke, 2008; Golombek & Jordan, 2005; Johnston, 1997; Kiernan, 2008; Liu & Xu, 2011; Pavlenko, 2003; Simon-Maeda, 2004; Tsui, 2007). Language in these studies is seen as a medium in and through which identities are constructed and enacted, and discussion on identity often revolves around its
discursive aspects through examining the discourse in which teachers engage as well as their narratives about life and teaching experience.

Although the role played by language in the construction of teacher identities has been investigated in the past decade, researchers have recently called for a more nuanced and comprehensive research approach (Cross, 2010; Varghese et al., 2005). Varghese et al. (2005) advocated the need for studies to take concepts of both “identity-in-discourse” and “identity-in-practice” into account. In “identity-in-discourse,” agency is “discursively constituted, mainly through language, focusing primarily on critical reflexivity”, while in “identity-in-practice,” agency is “seen as action-oriented and focusing on concrete practices and tasks in relation to a group” (p. 39). The concept of identity-in-practice suggests a mutually constitutive relationship between identity and practice (Kanno & Stuart, 2011). In order to distinguish between the discursively constructed identities and the identities that are enacted in practice, Kanno and Stuart (2011) referred to the former as “narrated identities” and the latter as “enacted identities”. Drawing these two lines of concepts together, thereby, can present a deeper understanding of identities as action oriented construction operationalised through concrete practices as well as discursive construction of personal and professional experiences.

Informed by such a combined framework, Wenger’s (1998) theory of identity formation and Bucholtz and Hall’s (2010) indexicality principle are used in order to understand how participants construct and position themselves in practices as well as how they negotiate and realize their identities with discourses. Wenger (1998) posits that identity forms from belongs to and engaging with the various groups to which people belong, and the three modes of belongs include “engagement”, which refers to the joint process of production and adoption of meaning; “imagination”, which enables people to create an internal picture of the world in which they engage; and “alignment” which enable people to assume an identity though affiliation with a larger group. According to Bucholtz and Hall’s (2010), indexicality refers to semiotic links between linguistic forms and social meanings, and identity relations emerge in interaction through several related indexical processes. In addition to overt mention of identity categories and labels, other indexicality processes include display evaluative and epistemic orientations to ongoing talk, as well as less direct means of positioning through implicatures and presuppositions and use of linguistic systems that are ideologically associated with specific personas and groups. Adopting these two theoretical lenses will combine macro and micro analysis, thus provide a fresh perspective and deep understanding of teachers’ “being” in a particular situation as well as their “becoming” across time and space.

Literature review

Having situated present study’s understanding of the notion of identity, this section turns to position this study in relation to current literature of empirical work on language teacher identity in the field of TESOL.

Research on teacher identities emerged as a significant strand in TESOL field during the past decade, and has been gaining momentum ever since. These studies have been conducted in diverse contexts, and generally followed four lines that touched on certain distinct facets of the complex English language teacher identities. The first vein of studies focuses on teachers’ linguistic identities, and particularly how the
The dichotomy between native and nonnative speakers has impacted on teacher identities (e.g. Diniz de Figueiredo, 2011; Jenkins, 2005; Reis, 2011; Tang, 1997). The central focus of these researches highlights the conflicts between being an English teacher and a nonnative speaker, and the dichotomy which has caused negative perceptions of and among nonnative speakers in general and teachers in particular. A second line of research (Amin, 1997; Motha, 2006; Nagatomo, 2012; Simon-Maeda, 2004) casts attention on English teachers’ social identities, such as race, gender, class and sexual orientation, and reveals that social identities are inextricable components of teachers’ identities and have tremendous impact on how they perceive themselves as ESL/EFL professionals. A third group of studies delves into the impact of participating in teacher education programs on their identities development (e.g. Clarke, 2008; Golombek & Jordan, 2005; Pavlenko, 2003; Tseng, 2011), and highlight the tension and confusion during the transformation of their perceptions of being ELT professionals while learning in the programs. In addition to the formation of teacher identities for pre-service teachers in education programs, an understanding of the transformation of identities across the trajectory of teachers’ careers caught the attention of the forth line of studies. In-service teachers have constructed ideals of selves based on previous teaching experiences, but such self perceptions may be challenged by intervention from local school authorities who favored the use of particular approaches to teaching and the adherence to teaching curriculums (e.g. Trent & DeCoursey, 2011), and local educational reforms (e.g. Liu & Xu, 2011; Tsui, 2007). Results from these studies highlight that teachers need to reconcile conflicting identities so as to cope with challenges through very complex process.

The above discussed studies provide perspectives on English language teacher identities by focusing on various aspects related to identities construction and transformation. In general, they have firmly established the complex multidimensional and multifaceted nature of English language teacher identities, the interrelatedness between identities and contexts, and the importance of understanding teacher identities construction in teacher professional development and empowerment. However, it should be noted that to date a considerable number of studies have focused on identities of NNES English language teachers, relatively few have focused on NES teachers, and even fewer have shed light on their identities construction and negotiation while working in foreign lands. In addition, researchers have recently called for a better understanding of the complexity and importance of contexts in teacher identities formation (Beijaard et al., 2004; Miller, 2009). Context and identity play crucial mediating roles in all classroom interactions and teacher work, and the classroom itself is a “complex ecological site in which unfolding events and processes shape the way in which participants think, feel and act” (Singh & Richards, 2006, p.154), and will thereby affect how teachers negotiate and construct their identities.

The present research aims at examining the identities development of native English speaking teachers working at tertiary level institutions in the state educational system in China. At the micro level, the present study differs from previous investigations in that it will examine teacher identities as manifested in their concrete teaching practices at interactional level in the classrooms through longitudinal classroom observations. Such fine-grained micro-analysis of identity-in-discourse and identity-in-practice within classrooms will enable a deep understanding of the present, concrete aspects of English language teacher identities. At the macro level, by conducting teachers’ life history interviews, the examination of teachers’ identities construction and negotiation will transcend the here-and-now, and combine through
teachers’ narratives the here and there, then and future within broader social, cultural, political, and economic environments in and from which their identities emerge. By exploring the identities development of native English speaking teachers in China, the study adds deep and refined knowledge to the field of teacher professional development, particularly in the realm of language teacher identities. The following three research questions guided this study: (1) What personal and professional backgrounds do participating NES teachers bring to teaching in China and in what ways do these backgrounds influence the formation of their identities? (2) How are participating NES teachers’ identities negotiated and transformed over time throughout their teaching and living experience in China? (3) In what ways do participating NES teachers’ identities manifest themselves in and impact on their classroom instructional practices?

The case study

The case study reported in this paper is a part of a larger study of the identities development of four transnational native English-speaking teachers in China. A qualitative multiple case study approach was adopted because case studies feature rich, thick descriptions of a single entity or phenomenon which is situated and embedded in particular contexts (Merriam, 2009; Paltridge & Phakiti, 2010). In this way, it can provide insights into the complexities of particular cases (Mackey & Gass, 2005). Further, a case study approach is especially promising in shedding light on various educational, social, cultural and economic contexts which shape and reshape individual’s identities, thereby making visible and meaningful the complexity of teachers’ understanding of who they are as English language teachers. Four native English-speaking teachers teaching English at three different public tertiary schools in China were recruited through purposeful sampling. Researchers (e.g. Creswell, 2009; Patton, 2002) have confirmed that the power of purposeful sampling lies in selecting information-rich cases for study so as to yield insights and in-depth understanding to research questions.

All ethical issues arising from this research were identified and resolved following the manual provided by the university’s Human Participants Ethics Committee. Consent from the school principals and teachers were obtained before data collection. The names of the participants and their affiliations were fictionalized to safeguard confidentiality. The teacher reported in this paper, with pseudonym James, was one of the four participants of the larger study.

The teacher and the context

James was born in Ohio, the United States of America. Because his father was a university professor in English and his mother was a middle school teacher, James had been interested in going to school and receiving education since an early age. After he received his bachelor’s degree with major in psychology plus minor in English and consecutively master’s degree in English from one top ranked university in US, he worked for two years as a psychological counselor for teenagers who were in residence at a correctional facility. Then he enrolled in a master’s program in creative writing at a different university in US. Upon graduation, he subsequently taught academic English writing course at a university in South America for half a year, business English writing course at a university in US for half a year, English
writing courses for five years in China at a private university. He had obtained a CELTA certificate in his spare time during his teaching at the first university in China.

At the beginning of this research, James just started his work at the observed public university in China to teach English writing courses to non-English major sophomore students who were enrolled in a joint program offered by the Chinese university and an American state university. He was assigned to teach four classes for sophomore students during the observed semester. Each class met twice a week. The course had a set textbook called *The St. Martin's Handbook (7th Edition)* (Lunsford, 2011).

**Data collection and analysis**

Primary sources of data for this case study included three interviews between the researcher and James, audio recorded non-participant classroom observations of James’ teaching over one semester and after observation follow up interviews, and field notes. Other relevant documents, such as course syllabi, class handouts, assignment sheets, textbooks, and samples of student work were also collected but served only to triangulate findings from interviews and classroom observations.

Three semi-structured qualitative interviews on a one-on-one face-to-face basis were adopted in order to create and maintain rapport with participant through personal level involvement. Researchers (e.g. Dornyei, 2007; Richards, 2003) have suggested that one-shot interviews are rarely able to produce full and rich descriptions necessary for worthwhile findings, and follow-up interviews should be arranged wherever possible. The first two interviews with James were conducted at the beginning of the semester, with the first interview focused on eliciting his experiences, including, among others, family backgrounds, learning experiences, pre service training and teaching experiences before he came to China and the second one focused on his working and living in China. The third interview took place at the end of the semester. It focused on his teaching practices during the observed semester and also served as a wrap-up with additional questions for further clarification of questions emerged during the entire data collection process. All three interviews were conducted in English and audio recorded.

Besides interviews, non-participating classroom observations of James’ lessons were also conducted. These observations were conducted once a week over three months’ period of time. The purpose of conducting classroom observations was to witness participating teachers’ concrete instructional practices and tasks implemented to groups of students, thereby to answer my research questions related to teachers’ identities in practice. Each observed class was audio recorded by a digital voice recorder placed at the front of the classroom. During observation, I sat at the back of the classroom to cause as little disruption to the normal flow of the lessons as possible, and took detailed field notes.

All of the data from interviews were transcribed by the researcher, since Ellis & Barkhuizen (2005, p.209) stated that “transcribing is an integral part of the analysis itself”. After the transcripts were proof read by the participant, I read through the transcripts thoroughly once to become familiar with the data and live through the participant’s experience. Then I conducted open inductive coding for sources of personal and professional experiences that influence the participant’s identities’ formation. I also looked for sources to which the participant attributed transformation of his identities as becoming a teacher through time and space. After examining
interview data, I moved on to micro level to examine the participating teacher’s enacted identities in observed lessons. Next, the macro and micro levels of examination of the participating teacher’s identities were combined and triangulated to examine how the participant perceived, positioned, and understood him self. Then similar codes from various sources were categorized together and organized to establish themes. A detailed report on the formation and transformation of James’ identities as an English language teacher is presented in the following section.

Results

Setting class rules to manage the class

One important discourse emerged in James’s discussion about his relationship with students was related to discipline. It appeared that he favoured regulative discourse and class management was of paramount value to him, as he commented “a big part of teaching is being able to control the class and manage it so that everybody is together” and “I feel this is important to create a working relationship, set boundaries and establish expectations for the students”. These interview data suggested that he deliberately positioned himself as an authoritative figure in order to effectively manage his class and students’ learning.

Such a position as a discipliner was reflected in his observed class management. For instance, he stressed and checked attendance at each lesson and put an emphasis on his class rules. He was observed to write lots phrases such as underlined or circled “NO TALKING!” and “NO EATING!” together with the bullet points of lesson agenda on blackboard before several lessons for students’ individual writing. In fact, James was observed to have spent little time and effort during lessons in monitoring students’ attention, because the students in both observed classes followed his rules that had been laid in advance. In particular, students all sat in set seats assigned by him at the beginning of the semester during the observed lessons. His rationale for doing this was to prevent students from chatting with friends in class and elaborated its reason in the following way:

“To admonish students for talking, and this is a psychological theory, differential reinforcement of incompatible behaviour, you reinforce behaviour, students can't seat next to their friends, and they can't really talk to each other coz there is a seat in between, so you don't have to always be like, hey quiet, don't talk. If they are not sitting next to their friend, they can't chat with their friend, so that behaviour is incompatible with what distracts the teacher or the other students from the class.”

In the above excerpt, psychological terminology, such as lexis of “differential reinforcement of incompatible behaviour” “reinforce”, was the means James used to rationalize his management practice. He had also adopted several other lexis which were associated with psychology throughout his interviews, such as “so they begin to realize this rewards system, read the material, think about it and then when you have the quiz, the questions will connect very well with the reading”. By using his repertoire of linguistic forms that were ideologically associated with psychology register, James demonstrated affiliation to and membership in his previous communities as a student of psychology.

In fact, interview data revealed that how James positioned himself in relation to his students during the process of his teacher identities construction was significantly
affected by his previous learning and working before he became a professional teacher. In addition to his study of psychology as discussed above, he had constructed a coherence that threaded his previous identity as a psychological counselor with latter one as a teacher. He mentioned that discipline reigned in his job at the correctional facility and it was important for him to set rules in place and firmly stick to set rules unless certain unexpected situation called for a flexible deviation. He compared in interviews the psychological traits between university students and teenagers in the correctional facility he used to work as “not much different” in that both of them thought “they can do what they want, they can get away with everything” and both were “not very well disciplined”; and he described his teaching as “it was ok and I already had a job in a group home as a counselor, so I already had the ability, that kind of control but not control, like the flexibility but also some rules in place”. His explicit invocation and juxtaposition of the identity label of “a counselor” in talking about his initial teaching experience illustrated the transference of his management skills through different professions.

From teaching composition to incorporating EFL teaching

When James initially started to teach in China, he drew on his position as an instructor of English writing skills established during his previous teaching experiences. Similar to his teaching of academic English writing, his instruction at both universities in China focused on teaching English writing skills appropriate to academic discourse, and was based on textbooks and syllabus with target skills set by his employing institution. Besides, he commented that “because this is an American degree, my English department in America has these goals, and this is what I'm doing in my classroom”, which reflected the discourse that legitimated his instructional practices was also an authoritative discourse.

While James relied on his previously established position as an instructor of academic English writing skills, he encountered challenges resulting from his Chinese students’ low English proficiency as well as the syllabus set by his employing institution. With a great portion of his students at UZ, their limited control of English lexical and syntactic tools to express their ideas turned out to be a major inhibitor in the realization of his previously established identity. On the other hand, his American department included a speaking component in his writing course syllabus in order to cultivate students’ ability to not only summarize a text in writing but to talk about it verbally.

Due to students’ low English proficiency, James had to reposition himself correspondingly. He modified his instruction to first focus on short essays and to postpone longer research papers until the middle of each academic year, as well as incorporated some vocabulary and sentence building when there was enough time in class. He pointed out “I had to adjust the course for the needs of the students to prepare for what goals were of my university, you have to change the class to fit the audience”, where his usage of modal verb “have to” implicitly displayed his affective frustration. In addition, based on the syllabus sanctioned by his employing department, James added a small component of presentation task to his course each semester. It appeared that James had been, and still was at the time of this study, focusing primarily on teaching academic English writing skills. The clash between his ideal identity as a writing teacher of academic English skills and his enacted identity as an English composition and language teacher was evident in the excepts below, as he
made a comparison between teaching algebra and basic math to justify his instructional focus and explained his alignment with his institutional goal of incorporating speaking element into his course even though he personally did not identify with the goal.

“This shouldn’t be a class about the sentence level; it should be about the essay level. (...) When I get my students here, they’re supposed to already know some English, I don’t cover grammar much in my class, it’s really not why I’m here, I’m here for writing class. It's like if you think of math and I am teaching algebra, I shouldn't have to cover addition, subtraction, multiply, that they should already know, two plus two, eight times four. Basic math is something they need to know already.”

Despite the clash between his narrated identities as a composition teacher and as an instructor of other English language skills alongside writing, James had enacted both positions during observed lessons. He had spend more than three quarters of four lessons’ time in giving lectures on target writing skills with reference to selected chapters in the set textbook and assignment outlines developed by him. Besides, the first two observed lessons covered oral presentation skills. He gave instructions on how to prepare for a speech with the aid of a speech card which provided an outline for article summary speech, and provided useful strategies for presenting such as eye contact, body gestures and so on. Then each student gave a 2-4 minutes oral presentation to summarize the articles they had read. Further, during all the observed lessons, before he would instruct on a textbook paragraph’s information about target writing skills, the whole class would usually listen to either his or a voluntary student’s reading the paragraph sentence-by-sentence, and he would at time correct some pronunciation errors and clarify the meaning of certain vocabularies that were important or unfamiliar to students.

**Developing culturally relevant pedagogical materials and tasks**

In addition to being a discipliner and instructor, James also perceived himself as an entertainer and stressed that “the worst was to have a boring teacher”. In the following excerpt, he overtly mentioned the identity label of a “clown”, and elaborated on the significance of creating a relaxed and interesting learning environment for the sake of making students more receptive to learning:

“I just use different topics to keep us all interested, just to make it something that they don't dread. It's a performance really, you gotta entertain students, it's like you are a clown, you gotta keep them engaged, or they are gonna shut you off. (...) I think it could be a good mix of you being strict, being in control, being flexible, being academically serious also being funny. You gotta blend it together, coz if it's always one, it's gonna feel too stifled, I think this makes a better, more relaxed learning environment.”

As an entertainer, James adapted textbook materials to make sample texts he used in class intriguing and culturally relevant to his students’ demography. During the first semester of his teaching in China, he quickly identified one problem of the textbooks set by his American department as that most of the sample paragraphs and essays were about American situations that his students had no experience of. Therefore, he only used information from set textbook as “a reference”, and he would select from various online websites suitable texts on topics which could relate to China and somehow connect with students’ life, and used as materials for students to read.
also wrote appropriate sample paragraphs and essays by himself to provide students with optimal learning opportunities of target writing skills.

James’s sensitivity towards cultural issues could be traced from two previous experiences he elaborated in interviews. First, his teaching in US of international students from around the globe enabled him to observe American culture from a new perspective. He found that answering students’ daily questions and reading their essays offered him a fresh look at things that he saw every day and took for granted. The second related to an incidence about an inappropriate slang he inadvertently used during his teaching in South America, which made him realise the importance of being sensitive to local culture. When he taught there, he occasionally used Spanish in class, and once he said in Spanish that he liked to eat chorizo, but he did not know that in local context the word chorizo for sausage was a very bad slang word until he received his students’ response of laughing hardly. It could be seen from his explicitly comment after sharing these experiences in interviews that “I learned to pay attention, to be careful” that his experiences of teaching various groups of students from multiple backgrounds in different cross cultural contexts raised his awareness to cultural issues.

In addition, James attempted to make the writing assignments he gave appealing to students. Over his years of teaching in China, he had created several writing projects that encouraged students to investigate their own culture and lived experiences in real life and write with enough substance. One instance he elaborated in interview was a project that involved sharing their memories of food culture through written essays and recipes of their favourite Chinese cuisines. In his view, this project not only made learning process more engaging, but also promoted an inclusive vision of writing that enabled his students to capitalize on their rich local cultural resources and have their cultural identity validated and maintained. Besides, it appeared that being a lover of food and cooking himself added authenticity to many writing projects he assigned to students which were related to food, and therefore, his identities as an English writing teacher had a personal touch to it.

Classroom observation confirmed James’s self-position as an entertainer who attempted to create a relaxed and engaging learning environment, and further revealed two particular strategies he used intentionally to entertain students. One was to incorporate Chinese in his instruction on vocabulary. He often asked students explicitly during vocabulary teaching for corresponding Chinese translations and attempted to learn related Chinese pronunciation. In doing this, he enacted a situated identity of a learner about Chinese language during his interaction with students, which transformed the unidirectional flow of information from teacher to students and engaged students more during class interactions. The other one was using local examples, especially by resorting to his knowledge of local practices and referring to anecdotes about his personal experience in China, to illustrate target skills and related points instead of using accompanied examples in the textbook. By referring to his personal experiences, James managed to establish a relaxing environment for students’ open sharing, thereby adding a possible interactional dimension in the classroom.

*Resisting assigned positions and initiating changes at departmental level*

During his identities negotiation, James at times overtly resisted the power relationship that existed in his employing department by not abiding by the
department’s pedagogical demand. For instance, at the first university he worked at, his identity as an autonomous teacher was contested by the department’s business-like attitude toward education and preferred ways of doing things. Such a tension was mainly illustrated in interview data as the types of writing assignments given to students, as the excerpt below demonstrated. The department dean wanted all English writing classes of the same level taught by different teachers to have the same assignments due to students’ complaints. James, however, thought it would lead to many possible instances of students sharing their work with others enrolled in a different teacher’s class. He described the university as “a consumer based school” and made the following comments:

“I think universities are adapting business models these days, too many times, students are treated like customers, when customer complains, the chicken's too spicy, the paper's too long, then the manager changes something. That's not how it's supposed to work, it's not how it used to work, and I don't think it's good.”

By referring to “how it's supposed to” and “how it used to work”, James drew on personal value system and traditional practice to illegitimate the inappropriately commercialized position as an educator which, in his view, the administrators at UZ projected. James’s explicit negative evaluation “I don't think it's good” fore-grounded the difference between his and the administrative perspectives on education and marked his disalignment with the administration at UZ and his stance of resistance toward the discourses of local community. Therefore, he negotiated his pedagogical autonomy with institutional demand and chose to not comply with the department’s requirement.

What’s more, during the process of his teacher identities development, James exercised his agency to share ideas with colleagues and initiate new practices in his institutional context. James stressed in interviews that “I always argued every year that we should have a different book, it wasn’t very good, none of the examples that were in there were culturally relevant to this demography”. His suggestion to his American department was accepted at his fourth year’s teaching at the second university and the set textbook was changed to one which James commented as “but even this one I think is not good”. Such realization of his suggestion through individual negotiation reflected the initiation of his active engagement in his teaching institutional context.

Discussion and conclusion

This study investigated the identities formation and transformation of one transnational native English-speaking teacher in China. For this particular case, the development of his identities as an English teacher rose from lived past and present educational and professional experiences. In terms of his previous learning experiences prior to coming to China, his educational background influenced his attitudes towards teaching with an emphasis on psychological approach. Besides, his professional experiences before he started to teach in China shaped the formation of his identities as a teacher. He transferred his management skill developed in his earlier work as a psychological counselor to help him relate with students with a stress on discipline in class. Later, his insights and skills developed during his transnational teaching experience prior to coming to China assisted him in adjusting pedagogical materials and task and relating with his students.
Even though James had formed his identities as a professional English composition teacher before he came to China and maintained aspects of his positions such as being an instructor of target writing skills and a discipliner in relation to students in China, he was faced with external challenges after he started to teach in China. Parts of the challenges were from classroom, including local students’ English language proficiency level and culturally inappropriate textbooks. Accordingly, he repositioned himself by incorporating instruction of language and academic skills and creating an engaging learning environment with intriguing materials and tasks for his courses, which had been confirmed and reflected in the observed lessons. In addition, he exercised his agency and negotiated tensions between individual autonomy and departmental demand at the first university he taught in China, and between personal pedagogical aspiration and limited available computer facilities that formed his working context. Torn between individual positions, class conditions, institutional prescriptions and societal practices, James still managed to build up his professional profile through taking professional training program and engaging in wider academic community during his working in China, and was committed strongly to his career as a professional English writing teacher.

Although the focus of the present study is on one transnational native English-speaking teacher’s identities development and the limited generalizability of case study is acknowledged, the implications raised go beyond institutional and national boundaries. First, for administrators and host teachers who hire and work with NES teachers in similar EFL settings, they should acknowledge the competencies these teachers bring with their cross cultural experiences and make informed efforts to retain NES teachers through necessary professional support. Second, for teacher educators in NES contexts who are involved in preparing NES teachers to teach abroad, they should acknowledge the insights and skills teachers bring into their professional teaching contexts from their previous careers and possibly incorporate teacher identity formation as an explicit topic of study. Last but not least, it is hoped that more studies will make visible and accessible the day-to-day realities of teachers’ identities development in the “expanding circle” contexts, paving the way to a better understanding of and a deeper inquiry into TESOL teachers’ professional growth.

References


NATIVE AMERICAN-BASED MATHEMATICS MATERIALS FOR UNDERGRADUATE COURSES: YEAR FOUR REPORT

Topic Area: Curriculum, Research and Development

Presentation Format: Paper Session

Description: This project develops and researches undergraduate mathematics materials based in the culture and mathematics of Native American Peoples for integration into undergraduate courses. Mathematics topics include probability, number theory, transformational geometry, and pre-service elementary and secondary education-related content. These materials--both paper and electronic--are classroom ready, and are developed and piloted in consultation with Tribes in the Rocky Mountains, Plains, Pacific Northwest, and Southwest. This is an NSF DUE TUES Type 2 funded project.

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ABSTRACT: This session will present mathematics materials based on the culture and mathematics of Native American Peoples. These materials—both paper and electronic—are classroom-ready, and were developed and piloted in consultation with Native American Tribes in the Rocky Mountains, Plains, Pacific Northwest, and Southwest. It will also discuss the philosophy behind the materials, the need for them, and the success of their use in the classroom. This is an NSF DUE TUES Type 2 funded project.

The session will include topics from the following list:

1. The background, need and accomplishments of the project.
2. The relationship between culture and mathematics for Native American peoples.
3. A discussion of the progress of this project during Year Four.
4. The mathematics of Native American people that may be of interest to teacher educators and teachers of grades 9 – 12.
5. Examples of the classroom-ready materials selected from probability, number theory, transformational geometry, and pre-service elementary and secondary education-related content. Included are the statistics of contemporary mathematical problems facing Native Americans, like the high rate of diabetes.
6. The value of these materials for teachers in Native American Colleges and High Schools.
7. Connections between these materials and other select groups of students.
8. Suggestions for future research and funding.
Counselor Self-Exploration as it Relates to the Communication Process.

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During the course of the Presentation we will explore areas such as, pre-requisites required of ourselves before we enter the helping professions, basic guidelines of the counseling process, counselor emancipation from self as readiness for counseling including, the processes of observation and participation, communication vs. conversation, confiding vs. confession, clarity vs. solutions. I will also present a proposed structure to refer to within the counseling session for review. This structure may be especially helpful for beginning counselors and includes, identifying the concern, identifying the primary category of the concern, the steps in sharing the meaning of the experience and utilizing the appropriate style of responding.

Pre-requisites of the helping profession

1. We must sincerely want to enter the profession. We must want to work with individuals with concerns. We must have a continued passion and enthusiasm for what we have chosen to do or we will disintegrate into inadequacy.
2. We must be willing to give time. Counseling cannot be mailed in; it is a face to face relationship that requires a portion of our lifetime.
3. We must derive satisfaction from what we do if we are to replenish ourselves professionally. Most of us enjoy nurturing others, we touch people and they grow, there are those who touch people and cause them to shrink.

Basic Guidelines of the Counseling Process

1. Clients come to counseling because they want change in their lives. We can help to promote change by either adding or reducing forces in our clients lives. Adding forces involves giving advice, suggestions, information. Reducing forces is a more important counselor role in that it addresses what is it within the client that is preventing change.
2. The primary goal in counseling is emancipation. To help or clients become self-directing by introducing them to the skills of decision making, problem solving, critical thinking, risk tolerance, and confidence building.
3. An effective counseling session is not concerned with whether the client leaves either happy or sad but rather that they leave the counseling session thinking.

4. The primary tool of the counselor is communication.

5. The foundation of the counseling process is that it is a relationship. As in all relationships we must remember that it involves the changing process of relating. It is a verb not a noun. It requires on both sides, commitment, agreement and investment.

Counselor emancipations and transformations as readiness for counseling

1. Clarity -vs- solutions, counselors provide clarity of self and situations so clients can find their own solutions and make their own decisions. A counselor who gives advice is not helping the client to learn how to help themselves.

2. Observer -vs.-reformer. Observation is to be with something without a point of view. Our emphasis is not to reform but to observe the behavior that is being demonstrated. Our focus is on the problem as well as the client presenting the concern.

3. Understanding through the clients perception. We must see the world through our clients eyes not our own if we want to understand our clients world. Acceptance of our client is the residue of true understanding, and acceptance and understanding lead to mutual respect.

4. Communication -vs.-conversation. Communication we can define as sharing the meaning of an experience, while conversation can be defined as sharing the experience only.

5. Participation -vs- removed. We must invest ourselves 100% in being with those things we chose in life. To the extent that we do not, that is the extent to which we exist rather than live. The counselor must be “with” his client 100%.

6. Confiding -vs- confessing. Confiding is affective in nature, confessing is cognitive in nature. We gravitate to those we can confide in, we distance ourselves from those we feel we have confessed to. In confiding we do not feel as if we have lost one iota of our self concept or self esteem.
Structuring the counseling session

1. Provide a supportive statement recognizing the client's efforts. 2. Identify the concern as stated by the client, not what we interpret the concern to be. Discuss first what steps in sharing the meaning of an experience. 5. Utilize the appropriate styles of responding. 6. Incorporate techniques that facilitate communication. 7. End the session leaving the client thinking.

Identifying the primary areas of concern

Styles of responding

Sharing the meaning of an experience
1. Statement of the Item -(what is the concern). 2. Physical Awareness - (where is the pain or joy). 3. Primary Emotions and Feelings (loneliness, inadequacy, fear etc.). 4. Attitude-Point of View-(my fault or their fault) 5. Behavior - (what do you do). 6. Considerations-Beliefs -Ideas (that may impact the concern) 6. Images of the Future-(how does the situation affect future plans)

Samples of techniques in counseling

Listening, summarizing, reflecting, silence, open-ended questions, confronting, clarify, active listening, accurate empathy, evocative responding, etc.
Proceeding Submission

1. Title of the submission

“Self-Identification of Adult Developmental Theories: Comments From Educators”

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6. Abstract

Research indicates teachers’ beliefs in a specific adult development theory have an effect on their teaching. These beliefs provide the lens through which teachers view their teaching practices and the instructional needs for students. (Baumgartner, 2001) Teachers who know their development theory will be able to teach students and help students be successful in acquiring and retaining knowledge. The purpose of this investigation was to determine if teaching practices correlated with the self-identified adult development theory of teachers. Findings revealed that the majority of participants identified with the behavioral/mechanistic theory and showed evidence of practicing that theory in their teaching.
An effective field experience for pre-service education majors in online courses is an important component of teacher education programs. Partnerships between universities and K-12 schools are one way to provide positive experiences for pre-service candidates. One challenge in developing these partnerships is in the design of the field experience for online pre-service candidates. This study describes a partnership and activities between a university professor and teachers which was designed to enhance the field experience for pre-service candidates.
Title: Meeting Literacy & Music Standards through Sound Stories in the Music Classroom!

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Description: Engaged activities and discussions lead participants to new strategies and understandings of the ever increasing task to include various standards, including those of literacy, in the music classroom. Sound stories will be highlighted throughout the workshop to guide these connections using the instruments and sounds of Hawaii. Participants will create examples of this style of literature and ensure that engaged learning, standards, and music excellence are fulfilled in the music education classroom.

Detailed Abstract of the Session

Music education has changed drastically within the last few years given the implementation of Common Core Standards, revised state standards, music education standards and even the newer requirement of adding literacy standards. Colleges and Universities that prepare music students for teaching are having to alter methods courses and standard lesson plan formatting in order to fit all of the new directions. Varied ways of teaching must now be evidenced that highlight strategies of incorporating all of the standards to the future teachers. In the classroom, music educators are also having to rethink lesson plans and teaching procedures to incorporate the ever growing standards. This requires greater attention and detail to planning.
The purpose of this workshop session is to guide music educators on all levels, from student teachers to even more experienced teachers, in their attempt to organize the possibilities that exist in music teaching to incorporate the various standards. Oftentimes the simplest strategy will go overlooked in the complexity of the requirements. The formal lesson plan will be used as a guide to illustrate the possibilities of easily incorporating literacy standards. From there, several suggestions and ideas will be gained through active participation how this can be simplified and brought together.

This workshop session is not meant to be lectured-based but rather one that participants are asked to participate, clarify thoughts, ask questions, and seek new understandings of the standards in terms of daily teaching in music education with the inclusion of literacy projects. After discovering elements of a sound story and experiencing various examples, the participants will create their own sound story and connect it to literacy standards in the music classroom. Participants will use Hawaiian hand instruments such as the frog instrument and various hula instruments including the Pu`ili. Moreover, participants may need to record birds, water, etc. to use in their literature creation. As participants create these literacy experiences and portions of lesson plans, they will discover strategies that can quickly meet the requirements of the standards for an enhanced classroom in music education.
Examining School Shootings Through the Lens of Margin
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Abstract
This paper is based on a phenomenological study of school leaders who experienced a school shooting. Looking through the lens of “Margin”—what is left over after subtracting one’s “Load” from one’s “Resources”—this paper describes the Load school leaders felt in the aftermath of a significant crisis. Swenson describes two kinds of Load: external and internal. The data showed that leaders experienced both types. Examples of external Load cited by participants included extra duties, demands from the media for information, and legal demands. Examples of internal Load included feelings of responsibility for the shooting (even in the face of logic which said that there was nothing anyone could have done to prevent the shooting); the emotion work needed to present a calm and steady face to colleagues, the media, and the community despite inner emotions of deep sadness and feelings of being overwhelmed; and personal struggles that may be caused by exposure to a traumatic event or from exposure to individuals who have suffered trauma. Despite these examples of Load on leaders—and there were many others—leaders also drew upon Resources to cope with the unusual and demanding circumstances of leading a school under horrific circumstances. A few examples of Resources included support from others, being able to "stand outside" their experience in order to make sense of it, and focusing on the needs of others. Leaders experienced of school leaders significant "negative Margin" yet most came through their experience wiser and stronger. Their example, although specific to a school crisis, has implications for all types of leaders in other settings.

Introduction
Seventy-five percent of the almost 100 mass shootings listed in the Timeline of Worldwide School and Mass Shootings have occurred in the United States, beginning with the 1996 shooting in Moses Lake, Washington. However, further exploration of school violence reveals that such events are known to have occurred in the United States as long ago as the mid-1800s. However, it was the Moses Lake shooting that brought me to the study the impact of school violence on those who were leading schools and school districts. At the time of the shooting at Frontier Middle School in Moses Lake, I was serving as a principal in Spokane, Washington, just 90 miles east of the shooting site. I remember commenting to some colleagues that the job of school leader is already extremely demanding, so how much more so under the circumstances of extreme school violence? That question eventually formed the basis of my doctoral dissertation, which explored the experiences of leaders where school shootings occurred. Over the years, I have continued to write about the phenomenon of leading in times of crisis, especially
crises caused by extreme violence. In this article, I will explore the impact of crisis leadership through the lens of living systems theory or “Margin,”iv which I will outline below.

Margin

The concept of Marginv originated from the work of Richard Swenson, and is defined as what remains when Load is subtracted from Resources.vi In this simple equation \( R - L = M \), R represents personal Resources, which might include our health, financial security, education, talents and skills, social supports, and spirituality. Load (L) comes in two forms: external Load, the kind that is readily observed, and internal Load, which is invisible to others. Thus, the equation \( R - L = M \) can yield two possible answers: “positive” or “negative” Margin.

The ideal state for every individual, when our Load is subtracted from our Resources, is positive Margin. Without additional (or slack) resources, individuals cannot as easily respond to a crisis or develop creative responses to their problems. Our language is full of expressions that reflect the state of negative Margin; for example, “burning the candle at both ends,” “burning the midnight oil,” “running on fumes,” and “running on empty” come to mind. It is possible to sustain negative Margin, or “burn the candle at both ends,” for a time. But, in the same way that over-spending may lead to bankruptcy, if we live past our human capacities for an extended period of time, negative Margin will lead to only one of two consequences: (1) making a voluntary, fundamental change or (2) eventually, some type of collapse.

The beauty of Swenson’s work on Margin is that it frames an individual’s stress levels in living systems terms, but in a way that is easily understandable, as well as
providing a simple way to understand both first-order and second-order changes. In this study, I use the Margin concept to describe the experiences of individuals who led schools when a shooting occurred.

**Methodology**

The goal of this study—to better understand the experiences of school shootings through the concept of Margin—was best achieved by allowing participants to tell their stories in their own words; I therefore chose to conduct this study using phenomenological research methods. This approach describes the meaning, or the lived experiences, for individuals who share some particular phenomenon. Phenomenology relies on the analysis of participant interviews; the researcher searches for themes and for possible meanings interviewees attach to the phenomenon being studied. The researcher sets aside prejudgments and "brackets" his experiences, later relying on intuition to find themes and patterns in the data. In my original study, I interviewed 19 leaders from one of four school districts where school shootings occurred. For this paper, I drew from the transcripts of four participants, one from each of the four original sites visited. All names referencing participants are pseudonyms. At the time the interviews took place, “Brad” was a high school principal, “Dan” and “Ed” were school district superintendents, and “John” was a school district psychologist. All four had major leadership roles in the aftermath of school shootings that occurred at their respective sites.

**Resources**

The “R” in the Margin equation represents personal Resources. These can include a person’s perceived health, financial security, education, talents and skills, social supports, and spirituality. Participants mentioned two types of Resources: 1) internal,
those personal traits and skills they drew upon to lead during the crisis and 2) external, Resources that came from others.

**Internal Resources**

Ed described a kind of personal “inner strength” as one personal Resource he possessed: “It is testimony to the strength of the human spirit and the nature of us all that sometimes, in situations like this, you just reach down. I don’t know where you get it from, but it’s there, and thank heavens for it.” Although not mentioned as explicitly by other participants, all of the leaders with whom I spoke drew upon what Ed described as this “inner strength.” Sometimes past life experiences, particularly those where the participant successfully coped with extreme difficulties, served as a Resource. John described how his military experiences help him avoid “being emotionally impacted” by the horror of the shooting. He described a conversation with a colleague who told him, “I cry all the way home and I cry all the way in here in the morning when I come in.” John explained that he was able to distance himself emotionally because he had “been in a lot of stress trauma situations. We lost 13 men in one whack in Viet Nam. I’d been there so I had some coping mechanisms instilled.” Another school leader described how he drew upon his experience of the death of an adult child in much the same way.

Self-talk and the ability to focus on others were also Resources leaders drew upon. John haltingly described how he used self-talk to cope with finding a student who had been shot, “I just... I just...said [to myself], ‘It was just brain tissue. You’ve seen it before. Don’t worry about it.” The majority of leaders I originally interviewed described using self-talk as a Resource to cope with the crisis they faced; many coped by focusing
on the needs of others rather than on themselves: “I just focused on her [shooting victim]. Getting her to feel safe again” (John).

“Default” habits of being organized and personality traits were also a Resource. John described his habit of note-taking: “I got a notebook, legal pad and I’d jot my notes. I had notebooks strung all over that campus.” Brad recognized his need for alone time and structured it into his day during the height of the crisis: “I came out to school and stayed here for three or four hours by myself. By Saturday [several days after the shooting], I had a great need to spend some time alone.” Brad also coped by sharing time with his two-year-old granddaughter. He enjoyed that she did not “worry about what kind of a day I had, and was not concerned with the events…and was not going to ask any questions or feel sorry [for me].”

Ed told me, “I pride myself on not being so much of an emotional person.” The majority of the leaders with whom I spoke prided themselves on being able to keep their personal feelings private. This ability was interpreted as a Resource. However, the cost of impression management, also known as emotional labor, is high in such situations; I will, therefore, address emotional labor as a Load later in this analysis.

Ed also expressed confidence “that I was going to get through this. I felt it was going to be all right. I was quite confident.” Again, many leaders believed they would “get through this.” Such attitudes of confidence were experienced as a Resource, according to the Margin concept.

External Resources

By far, the majority of Resources leaders drawn upon during the crisis came from
external sources. “Other people were worried about me. I know that. They talked about it” (Ed). Regard and concern for leaders by subordinates and colleagues was a huge Resource for leaders. However, leaders also drew upon Resources outside of their districts for support.

*Outside experts.* Particularly in later school shooting sites, school leaders could draw upon the experience of others who had led under similar circumstances or who were experts in dealing with the media or with the trauma of violence. Often these external sources contacted the affected school leaders and offered their support. For example, Ed described how he was provided with “a public relations person who helped us with press releases and preparing ourselves for news conferences.” John “counted over 30 big satellite trucks” parked near his school and told everyone he worked with “to stay away from that area. Don’t you dare mention my name to anyone” [in the media]. John suggested to his superintendent and school board, “Why don’t we get the experts in here [from two different nearby sites where previous school shootings occurred]. I said, ‘Let’s bring them in.’ They said, ‘Okay, it's a good idea.’” Similarly, Brad received a phone call from a principal at a nearby school-shooting site. “He had told me the press was at his school for 12 days. He told me you can cut deals with the press—and so I started cutting deals with 'em. And the deal that I made with them—all the media really—what they wanted was a personal interview—and so I did lots and lots of personal interviews.”

*Government officials.* Officials from local, county, state, and even national government were also instrumental in providing support to school leaders. When the media tried to get students to offer statements at counseling centers, John expressed his frustration, and the local sheriff sent a warning to the media that anyone caught on school
grounds would be arrested and put in jail. John reported, “And he said ‘You will not be put in the same area that the shooters are. We will put you in the bull pen with the boy friends.’ [After that], we had no problems with them.” The sheriff assigned John a car and deputy for “errands or anything we needed to go pick up, supplies we had to fly in, or things we didn’t have and had to bring in. He could get there a lot faster than we could.”

State-level government officials also served as Resources to school leaders. John reported that the state Superintendent of Education provided “funds for counseling.” Ed described how one such official made a statement at an early press conference:

None of these politicians were trying to make political hay. He made the statement, “No amount of rational planning can defeat irrational behavior.” I thought a great deal about that because [irrational behavior] impacts me in my position. Because if that statement is true, what can we do about this [school-shooting phenomenon]? And I have come to believe that rational planning can, to a degree, defeat this kind of behavior, but not absolutely. And that’s where it causes some anxiety. We know that no matter how much we do, it will not guarantee that this won’t happen again.

Federal government officials provided support for some schools, including the Office of the President, in some instances. John reported that the President called and said “Anything you need, call. And he gave me his phone number. This will get you directly to me. Any red tape you need cut, or anything like this, call me.” John made such a call when a television executive informed John that a segment about the counselors at his site was going to be aired, much against John’s wishes. After John’s call to the President, the segment was cancelled. John also appreciated extra funding provided by the Department of Education and the presence of the National Guard at the shooting site.

**Counseling for leaders.** Counseling for leaders was provided in all cases, but the trend among the leaders with whom I spoke was either to not participate in counseling
(because they were too busy coping with the crisis), or to participate only perfunctorily.

Most reported they did not participate in formal counseling.

To be honest, I haven’t personally had any counseling services provided to me. I haven’t felt that I needed them, although I talked a lot to people about it, who were confidants and we could share and work through some things. I would say to anyone that goes through it, don’t be afraid to do that. (Ed)

Ed suspected that the crisis team leader was “maybe counseling me and I didn’t know it, but we talked a few times. That is important to do, because the effect is so profound. It really is.” Dan echoed Ed as he described how he did not let himself “get into [the debriefing] very deeply”:

The administration team did have a little debriefing session 10 days after the shooting. There had already been debriefings for everyone else. We needed to talk about it ourselves. A local expert, very adept at crisis counseling, who had been working with the staff, conducted a debriefing with us. I don’t think I let myself get into that very deeply. I just kind of did it and went on. I figured the phone was about to ring and there were papers to do. So I really probably never really debriefed it to the degree I should have. I don’t think anyone else did either. We tried to do that but probably it wasn’t real effective.

John led the crisis response team. He described how the team would meet “after all the counseling was over”:

About 10 of us every night. We would sit down at the end of the day and chit chat and talk and share our feelings. We debriefed each other…Any emotion we had that kind of spilled out because we were all professionals there, and we would unofficially debrief ourselves and take care of each other that way. It was so late, people were so tired, most of the counselors would scatter, except our group would make our plans and kind of debrief each other.

Team leadership. Another major Resource for school leaders was team leadership.

In every case, many people were involved in post-crisis management; leaders consulted with local experts and often delegated decision-making authority. Ed felt the team approach helped his district respond appropriately. “I would say the main reason was
because no one person was making the decisions. There were key people in leadership positions who collaborated together to make the critical decisions.

This approach was common at all sites. Dan assembled a post-crisis management team that included the board members, the school district insurance company and attorney, as well as other administrators.

However, there were times when “someone had to make the decision” [Dan], particularly when there were opposing recommendations for what actions were appropriate. Dan told his school board, “I’m going to need your permission, if you will, to violate policy…under extraordinary circumstances.” Like Dan, John was granted permission to exceed his usual scope of authority, which he had to do often.

Existing crisis response team. A major Resource at Ed’s site was an active crisis response team. Brad, John, and Dan’s sites had no such team in place and all had to scramble to deal with the massive demand for counseling services for students, staff, and community members. Ed called it “providential” that the crisis team “had scheduled a meeting” on the day of the shooting, just a few blocks away from the school where the shooting took place. “They were all there. And as soon as the call came in they were there actually before the ambulance and police people arrived.” The ability to respond to the crisis immediately became a key Resource in Ed’s district.

Community members. At all school shooting sites, community members stepped up to provide Resources. These included providing expertise, counseling services, food, transportation, and a myriad of other services.

Walmart and Kroger's brought truckloads—I'm serious—truckloads of food. One group brought us 12 frozen solid turkeys. We thanked them and we gave them to families of the deceased and wounded because they're going to get company.
Red Cross did all the cooking for us and the Salvation Army had a mobile canteen too. (John)

John also described how parents volunteered to drive the counselors to remote locations in the community, which allowed his team to serve many more families. Brad stated, “The community was very supportive. I think just about anything I needed done, there was somebody there to do it.”

Support from the community, at Ed’s site, also extended to the family of one of the victims. Ed described how one victim’s family made healing and “taking back the school” much easier because of their desire that their boy’s death…

[C]ount for something, and to learn from it, and be more caring. And that is just exactly what we wanted too. We were fortunate that the parents of the boy who died were not looking for vengeance or someone to blame, which is so often the case and it's natural.

As Ed points out, often parents of victims in other school shooting sites sued the school and its leaders. Lawsuits were a huge Load on school leaders.

**Load**

According to Swenson, Load comes in two forms: *external*—the kind that is readily observed, and *internal*—which is less visible to others. There were abundant examples of both types of Load in these incidents. External Load increased dramatically as a result of the crisis. Two comments capture the major kinds of Internal Load that leaders experienced: 1) Leaders had so many details to attend to, as John stated, “There wasn’t really time to think.” And 2) Ed’s comment that the crisis “was almost surreal. You don’t really believe it's happening, but you know it's happening.” The crisis impacted leaders’ communities, their school system, but also significantly impacted them personally.
External Load

Examples of external Load include increased work demands, meetings and appointments, “to-do lists,” health issues or those of loved ones, debt, interpersonal conflicts, and lack of social supports. All four participants highlighted in this study held positions of leadership at “ground zero,” three due to formal positions of authority they held (two as superintendents—Dan and Ed—and one as a school principal—Brad) and one who was placed temporarily into a position with authority (John).

The Load of all four leaders was immediately impacted due to demands for them to coordinate the various efforts needed to respond responsibly to the crisis. Coordination required hands-on attention to a broad range of issues. Even when they delegated some of the tasks to others, these leaders had to continually communicate with school board members, government representatives, law enforcement, hospitals, counselors, attorneys, other administrators, teachers and support staff, parents, students, and various other community members. Therefore, even though the crisis response in every instance “was a team process” (Dan), holding a central leadership role added tremendously to everyone’s Load: “There was team working on the counseling, a team working on the clean up, a team working with the press, working with parents, working with the funeral arrangements, everything had to be coordinated” (Dan).

Unknown territory.

Ed captured what all leaders felt at being thrust into a circumstance that they had never imagined they would face:

Suddenly you’re in a context that is beyond you, really. It is something you are not prepared for, that you haven’t got experience in. And the protocols aren't part of your normal everyday workings. It's just incredible. So it's amazing the kinds
of demands that were placed on you that time. It is just almost beyond comprehension.

As mentioned earlier, Ed’s district had a crisis team in place, typically to deal with teen suicide, accidental death of students or staff, and other crises that arise in the “normal” life of schools.

John, who led the counseling efforts in his district, faced circumstances where no such crisis team existed: “We started at zero. Nothing. I just never felt so alone. You look back at the enormity of what occurred and what was ahead of you and you have nothing. Zero. Nothing at all to go by.” This sentiment was true for all participants: none had ever had any type of training to deal with a crisis of the magnitude of a school shooting.

In fact, one silly reporter asked me, said “What training do you have to handle a crisis like this?” I said, “I had no training. I don’t know of any high school principal that has ever had any training with what you do when you walk out and eight of your students have been shot in the main lobby. I said, “I don’t know where you get that kind of training.” (Brad)

The horrific nature of a school shooting forced professional educators who were experts in child development, curriculum, and school leadership to deal with what the Public Relations Director at one site described as “what one expects to find in a war zone, rather than a school zone.” For example, Brad “told the janitors to be prepared to work late, to clean up the blood, and to fill the bullet holes and paint the walls. We were going to school the next day.”

As a consequence of the crisis, leaders had to deal with a myriad of complex issues and questions they could not have possibly anticipated before facing the reality of a school shooting: legal issues; liability; logistics related to counseling, care of students, teachers, staff, and community; when to reopen the schools; etc. Additionally, school leaders, including superintendents, were suddenly thrust into circumstances where their
authority became subordinate to the legal system. School property became a “crime scene” and district administrators had no authority to enter until law enforcement allowed it.

Leaders coped with a range of issues that added Load, from the inability to use of the phone lines due to overload, “to having to give attention to detail and concerns that you don’t normally have to concern yourself with” (Ed). The factor of unknown territory caused leaders to feel a high degree of anxiety due to the highly ambiguous nature of responding to the crisis.

Things like, should we visit the families of these victims? Which we certainly did. Should we visit the family of the boy who did the shooting? Which we did. How do we proceed with funeral arrangements and costs? What responsibility do we have there? … You're talking to your insurance people, and talking to lawyers. I mean there's just things that you would never in the course of a career experience, you would ever have to deal with, hopefully ever. (Ed)

Do we pay the medical bills? Were we at fault? If you pay them, are you? We don’t have a zero-fault process here. We are not at fault. Parents are thinking, we can’t afford, I have to buy meals and take all these trips. Can’t you help us out? Insurance issues. And it tugs at your sense of fairness. But, on a legal side, protecting the public’s interests here. We were dealing with employees who lost a child. Do they continue to work? Well, they can’t. You’ve got leave policies. They have bereavement leave—two or three days. They got sick leave. Go to the end of sick leave. Well, you’re done. You've got to come back to work, according to our policy. Do you? Well, you make a decision. (Dan)

Sometimes, decisions made with the best of intentions garnered severe criticism. Dan described one such occasion:

We declared a task force—a blue ribbon task force. What a mistake that was. One victim’s favorite color was blue. He was called “Baby Blue.” It looked like we were not honoring the other deaths with no intention to do that. We made a mistake.
Decisions regarding when to send students back to school after the shooting or when to stop lowering flags to half-mast often created controversy. Leaders felt that often there was no way to satisfy the needs of the school community.

*The media.* The impact on leaders to satisfy media demands was a load second only to the shooting itself. For example,

Newspapers, and everything, and television were here. They came from all over the world, remaining on school campuses, in some instances, for over two weeks. They wanted—demanded—interviews with students, parents, community members, and administrators at any cost. (Brad)

As Ed explained, “There is a saying about the media: feed the goat. And that means they will eat anything, but if you don’t feed them, they will find something to eat.” Brad described his strategy for “goat feeding”: “About every 30 or 40 minutes I would have someone go over to talk to the press and make sure they were getting continuous information.” The media had to be fed; however, leaders struggled to place limits in order to protect vulnerable people. Ed explained, “The first thing is to decide who is going to speak on behalf of the district. No one else then talks to the media. I was assigned that duty, as the superintendent.” Likewise, Dan and Brad took on that role in their respective districts. John announced to his team, “No one will talk to the press. Period.” John tried to insulate himself and his team from all media, however, could not avoid being significantly impacted by their presence. He said, “Our biggest problem was the press. They all but sunk us. We were inundated.”

All the sites faced bullying by the media, especially national and international media. When leaders tried to limit access to students and staff, media representative cited “first amendment rights” (John) and threatened lawsuits. The Sheriff at John’s site told the crisis team, “Let them sue us. Guess where the trial will be held?” Such a stance
emboldened school leaders and in every site, they placed boundaries on the media to
protect vulnerable people. For example, leaders limited reporters to specific media areas
and backed their demands with promised consequences: “If you were outside of this gym
interviewing anyone, then you would be escorted off the campus and your truck will be
impounded” (Brad). Participants shared many examples of unscrupulous efforts by
members of the media to “get their story” at any cost.

Participants at all four sites described feeling anger toward the media, but leaders
were especially wary of them:

There was a lot of animosity towards the press because people saw what
happened in places like Columbine, where people in their grief were exposed.
There was nothing private” (Ed).

Issuing statements becomes a little scary because you have no idea whether or not
some reporters are deliberately trying to inflame the situation or trip you up, or
create some controversy that they can then exploit.

Those that served as district spokesperson, and other leaders who shared their
experiences publicly, often paid a personal price. During my interview with Brad, he told
me:

The words came easy and the thoughts come easily. But after [this interview] is
over, I will not be in any shape to drive a car. It's easy to do right now where we
are sitting here, but when we get through, I will be so drained emotionally that I
won’t want to talk to anyone about anything for the rest of the night. You are just
emotionally drained.

Based on the data, such a post-interview response constituted a significant load for
leaders.

Trauma responses. The intense demand on leaders represented ongoing, relentless
Load. Dan’s experience represented the norm for all participants: “I never got anyone to
step in for me or any of the central office people. We pretty much had to keep going. It
took a tremendous toll mentally. Keep going, keep going.” As Swenson explains, when Load exceeds Resources, negative Margin results. Humans do have the capacity to function under circumstances of negative Margin, but only for a finite period of time. Without adding Resources or decreasing Load (in other words, making a voluntary fundamental change), sustained negative Margin leads to collapse.

School leaders endured significant negative Margin.

I felt like I had an ulcer. My stomach was upset all the time. I wasn't eating at all well. I stopped my exercising and probably haven’t come back to it since then [this statement made over a year after the shooting]. There was a physical sort of tightening of the chest—kind of an anxiety response—a dryness of the mouth. (Dan)

Participants reported dizziness, shaking, loss of appetite and other physical symptoms, but most universally reported was the inability to sleep. Brad described how he “hadn’t slept for two or three days, so you’re just kind of on automatic pilot.” He also described having “very vivid dreams” after which “I had to take a shower.” The crisis team leader from Ed’s district told me, “I was hyper-aroused for a week.” These physiological responses to trauma are normal, but “trauma” wasn’t a label extended to leaders under these circumstances.xiv

Concern for students and staff: Leaders faced previously unimaginable issues, and despite their best efforts to delegate some responsibilities, they felt tremendous responsibility to address multiple constituencies. Universal among leaders was the concern for students. “But, it was very important for the kids—that we get back to somewhat—what resembled a ‘normal situation’. And a ‘normal situation’ means classes and no outsiders” (Brad). Initially that concern was addressed by bringing counselors into the schools.
However, especially in sites where a crisis plan did not exist, leaders had to monitor carefully. “I had over 150 counselors sign in and nearly 50 clergy. We didn’t know their credentials because we didn’t have a plan!” (John). Protecting children from well-intentioned but inadequately trained counselors or clergy forced John to “fire some people who could not handle the situation or were not trained because they could do more damage.” How long to have counselors remain on campus was another concern. Brad described how he had to make a judgment about when to stop having counselors at the school. “Our objective was to get back to a normal situation as soon as possible—or what was as close to a normal situation as we could get. And that's what we did.” John placed “two counselors in every classroom on the campus, K through 12. I had my best counselors in areas where if the kid was having problems, you could take them in.”

Concern for students meant cleaning up blood-soaked areas of campus, repairing bullet holes, repainting, and sometimes major remodeling. John ordered the sidewalk where multiple victims fell replaced.

The kids refused to walk on it. We had to take it out. Destroyed that sidewalk. Took it all out because the kids wouldn’t walk on it. Bloody bodies were there. Neither would the teachers. So they came in, demolished that sidewalk, and put another one in the exact same spot. (John)

After the crisis had subsided, John was criticized for exceeding his authority by the new superintendent, due to the costs involved in such actions as replacing the sidewalk. Costs related to the crisis response were not a primary concern for leaders in the immediate aftermath of the shooting, but financial cost concerns were real and eventually became manifest: “We had high costs, maybe 10% of the total budget. Where is that going to come from?” (Dan). However, leaders were initially primarily concerned with human needs.
Parents were also objects of concern. In the immediate aftermath of the shooting, “the parents were just frantic to know about their kids” (Brad). Leaders often did not have information or were prevented from giving out information about students, even to parents. “It was a situation where you couldn’t tell them who was shot, so you had to stand there helplessly” (Brad). John’s concern for parents and community members led him to establish “phone counseling around-the-clock and [providing] counselors ready to go out if someone called up at two o’clock to say they can’t sleep and wanted to talk to someone face to face.”

John told of a woman who came to him saying, “I don’t know where my girl is.” I said, “You tell me her name and I’ll call around and see if we can find her.” And she said, “No, no, she was one of those that was killed.” She explained that she had been to multiple hospitals unable to find her daughter’s body. Additionally, she had no resources for paying for a burial or for clothing for the funeral, or any capacity to host family members who were on their way. John found the resources to support this parent.

Teachers and staff were also vulnerable and leaders took steps to meet their needs. John had teachers work with counselors the day before students returned to school after the shooting: "The therapy you're going through now will be the same thing the kids are going through, so you’re going to be familiar [with it].” John also placed a counselor on the busses where kids had been wounded or killed. “A counselor sat in the seat that they normally sat in so they could talk to the kids around them.” He also placed a second “counselor kind of up by the driver. And that worked great. The drivers were really reassured.”
All the participants shared concerns for students, parents, staff, and community members. Some were responsible for addressing these needs directly, while others delegated responsibilities to others. Ultimately, leaders felt responsible for easing the pain of the wide range of people impacted by the shooting.

**Internal Load**

According to the Margin equation, internal Load is not observable to others. Examples of internal Load might include the feelings we carry when we leave a small child in day-care to go to work, or the concern we have about an aging parent or a loved one diagnosed with a life-threatening illness. Worrying about how we are going to be able to send our children to college or feeling distrust of a co-worker or supervisor can constitute internal Load. Other examples of internal Load include striving for perfection or needing to be loved and cherished by others.

**Personal crises.** The concern people feel about an aging parent or a loved one diagnosed with a life-threatening illness is an example of internal Load. Ed “was waiting for bypass surgery at the time [of the shooting]” and John’s wife had been diagnosed with a serious illness and “had a doctor's appointment” the day of the shooting. These types of concerns were not shared publically and represented added Load.

**Sense of personal responsibility.** Leaders understood, intellectually, that they were not personally responsible for the shootings at their sites. Nothing they could have done could have prevented such events from occurring. Yet, they did feel enormous responsibility for responding to the crisis. Dan worried that someone would ask, “How could you let this happen?” He was grateful that “nobody really said that with the intent
to mean it. Sort of we joked about that: wouldn’t that be the worst question anybody
could ask?”

Some people were almost crying out, “Solve this problem. Put these kids back to
life. Get this school back together.” Being the one who is going to answer the
public, figure this out, get it done, get on to work and get everything back together
again. I felt that. I felt it was me that had that most responsibility. (Dan)

Similar to Dan, Ed, also a superintendent, described longer-term concerns he felt
responsible for: “What is going to be our long-term ongoing response for this? And how
are we going to deal with the way staff are still feeling about this? How are we going to
accommodate staff that have been traumatized?”

Another unrelenting sense of pressure on leaders was the fact that they knew
“everyone is looking for you for an example, so you just had to set the example that you
wanted everyone else to follow” (Brad). Being a role model constitutes internal Load.

Brad was one of two participants I interviewed originally who intervened directly
with the shooter before the shooter was subdued. His sense of responsibility outweighed
any thoughts of personal safety:

I could see a young man with a pistol standing over against that far wall where
you just walked through. Then you had to decide what you were going to do. You
had to decide real quick. Well, someone's got to go. Someone's got to stop him.
So I started out towards him, and I kept a concrete pillar between us as I went
towards him, and when the firing stopped, then I thought he was probably
changing clips and I needed to get to him before he changed clips, so I stepped
out.

Brad placed himself in harm’s way because he recognized, as the formal leader
responsible for the school, he was the “someone” who had to stop the shooter. Brad also
typified the kind of intimate relationship school leaders have with their students: “I was
the one that was here on the scene, not the superintendent. I was the one that knew the
kids. I was the one that knew the victims. I was the one that knew the shooter.” Building
leaders’ almost parental sense of responsibility for students was an example of internal Load. However, central office responsibility did not always mean less sense of personal responsibility.

I was raised in [town where shooting occurred]. I am a small town boy. Spent most of my life here. Loved the community. I was the principal of that school for nine years before I became superintendent. I mean, it's part of me. It's my baby. So it affected me very personally as well as professionally. (Ed)

For those leaders who became the district media spokespersons, there was added load, not only of giving interviews, but over the worry “that you might say something or do something would make it worse, that would create controversy. That is great deal of pressure on you” (Ed). Ed captured the ongoing sense of responsibility leaders felt once they passed the immediate demands of the crisis:

I don’t think when it's over that it is over. Because it's not over. After an immediate response, people are then asking, “What is your long-term response going to be? What is your ongoing response going to be?” A lot of pressure is put on you and you have to deliver on this. I mean, this can’t happen again. Do you understand?

The unrelenting pressure for not “letting this happen again” existed for all leaders, but most especially for superintendents such as Ed and Dan.

**Exposure to horror.** Ed described his experience as “almost surreal. You don’t really believe it's happening, but you know it's happening.” In part, the sense of unreality was shaped by leaders’ exposure to horrific events:

[The shooting] takes away your innocence. You lulled yourself into a sense of security. Can’t happen here. Small town. Family place. Non-violent. No preparation for this kind of thing. Then when it happens there, then suddenly you as an individual feel vulnerable” (Ed).

Personally witnessing horrific events, or what Ed called “the awfulness of whole thing,” is one of the preconditions for developing PTSD. Many leaders were personally
exposed to death. Brad, for example, held dying children in his arms. He described his feelings of helplessness:

And I go to the first little girl. She was laying over by that pillar. And I bent over her and just kind of looked at her. She had a bullet hole right there [points], and her brains were coming out and I just laid her head back down and I just went to the next student. It was just like, I can’t help her. You know and I just went to the next student.

Exposure to horror sometimes had a lasting affect on leaders.

Every now and then something can grab me. All of the deceased were taken away in ambulances except for one victim. That was the only body they left on the scene, they declared her DOA and the others they took to the hospital. They covered her up but I could still see her little foot sticking out about an inch from the cover. I told the cops “Cover that foot up. Every time I go by, I know it’s there. I can’t keep from looking. Please cover her foot up. That spot's really starting to get to me." (John)

Dan reported feeling “kind of uneasy all the time,” then, deeply sad. He went on,

Kids were dead, [name of teacher who was shot], I sat next to her at football games. I built my life helping kids and I see kids killed—the smell of blood and the trauma of that whole experience.

John shared “the first thing that impacted me was the terror that was there. You could just reach out and basically touch it.”

Schools looked like battlegrounds:

They were dragging some kids in the hall that had been wounded or with blood all over, bloody rags. We had no bandages. They were ripping shirts off of kids and binding with them: head wounds, chest wounds, lot of blood. (John)

However, John and Brad both also mentioned a second level of horror: discovering that some students had relevant knowledge prior of the shooting, but did not report this knowledge to an adult.

I sat down with the group of this one girl. I could see the brain tissue on her from another girl. She was sobbing and had blood all over. She said, “Why did they do it?” “Why did they do it?” I said "Who?" She named the shooters. And I said
“Who?” She knew who did it. And I said, “Well, how do you know?” She said, “He said he was going to do it, and said, 'Don’t come to school today.'” (John)

Similarly, Brad described “the low point of the experience.”

Two days later, I found out that the young man that did the shooting had the gun at school five days prior and several students had seen the gun and did not confide in any adult.

Such knowledge constituted internal Load because leaders’ assumption about the kind of trust they had formed with students was severely undermined by the revelation that students had important advanced knowledge but did not act.

The exposure to trauma directly, or indirectly by exposure to traumatized others, may have a long-lasting impact on leaders. Individuals who suffer trauma often experience flashbacks caused by some stimulus they associate with the event. For Dan it was cold weather.

As soon as it snows and it is a cold wintry day. When it drops below zero, I kind of (makes a sound) [revert] back into that. It trips you back into that trauma of how fearful you are.

For John, a trophy case caused a similar flashback response:

I walk in there and see some of the things in there. That bothers me, so I don’t look at it even now. When I get in the front door, I just avert my head because it bothers me. I don’t know why, but it does.

Ed described how the horror “all came back” just before he and a colleague were going to make a professional presentation about the shooting: “I had to relive it. It's a tremendously emotional experience. There's times when it's almost more than you think you can bear.”

Feelings. Participants described many different types of emotional responses. For example, leaders often recognized and spoke about feelings of guilt.

You felt very guilty about what had happened. You were the guy in charge and this had happened on your watch, so you carried that guilt, even though there
wasn’t anything that you could have done to stop the situation, that doesn’t really matter, you still have that overwhelming feeling of guilt. (Brad)

Many leaders felt shame as well, although none labeled the feeling as clearly. Ed, for example, who grew up where the shooting occurred, lamented that the town was well know for a crop that grew there. Though the town and its crop were well known, the location was more obscure. Ed bemoaned, “Now they know exactly where [our town] is and they tell you why they remember.” Similarly, Dan was saddened that his school district would forever be known for the shooting rather than for educational excellence.

Dan described feelings of helplessness, bitterness, and anger:

Someone sitting across from me talking about their child that has just died, and I have teenagers and young adult children and I realize how horrible that would feel, but that didn’t make you able to help the parent.

Dan also expressed feeling isolated and bitter because “people could have done a little more, if they really felt that it was their problem, too. There was great support from peers and other districts, but as far as getting a letter from the President. No national response.”

Dan also described the anger he felt from other directed at him and again echoed feelings of helplessness to personally resolve issues:

People were angry. Employees saying they weren’t really angry but later it appeared they were because lawsuits came out. They were angry and you don’t like to have people angry at you. You try and resolve those things. And you can’t resolve them. First off, it is your position that they are angry at.

The shooting was a life-changing experience: “Everyone is so profoundly changed, and probably the leaders more than anyone” (Ed).

Emotional Labor. Emotional labor, or emotion work, explains that how we feel, to some degree, is socially and culturally constructed. Leaders were engaged in emotion work during and after these incidents of organizational violence. Hochschild describes
two different types of emotion work: surface acting and deep acting. Surface acting refers to “painted on” displays of emotion. Deep acting, on the other hand, requires a person to consciously “work on” his/her inner feelings so as to bring in line one’s inner feelings with the requirements of the situation.

One example of emotion work leaders described was their efforts to set aside the personal: “I had to set aside all things personal. It really wasn’t that hard to do. Because you're in such shock” (Brad). Leaders felt they had to be “good models” for others. Many stated that they “tried to be strong for the kids and the teachers—let them do what they needed to do, but to set an example” (Brad). Another way Brad explained the notion of setting aside his personal experience was what he called “going completely into the professional mode.”

I was in professional mode and there was no personal. Just pushed that aside completely. Just pushed everything aside that was personal completely. In other words, it is just all business.

Brad’s way explaining how he managed his public and private emotions was echoed by other leaders. A principal from Dan’s district lost his wife in the shooting. Dan described how before the principal knew whether his wife was okay or not, the principal had to manage his emotions:

He had to separate his immediate emotions—“my wife is mortally wounded and may be dying but I’ve been told I can’t go in to her classroom because there is a gunman in there”—from “I’ve got kids to evacuate.”

Dan explained the how this principal “was torn between the personal push of wanting to see his wife and being forced to step back into his professional role.”
Conclusion

The examples of four leaders at four different school shooting sites have implications for leaders in other settings. People who experience significant loss and/or trauma must be able to make sense of the experience in order to recover from it. Sense-making involves being able to "stand outside" an experience in order to re integrate it and to move on to a “new normal.” Sense-making,\textsuperscript{xix} therefore, qualifies as a Resource, in the Margin\textsuperscript{xx} equation. Each leader’s experience offers insights into crisis response for leaders in any organizational situation.

Ed

Ed came through his experience in a healthy way. Key to his experience was his the ability to make sense of the experience, to integrate it, and to move forward.

I know that I have to live with the reality of what happened. I don’t care if you’re a quarterback or a superintendent, Monday morning you’re wondering what could I have done differently or should have done differently, whether you won the game or lost it. I do that. Still do. Leaders should be introspective and so you do replay a few things from time to time to see if you can learn. How can I still be an effective leader, be positive, optimistic, forward thinking, plan it strategically, create a vision, motivate people, all this in spite of what has happened? How can I take an organization that has been dealt this kind of a blow and help them to recover from that blow? That is what I focus on. That is what I have to focus on.

Ed’s crisis team leader was well versed in family systems therapy and trauma from his professional practice. One of the victim’s parents was instrumental in helping Ed’s school district deal with the shooting in a way that helped everyone in the community move forward. Both these factors underscore the importance of counseling support for leaders. Whether or not they realize they are processing their experience, leaders need to do so. Without adequate opportunities to make sense of the experience, recovery from trauma is difficult.
Brad

Brad had difficulty making sense of the experience:

You don’t make any sense out of it. Doesn’t make sense, so I don’t even try to make sense of it. You try to deal with the situation. [Play] the cards that have been dealt to you. Go from there.

Brad felt a deep, personal sense of responsibility for shooting:

The hardest part is getting over the guilt feeling that it happened on your watch. That is the hardest part. The hardest part to get over is that you were in charge, and it happened. You were the person in charge. That is the hardest part to get off. That you didn’t stop it. That even though you know that rationally there was no way you could have known.

Brad’s sense of responsibility framed his need to “restore order” as soon as possible. A way he thought he could accomplish this was by giving interviews and getting the media to leave the school—at great personal cost. His strategy suggests that Brad’s ideal of “leader” was the heroic model. His actions probably contributed greatly to his goals of helping others, but in the end, his personal needs were sacrificed.

I am more in tune with other people’s feelings, but I am a worst principal, because it’s taken away my vision of the future. I have a real hard time focusing on the future. I tend to look back at the past too much and judge everything according to the past. So, if you're dwelling in the past, you're making a mistake. In this business, you need to be looking in the future. So in a way, all my judgments are tied to the past. I’m a better person, but not as good a principal. Brad’s seeming inability to look forward led to his leaving education before he qualified for retirement.

John

When asked if he would “do over again, what would you do?” John said,

I would get out there and see what I had and I would turn around and I would go home. But it was rewarding, it really was rewarding. “Man, we sure did a lot out here…. Emotionally I am fine. Because I've had some coping skills instilled in me from the past experiences [wartime experiences in Viet Nam] like this that others haven’t. So they've had some problems. I've done fairly well on this.”
John reported that he could not bear to look at the trophy case when he entered the school where the shooting occurred, but he was at a loss to explain why this was so. John was the lead for the counseling response. He helped organize post-crisis counseling for children and for staff. He described how his team debriefed nightly. John’s self-assessment was somewhat contradictory. He stated, “That was the worst three weeks of my life” however he called it “rewarding. John’s ambiguity about how he faired suggests that leaders who deal with extreme crises are not receiving the kind of support they need.

Contracts for school leaders contain sick leave and bereavement leave provisions, but not crisis leave. Whether or not they are contractually guaranteed, organizations must consider the human costs involved in crisis management by providing Resources to leaders that have had to cope with extraordinary Load. John’s “I’m fine” directly contradicted some of his other post-crisis self-assessment. Such an outcome suggests that a structured process of sense-making might have help John reconcile the contradictions he expressed. Unfortunately, after a crisis subsides, most organizations want to “move on.” Looking back is often seen as weakness.

Dan

Like the other men and women who led in the aftermath of a school shooting, Dan wanted to take care of people and not take any action that might cause further harm. But even the seemingly simplest decisions were challenging.

Candles and ribbons and flowers. Who makes the decision to do away with those? They can’t stay there forever. When are you taking them away? What process? There is no book to look that up in. When do you get rid of the candles in the doorway? (Dan).

Dan was acutely aware that the “candles and ribbons and flowers” carried meaning to those who brought them. His school housed children from any cultures. Dan wanted to be
sensitive to the sensitivities of his community, yet pragmatically, “They can’t stay there forever.” Multiplied many times, the ambiguity created by the crisis took a heavy toll on leaders.

Dan realized that the experience of crisis responding took a toll on him: “There are people who say I am never going to get on with life. I am always going to be affected in a different way. I will never be completely over that.” Dan recognized that his experience of crisis responding made a significant “impact…on your personal health and mental state. I know in my case, you get on with life. That's sort of the way I've handled it. Dan reported that severe cold temperatures took him “back into that trauma of how fearful you are.” In stating that a traumatic event can have a significant impact “on your personal health and mental state,” Dan has articulated what other leaders suspected, but may not have understood, and rarely articulated as clearly as Dan did: A crisis as intense as a school shooting take a toll on leaders. And a school shooting is on the extreme end of a continuum of crises that leaders might face. Certainly, “lesser” crises might impact leaders similarly.

**Recommendations**

Probably none of these leaders will ever be “completely over” (Dan) their experience. According to the Margin concept\textsuperscript{xxi}, these leaders experienced negative Margin. The only way to prevent collapse is to add Resources or decrease Load. Because the nature of the crisis adds Load that cannot be decreased, I recommend that organizations find ways to provide Resources both during and after a crisis, particularly debriefings, counseling, and some sort of crisis management leave, so that they and their leaders come through the crisis intact. The self-report of these four leaders suggests that
they saw themselves as heroic. Such notions do serve leaders, but may also be unrealistic and counter-productive. Leaders, particularly those who lead during times of crisis, can benefit from standing back and reflecting, or as Ed put it, consider “what could [they] have done differently or should have done differently, whether [they] won the game or lost it.”

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7 Swenson (1992) uses the term power, not Resources. Because power has connotations related to influence, politics, and authority, we have opted to substitute the term Resources.
8 The same Margin equation can be applied to any living system (families, work teams, entire organizations, religious congregations, etc.). Daryl Connor (1992), for example, describes an organization’s Resources as “capacities” and its Load as “demands,” and makes the same points as does Swenson.
11 Subsequent to the original study, I have also interviewed 12 individuals from two school shooting sites.


Promoting STEM Achievement for African American Male Success

Mathematics Education

Paper Session

Abstract: Too many of our students are falling short in the STEM field. We will provide results of a study that will show achievement factors including engagement, capacity, continuity, and guided functions that can improve the classroom ethics of care and social-emotional well-being of student success towards STEM fields. Education Professionals will learn how to implement these achievement factors to increase responsiveness for higher academic achievement in STEM subjects.
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The number of African American males entering college to pursue STEM fields is small and dwindling. While African American males comprise 15.4% of the US population they only receive 5% of STEM bachelor degrees awarded (NCES, 2009). The success of our nation’s economy is dependent on having a racially and ethnically diverse workforce trained in quantitative and technical fields. Identifying and evaluating the school related factors connected to math and science achievement so that African American males in high school can be directed towards success in STEM subjects in the classroom are needed.

The model discussed is the Four Factor Hybrid Model that consists of four achievement factors, engagement, capacity, continuity, and guiding functions (Boykin & Noguera, 2011). Each factor described focuses on the achievement levels specifically for Black males in the classroom to excel in STEM subjects (Jolly, Campbell, & Perlman, 2004). Each factor embodies certain achievement functions such as determining the interest level of math and science, rigor of the subject, and various institutional opportunities afforded to the students (ECC Trilogy Model & Boykin/Noguera model). This paper will discuss an empirical research project designed to evaluate the effectiveness of the Four-Factor Hybrid Model for high school students in the classroom. By evaluating the success of these four factors through the literature and an empirical study, a better understanding of how to incorporate these four factors in classroom instruction will become essential to the increase of more African American males to receive higher achievement in STEM subjects.
Overview of the Four-Factor Hybrid Model

In an effort to account for creating a theoretical framework that included African Americans Males and STEM achievement, a combination of the Engagement, Capacity, Continuity (ECC) Trilogy (Jolly, Campbell, Perlman, 2004) and the Research-based Scheme for Promoting Enhanced Teaching and Learning (Boykin & Noguera, 2011) were used to create the Four Factor Hybrid Model. The Four Factor Hybrid Model includes achievement factors of engagement, continuity, capacity, and guided functions. The engagement factor is the student’s active participation towards an academic task (Boykin & Noguera, 2011). Also included is capacity, which is the student’s acquired knowledge and skills to advance to rigorous quantitative content (Jolly, Campbell, Perlman, 2004). Continuity is the institutional and programmatic opportunities, resources and guidance that support advancement to rigorous content in science and other quantitative disciplines (i.e., teacher practices, what is the school doing) (Jolly, Campbell, Perlman, 2004). Lastly, guiding functions are the student’s adaptive learning postures such as self-efficacy, self-regulated learning and incremental ability beliefs (students beliefs) (Boykin & Noguera, 2011). All four of the factors are used to guide the research in determining how to improve the success of student achievement in STEM subjects.

Project Design

Participants included (N=517) undergraduate students (Female= 346, Males=170) in math category courses at Howard University in Washington, DC. Undergraduate
students were given a 47-item questionnaire on a 4-point Likert-scale entitled the Conditions for Black Male Success in STEM Survey (CBMSSS). Each question corresponded to one of the four factors of engagement, capacity, continuity or guiding functions. The students were asked to reflect back on their high school experience in responding to each question on the CBMSSS questionnaire. The data was collected and organized for quantitative analysis.

Results

The predicted hypothesis is to evaluate the interaction of factors proposed in the Four Factor Hybrid Model and determine what combination of factors best work together (Appleton, et.al, 2006). An ANOVA analysis will be used to determine an interaction among the four factors and a multiple regression (hierarchical method) will be performed to determine which combination of the four factors predicts the highest achievement using GPA as an achievement indicator. Based on the literature, the engagement factor is proven to be an effective indicator for achievement in the classroom. Therefore, evaluating the additional factors, capacity, continuity and guided functions, in predicting achievement is also necessary for improved classroom instruction. The expected outcome is engagement will yield the highest interaction result of the four factors and engagement and capacity combination will yield the highest predicted achievement outcome (Boykin & Noguera, 2011).

Objectives/Learning Outcomes

Education professionals can utilize the CBMSSS as an academic instructional
support tool to evaluate how to increase these four factors in classroom instruction and various assessments and interventions. In doing so, participants can use this tool as a formative assessment for preventative of low achievement. Also, using these questionnaire items as a guide can help improve the classroom ethics of care of the teacher-student relationship and build upon the increasing these achievement factors for higher social-emotional health for students. Educators will gain an understanding as to how to be more intentional and transparent about the value of assignments given to students, so that students find more meaning behind it and are encouraged to complete it (Conner and Pope, 2013).

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Journey Through the Leaky Bucket: Canadian Millennial Teachers

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Teacher turnover is a growing problem in North America. Numerous research studies have estimated that half of the teachers leave the profession within their first 5 years on the job. The topic of teacher attrition in North America has been widely discussed in the education field, with such scholars as Linda Darling-Hammond (2003, 2005) and Linda Duxbury (2013) arguing that work overload, inadequate support from colleagues and administrators, irrelevant professional development, and constantly changing policies pressure teachers to leave the profession. While there is a breath of research on teacher turnover in general, those works do not adequately address generational differences among the teachers in regards to turnover. My paper addresses the issue of Canadian teacher turnover with a focus on the Millennial generation of teachers. According to the most widely used definition, Millennials are a generational cohort that was born roughly between 1977 and 1995. It is the youngest generation of professionals entering the workforce at this time and the generation that has proven to be the most difficult to retain in any workplace, making retaining teachers from that generation an even more difficult task. Furthermore, previous works have focused on teachers who were still teaching at the time the studies were conducted, while my research focuses on individuals who have already left the teaching profession. My research aims to investigate two questions: (a) why do Canadian Millennial teachers leave teaching? And (b) what would be needed to
retain Canadian Millennial teachers? Using a case study approach, I conducted in-depth interviews and follow-up questions with three groups of participants: (1) former Canadian teachers from the Millennial generation, (2) current Canadian teachers from the Millennial generation, (3) former immigrant teachers from all generations. Based on the lived experiences of my participants, I discuss what conditions influence Millennial teachers to leave and what is needed to help them want to stay in the profession. My study may open up new areas of interest in regards to being a teacher in the 21st Century, such as having a foreign accent, having the freedom to work overseas, ability to teach online, and reaching out to opportunities in Education outside of the K-12 sector. There is an urgency to find appropriate employment practices that will help retain Millennial teachers at K-12 schools because that generation will soon comprise the majority of the North American workforce. My research study is one of the first to focus on Millennial teachers in Canada.
Title of Submission: Learning to Live with HIV/AIDS in the Rural United States: Research-in Progress

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Learning to Live with HIV/AIDS in the United States: Research-In-Progress

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Abstract: The purpose of this presentation is to discuss my research-in-progress concerning the learning journeys of People Living with HIV/AIDS (PLWHAs) in rural areas. The research questions include: (1) How do PLWHAs learn about HIV/AIDS? (2) How do various contexts (e.g. sociocultural, interpersonal, and situational) affect the learning process? (3) What learning resources are most beneficial? Tentative findings show learning is self-directed, affected by various contexts, and learning from other PLWHAs is most beneficial.

Although much of the literature concerning PLWHAs in the United States centers on populations in metropolitan areas (Galindo, 2013; Marshall et al., 2012), individuals living in rural areas must also cope with the disease. Approximately 67,000 individuals age 13 or older who live in rural areas have been diagnosed with HIV or AIDS since the beginning of the epidemic (Centers for Disease Control (CDC), 2013). In 2011, almost 2,300 individuals 13 years or older were diagnosed with HIV/AIDS (CDC, 2013).

Rural PLWHAs may have different experiences from those living in larger cities. The concerns of rural PLWHAs include barriers to care such as lack of transportation and lack of health care professionals adequately trained in HIV care (Pellowski, 2013; Sarnquist et al., 2011). Research that included rural PLWHAs has focused on coping strategies (Johansen & Kohli, 2012), disclosure, social support and depression (Vyavaharkar et al., 2011), and resilience amongst African Americans (Bletzer, 2007).

In addition to these areas of inquiry, learning to live with a chronic disease is also important. Learning about HIV/AIDS has helped individuals better cope with the disease and integrate HIV/AIDS into their respective identities (Baumgartner, 2007). Few chronic illness researchers have framed their investigations in terms of learning theories and even fewer have discussed the learning of PLWHAs. Further, how various contexts including the sociocultural (race, gender, culture), interpersonal (support and stigma), and situational (e.g. living in a rural area) influence the learning process has not been studied in a rural population (Ickovics, Thayraypan, & Ethier, 2001).

Researchers that have examined learning as it relates to chronic illness have looked at participants’ informal and transformative learning. Informal learning happens without “externally imposed curricular criteria” (Livingstone, 2001, p. 4) and includes self-directed, incidental, and tacit learning. Self-directed learning occurs when individuals consciously decide what to learn, how to learn it and how to evaluate the learning experience (Knowles, 1975). Incidental learning is the “unintended outcome of a learning experience” (Keeping & English, 2001, p. 313). A person attends a seminar to learn more about HIV/AIDS medications and incidentally learns that PLWHAs can live long healthy lives. Tacit learning occurs at an unconscious level and awareness of this type of learning occurs later (Marsick & Watkins, 1990). Upon reflection, a participant who has been attending AIDS Service Organization (ASO) meetings might realize that a goal of the ASO is to empower clients to become HIV/AIDS activists. Transformative learning occurs when an individual’s worldview changes as the result of critical reflection on previously held assumptions (Mezirow, 2009).
Studies that examined informal learning include the informal learning of multiple sclerosis (MS) educational support group attendees (Preissner, 2013) and patients with continuous ambulatory peritoneal dialysis (CAPD) (Keeping & English, 2001). The self-directed learning of men with prostate cancer and women with breast cancer was explored (Rager, 2004, 2006). Holland (1992) and Francabandera (1992) spoke with individuals living with MS and their family members and uncovered the kinds of information sought. Participants in these studies were from metropolitan areas.

Regarding transformative learning and chronic illness, investigators delineated a meaning-making process of PLWHAs from a major Midwestern metropolitan area that resulted in a perspective transformation (Courtenay, Merriam, & Reeves, 1998). Two years later, they returned to determine whether the perspective transformation remained (Courtenay, Merriam, Reeves & Baumgartner, 2000).

Persons Living with HIV/AIDS (PLWHAs) need to learn about the disease to emerge from the shock of diagnosis and effectively integrate that identity into their larger self, and live more productive lives (Baumgartner, 2007; 2012). PLWHAs living in rural areas face unique challenges. The voices of PLWHAs living in rural areas have been largely absent from the literature on learning and chronic illness and their learning journeys need exploration in order to more effectively serve them.

Most of the existing research on PLWHAs in rural areas concerns access to care, coping strategies, and relationships between social support and depression (Johansen & Kohli, 2012; Pellowski, 2013; Sarnquist et al., 2011; Vyavaharkar et al., 2011; Zukowski & Thornburn, 2009). Few studies discuss the learning journeys of PLWHAs living in rural areas. The purpose of this study is to examine, describe and analyze the learning journeys of PLWHAs who reside in rural areas. The research questions include: (1) How do PLWHAs living in rural areas learn about HIV/AIDS? (2) How do various contexts (e.g. sociocultural, interpersonal, and situational) affect the learning process? (3) What learning resources are most and least beneficial? Answer to these questions will show how, where, what, when and why rural PLWHAs learn about HIV/AIDS and what prevents and enhances their learning processes and will help health educators provide client-centered education and inform administrators how best to spend HIV/AIDS education funds.

**Method**

Qualitative research is concerned with how people make sense of processes (Bogdan & Biklen, 1998). Since I want to understand the learning journeys of PLWHAs living in rural areas, I am conducting a basic qualitative study.

Participants that are being recruited for the study are: (1) at least 18 years old; (2) reside in a rural area of the United States (3) are diagnosed with HIV or AIDS for a minimum of a year. Based on my previous research, it takes a minimum of a year for individuals to start making sense of living with HIV/AIDS. For the purposes of this study, I used the Centers for Disease Control definition of rural which is “an area with a population of less than 50,000” (CDC, 2008, p. 4).

I have contacted numerous rural health agencies throughout the United States and have worked with contacts at my institution to recruit participants. For a number of reasons, recruitment has been slow. However, I am persisting and trust I will eventually be able to secure enough participants to achieve saturation.
After receiving IRB approval, I have conducted one (1) usable in-depth interview with a participant which was tape-recorded and transcribed. To ensure credibility of the findings I plan to conduct interviews until saturation. This means the same information is heard repeatedly and no new information is forthcoming (Merriam, 2009). To ensure adequate engagement in the field, I plan to interview at least 20 participants. I will also conduct member checks by providing tentative findings to participants to obtain their feedback, and keep and audit trail which details data collection and analysis decisions (Lincoln & Guba, 1985). Pseudonyms are assigned to participants to protect anonymity.

Data is being analyzed using the constant comparative method (Glaser & Strauss, 1967). I am coding transcripts and looking for themes across and within them. First, I perform initial coding which involves categorizing short segments of data (Charmaz, 2006) and then I conduct focused coding which involves sifting through the initial codes to derive more conceptual codes that result in larger themes (Charmaz, 2006).

Results of a Study-In-Progress

Because there is only one participant thus far, I will write the findings in a more narrative format. As more participants are interviewed, a thematic presentation of data will occur in future publications.

Jeremy is a 25-year-old, employed, White male who is a high school graduate. Much to his surprise, he was diagnosed HIV-positive five years ago when he took a physical. Prior to diagnosis, Jeremy learned what HIV was when a friend’s relative was diagnosed and the information was also presented to him in high school.

Although he knew individuals lived with HIV/AIDS when he was diagnosed, and that there were medications available, Jeremy said, “I was still in shock about it because it was still kind of like, ‘Is this really happening?’” This period of shock lasted “about six months” during which time he “made a lot of stupid choices” and “drank, drank, drank.” The turning point to this behavior came when started crying in front of a friend. After that emotional outburst, he went back to the doctor and started telling friends he was HIV-positive. He received support and information from friends, doctors, and “reliable sources on the internet like Web MD and Wikipedia because for the most part, people don’t mess with Wikipedia. They don’t put false information on Wikipedia.”

Jeremy tried support groups but found his friends were more helpful to him when he wanted to talk about or learn more about HIV. He did not join a support group because he “didn’t want to sit around feeling sorry for [himself] every day or every week.” His favorite way to learn about HIV is from his friends,

Because you get to hear their stories and everybody has a different story to tell about how they got it and how they found out and that’s kind of the biggest support that you have is your friends. The internet is going to be there and you can view the internet all day long but the internet’s not going to be saying, ‘Hey, I’m here for you.’

Jeremy appreciated his doctors’ knowledge and has found medical professionals helpful. However, he cautioned that doctors can sometimes be condescending. He remarked,

Sometimes the doctors just like to assume that I don’t know what they are talking about and so when they start talking. . . and I’m like ‘I know what you are talking about.’ And
they are like, ‘No you don’t.’ I’m like Mhmm [yes] I do.’ . . . I have never liked it when people talk down to me and act like I don’t know what they are talking about. I love the doctors and they give me really good information but 90% of the time it’s something I already knew because someone told me or I looked it up.

Jeremy believed that besides his own shock at diagnosis, nothing has affected his learning about HIV/AIDS. However, he said that being HIV-positive has affected his social life somewhat. He stated, “People don’t send me messages all the time anymore.” He has to travel some distance to see friends and have more of a social life.

When asked what ideas he had to help rural individuals learn about HIV/AIDS he encouraged individuals to “ask questions” “go to the library” and “look up stuff on the internet.” He remarked, “The only thing that is preventing somebody from finding out information is themselves [sic].” Another way that he thought individuals would be receptive to information about HIV/AIDS is through general public health conferences where a variety of subjects were discussed including HIV/AIDS. Privacy and anonymity are important in small towns, he noted.

Jeremy cautioned newly diagnosed PLWHAs saying, “I guess my biggest advice is ‘Don’t let AIDS define you’ . . . People let HIV control their identity rather than being part of their identity. . . I don’t let HIV control my identity.” He also said that he would tell newly diagnosed individuals “Don’t be scared and…move to a larger city [if you feel you are in danger]. He stated that being gay and having HIV might put people in danger in small towns in some cases.

In summary, Jeremy knew about HIV/AIDS prior to diagnosis through information presented in high school and knowing a friend’s relative contracted the disease. After diagnosis, he sought information from his doctor, the internet and friends who were HIV-positive. He found the information from his peers most helpful. He did not think there were any other factors that influenced his learning about HIV/AIDS other than the initial shock he experienced after diagnosis. He did not experience stigma when looking up information at the library. He considered his friends the best resource for learning and although he appreciated his doctors, he warned that doctors should refrain from being condescending to their patients.

Discussion

Jeremy’s learning appears to be largely self-directed (Rager, 2004). He used a variety of sources to learn more about HIV/AIDS. His story confirmed the importance of peers in the learning process although he found his support outside of a formal support group at a community-based organization (CBO) (Coursaris & Liu, 2009). His portrayal of HIV/AIDS support groups as a place where individuals felt sorry for themselves is something that could be investigated further. Was this experience situational? He noted that the support group contained people of all ages which were not bothersome. He also had peers he could talk to once he revealed his diagnosis. It would be interesting to investigate how PLWHAs in more isolated areas than use support groups for learning.

Second, Jeremy considered WebMD and Wikipedia reliable sources of information for HIV/AIDS. Further investigation of how PLWHAs decide which internet resources are reliable is an area of inquiry I might pursue in future interviews. How does education level factor into these decisions? What other factors influence which internet sites individuals investigate regarding HIV/AIDS?

Third, PLWHAs contend with various challenges regarding healthcare including access,
stigma, and healthcare professionals’ attitudes (Grodensky et al., 2015; Jin et al., 2015; Kempf et al, 2010). Emotions and learning are intertwined. Although health care professionals might be unaware that they are being perceived as condescending to patients in some cases, this attitude comes across and can be detrimental to the patient/doctor relationship and to patients’ ability to learn from health care professionals.

Last, although Jeremy eschewed any contextual influences on his ability to learn about HIV/AIDS, I suspect more effective questioning in this area might uncover how various contexts influence learning about HIV/AIDS. Assuming individuals can access the internet, has the internet leveled the information playing field? Are others as internet savvy as Jeremy? How did Jeremy’s relatively close proximity to a larger city affect his access to information? What differences, if any, will be found for PLWHAs in more isolated areas? These and other answers await as I continue to pursue my investigation into the learning journeys of PLWHAs living in rural areas in the United States.

References


Examining the Effectiveness of a Cohort Model in an Educator Preparation Program

Paper Session

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Abstract

Introduction

The utilization of cohort models is not a recent concept in educator preparation programs; universities have been using cohorts, in various forms and constructs, for decades. Goodlad (1990) described a cohort as a group of pre-service teachers working and sharing experiences together throughout their time in an educational program. While there was a time in the educational system when cohort models were less formally planned and much less strategically structured, due to current redesigns in the extensive training of pre-service teachers, institutions of higher education have realized the need for effective cohorts. Having high-quality teacher education programs in EPPs has never been more critical, and cohorts are an important component of the preparation of teachers.

While the cohort model has become a very common practice (Mandzuk, Hasinoff, & Seifert, 2005), the concept must be thoroughly examined to allow teacher candidates to “acquire the values, attitudes, norms, knowledge, skills, and behaviors of the teaching profession…” (Staton, 2008, p. 1). While Maher (2005) believes that cohorts can seem attractive to EPPs because of consistency and coordination of course sequencing and course completion, cohort models are only successful if they produce effective teachers who add value to the lives of the students with whom they work. Cohorts in which members develop a strong sense of community most enhance the educational experience of pre-service teachers (Dinsmore & Wenger, 2006).

The purpose of this study was to evaluate teacher candidates’ attitudes toward the effectiveness and potential problems and difficulties associated with being a part of a cohort.
Teacher candidates were surveyed, and analysis of the surveys was used to inform policy and practice; learning how the teacher candidates feel about being in a cohort, and the positives and negatives associated with the cohort model, were key in informing the EPP in decision-making going forward. The discussion of this study may be relevant for individuals from other EPPs who hope to strengthen their own cohort models and policies. The impact of this could be far-reaching for teacher preparation programs globally, as the field of education is ever-changing and EPPs must know how best to prepare candidates for the increasingly diverse landscape of education.

The results of this study may be instrumental in determining implications for program policy. The use of such qualitative evidence helps to inform decision-making and adjust practices with those currently being used.

**Research Objectives**

The main purpose of this study was to evaluate preservice teachers’ attitudes toward the effectiveness of the cohort model and to assess potential problems and difficulties associated with being a part of a cohort. Many education preparation providers utilize a cohort model. In the Middle Georgia State University Early Childhood Special Education program (Pre-kindergarten through fifth grade certification), the term “cohort” consists of a group of teacher candidates taking all education courses with one another during their last two years in the program. This is consistent with Dinsmore and Wenger’s definition of the cohort model, who characterize cohorts as “having four or more classes together in a given semester” (2006, p. 59).

The hope was that in learning about the candidates’ feelings toward the positive and negative attributes of the cohort model, the teacher education program can be strengthened, cohort models
can become more effective, and teacher candidates will be better supported as they go through their coursework and prepare to teach in their own classrooms.

**Methodology**

As the focus of this study concerns teacher candidates’ attitudes toward the effectiveness of cohort models used in teacher preparation programs, the principal investigator wanted to determine the candidates’ perspectives of the positive and negative attributes associated with being in a cohort while in the EPP. Therefore, it was vital to use surveys to ask the candidates for their opinions. The use of this qualitative method yielded important information that can help improve the structure of cohorts for future preservice teachers preparing for the field.

The survey was given to two cohorts of teacher candidates at the end of the spring semester of their junior year (April 2014). This timeframe was important, because at this time, the teacher candidates had been together as a cohort for two complete semesters (one full year in the program).

Prior to giving out the surveys, the principal investigator wrote identification numbers in the heading of each copy of the survey. In order to differentiate between the two cohorts and the contributors of the study, the investigator assigned numbers beginning with a “1” for “Cohort A” and a numbers beginning with a “2” for “Cohort B.” Participants were not identified by any other means on the surveys to preserve anonymity. Participation for this study was voluntary, and the participants had the right to decline responding to any question that they did not feel comfortable in answering. Participants were asked to participate in this research by filling out a survey regarding their thoughts and attitudes concerning the effectiveness and potential limitations of being in a cohort setting. Two questions were “open-ended” responses while the
other questions asked for “Likert scale” responses. For these questions, the participants circled the response that most closely resembled their experiences, feelings, and attitudes toward the subject.

The principal investigator then gave the same survey to the same candidates at the end of their senior year in the program (April 2015). The investigator wanted to see if any changes in attitudes and perceptions occurred within a year’s time of the first survey. Participation was once again voluntary. The same procedures for data collection were used. All surveys had an identification number; for the senior year, the investigator assigned numbers beginning with a “4” for “Cohort A” and a “5” for “Cohort B.” The surveys took approximately 10-15 minutes for volunteers to complete.

Once the investigator had information for both years of surveys, the process of looking at the data began. At this time, the investigator compared the answers given by cohort members to see if individual candidates had changed their opinion and perspective concerning the positive and negative attributes of being in a cohort. As well, the principal investigator looked for similarities and differences between the two cohorts.

**Overview of Results**

The responses from the candidates showed that overall, the cohort model being used is working for both cohorts. Although there was some change in attitudes on the Likert scale questions, the changes were rather minimal. Overall, the candidates answered the Likert questions quite positively.

However, there was a huge change in the results of the open-ended question. The participants were given the opportunity to answer these two questions after their junior year and senior year:
In your opinion, what are the greatest positive attributes of being in a cohort? In your opinion, what are the biggest negatives of being in a cohort? During the junior year, there were far more responses for the first question than the second question. When completing the survey during the senior year, the responses for the second question were much more detailed and showcased more negative thoughts and feelings toward others in the cohort and the cohort in general.

The seniors talked more about bullying in the cohorts; some even mentioned that there were cohort members who tried to sabotage potential job opportunities. The subject of cliques was discussed by both cohorts in both the junior and senior years, but the candidates talked even more about cliques and feelings of being left out in the senior year survey. As well, the seniors had more to say about faculty members and how they felt that future cohort members would benefit from better faculty support. This echoes the work of Dinsmore and Wenger (2006).

Teacher candidates were also very honest and forthright in stating that they were never “taught” how to work in a cohort; rather, they were “thrown together” and told to work together for two years. This information is pivotal; research shows that collaboration and teamwork are essential for positive cohort models (Koeppen, Huey, & Connor, 2000). In order for candidates to gain the optimal benefit of cohorts, a conscious effort must be made to teach pre-service teachers how best to work in communities.
Likert Scale Questions:

Being in a cohort is a rewarding experience.

Strongly Agree    Agree    Neutral    Disagree    Strongly Disagree

Being in a cohort helps prepare me for working with others in the field of education.

Strongly Agree    Agree    Neutral    Disagree    Strongly Disagree

Being a member of a cohort system allows me the opportunity to learn from others.

Strongly Agree    Agree    Neutral    Disagree    Strongly Disagree

I spend time with cohort members who are of varying ages, who have different life experiences, or/and who have different personalities than I do.

Strongly Agree    Agree    Neutral    Disagree    Strongly Disagree

I feel that all or most of my cohort members are supportive of me and want me to succeed in the program.

Strongly Agree    Agree    Neutral    Disagree    Strongly Disagree

Being in classes with the same individuals each semester gives me a feeling of security.

Strongly Agree    Agree    Neutral    Disagree    Strongly Disagree

“Bullying” is not, and has never been, a problem in my cohort.

Strongly Agree    Agree    Neutral    Disagree    Strongly Disagree

In my cohort, I rarely, if ever, see the forming of “cliques” that exclude others.

Strongly Agree    Agree    Neutral    Disagree    Strongly Disagree

I consider my colleagues in the cohort to be very caring and respectful of me and my feelings and ideas.
Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree

I consider the cohort that I am in to be a very close-knit group.

Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree

I believe that I will stay in touch with members of my cohort after graduation.

Strong Agree  Agree  Neutral  Disagree  Strongly Disagree
Responses to Likert Scale Questions

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References


The overarching goal of this project was to involve teachers directly in sea turtle research, rehabilitation, and education through the Georgia Sea Turtle Center (GSTC) on Jekyll Island, Georgia. The project was conducted through the summer course, ESED 7090: Using the Georgia Sea Turtle to Build Teachers Understanding of Sea Turtle & Rehabilitation offered through Georgia Southern University. Twelve Georgia state teachers enrolled in this course were working on their Master of Education in Science Education.

The twelve teachers first participated in a full day pre-residency workshop on campus. The purpose was to introduce the participants to barrier island geology and ecology and to build the students’ background knowledge on sea turtle anatomy and nesting habits prior to their time on Jekyll Island. During the pre-residency workshop, the twelve teachers received content-specific texts to read and hand-outs on the five different types of sea turtles to increase comprehension that would be needed to complete the course. The twelve teachers were assigned a homework lesson that required them to build a power point or chart to illustrate the following facts for the five species of sea turtles: general characteristics, adaptations, habitats, common nesting range, endangered level, life cycle, and fun facts.

During their residency on Jekyll Island, the twelve teachers participated in activities designed to study sea turtles’ life cycle, anatomy, food chains, and threats to survival. Such duties included shadowing a rehabilitation technician to perform daily duties, such as feeding, cleaning the tanks, and assisting the staff during turtle releases back to the sea, and to monitor sea turtles with nighttime beach patrols that included protecting female turtles during the egg laying process. In addition, the twelve participants served as hosts at the Georgia Sea Turtle Center to talk to the
public, answer questions about sea turtles, lead beach walks on nightly turtle patrols, and provide power point lessons on sea turtles and the interconnectedness of ecosystems.

A follow-up learning activity took place on St.Catherine’s Island to engage the twelve participants in a concluding field-based experience. On this day, the twelve teachers participated in the care and treatment of sea turtle nests and hatchlings. The twelve teachers put into practice their field science skills that included observing, sketching, measuring, and recording each nest to predict the location of the egg chamber within the greater nest structure. Each nest was then documented, sketched and/or photographed, and monitored. When sea turtle nests were found that were not in located in safe areas, the clutch of eggs was moved under the guidance of two resident professors who are certified to perform this function.

Throughout the course, the twelve teachers were required to utilize the following literacy skills: observing, predicting, inferring, comparing & contrasting, communicating, classifying, collecting and organizing data, interpreting data, linking cause and effect, and formulating conclusions. Because the twelve participants were all classroom science teachers, it was important for them to understand that developing literacy through science concepts is essential for effective science teaching and learning. It supports clarity of thought, description, discussion, and argument. Students make meaning by writing, talking, and reading about science, especially when accompanied by direct investigation of scientific phenomena.

As a culminating activity, the twelve teachers met at Georgia Southern University at the beginning of the fall semester. The purpose was to share the instructional lessons they had created for their own classroom students that targeted scientific content on sea turtles and the nature of the scientific process.
1. Title of submission

Utilizing Student Self-Reflection Assessment to Develop Retention and Persistence Academic Advising Practices

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6. Abstract and/or full paper

Abstract

In 2012, the Office of Student Academic Services (OSAS) began admitting freshmen students to the College of Education (COE) at the University of Hawai‘i at Mānoa for the first time. Previously, students were admitted in their junior year under stringent admission criteria, including a fairly high grade point average (GPA) standard. Generally COE students were academically strong from admission through graduation and GPA issues were not a major concern. However, with the admission of freshman students, OSAS noticed an increase in students who struggled to maintain minimum GPA requirements.

As a result, OSAS focused on expanding current retention and persistence efforts by developing a series of strategies aimed at assisting students placed on academic warning, probation, suspension, and dismissal. Via an assessment survey, OSAS engaged students in self-reflection to identify reasons why they experienced academic difficulty. Data collected by the retention assessment survey were analyzed to guide and inform OSAS advising practices that help and support academically at-risk students. New interventions now include: student notification letters every semester after grades are posted, mandatory advising appointments, student self-reflection assessment surveys, resource handouts, an academic progress contract, collection of retention and persistence data for reporting purposes, and annual reviews of program effectiveness for improvement.
1. Title of submission

The Model Minority Myth: Deconstructing What this Means for Asian Americans and Pacific Islanders

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Abstract

The U.S. Census predicts that the Asian Americans and Pacific Islander (AAPI) population is increasing at a faster rate than any other racial group (Museus, Maramba, & Teranishi, 2013). However, historically, AAPIs are often invisible, which results from constant marginalization and, in many cases, entirely excluded on the basis of race within higher education research and policy (Museus, 2009b; Museus & Chang, 2009; Museus & Kiang, 2009; Museus et al., 2013; Osajima, 1995; Suzuki, 2002; Teranishi, Ceja, Antonio, Allen, & McDonough, 2004).

Often times, people from various geographical areas are grouped into the AAPI racial category, which creates numerous issues. As stated by Museus et al. (2013):

In constructing the AAPI racial category, forcing a wide range of ethnic groups into it, and attaching misleading overgeneralizations and misconceptions of its members as universally successful, dominant political and social forces have helped render the diversity and unique realities of communities and individuals within this population invisible. (p. 8)

One such issue is the mythical fallacy of the AAPI group being the “model minority,” which broadly assumes that AAPI students are academically successful, attend highly selective four-year institutions, and are scholastically strong in science, technology, engineering, and mathematics (Agbayani & Ching, 2012, p. xxvi). Data from the U.S. Census and the National Commission on AAPI Research in Education (CARE) challenges this misconstruction (CARE, 2008, 2010; U.S. Census Bureau, 2012), as it demonstrates that almost half of AAPI students attend community colleges, not Ivy League schools.

When the AAPI student population is disaggregated, there are great disparities among specific groups regarding the rates of college degree attainment in the U.S. (CARE 2008, 2010). On one hand, the number of Southeast Asian Americans, which includes Cambodian, Hmong, Lao, and Vietnamese people, earn a bachelor’s degree or higher at rates disproportionately lower (Cambodian, 9.2%; Lao, 7.7%; Hmong, 7.5%; and Vietnamese, 19.4%) than the national average of 25.9% (Maramba, 2011). On the other hand, there are other populations within the AAPI grouping that earn a bachelor’s degree, like Koreans at 35% and Filipinos at 40%, at significantly higher rates than the national average (U.S. Census Bureau, 2012). Despite the increasing number of AAPIs entering college, there are only a small number of studies pertaining to the experiences of these students (e.g. Buenavista, Jayakumar, & Misa-Escalante, 2009; Lee,
For this presentation, the co-presenters will discuss two recent studies utilizing quantitative and qualitative methods to learn more about the disparities among and within specific AAPI. The results of these studies informs higher education research, theory, policy, and practice. Generating more knowledge about AAPIs will help postsecondary administrators, faculty, staff, and advisors be better-prepared and able to support AAPI students. People who work with these students could use the results of this study to determine what strategies and approaches to employ when working with this population to help increase academic success. With the AAPI population being the fastest growing racial group in America, the results of these studies are important to postsecondary institutions to help ensure the academic success of AAPI students.

As a result of this presentation, participants will be able to:
1) Define the AAPI population
2) Understand the model minority myth and its related issues
3) Comprehend two studies that address the model minority myth
4) Discuss the ways in which higher education institutions can further understand and support AAPI students

The presentation outline is as follows:

1) First, a brief literature review defining the AAPI population and the model minority myth will be provided.
2) The issues related to the model minority myth will be discussed.
3) A quantitative study focusing on the status of Filipino students in Hawaii public higher education will be described.
4) Next, a qualitative study examining the academic motivation of AAPI students will be presented.
5) Then, participants and co-presenters will discuss specific recommendations and strategies to better support AAPI students in higher education based on the findings of the studies.
6) Small group activities along with debriefing will be interspersed throughout the session.
7) The presentation will close with a question and answer session.
The Impact that the Environment and Materials have on a Child’s Health
and Overall Development

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Introduction

The early years are a critical period for all aspects of a young child’s development and set a foundation for future growth (Fernald, Gertler, & Neufeld, 2008). Thus, young children need a world that is safe to explore, one where they are encouraged to venture and discover. The experiences young children have with their environment impact their development in a multitude of ways (Berris & Miller, 2011). This article explores ways to optimize the environment that surrounds the young child. Variations in the quality of the environment provided to young children can facilitate or harm development. We will discuss the various materials that are commonly found in the young child’s environment. Research findings that delineate the impact that many of these materials have on a child’s health, the environment and overall development will be reviewed. We will address the following questions 1) What materials should be avoided? And 2) What is the selection criteria?

Environment

The quality of a young child’s environment has been correlated with child IQ at 3-4 years of age (Blair, Gamson, Thorne, & Baker, 2005). The deleterious effects of inadequate environments on development have been well established (Evans, 2006). An environment that does not provide developmentally appropriate materials for young children to explore (Santos et al., 2008) may result in physical and intellectual delays. While an ideal and effective caregiving environment should provide opportunities for learning (Curtis & Carter, 2014), it is essential that a young child’s environment, which includes the materials in it, provides for the child’s overall
health. The health of the young child lays the biological foundation so that learning and development can take place.

The age and developmental stages of the children sharing the environment. When two or more infants who bang and throw toys are present, soft toys (e.g., soft blocks or balls) are less likely to result in injury than solid toys (e.g., wooden blocks and hammers). That is not to say that infant should not be provided the opportunity to utilize hard or heavy object but in those instances close direction and supervision would be recommended. In the circumstances where there is a mixed-age environment, caregivers need to consider how to provide for the needs of all the age groups in a safe manner. Providing a separate semi-enclosed area (could be defined by shelves) creates a natural boundary for non-mobile infants from older toddlers that need space to be more active.

Materials

Toys and play materials are a salient part of the young child’s environment. The availability, variety, and number of play materials accessible to an infant has been correlated with IQ at 3-8 years of age (Blair et al., 2005). They provide opportunities for young children to develop skills, learn and interact with others (Wachs, 1987). For example, a manipulative helps children develop their fine motor skills, build on their understanding about spatial relationships or encourage collaborative work with a peer.

The main consideration in selecting play materials and setting up a young child’s environment should be safety. Caregivers should be cautious of materials that have sharp edges, may chip or splinter (toys should be made of durable and resilient materials), have small holes (leading to entrapment of fingers), have easily removable parts (choking hazard), or toxins (Langley, 1985). Many products found in young children’s environments, including toys,
household item, and feeding materials, are made from plastics, which may be particularly harmful to young children (Wargo et al., 2006). Two harmful chemicals found in plastics are bisphenol A (BPA) and the phthalate DEHP. Both compounds cross the blood-brain barrier, which may negatively affect brain formation—particularly in infants’ developing brains and other organs. Phthalates are chemical compounds used in poly-vinyl chloride, PVC found in vinyl flooring, shampoo, air fresheners, soft plastic items, food packaging and wraps, textiles, paints, cleaning products and detergents. The effects of phthalates on newborns, infants and toddlers have been extensively researched. Multiple studies examined associations between phthalate exposure and physiological, cognitive and behavioral development of subjects.

To limit exposure to these toxins, caregivers can select BPA-free plastics and alternatives, such as materials made from bamboo, stainless steel, wood or cloth. However, for younger infants whose primary mode of material exploration is through mouthing, it is important for adults to select materials that can be easily cleaned. In addition to preventing additional exposure to these harmful toxins, young children can learn a lot by exploring natural materials (Curtis & Carter, 2014). Bark and shells provide wonderful textures for young children to explore, while instilling a connection with nature. It is important, however, to be always mindful of choking hazards for younger infants whose primary mode of material exploration is through mouthing. Also, caregivers may wish to consider the durability of natural materials. Thicker, larger shells are more suitable than small, delicate ones. Conversely, not all manufactured materials are poor choices. Plastics tend to be easier to clean and disinfect than natural materials, and for materials in large volumes, such as Duplos, this may be crucial for appropriate sanitation. Choose fabric items such as cloth teethers or cloth dolls for toys that are frequently mouthed so that they can be laundered.
Another commonly found toxin that young children are often exposed to are chemical flame-retardants, Polybrominated diphenyl ethers (PBDE) which are used in a variety of products to prevent the spread and occurrence of fire. They are found in carpeting, pajamas, crib bedding, wallpaper, toys, cell phones and other electronic devices. PBDEs are extremely toxic, do not break down, and build up over time in our bodies as well as the environment. PBDEs have been found to negatively impact attention, learning, memory and behavior in animals. The have also been found to be harmful to the brain, reproductive system, liver and thyroid. To avoid PBDES, caregivers should use alternative natural flame retardant materials like wool.

**Conclusion**

The focus of this paper has been the assessment and selection of the environment and materials in a young child’s environment. The arrangement of the caregiving environment provides the foundation upon which the well-being and development of the child depends on. The materials in the environment can promote developmental growth in a young child or have deleterious health and safety effects on a child. This article provides the research so that caregivers can make informed decisions when designing a young child’s environment and selecting materials for a young child.
References


Exploring Intercultural Competence with Non-Traditional Students:

A Case Study at Miami University (Ohio)

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The Goals of this Report

The Bachelor of Integrative Studies (BIS) program on the Miami Regional Campuses was developed in 2008 and, with 350+ enrolled students per semester, is currently one of the largest academic majors in the College of Professional Studies and Applied Sciences (CSPAS). The BIS program has many possible foci, and students can even design their own degrees in order to enter the work force in myriad career tracks. In this report we will review the BIS program and determine how it is preparing students to interact in an increasingly globalized world. We are specifically looking to see if, over time, the BIS program’s influences students’ Intercultural Competence (ICC) development. To assess students’ perceived intercultural knowledge, attitudes, and skill, we will utilize BIS students’ scores on the six primary scales of the Global Perspectives Inventory (GPI; Braskamp, Braskamp, Merrill, & Engberg, 2012): Knowing and Knowledge (Cognitive), Identity and Affect (Intrapersonal), Social Interactions and Social Responsibility (Interpersonal), as well as the supplementary scale, Experiences (Curriculum, Co-Curriculum, and Community). The BIS faculty and Miami administrators can use this report to see the strengths of the program and to identify gaps in its influence on student development. We will also provide literature reviews of best practices for increasing ICC, with particular emphasis on strategies that can benefit a more non-traditional population (National Center for Education Statistics, n.d.) such as ours.

The BIS Program and the Importance of Service-Learning

The Bachelors of Integrative Studies (BIS) degree is a 4-year degree offered at Miami University Regional campuses (Middletown, Hamilton, and the Voice of American Learning Center). In the BIS program students are able to select from a variety of concentrations or design their own Bachelor’s degree to fit better their personal and professional needs. Students pick two concentrations upon which to focus their degree and are required to take three BIS core courses to synthesize their course work. Students can chose from 14 concentrations, including:

1. Applied Kinesiology
2. Applied Sociology
3. Child Development
4. Contemporary American Experience
5. Cross Cultural Leadership
6. Environmental Studies
7. Family, Gender & Society
8. Geographic Information Science
9. Health Care Administration
10. Information Technology Strategy for Organizations
11. Organizational Leadership
12. Personal and Community Health Perspectives
In addition to their two concentrations, BIS students are required to take three core seminar courses. BIS 201 is the introductory course where students learn important concepts of the BIS program as well as develop their educational goals and plan for their degree. BIS 201 has a focus on the “self.” In BIS 301 there is a focus on “others.” Students participate in a Service-Learning project and are paired up with a local business or organization. In their senior capstone, BIS 401, students have to create a “product” that demonstrates what they learned from the program.

Required Service-Learning is one of the unique highlights of the BIS program. Much more than volunteerism, Service-Learning involves students meeting an identified community need while applying what they are learning in credit-bearing classes and then reflecting on their experiences in order to deepen their knowledge about, attitudes toward, and skill when working with others (Bringle & Hatcher, 1996). Designed to be mutually beneficial for both the students and the community, this type of experiential learning (Kolb, 1984) has myriad benefits for students, including reduced apprehension toward out-group members, increased awareness of stereotypes and biases, increased social responsibility and civic engagement, greater cultural and self-awareness, and improved academic performance (e.g., Bringle & Hatcher, 2002; Dolynui, 2002; Eyler, Giles & Braxton, 1997; Feen-Calligan, 2008; Kretchmar, 2001; McKenna & Rizzo, 1999; Miller & Yen, 2005; Peterson, 2009; Reeb, Sammon & Ibersom, 1999; Reed, Jernstedt, Hawley, Rebe, & DuBois, 2005).

A 2015 post-graduation follow-up project report of the CPSAS Bachelor’s Degree recipients for the year 2013-2014 indicates that BIS students have a 93% placement rate in jobs or graduate school within six months of graduation. The department graduates a higher percentage of enrolled students than any other CPSAS department.

**BIS Core Competencies**

The BIS program is built around six core competencies that are used to frame each course in the major and to assess student development upon graduation (Integrative Studies Core Seminar/Degree Competencies, 2015; please see Appendix A for assessment rubric). The BIS program expects and prepares students to be:

1. **Reflective Thinkers** – Reflects on own learning, values, beliefs, and experiences to articulate why they think what they think and consider other ways of making meaning.
2. **Critical/Creative Thinkers** – Identifies and explores ideas and perspectives in diverse contexts. Designs and responds to relevant questions and approaches.
3. **Self-Directed Problem Solvers** – Identifies components of a given problem and possible responses in a structured framework and enacts a problem-solving strategy.
4. **Communicators** – Communicates a concept or position orally or in writing, demonstrating awareness of audience and purpose.
5. **Collaborators** – Employs active listening and articulates appreciation of diverse contributions of self and others in groups or partnerships. Takes on roles and responsibilities as instructed.

6. **Integrators** – Connects ideas, texts, experience and learning across two or more contexts in personally relevant ways.

While the BIS program does not specifically target ICC development in its students, its focus on experiential learning (Kolb, 1984), including the Service-Learning requirement, is extremely relevant and synchronous with many ICC constructs, as explained below.

### Intercultural Competence (ICC)

ICC definitions vary among different institutions, but most scholars in the field agree that ICC can be defined by the attitudes, knowledge, and skills necessary for individuals to have an understanding of others and themselves from a cultural context in a way that leads to effective and appropriate behavior during intercultural interactions (AAC&U, n.d.; Deardorff, 2006). One method that many if not most schools rely on to boost intercultural skills is study abroad programs. Many times, depending on the structure of the program, these programs have been effective in increasing ICC (Salisbury, 2011). However, on-campus programs can also be beneficial (Anderson & Lawton, 2011). Although study abroad programs are growing and are indeed be a learning opportunity for many students, other students are unable and/or unwilling to dedicate the money and time required to learn abroad, even in short-term programs, which is especially true for more non-traditional students. What becomes challenging for institutions is to provide resources and opportunities for intercultural growth for both traditional and non-traditional students at home and abroad. Soria and Troisi (2014) encourage institutions to offer at home solutions that will encourage all students to participate in events and activities that will increase overall ICC.

### ICC and Non-Traditional Students

Developing intercultural skills, attitudes, and knowledge is important for all students—whether they are more traditional or more non-traditional. All students should be provided with the opportunities and resources that are needed to foster ICC in order for programs to graduate students who are global citizens. The BIS program is a regionally based degree, meaning that many students in the program are non-traditional at some level (Horn & Carroll, 1996; National Center for Education Statistics, n.d.). For example, our sample of students tends to be older, have a lower family income, and have more work and family commitments than do more traditional students. As these students are preparing for the workforce, they will greatly benefit from having a global perspective and the ability to work well with culturally different others, even if they never leave the United States.

Literature reviews reveal the challenges of internationalizing both community and two-year colleges. Small campuses, limited funding, lack of interest, and poor administrative support can often be barriers to providing an environment rich in opportunities for ICC growth (Green, 2007). Community or two-year colleges may find it difficult to get both students and faculty to
be interested in learning about other cultures and developing intercultural skills. This overall deficiency of interest can result in reduced funds and resources that are allocated to internationalize the campus. Even if a school is interested in fostering a global and culturally welcome environment, they may not have the financial means. Despite these challenges, different ways exist for schools to be local but push students to think and act global (which we will describe later in the best practices review).

**Miami Global 2020 Goals**

The Miami Global 2020 plan is a set of global goals of the university, with the ambition of “promot[ing] a vibrant learning and discovery environment that produces extraordinary student and scholarly outcomes” (Miami University 2020 Plan, 2013). To accomplish this unifying goal of overall excellence, there are three foundational goals—Foundation Goal 1: Transformational Work Environment, Foundational Goal 2: Inclusive Culture and Global Engagement, and Foundation Goal 3: Effective Partnerships and Outreach. These goals have measurable matrixes of institutional outcomes to be fulfilled by the year 2020.

Specifically relevant to this report and initiative is **Foundation Goal 2: Inclusive Culture and Global Engagement**. Our report focuses on Foundation Goal 2 because we are assessing the BIS program’s effectiveness for increasing students’ ICC. We will address whether or not the BIS program helps students develop the needed skills to interact with others from different cultures. If the BIS program is effectively increasing ICC, then the program will be meeting both components of the foundation goal. In some sense, we are determining if this Regional degree is offering students similar (or perhaps enhanced) resources and opportunities as those offered by the main campus (Oxford). This contributes to an inclusive culture throughout the university because students from diverse backgrounds will have the same chances for success in the work force. Being able to communicate and work well with people from different cultures is a vital component of professional success (Lloyd & Härtel, 2010; Stone, 2006). We are also assessing whether the BIS program helps students over time develop and mature in their ICC to have better understanding of the world and other viewpoints.

Students in the BIS program can take courses and tailor student projects that have a global/cultural focus, and they can take a BIS 201 course that has a global theme. They can also partner with an organization in their BIS 301 program that offers interactions with diverse others. In BIS 401, students can create any product of their choice. As a result, students in the past have sometimes created culture-focused projects or worked with diverse people groups as part of their projects. The Service-Learning projects and self-designed projects put learning into the students’ hands. The 301 and 401 courses also meet the requirements of the Miami 2020 Foundation Goal 3: Effective Partnerships and Outreach. These opportunities foster student growth as well as benefiting the communities that they affect.

**Regional Campus & BIS Programmatic Responses to 2020**

The Miami Regional campuses, which fall under the College of Professional Studies and Applied Sciences (CPSAS), have drafted their own metrics in response to the objectives in accordance of
The Miami Global 2020 plan (CSPAS Goals, Objectives and Metrics, n.d.). The BIS program has additionally articulated strategies toward achieving these metrics, as well as the opportunities and challenges in doing so (2020 Metrics Integrative Studies, 2014; please see Appendix B). This section will highlight objectives that are most relevant to this project.

In response to the Miami 2020 unifying goal, the regionals have included goals of higher graduation rates, increased employment rates after graduation, increased opportunities for student creativity and research, higher levels of students who intern before graduating, more student co-curricular involvement, and more degrees and pathways for success at the campuses. The BIS program bachelor’s degree, started in 2008, offers students a flexible program that can fit their career goals best. This should increase graduation rates, offer students better opportunities in finding employment, demonstrate student creativity and research, and encourage involvement in more co-curricular activities.

**Foundation Goal 2: Promote a diverse culture of inclusion, integrity, and collaboration that deepens understanding and embraces intercultural and global experiences.** Of specific relevance to this report, the Regionals are dedicated to the objectives of 1) increasing diversity on the campus in both staff and students, 2) fostering a warm and inviting environment for all members, 3) increasing the amount of students who study abroad and participate in curricular and co-curricular cultural learning experiences, and 4) broadening Miami Regionals overall global involvement. While over 50% of Miami students tend to study abroad, regional campus estimates of students studying abroad are less than 5% (hence, the Regionals’ goal for Metric 20 of increasing students studying abroad or away to 5%; CPSAS, n.d.). However, ICC must then be achieved in more “local” options. In the current sample, only 2% of students had studied abroad or away, and only 15% of students indicated that they intended to study off campus. Therefore, local strategies that address Metric 21, *All Miami students will have a curricular or co-curricular cultural learning experience (e.g., intensive community engagement, service-learning experience, intercultural or global learning requirement) by the time they graduate*, become all the more important as a way for Regional students to develop further ICC.

**Foundation Goal 3: Cultivate mutually beneficial partnerships and applied and service-oriented projects that strengthen our local, state, national, and world communities.** The objectives in Foundation Goal 3 outline the regional campuses’ commitment to developing partnerships that strengthen both the local and global communities. To achieve these goals, the campuses strives to 1) partnering with more private and public institutions, 2) offering life-learning services and support from alumni and parents, 3) increase research and internship partnerships, 4) and supporting the community by providing the expert services from the university. BIS students have the opportunity to partner and work with organizations to foster both student growth and aid for the community.
Introducing the Global Perspectives Inventory (GPI)

We chose the AAC&U *Intercultural Knowledge and Competence VALUE Rubric* (n.d.) as our guide for ICC goals for the BIS program. From this we found alignment with the Global Perspectives Inventory (GPI) tool to serve as our method to assess ICC (see [http://gpi.central.edu](http://gpi.central.edu)).

Developed by Larry Braskamp, David Braskamp, Kelly Carter Merrill, and Mark Engberg (2012), the Global Perspectives Inventory measures global perspective under the theory that all students, faculty, and staff are on a life journey in which they continuously ask three key questions:

- **Who am I?** Reflects the Intrapersonal dimensions. This area of development focuses on becoming aware of and integrating personal values and self-identity.
- **How do I relate to others?** Reflects the Interpersonal dimension centered on willingness to interact with others with different cultural backgrounds and social norms, acceptance of others, and being comfortable relating to others.
- **How do I know?** Reflects the Cognitive dimension and is centered on our knowledge and understanding of what is true and important to know, including knowing with greater complexity and not relying on external authorities to have absolute truth.

The GPI measures the three dimensions of global learning and development, each of which can be broken down into two subscales. The three dimensions align with the Knowledge, Skills, and Attitudes components found in the AAC&U *Intercultural Knowledge and Competence VALUE Rubric* (n.d.).

These skills and attitudes can be broken down into six core scales of the GPI, with one supplementary scale that addresses campus-community belongingness. Cronbach’s coefficient alphas (α), a measure of internal consistency, for the current sample are reported below. (NOTE: Some scholars suggest α > .70 is ideal for measures used in research, e.g., Cho, 2015)

**KNOWING:** Complexity in understanding cultural contexts (α = .65)

**KNOWLEDGE:** Degree of cultural understanding (α = .65)

**IDENTITY:** Awareness and acceptance of ethnicity, race, and gender (α = .72)

**AFFECT:** Respect for and acceptance of cultural differences (α = .71)

**SOCIAL INTERACTIONS:** Degree of engagement with cultural different others (α = .74)

**SOCIAL RESPONSIBILITY:** Level of interdependence and social concern for others (α = .65)

**COMMUNITY:** Degree of connection and belongingness to one’s university (α = .84)
Results

Demographic Information
There are currently over 320 students enrolled and involved in the BIS program. This report summarizes data from a sample of 321 students in the BIS 201, 301 and 401 courses who were assessed from fall 2013 to spring 2015, suggesting we captured a strong percentage of the BIS majors (the exact number will fluctuate from semester to semester) and therefore have a fairly representative sample. A sub-sample of students (n = 52) took the survey at least twice, and we were able to match their responses. For raw data, please see Appendix C.

The sample was largely female, including 207 women (65%) and 111 men (35%), with 3 students (<1%) not reporting gender. The average age was 26.9 years (Males = 25.8, Females = 27.3), which is noticeably older than more traditional college student samples. By ethnicity the group included: 280 Caucasian Americans (87%), 12 students of multiple ethnicities (4%), 15 African Americans (5%), 3 Asian (1%), 2 Hispanic/Latino(a) (1%), and 6 people (2%) who did not report ethnicity. The majority of students were lower- to middle class, with an average household income of $71,942.75 (median = $50,000, range $4,000 to $750,000). In terms of mothers’ and fathers’ education level, the most common response for both mothers and fathers was high school graduate (32%). Mothers’ highest level of education were <1% elementary school, 6% some high school, 15% some college, 17% Associate’s degree, 17% Bachelor’s degree, and 11% Doctorate degree. Fathers’ highest level of education were 2% elementary school, 6% some high school, 19% some college, 12% Associate’s degree, 19% Bachelor’s degree, 6% Master’s degree, <1% professional degree, and 3% Doctorate degree.

Geographically, only 25 (8%) of students grew up primarily in an urban area, while 138 (43%) grew up in suburbs, 103 (32%) grew up in small or mid-sized towns, and 47 (15%) grew up in rural areas. Most students (n = 311 or 98%) had not studied abroad, only a small group (n = 23 or 7%) had lived abroad, and roughly 1/3 of them (n = 112 or 35%) had previously traveled abroad, suggesting relatively little international experience for this sample as a whole. Altogether, about 2/3 of them (n = 206 or 65%) had no experience in a foreign country, and the vast majority (n = 274 or 85%) said they do not intend to study abroad. Thus, if global perspectives are what the BIS program and Regional campuses want for their students, the onus is on Miami to either find ways to encourage and support students in seeing study abroad as a feasible option, or we need to develop more effective ways for students to achieve global learning experiences locally.

ICC: The GPI & Personal Background Factors
Before we began more targeted analyses, we explored potential impacts of personal and cultural factors on GPI subscales.

• Gender. Many differences in the GPI factors could be found between males and females. Females made up 65% of the sample (n = 214), and 35% were male (n = 113). Men reported having higher Knowledge, t(265.17) = 5.21, p < .00, Identity, t(316) = 2.77, p < .01, and Social
Interactions with individuals outside of their cultural group, $t(316) = 2.23, p = .03$, than women. Women reported having higher Social Responsibility, $t(316) = -3.59, p < .00$, and greater Community Belonging, $t(316) = -2.88, p < .01$, than men.

- According to Braskamp and Engberg (2011), females report having higher scores in the GPI factors of Social Responsibility, Knowing, Social Interaction, and Affect than males in national norms. Males reported higher scores in Knowledge than females. Males and females did not significantly differ in the GPI factor of Identity.
- In comparison with national gendered norms of the GPI using one-sample $t$-tests (Braskamp, Braskamp, & Engberg, 2014), females in our sample reported significantly lower scores in the GPI subscales of Knowing, $t(206) = -3.93, p < .00$, Affect, $t(206) = -2.04, p = .04$, Social Interaction, $t(206) = -4.32, p < .00$. Male students in our sample reported higher scores of Knowledge, $t(110) = 2.91, p < .01$, Identity, $t(110) = 3.56, p < .01$, and Affect, $t(110) = 2.95, p < .01$, than the national norms.
- While we did not collect data on military history of the participants, we suspect that veteran status is more likely in males on our Regional campuses than in traditional undergraduates, which may be influencing their GPI scores more than it does for women, and we speculate that this might explain why our pattern of gender differences differs from the national norms. Regardless of the source of the gender differences, which is outside the scope of the current report, the impacts were great enough that we controlled for gender in our primary analyses described below.

- **Ethnicity.** We could not realistically compare students across various ethnic groups given that the sample was 87% White (which is fairly representative of our campus). However, there were generally no significant differences when we compared White to non-White students except, as might be expected, that minority students were more likely to have social interactions with individuals outside their ethnic group, $t(328) = -3.86, p = .00$.

- **Socioeconomic Status Variables.** There was only one significant correlation between family income and the GPI factor of Knowing, $r(260) = -.23, p = .00$. Students who had a higher annual family income reported less complex thinking in cultural contexts. A small positive correlation, $p(318) = .11, p = .05$ existed between the GPI factor of Knowledge and students’ mothers’ years of education, when mothers had more years of higher education, students reported higher levels of cultural knowledge. There were also two small negative correlations between the GPI factors of Social Responsibility with students’ fathers’ years of education, $p(315) = -.13, p = .02$, and Community with students’ fathers’ years of education, $p(315) = -.14, p = .01$. When fathers had more years of education, students reported having lower levels of social responsibility and belongingness with community.

- **International Experience.** We used a 2 (traveled abroad vs. not) x 7 (GPI factors) MANCOVA (multiple analysis of covariance), controlling for gender, to see if there were any differences between students who have traveled abroad ($n = 112$) than students who had not been out of the USA ($n = 206$), with follow-up separate ANCOVAs for each GPI factor when
differences across factors were observed. The omnibus $F$ was significant, $F(7, 306) = 523.69, p < .001$. There was also significant main effect of having traveled abroad before with the GPI factors of Knowing, $F(1, 312) = 19.13, p < .00$, Affect, $F(1, 312) = 7.98, p < .00$, and Social Interactions, $F(1, 312) = 17.04, p < .00$. These results suggest that students who had traveled outside of the country previously reported more complex thinking, had a better respect and acceptance for other cultures, and had also interacted with others outside of their cultural group more often.

- **Study Abroad: Historical or Prospective.** We combined students who have intention to study abroad as an undergraduate ($n = 37$), with students who have studied abroad ($n = 7$) and compared them with students that have no intent to study abroad ($n = 274$). Utilizing 2 (abroad vs. not) $\times$ 7 (GPI factors) MANCOVA (multiple analysis of covariance), controlling for gender, the omnibus $F$ was significant, $F(7, 309) = 503.17, p < .001$. There was a significant main effect of intent to study abroad on Knowledge, $F(1, 315) = 4.55, p = .03$. Students who had an intention to study abroad or who had studied abroad reported that they had more cultural knowledge than students who had no intent to study abroad. There was also a significant main effect of intent to study abroad on Social Interaction, $F(1, 315) = 13.73, p = .00$, as well as Social Responsibility, $F(1, 315) = 5.52, p = .02$. Taken together, students who had studied abroad in the past or had an intention to study abroad reported higher levels of interaction with others outside of their cultural group and felt a greater level of concern for others than those who were not planning to go abroad.

GPI “OVER TIME” – MEASURED BY CLASS YEAR, BIS CLASS, AND AGE

- **Year in School.** Selecting out the few first year ($n = 6$) and sophomores ($n = 23$) in the data set because of small sample size, we compared junior ($n = 143$) and senior students ($n = 144$) on GPI scores. Utilizing 2 (year in school) $\times$ 7 (GPI factors) MANCOVA (multiple analysis of covariance), controlling for gender, the omnibus $F$ was significant, $F(7, 278) = 493.07, p < .001$. There was a significant main effect of class year on Identity, $F(1, 284) = 5.45, p = .02$: Senior students reported more solid identities than junior students. Another significant main effect, $F(1, 284) = 8.20, p < .01$, indicated that senior students also reported a higher Social Responsibility than did junior students.

- **BIS CLASS.** (201, 301, 401) BIS students were sorted into before Service-Learning ($n = 259$) and after Service-Learning ($n = 59$) based on whether they had completed Service-Learning in BIS 301 at the time of data collection. Utilizing 2 (Before SL vs. After SL) $\times$ 7 (GPI factors) MANCOVA (multiple analysis of covariance), controlling for gender, the omnibus $F$ was significant, $F(7, 309) = 509.89, p < .001$. There was a significant main effect of Service-Learning on GPI factors of Knowledge, $F(1, 315) = 5.94, p = .02$, Identity, $F(1, 315) = 4.58, p = .03$, and Social Responsibility, $F(1, 315) = 5.03, p = .03$. Students who had completed the Service-Learning during their 301 semester reported having higher levels of cultural knowledge, had a greater developed sense of self, and felt a greater concern and responsibility for the well-being of others than students who had not yet completed this programmatic requirement.
• **Age.** Because “non-traditional” most often refers to older students, in this sample age was split between students age 23 and below (younger) \( n = 152 \), and students 24 and older (older group) \( n = 162 \). Older students were more likely to report higher scores in Knowing, \( t(325) = -2.65, p = .01 \), Affect, \( t(325) = -3.15, p = .00 \), and Social Interactions, \( t(325) = -3.26, p = .00 \), than younger students. There was also a significant linear relationship between age and Knowing \( r(316) = .14, p = .01 \) and Knowledge, \( r(316) = -.22, p = .00 \), indicating that students who are older (as opposed to younger) reported greater complexity in thinking in regards to cultural contexts, but alternatively reported less cultural knowledge.

• **Paired Samples Analyses.** We ran a 7 (GPI factors) x 2 (time: Time 1 or Time 2) repeated measures MANCOVA, controlling for gender, with a sub-sample of 51 students who had filled out the GPI at least two times (e.g., at the beginning and end of semester, or in BIS 201 and 401, etc.). If students had filled out the GPI three times, we selected their two sets of GPI scores with the most time in between for analyses. There was a significant main effect for GPI score, \( F(6,44) = 3.78, p = .004 \), but not for time, \( F(1,49) = 0.59, p > .05 \), yet there was also a 3-way interaction between GPI factors, time, and gender, \( F(6,44) = 3.36, p = .008 \). In essence we did see differences in GPI factors from the first to second self-report, and we did see impacts of gender on GPI factors, but the influences were not always the same. Therefore, we ran a series of one-way repeated measures ANCOVAs, controlling for gender and looking for differences in GPI factors from Time 1 to Time 2. Only the Social Responsibility factor showed significant effects, with a significant interaction between time and gender, \( F(1,49) = 6.90, p = .01 \). Men significantly gained in social responsibility from Time 1 to Time 2, while women scores remained the same. Therefore the BIS program may be influencing men’s sense of social responsibility more than women’s (remembering that women’s were higher to begin with). Please see Figure 1 below.
GPI Outcomes by BIS Concentration (Culture Focused vs. Not)

The BIS program allows students to pick two concentrations to focus on in their major. From the descriptions of the BIS concentrations, both authors concurred to label the concentrations as culturally focused or not. In using this strategy, we recognize that we may have had some bias in selecting which courses we “counted” as culturally focused. The concentrations were broken down as such:

1. **Culturally focused**: Applied Sociology, Contemporary American Experience, Cross Cultural Leadership, Family, Gender & Society, Personal and Community Health Perspectives, Understanding Media and Visual Culture and Self-Designed Concentrations that were culturally relevant (i.e., included culture in their title).
2. **Not culturally focused**: Applied Kinesiology, Child Development, Environmental Studies, Geographic Information Science, Health Care Administration, Information Technology Strategy for Organizations, Organizational Leadership and Self-Designed Concentrations that had no cultural aspects.

We ran a 2 (time: before or after Service-Learning) x 2 (culture: culture-focus or no culture focus) MANOVA, $F(7, 275) = 302.73, p < .001, \eta^2_p=.89$. In the GPI factor of Knowing there was a significant main effect for culture, $F(1, 275) = 6.77, p =.01, \eta^2_p=.02$. There were no significant effects for Affect, Social Interaction, and Community. Students who had a culture-focused concentration reported more complex knowing than students without, whether they were assessed before or after their Service-Learning in BIS 301. There was a significant main effect of
time for Knowledge, \( F(1, 275) = 4.51, p = .03, \eta^2_p = .02 \), for Identity, \( F(1, 275) = 4.65, p = .03, \eta^2_p = .02 \), such that students reported stronger senses of identity and more knowledge after Service-Learning than before, regardless of whether they had culture-focused concentration. For Social Responsibility there was a significant main effect for time, \( F(1, 275) = 4.81, p = .03, \eta^2_p = .02 \), a significant main effect for culture, \( F(1, 275) = 5.75, p = .02, \eta^2_p = .02 \), as well as a significant interaction, \( F(1, 275) = 6.40, p = .01, \eta^2_p = .02 \). In other words, while both groups saw increases in Social Responsibility from before Service-Learning to after, and the culture-focused group always reported higher Social Responsibility than the group not focused on culture, the impact of Service-Learning was even more pronounced in the “no culture focus” group. See Figure 2.

**Figure 2. Global Perspectives Inventory (GPI) Scores Before and After Service-Learning (S-L) by BIS (Bachelor of Integrated Studies) Concentration Focus**

GPI Outcomes, Co-Curricular, and Extra-Curricular Activities

A large number of significant correlations existed between GPI subscales and students’ co-curricular and extracurricular activities that had a global or cultural element (please contact authors if interested in the complete correlation matrix). The most significant factors are included in Table 1.
Table 1. Correlations of Co-Curricular and Extracurricular Experiences with Global Perspectives Inventory (GPI) Factors

<table>
<thead>
<tr>
<th>Activity</th>
<th>KNLD</th>
<th>KNOW</th>
<th>IDEN</th>
<th>AFCT</th>
<th>INTR</th>
<th>RESP</th>
<th>COM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multicultural course</td>
<td>.19**</td>
<td>.15**</td>
<td>.15**</td>
<td>.21**</td>
<td>.16**</td>
<td>.17**</td>
<td>-.02</td>
</tr>
<tr>
<td>Service-Learning course</td>
<td>.12*</td>
<td>-.05</td>
<td>.07</td>
<td>.01</td>
<td>.14*</td>
<td>.10</td>
<td>.04</td>
</tr>
<tr>
<td>Course focused on global issues</td>
<td>.31**</td>
<td>.15*</td>
<td>.22**</td>
<td>.18**</td>
<td>.12*</td>
<td>.17**</td>
<td>.07</td>
</tr>
<tr>
<td>Course involving dialogue with culturally different others</td>
<td>.25**</td>
<td>.20**</td>
<td>.21**</td>
<td>.18**</td>
<td>.23*</td>
<td>.13**</td>
<td>.11</td>
</tr>
<tr>
<td>Discussed course topic with faculty outside of class</td>
<td>.13*</td>
<td>.17**</td>
<td>.17**</td>
<td>.17**</td>
<td>.17**</td>
<td>.25**</td>
<td>.24**</td>
</tr>
<tr>
<td>Discussed academic performance with faculty</td>
<td>.05</td>
<td>.10</td>
<td>.20**</td>
<td>.16**</td>
<td>.13*</td>
<td>.22**</td>
<td>.29**</td>
</tr>
<tr>
<td>Faculty challenged student’s views and perspectives</td>
<td>.15**</td>
<td>.14*</td>
<td>.23**</td>
<td>.18**</td>
<td>.10</td>
<td>.21**</td>
<td>.20**</td>
</tr>
<tr>
<td>Faculty presented issues and problems in class from different cultural perspective</td>
<td>.21**</td>
<td>.19**</td>
<td>.20**</td>
<td>.25**</td>
<td>.14*</td>
<td>.18**</td>
<td>.22**</td>
</tr>
<tr>
<td>Events sponsored by own cultural group</td>
<td>.09</td>
<td>.03</td>
<td>.14*</td>
<td>.04</td>
<td>.16**</td>
<td>.14*</td>
<td>.07</td>
</tr>
<tr>
<td>Events sponsored by different cultural group</td>
<td>.23**</td>
<td>.15**</td>
<td>.19**</td>
<td>.23**</td>
<td>.52**</td>
<td>.25**</td>
<td>.07</td>
</tr>
<tr>
<td>Participated in leadership activities emphasizing collaboration</td>
<td>.09</td>
<td>.6</td>
<td>.23**</td>
<td>.19**</td>
<td>.17**</td>
<td>.20**</td>
<td>.17*</td>
</tr>
<tr>
<td>Attended a global/international lecture, workshop, or discussion</td>
<td>.23**</td>
<td>.19**</td>
<td>.16**</td>
<td>.20**</td>
<td>.18**</td>
<td>.21**</td>
<td>.19**</td>
</tr>
<tr>
<td>Read a newspaper or news magazine</td>
<td>.12*</td>
<td>.18**</td>
<td>.20**</td>
<td>.18**</td>
<td>.04</td>
<td>.10</td>
<td>.08</td>
</tr>
<tr>
<td>Watched news program on TV</td>
<td>.08</td>
<td>-.01</td>
<td>.11*</td>
<td>.09</td>
<td>.04</td>
<td>.06</td>
<td>.15**</td>
</tr>
<tr>
<td>Followed an international event through media</td>
<td>.30**</td>
<td>.24**</td>
<td>.23**</td>
<td>.31**</td>
<td>.16**</td>
<td>.13*</td>
<td>.18**</td>
</tr>
<tr>
<td>Discussed current events with other students</td>
<td>.36**</td>
<td>.26**</td>
<td>.35**</td>
<td>.29**</td>
<td>.17**</td>
<td>.22**</td>
<td>.25**</td>
</tr>
<tr>
<td>Interacted with students from different country</td>
<td>.26**</td>
<td>.21**</td>
<td>.13*</td>
<td>.23**</td>
<td>.46**</td>
<td>.23**</td>
<td>.15**</td>
</tr>
<tr>
<td>Interacted with students from different race or ethnic group</td>
<td>.24**</td>
<td>.26**</td>
<td>.19**</td>
<td>.30**</td>
<td>.48**</td>
<td>.25**</td>
<td>.14*</td>
</tr>
</tbody>
</table>

Notes. Spearman correlations ($\rho$) were conducted. Students in all courses of BIS. n > 307. KNOW = Knowing, KNWL = Knowledge, IDEN = Identity, AFCT = Affect, INT = Social Interaction, RESP = Social Responsibility, COM= Community. *p < .07. **p < .01.

This correlation matrix demonstrates that there are many co-curricular and extra-curricular activities in which students can participate that positively relate to ICC. These relationships are important to address because college, as a holistic experience, offers students a multitude of...
opportunities to increase ICC. Knowledge of these effective activities can also be beneficial for the BIS program because it can be a helpful framework for instructors who might wish to incorporate best practices when developing their courses.

**Best Practices in ICC: What Works with College Students?**

In this section we review the literature on best practices for increasing campus internationalization and student ICC for both traditional and non-traditional students. Studying abroad is a traditional method that universities will use to increase student ICC. Again, because 85% percent of the Miami regional students sampled reported that they do not intend to study abroad, it is important for Miami’s regional campuses to discover additional other methods that universities utilize effectively to increase ICC.

First, as demonstrated by our data and other studies Service-Learning programs can have an effect on students’ ICC, including their ability to advocate for marginalized social groups (e.g., Bringle & Hatcher, 1999; Etheridge, 2006; Marchel, 2004; Wickline, 2012). Our data suggests that the impacts on cognitive, affective, and behavioral aspects of ICC can happen even when each Service-Learning placement does not directly focus on cultural diversity. Rather, through the variety of experiences that students have out in the community, where they are encountering others from different walks of life, social classes, and ethnic groups, they are gathering experiences that are challenging them to increase their global perspectives.

Second, Choi et al. (2014) suggests that universities can internationalize their campus as well as increase students’ ICC by having a group of international students study at their school. Currently many opportunities exist for regional students to work and get to know international students. The English Language Center (ELC) has been growing rapidly since its creation in 2008, such that there are now several hundred international students on Miami’s Middletown campuses. Host students can learn about the international students’ home cultures, as well as increasing many important ICC skills—such as communication skills during intercultural interactions, attitudes and openness toward international students, and knowing more about their own and other cultures (Wickline, 2012). From our analyses, it appears that BIS program does contribute to growth in many ICC domains, but social interactions with and empathy for culturally different others appear to be gaps in student growth that are not currently addressed through BIS classes. Perhaps the BIS program can utilize and partner up with the ELC to better prepare students to interact with culturally different others.

Third, courses with a global or international focus also can improve ICC skills (Soria & Troisi, 2014). Students who are a part of the BIS program are required to take the Global Miami Plan as a part of their Bachelor of Arts degree, which requires classes that focus on global issues and perspectives. From students’ self-reports in our data (see correlation matrix), taking more of these classes appears to be helping students in all ICC scales. What is unclear from our largely cross-sectional data review is whether it is the BIS core courses (201, 301, 401) and/or their Miami plan courses that are contributing more to ICC development. Alternatively, perhaps there is also a selection bias in play, whereby students who are already more developed in ICC are drawn to culturally-focused concentrations.
Fourth, another effective method of increasing student ICC is by providing students with many opportunities to attend cultural events (Anderson & Lawton, 2011). The Miami regional campuses have global/intercultural courses that allow students to participate and practice ICC skills, and they host diversity-focused extra-curricular and co-curricular events that are open to all students. Students in the BIS program may choose to host a multicultural event as their capstone project, increasing both their own ICC as well as overall internationalization of Miami University. Additionally, the BIS program could encourage or require their students to attend a certain number of diversity-focused events each semester.

**Authors’ Summary & Primary Suggestions**

- In general, the data sample is large and representative enough to draw reasonable conclusions about the impact of the BIS Program on Miami students’ ICC growth.
- From our findings we can conclude that at least some regional campus BIS students are increasing in Knowing, Knowledge, Identity, and Social Responsibility from the pre-test (before Service-Learning in BIS 301) to post-test (after Service-Learning), which demonstrates tangible impact of the BIS program on holistic student development.
- We did not observe differences in the Social Interaction and Personal Affect subscales, which one could perceive as “gaps” the BIS program might want to address with future curriculum changes. Alternatively, we recognize that changes in some aspects of ICC may not happen in a short amount of time. Perhaps longer-term assessment (e.g., graduation surveys, alumni surveys) would better demonstrate the impact of the BIS program on ICC development. From the data and literature reviews we suggest that the BIS program could better foster structured and semi-structured interactions between students of different cultural backgrounds to increase engagement (Social Interactions) and help students with respect for cultural differences (Personal Affect).
- We found gender to overall be a significant predictor variable, as we observed many gender differences between males and females on the GPI subscales. Our sample also differed from national gender norms. We speculate that this may result from age differences between our sample and the national norms, as well as Miami’s regional campuses having a higher number of student veterans, which could increase their global exposure. Further understanding of the reasons behind these gender differences would need to be pursued in future studies.
- This sample of this study included more non-traditional students (especially older students) than samples used for national norms. While the GPI appeared to be a relatively reliable and valid assessment instrument in this population, future studies utilizing the GPI with more non-traditional students can help schools that have a majority of non-traditional students learn more about their ICC trends, as well as the best methods for fostering ICC.
- In regional campus students, studying abroad is not their primary expectation or intention, and many BIS students did not have a culturally-focused concentration. How specifically and intentionally we reach these “no culture focus” students to convince them of the importance of ICC development remains a crucial and critical goal with
which Miami needs to wrestle in the near future if it is to prepare global-ready graduates and meet Miami 2020 metrics.

- Specifically, our suggestion for Miami – if it really does value global-ready graduates – is to invest more financial resources in the programs, people, and events that support ICC development in students: Intercultural events need food and supplies, the professors that teach Service-Learning or experiential learning classes need time (in the form of course releases) and professional development funds, and the diversity- and globally-focused offices need larger budgets.

Next Steps

Developing global perspectives and intercultural competency is a primary goal for Miami University graduates, as highlighted in the Miami 2020 goals. The intent of this report and study was to assess and evaluate the global competencies of current BIS students. BIS faculty and administrators can use these findings to identify program strengths and gaps in student ICC growth.

This report has been shared with BIS administrators and faculty who can use the results 1) in supporting curriculum development and interventions to increase intercultural knowledge, skills, and attitudes and 2) for addressing metrics for Miami 2020 plan. This report could also be shared with other administrators who are interested in using the BIS assessment as a model for other departments or in order to compare Regional and Oxford students on ICC development.

For complete statistics or more information, please contact: Dr. Louise Davis (davishl3@miamioh.edu or 513-785-3055) or her consultants, Dr. Virginia Wickline (wicklivb@miamioh.edu or 513-217-4180) and Dr. Chen Ferguson (fergusc@miamioh.edu or 513-785-7703). The Assessment Project team also acknowledges the hard work, statistical support, and project contributions of Sarah Matthews, Miami University Undergraduate Summer Scholar (USS), matthes2@miamioh.edu, which were funded in part by the USS program.
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## Appendix A: Integrative Studies Core Seminar/Degree Competencies

The following are competency areas for each of the core seminars in the Integrative Studies major. The competency areas for BIS 401 are the outcomes for the major.

<table>
<thead>
<tr>
<th>Competency</th>
<th>BIS 201</th>
<th>BIS 301</th>
<th>BIS 401</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reflective Thinkers</td>
<td>Reflects on own learning, values, beliefs, and experiences to articulate why they think what they think and consider other ways of making meaning.</td>
<td>Reflects on how values, beliefs, and life experiences affect their worldviews and interactions with other people in familiar and new contexts.</td>
<td>Aligns choices with self-authored beliefs and values that are contextualized within a larger framework. Situates self as a life-long learner.</td>
</tr>
<tr>
<td>Critical/Creative Thinkers</td>
<td>Identifies and explores ideas and perspectives in diverse contexts. Designs and responds to relevant questions and approaches.</td>
<td>Compares and analyzes subjects and modes of inquiry, articulates connections while identifying possible bias.</td>
<td>Articulates implications, draws conclusions, designs and theorizes new understandings based on a synthesis of diverse ideas and data from evidence.</td>
</tr>
<tr>
<td>Self-directed Problem Solvers</td>
<td>Identifies components of a given problem and possible responses in a structured framework and enacts a problem-solving strategy.</td>
<td>Identifies and evaluates problems from multiple perspectives and propose/apply one or more solutions.</td>
<td>Defines and contextualizes a problem, engages in necessary research, and selects a viable solution or response.</td>
</tr>
<tr>
<td>Communicators</td>
<td>Communicates a concept or position orally and in writing, demonstrating awareness of audience and purpose.</td>
<td>Communicates concepts in a two-way communication strain and demonstrates awareness of audience, purpose, and context.</td>
<td>Communicates complex ideas to diverse audiences in a two-way communication strain and initiates and/or supports dialogue in various contexts.</td>
</tr>
<tr>
<td>Collaborators</td>
<td>Demonstrates active listening and appreciation of diverse contributions of self and others in groups or partnerships. Takes on roles and responsibilities as instructed.</td>
<td>Collaborates effectively with diverse audiences, such as classmates, instructors, community member and partners, etc.</td>
<td>Initiates and engages collaboration with others and enacts constructive interventions to improve group productivity and functioning.</td>
</tr>
<tr>
<td>Integrators</td>
<td>Connects ideas, texts, experience and learning across two or more contexts in personally relevant ways.</td>
<td>Connects multiple experiences such life experience, academic course work, disciplinary perspectives, and professional experience, including the service-learning project.</td>
<td>Integrates academic learning, community needs, and personal values to become an engaged member of the community.</td>
</tr>
</tbody>
</table>
Appendix B: Miami 2020 Plan

Integrative Studies Department Contributions

UNIFYING GOAL: LEARNING AND DISCOVERY - Promote a vibrant learning and discovery environment that produces extraordinary student and scholarly outcomes.

Objective 1: Prepare students for success at Miami and beyond through a liberal and applied education emphasizing inquiry-based experiential learning that integrates many disciplines.

Metric 1: Miami will achieve a 6-year graduation rate of 85% (4-year graduation rate of 75%).
Enhanced Regional Metric: CPSAS will achieve six-year graduation rate of 30%.

Strategies:
- Offer hybrid offerings of Integrative Studies core seminars and online, upper level, IS electives
- Expand the curriculum to appeal to a broader base of students and provide more MPF and/or elective courses in Integrative Studies that would serve majors and non-majors alike
- Develop a 100 level foundation course to recruit majors and help prepare non-majors and majors for their academic careers
- Develop new faculty advising systems (including workshops) that offer clear information to students about learning expectations, resources, and curricular pathways to graduation
- Continue collecting data using new assessment plan

Challenges & Opportunities:
- Obtaining reliable data to track student success
- Maintaining standards of academic rigor while increasing retention
- Reconciling and prioritizing the competing and increasing demands on faculty and staff

Metric 2: Within one year after graduation, 100% of graduates (excluding those enrolled in graduate or professional school) will be employed.
Enhanced Regional Metric: CPSAS will increase by 5 percentage points the number of graduates who, one year after graduation, have sought employment and are employed.

Strategies:
- Enhance partnerships with Career Services and major employers
- Institute and enhance career mentoring and advising through foundation course and new curriculum
- Develop systems to provide support for students’ internship placement
- Continue to build and enhance connections with alumni who may provide networking opportunities to CPSAS graduates

Challenges & Opportunities:
• Challenge: Too few faculty to build strong curriculum, advise, develop and test assessment strategies, AND develop relationships outside the university
• Challenge: Current career services and internship systems on the regionals

**Metric 3:**  Upon graduation, 80% of students who apply to graduate or professional school will receive at least one offer of admission.

**Strategies:**
- Support the development office in offering workshops for current students and recent graduates on preparing for graduate school
- Provide student support with applications and offer interview preparation in the BIS capstone and through faculty advising workshops
- Encourage graduates to gain work/volunteer experience prior to going to graduate/professional school

**Challenges & Opportunities:**
- Too few faculty. Faculty are already stretched providing academic advising for BIS majors AS WELL AS majors in their original disciplines (i.e. Communications, Psychology, American Studies, English). More faculty are needed to support career advising initiatives

**Objective 2:**  **Immerse faculty, undergraduate and graduate students in research and creative scholarship that forms a vital part of the learning experience.**

**Metric 4:**  Continue to increase the quality and impact of scholarship and creative performance.

**Strategies:**
- Improve the annual review process to provide enhanced feedback to faculty and to encourage more goal setting and professional development.
- Encourage faculty to take advantage of university programs that support faculty research such as CFR grants.
- Leverage faculty workload assignments strategically to enable research-active faculty adequate time for scholarship

**Challenges & Opportunities:**
- Recognizing that many regional campus faculty have service as their second criteria for tenure and promotion, rather than scholarship and that many of the strategies for increasing scholarship can be deployed to increase the quality and impact of service activities
- Addressing the high number of university initiatives which may distract faculty from research activities
- Balancing the demand for increased faculty time devoted to diverse Miami 2020 goals such as retention and student success, development of online courses, and increasing community partnerships, with the need for increased scholarly productivity
- Providing increased financial support for faculty research in times of decreasing state support for higher education
• Advancing scholarship when standard faculty teaching loads on the regional campuses are 24 contact hours an academic year

**Metric 5:** Upon graduation, all Miami students will have participated in a research (40%) or a similar experiential learning activity (100%), e.g., fieldwork, field or clinical placement, service-learning, public or private sector engagement, performances, and other applied learning activities.

**Strategies:**
- Increase efforts to make students aware of opportunities available to them and the benefits of participation
- Create courses that either require experiential learning and internship experiences OR provide information on and encourage such learning experiences

**Challenges & Opportunities:**
- Provide opportunities for faculty to mentor promising students
- Too few faculty: Managing the logistics of and securing the faculty time needed for mentoring experiential learning projects
- Recognizing that regional campus students often have employment and family obligations which prevent them from spending additional time on campus to participate in research or similar experiential learning activities
- Lack of resources

**Objective 3:** Engage students with substantive co-curricular and internship opportunities that augment their learning and establish a strong foundation for lifelong success, growth, and adaptability.

**Metric 6:** 70% of Miami students will have completed an internship before they graduate. Enhanced Regional Metric: We will increase the percentage of CPSAS students who complete a co-op or internship before they graduate to 25%.

**Strategies:**
- Increase communication between faculty and OCCIS to make sure we are utilizing contacts that faculty already have in business, industry, and government to help increase the numbers of internship options available to our students
- Improve communication with students about the availability of co-ops and internships.
- Designate scholarship funds specifically for students who choose to do a co-op or internship.

**Challenges & Opportunities:**
- Securing the faculty time and the OCCIS resources required to maximize the educational benefits of internships.
- Finding ways for the many working students on the regional campuses to be able to participate in experiential learning opportunities, including internships related to their major and future career path

**Metric 7:** 95% of Miami students will have two or more co-curricular experiences before they graduate.
Enhanced Regional Metric: 75% of Miami students will have two or more co-curricular experiences before they graduate.

Strategies:

- Create an IS Week in which students and faculty promote and participate in events (e.g. panel discussions, poster board sessions, inviting guest speakers)
- Work with IS students and alumni already involved in community outreach to (a) work out the needs of the community, and (b) how the IS department can support those needs in traditional ways (through providing labor) and less traditional ways (e.g. running events that build community and provide material support)
- Support CPSAS and Regional Campus Veteran’s Group by providing IS veterans with information and support AND supporting veteran events on campus and in the community
- Start an IS student group

Challenges & Opportunities:

- Meeting this metric given that recent changes in advising and new demands that result from satisfying other metrics increase faculty workload
- Challenge: having only a half-time staff member to coordinate all IS departmental needs
- Challenge: Lack of IS faculty that do not have multiple responsibilities in other departments
- Recruiting dedicated faculty volunteers to serve as advisers to student organizations
- Addressing the fact that regional campus students have many family and work obligations that prevent them from participating in co-curricular experiences.

Objective 4: Offer flexible pathways to and through the university, including interdisciplinary, e-learning and multiple degree options, to help students achieve timely and cost-effective completion.

Metric 8: 20% of our students will graduate with multiple degrees, majors, or co-majors, and 4% will graduate with a combination bachelor and master’s degree.

This metric is not applicable to the regional campuses because the regional campuses currently offer no master’s degrees.

Metric 9: 60% of degree programs can be completed in 3 years or less through curriculum revision and by using different pedagogical approaches and modes of delivery.

Strategies:

- Identify paths that can be taken to complete a degree in three years
- Carefully schedule course offerings to assure that three-year paths can be completed
- Offer highly demanded classes in the summer and winter terms when pedagogically appropriate.
- Work with students so that they can effectively utilize the multi-year schedule to plan their degree paths

Challenges & Opportunities:
• Developing degree completion strategies that take into account that regional students frequently change majors which can increase credit hours and the time needed for degree completion
• Noting that students on the regional campuses have many competing priorities including family and work obligations

**Metric 10:** Increase the online and hybrid credit hours to 10% of the total credit hours.

*Enhanced Regional Metric: Increase the online and hybrid credit hours on the regional campuses to 15% of the total credit hours.*

**Strategies:**
• All new IS courses be offered in either hybrid or online format within 1 year of their creation

**Challenges & Opportunities:**
• Faculty workload
• Securing the appropriate approvals for online and hybrid courses that carry subject codes of an Oxford-based department or division

**FOUNDATION GOAL 1: TRANSFORMATIONAL WORK ENVIRONMENT -** Ensure vitality and sustainability by building a forward-looking, efficient, and caring culture that stimulates, recognizes, and rewards creativity, entrepreneurial thinking, and exemplary performance.

**Objective 1:** Promote a work environment built upon continuous improvement and evaluation that empowers employees through ongoing professional development and career growth opportunities.

**Metric 11:** All employees will have an annual evaluation that aligns with the overall university objectives and a measurable professional development plan.

**Strategies:**
• Incorporate goal setting into the annual evaluation process
• Provide incentives for achieving goals

**Challenges & Opportunities:**
• Finding a way to recognize professional accomplishments that are difficult to measure
• Addressing the fact that some faculty may view this as an encroachment on their traditional autonomy

**Objective 2:** Recognize and reward Miami employees for increasing effectiveness and productivity by utilizing their expertise, creativity, and collaboration to constantly improve accountability, productivity, and efficient utilization of resources.

**Metric 12:** At least 25% of the merit salary improvement pool for faculty and unclassified staff will be allocated to recognize and reward exemplary performance that contributes to university and unit goals and objectives.

This metric will be advanced at the divisional and University levels.
Objective 3: Implement flexible and accountable governance structures that increase the university’s responsiveness and ability to make timely decisions.

Metric 13: The time line for the process of soliciting input and recommendations for governance purposes should not exceed one semester as appropriate.

**Strategies:**
- Revise newly create governance document in response to Miami’s new guidelines for governance documents
- Continue to hold core faculty meetings on a monthly basis

**Challenges & Opportunities:**
- Governance document has yet to be approved because the guidelines mentioned have not yet been distributed

Objective 4: Minimize tuition increases through a transparent, strategic financial and budgetary system that incentivizes new revenue streams, reallocates resources, and promotes team-oriented solutions to fiscal challenges.

Metric 14: An average of 1% of Oxford campus total revenues annually will come from new or expanded revenue initiatives other than tuition rate increases.

This metric will be advanced at the divisional and University levels.

Metric 15: Divisional deans will annually realign 1% of their divisional University budgeted funds by phasing out low priority organizational structures, programs, and activities. These funds will be set aside to support new, or expanding successful, programs and collaborations with an emphasis on inter- and multi-disciplinary activities.

This metric will be advanced at the divisional and University levels.

Metric 16: 0.5% per year of permanent budgetary funds will be captured from divisions, and these funds will be collected centrally and redistributed.

*Enhanced Regional Metric: 0.5% per year of permanent budgetary funds will be captured from improvements in regional campus productivity, and these funds will be collected centrally and redistributed.*

This metric will be advanced at the University level.

Metric 17: Implement, and annually update, a transparent, flexible and dynamic 10-year budget plan that will ensure a sustainable and financially viable foundation.

This metric will be advanced at the University level.
**FOUNDATION GOAL 2: INCLUSIVE CULTURE AND GLOBAL ENGAGEMENT** - Promote a diverse culture of inclusion, integrity, and collaboration that deepens understanding and embraces intercultural and global experiences.

**Objective 1:** Attract and retain a diverse community of students, faculty, staff, and administrators.

**Metric 18:** Grow the diversity of our students, faculty, and staff.

**Strategies:**
- Continue to build our already diverse faculty base by hiring more IS tenure line faculty
- Support the veterans group (see metric # 7)
- Implement new advertising and marketing strategies, and combine them with student centered community outreach strategies (see metric # 7), in order to target communities of youths and adults that do not yet see college as part of their future
- Support students already working with underprivileged youths (either through service-learning projects or self-directed community outreach) to help them encourage young people to consider attending college
- Hold IS town and gown events

**Challenges & Opportunities:**
- Faculty workload
- Student obligations
- Safety

**Objective 2:** Create an environment where our people live, learn, and work cooperatively with those of widely varied backgrounds, beliefs, abilities, and lifestyles, moving beyond boundaries to welcome, seek, and understand diverse peoples and perspectives.

**Metric 19:** 90% of Miami students will report that they feel welcome and have had significant and meaningful interactions with diverse groups.
- **Enhanced Regional Metric:** The regional campuses will increase by 10 percentage points the number of students that report that they feel welcome and have had significant and meaningful interactions with diverse groups.

**Strategies:**
- Create a culturally relevant curriculum
- Develop student organizations
- Create or participate in multicultural student, faculty, and alumni events
- Create an IS film series that includes diverse guest speakers and foreign film
- Provide opportunities for community engagement
- Forge partnerships with other departments and community organizations
- Continue to support Professors Ginny Wickline and Chen Ferguson on their GPI project which tests the cultural competencies of IS students. Discuss findings with faculty and students using feedback loops.

**Challenges & Opportunities:**
Objective 3: Achieve cultural competency among members of the Miami community by immersing them in domestically and globally relevant learning experiences.

Metric 20: By the time of graduation, 60% of Miami students will study abroad or study away. 
Enhanced Regional Metric: Miami Regionals will increase the percentage of students who will study abroad or study away to 5%.

Strategies:
- Create a working group of faculty and students to brainstorm the possibilities for study away and virtual study abroad initiatives

Challenges & Opportunities:
- Oxford tuition rates for study abroad
- Students gaining sufficient ‘global’ credit for shorter study abroad and study away experiences
- Raising sufficient funding for study abroad and study away learning for regional students with financial need
- Creating exciting study abroad and study away opportunities for nontraditional regional students who may not be able to leave their jobs or families for long periods of time

Metric 21: All Miami students will have a curricular or co-curricular cultural learning experience (e.g., intensive community engagement, service learning experience, intercultural or global learning requirement) by the time they graduate.

Strategies:
- Develop an Applied Global Studies concentration for Integrative Studies students
- Strengthen our current Cross-Cultural Leadership concentration
- Develop ‘global’ courses in Integrative Studies that include study away, virtual study abroad, or global service-learning experiences

Challenges & Opportunities:
- Faculty workload (time needed to create contacts, develop and implement programs, develop assessment plans for cultural learning experiences)
- Financial resources

Objective 4: Expand, virtually and physically, Miami’s global involvement.

Metric 22: All faculty and staff will engage in meaningful, globally diverse cultural activities (e.g., volunteer or community engagement; course or workshops on global and intercultural topics, professional training on diversity issues).

Strategies:
- Engage in research collaborations with international colleagues
- Give presentations at an international conferences
- Attend and create programming related to global diversity issues
• Interact with global colleagues on teaching and learning projects
• Support faculty working to develop study abroad, study away, and virtual study abroad initiatives by reducing workload or providing financial incentives

**Challenges & Opportunities:**
• Faculty workload
• Financial resources

**Metric 23:** Miami will expand, virtually and physically, by 25%, its international partnerships and activities to increase its impact on the global stage.

**Strategies:**
• Offer globally related courses, programs, centers or institutes
• Design an Applied Global Studies concentration
• Hire TT faculty members with applied global experience and a research/teaching background in global interdisciplinary studies
• Develop core assignments in new courses that encourage students to participate in global activities and interact with diverse global communities
• Develop partnerships with peer and international institutions to teach combined online courses in which students can interact with diverse populations

**Challenges & Opportunities:**
• Identifying partner institutions and building mutually beneficial relationships
• Funding international travel and experiences for faculty, staff, and students
• Faculty workload

**FOUNDATION GOAL 3: EFFECTIVE PARTNERSHIPS AND OUTREACH - Cultivate mutually beneficial partnerships and applied and service-oriented projects that strengthen our local, state, national and world communities.**

**Objective 1:** Partner with educational and other public-and private-sector institutions to co-design academic and outreach programs that enhance access to and support of quality higher education.

**Metric 24:** Miami will increase the number of transfer students to 400 students on both the Oxford and regional campuses.

**Strategies:**
• As each new concentration is added to the IS major, develop at new articulation agreements with either Sinclair or Cincinnati State which will support enrollment in that bachelor’s degree

**Challenges & Opportunities:**
• Training faculty how to advise transfer students, process transfer credits, etc
• Faculty workload (we already advise over 400 majors. Increasing this number with additional transfer students will require more faculty advisors and tenure line faculty devoted to IS)

Metric 25: Miami will double the number of partnerships with high schools, community-based organizations, foundations, and other entities to expand the recruitment of talented, diverse college-bound students.

Strategies:
• Promoting the IS major as a four-year degree that can appeal to freshman and high school graduates by advertising the degree in area high schools

Challenges & Opportunities:
• Staffing

Objective 2: Increase lifelong learning opportunities, engagement, and giving from alumni, parents, and friends.

Metric 26: Miami will provide educational opportunities and career support to at least 10% of our alumni and to other external stakeholders.

Strategies:
• Providing webinars
• Providing social/continuing educational events (already under way)
• Offering hybrid, on-line, and evening courses
• Providing study abroad activities
• Flexible offerings for full time workers

Challenges & Opportunities:
• Faculty workload

Metric 27: Increase the total dollar amount raised annually from alumni, parents and friends by 10% per year.

This metric will be advanced at the University level.

Objective 3: Grow Miami’s sponsored research, grants, intellectual property, internships, and co-curricular learning opportunities by helping corporate, governmental, and non-profit entities thrive through solutions-oriented partnerships.

Metric 28: Increase the total dollars of external funding (contracts and grants) to $30 million. Enhanced Regional Metric: Increase by approximately 20% the regional campuses’ total dollars of external funding, to an average of approximately $3 million annually.

We do not have the expertise or resources currently to support such a metric.

Metric 29: Increase by 25% the number of mutually beneficial educational, governmental, corporate and non-profit partnerships.
We do not have the expertise or resources currently to support such a metric.

**Objective 4:** Advance Ohio’s economic development and prosperity by providing talent and expertise that helps shape policy and improves quality of life.

**Metric 30:** By 2020, 65% of the Miami University community will be engaged in providing expertise and advancing the success of public and private entities.

**Strategies:**
- Revising or creating websites
- Networking with community organizations
- Working with the Corporate and Community Institute & the Cincinnati Chamber to develop talent pipelines and develop awareness of community needs, especially in terms of IT

**Challenges & Opportunities:**
- Developing the expertise or finding the resources to support such a metric
- Faculty workload
### Appendix C – Tables for Raw Data

<table>
<thead>
<tr>
<th>Gender</th>
<th>Count</th>
<th>Percent</th>
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<tbody>
<tr>
<td>Male</td>
<td>111</td>
<td>35%</td>
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<tr>
<td>Female</td>
<td>207</td>
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<td>None Provided</td>
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<td>&lt;1%</td>
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<tr>
<td><strong>Total</strong></td>
<td>321</td>
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<table>
<thead>
<tr>
<th>Ethnic Identity</th>
<th>Count</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Ethnicities</td>
<td>12</td>
<td>4%</td>
</tr>
<tr>
<td>African Americans</td>
<td>15</td>
<td>5%</td>
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<tr>
<td>Asian</td>
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<tr>
<td>European/White</td>
<td>280</td>
<td>87%</td>
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<td>Hispanic/Latino</td>
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<tr>
<td>Native American</td>
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<td>0%</td>
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<tr>
<td>Other</td>
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<td>0%</td>
</tr>
<tr>
<td>None Provided</td>
<td>6</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>318</td>
<td>100%</td>
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<table>
<thead>
<tr>
<th>Student Status</th>
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</tr>
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<tbody>
<tr>
<td>New Student</td>
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<tr>
<td>Freshman</td>
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<tr>
<td>Sophomore</td>
<td>23</td>
<td>7%</td>
</tr>
<tr>
<td>Junior</td>
<td>149</td>
<td>45%</td>
</tr>
<tr>
<td>Senior</td>
<td>149</td>
<td>45%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>327</td>
<td>99%</td>
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Global Perspectives Inventory (GPI) Items

This is a copyrighted measure. For more information please go to [https://gpi.central.edu/](https://gpi.central.edu/) and contact Larry Braskamp

<table>
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<tr>
<th>Cognitive-Knowing</th>
<th>N</th>
<th>Strongly Agree (5)</th>
<th>Agree (4)</th>
<th>Neutral (3)</th>
<th>Disagree (2)</th>
<th>Strongly Disagree (1)</th>
<th>Average Response</th>
</tr>
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<tbody>
<tr>
<td>I rarely question what I have been taught about the world around me.</td>
<td>317</td>
<td>6</td>
<td>46</td>
<td>62</td>
<td>144</td>
<td>59</td>
<td>3.56</td>
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<td>I rely primarily on authorities to determine what is true in the world.</td>
<td>315</td>
<td>7</td>
<td>47</td>
<td>86</td>
<td>133</td>
<td>42</td>
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<tr>
<td>Some people have a culture and others do not.</td>
<td>316</td>
<td>1</td>
<td>38</td>
<td>38</td>
<td>117</td>
<td>122</td>
<td>1.98</td>
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<tr>
<td>In different settings what is right and wrong is easy to determine.</td>
<td>314</td>
<td>28</td>
<td>119</td>
<td>65</td>
<td>71</td>
<td>31</td>
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<td>When I notice cultural differences, my culture tends to have a better approach.</td>
<td>315</td>
<td>20</td>
<td>81</td>
<td>131</td>
<td>67</td>
<td>16</td>
<td>3.07</td>
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<tr>
<td>I consider different cultural perspectives when evaluating global problems.</td>
<td>317</td>
<td>45</td>
<td>195</td>
<td>62</td>
<td>15</td>
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<td>I take into account different perspectives before drawing conclusions about the world around me.</td>
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<td>84</td>
<td>189</td>
<td>36</td>
<td>7</td>
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### Cognitive-Knowledge

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<tr>
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<th>Disagree (2)</th>
<th>Strongly Disagree (1)</th>
<th>Average Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>I understand the reasons and causes of conflict among nations of different cultures.</td>
<td>317</td>
<td>30</td>
<td>148</td>
<td>97</td>
<td>38</td>
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<tr>
<td>I understand how various cultures of this world interact socially.</td>
<td>318</td>
<td>23</td>
<td>176</td>
<td>88</td>
<td>31</td>
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<tr>
<td>I am informed of current issues that impact international relations.</td>
<td>314</td>
<td>31</td>
<td>134</td>
<td>109</td>
<td>36</td>
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<tr>
<td>I can discuss cultural differences from an informed perspective.</td>
<td>317</td>
<td>47</td>
<td>175</td>
<td>78</td>
<td>16</td>
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<td>I know how to analyze the basic characteristics of culture.</td>
<td>317</td>
<td>22</td>
<td>186</td>
<td>80</td>
<td>28</td>
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### Intrapersonal-Identity

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<tr>
<th>Statement</th>
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<th>Disagree (2)</th>
<th>Strongly Disagree (1)</th>
<th>Average Response</th>
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</thead>
<tbody>
<tr>
<td>I am willing to defend my own views when they differ from others.</td>
<td>315</td>
<td>65</td>
<td>185</td>
<td>55</td>
<td>7</td>
<td>3</td>
<td>3.96</td>
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<tr>
<td>I can explain my personal values to people who are different from me.</td>
<td>316</td>
<td>106</td>
<td>181</td>
<td>21</td>
<td>8</td>
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<td>I put my beliefs into action by standing up for my principles.</td>
<td>317</td>
<td>53</td>
<td>217</td>
<td>43</td>
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<tr>
<td>I know who I am as a person.</td>
<td>318</td>
<td>116</td>
<td>166</td>
<td>25</td>
<td>10</td>
<td>1</td>
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<tr>
<td>I have a definite purpose in my life.</td>
<td>317</td>
<td>122</td>
<td>148</td>
<td>34</td>
<td>13</td>
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<td>I am developing a meaningful philosophy in life.</td>
<td>316</td>
<td>67</td>
<td>180</td>
<td>63</td>
<td>6</td>
<td>0</td>
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<tr>
<td></td>
<td>N</td>
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<td>Agree (4)</td>
<td>Neutral (3)</td>
<td>Disagree (2)</td>
<td>Strongly Disagree (1)</td>
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<td>Intercultural-Affect</td>
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<td></td>
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<td></td>
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<tr>
<td>I am accepting of people from different religious and spiritual traditions.</td>
<td>318</td>
<td>131</td>
<td>163</td>
<td>19</td>
<td>4</td>
<td>1</td>
<td>4.15</td>
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<tr>
<td>I am open to people who strive to live lives very different from my own life style.</td>
<td>318</td>
<td>63</td>
<td>198</td>
<td>47</td>
<td>9</td>
<td>1</td>
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<tr>
<td>I enjoy when my friends from other cultures teach me about our cultural differences.</td>
<td>318</td>
<td>106</td>
<td>176</td>
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<td>I am sensitive to those who are discriminated against.</td>
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<td>98</td>
<td>179</td>
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<td>I do not feel threatened emotionally when presented with multiple perspectives.</td>
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<td>75</td>
<td>195</td>
<td>36</td>
<td>12</td>
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<table>
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<th></th>
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<th>Strongly Agree (5)</th>
<th>Agree (4)</th>
<th>Neutral (3)</th>
<th>Disagree (2)</th>
<th>Strongly Disagree (1)</th>
<th>Average Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interpersonal-Social Responsibility</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>I think of my life in terms of giving back to society.</td>
<td>315</td>
<td>54</td>
<td>151</td>
<td>83</td>
<td>25</td>
<td>2</td>
<td>3.73</td>
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<tr>
<td>I consciously behave in terms of making a difference.</td>
<td>317</td>
<td>45</td>
<td>183</td>
<td>83</td>
<td>6</td>
<td>0</td>
<td>3.84</td>
</tr>
<tr>
<td>Volunteering is not an important priority in my life.</td>
<td>316</td>
<td>5</td>
<td>42</td>
<td>79</td>
<td>130</td>
<td>60</td>
<td>2.37</td>
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<tr>
<td>I put the needs of others above my own personal wants.</td>
<td>318</td>
<td>62</td>
<td>148</td>
<td>95</td>
<td>10</td>
<td>3</td>
<td>3.81</td>
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<tr>
<td>I work for the rights of others.</td>
<td>317</td>
<td>41</td>
<td>128</td>
<td>131</td>
<td>16</td>
<td>1</td>
<td>3.61</td>
</tr>
<tr>
<td><strong>Interpersonal-Social Interaction</strong></td>
<td><strong>N</strong></td>
<td><strong>Strongly Agree (5)</strong></td>
<td><strong>Agree (4)</strong></td>
<td><strong>Neutral (3)</strong></td>
<td><strong>Disagree (2)</strong></td>
<td><strong>Strongly Disagree (1)</strong></td>
<td><strong>Average Response</strong></td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>------</td>
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<td>-----------------</td>
<td>-----------------</td>
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</tr>
<tr>
<td>I frequently interact with students from a race/ethnic group different from my own.</td>
<td>318</td>
<td>78</td>
<td>149</td>
<td>59</td>
<td>32</td>
<td>0</td>
<td>3.86</td>
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<td>I frequently interact with students from a different country from my own.</td>
<td>313</td>
<td>39</td>
<td>94</td>
<td>87</td>
<td>79</td>
<td>14</td>
<td>3.21</td>
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<td>Most of my friends are from my own ethnic background.</td>
<td>316</td>
<td>56</td>
<td>152</td>
<td>44</td>
<td>57</td>
<td>7</td>
<td>3.61</td>
</tr>
<tr>
<td>I intentionally involve people from many cultural backgrounds in my life.</td>
<td>315</td>
<td>26</td>
<td>112</td>
<td>137</td>
<td>37</td>
<td>3</td>
<td>3.38</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Community</strong></th>
<th><strong>N</strong></th>
<th><strong>Strongly Agree (5)</strong></th>
<th><strong>Agree (4)</strong></th>
<th><strong>Neutral (3)</strong></th>
<th><strong>Disagree (2)</strong></th>
<th><strong>Strongly Disagree (1)</strong></th>
<th><strong>Average Response</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>I have a strong sense of affiliation with my college/university.</td>
<td>317</td>
<td>28</td>
<td>120</td>
<td>114</td>
<td>44</td>
<td>11</td>
<td>3.35</td>
</tr>
<tr>
<td>I feel that my college/university honors diversity and internationalism.</td>
<td>318</td>
<td>81</td>
<td>173</td>
<td>45</td>
<td>16</td>
<td>3</td>
<td>3.98</td>
</tr>
<tr>
<td>I understand the mission of my college/university.</td>
<td>318</td>
<td>47</td>
<td>169</td>
<td>72</td>
<td>25</td>
<td>5</td>
<td>3.72</td>
</tr>
<tr>
<td>I am both challenged and supported at my college/university.</td>
<td>317</td>
<td>68</td>
<td>177</td>
<td>55</td>
<td>13</td>
<td>4</td>
<td>3.92</td>
</tr>
<tr>
<td>I have been encouraged to develop my strengths and talents at my college/university.</td>
<td>318</td>
<td>79</td>
<td>168</td>
<td>50</td>
<td>18</td>
<td>3</td>
<td>3.95</td>
</tr>
<tr>
<td>I feel I am a part of a close and supportive community of colleagues and friends.</td>
<td>317</td>
<td>51</td>
<td>151</td>
<td>96</td>
<td>19</td>
<td>0</td>
<td>3.74</td>
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Submission ID 215

Title of Presentation: ADHD and Applied Reasoning Performance: Bridging the Gap between Science and the Classroom

Topic Area of Submission: Educational Psychology

Presentation Format - Poster Presentation.

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This poster presentation outlines my ongoing master’s research thesis project studying the relationship between Attention Deficit/Hyperactivity Disorder (ADHD) and possible deficits in reasoning performance. This project has been approved by the ethics board of the University of Saskatchewan and is funded by the Tri-Council Agency of Canada through a Social Sciences and Humanities Research Council grant. The project is supervised by Dr. Laurie-Ann Hellsten, Associate Dean Graduate Studies and Research and Associate Professor, University of Saskatchewan, Canada.

Summary of Research Our research investigates whether ADHD might affect the reasoning performance of students diagnosed with this disorder. Differences in analytic reasoning are compared between students with ADHD and those without. Our study may offer insight into why ADHD students require accommodations for learning, which can assist with how to help students with ADHD learn more effectively. Results could inform teaching approaches for students with ADHD aimed at improving hypothetical reasoning skills.

Word Count = 70

See following page for Abstract
Abstract
ADHD is widely associated with deficits in frontal lobe executive function (EF). Exactly how deficits in EF impair the ability to learn in the classroom is an on-going topic of research. One area of focus is the executive inhibition mechanism required to suppress erroneous belief responses to engage in deeper analytic thinking. The capacity to reason independently of beliefs is considered a core ability of formal reasoning that is highly dependent on executive processes. University students both with (64) and without (64) ADHD (N = 124) will solve base-rate (BR) problems, in which inhibition of belief mediates normative reasoning performance. BR problems feature salient stereotypes (e.g., “Paul lives in a beautiful home in a posh suburb”) that either conflict or match with presented base-rate probabilities (e.g. “Paul was randomly selected from a sample of 5 doctors and 995 nurses for conflict; 995 doctors and 5 nurses for non-conflict”) and asks for group membership (e.g. “What is the likelihood Paul is a doctor?”). Unless specifically instructed to respond using statistics, people generally neglect base-rates in favor of compelling descriptions due to differing processing demands that BR problems entail. Representativeness cues autonomous, intuitive responses that are difficult to inhibit, whereas base-rate processing requires effortful analytic reasoning. Resisting erroneous belief responses in favor of normative responses is linked to inhibitory control; thus, we expect ADHD participants to exhibit diminished reasoning performance when asked to respond ‘statistically’ to conflict problems. This study may offer insight into why ADHD students require modifications in learning, which has the potential to inform how to help students with ADHD learn more effectively.

Word Count = 263
Establishing an Effective Teaching Assistant Program for Computer Science Undergraduate Education

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Abstract—Academic support services (e.g., teaching assistantship services, enrichment activities) can be beneficial and at times crucial, for the success of low income, first generation, underrepresented, motivated students with gaps in their academic preparation. In this paper, we describe the establishment and growth of a teaching assistantship (TA) program in the Computer Science and Information Technology (CSIT) program at California State University Monterey Bay (CSUMB), a primarily undergraduate institution and evaluate its effectiveness. Developing a strong TA program in the CSIT program is challenging. Firstly, being an undergraduate only program, our teaching assistants have to be selected from undergraduate students. Compounding this issue is the fact that significant portion of our students are underprepared for the rigors of college education. Therefore, to create a successful TA program we recruit top-of-the-class junior and senior students (TA scholars). To ensure good quality of the TA program, we organize weekly workshops on effective tutoring and mentoring techniques for TA scholars. The TA program is currently in the third semester of its implementation. Data collected during the Fall 2014 semester suggests that nearly 60% of surveyed students availed TA services. Additionally, approximately 85% of students who availed TA services rate the TA program highly.

I. INTRODUCTION

Computer Science and Information Technology (CSIT) program at California State University Monterey Bay (CSUMB) is committed to providing high quality computing education and opportunities to low income, first generation, underrepresented students in the state of California [1]. Noticing that introductory computer science courses are becoming filter classes that are keeping out motivated students with gaps in their academic preparation from pursuing a computer science major, the CSIT program has invested significant effort in developing strong academic support services for students such as teaching assistantship services, mandatory study hours, professional development and internship/job preparation.

In this paper, we describe the establishment and growth of our TA program and evaluate its effectiveness. Prior research has demonstrated the benefits of undergraduate TA programs for introductory computer science courses [2], [3], [4]. While TA programs provide students additional academic support, it also helps teaching assistants improve their technical and communication skills. While there are multiple TA programs currently associated with large research institutions (e.g., Stanford University, University of Arizona) we explore the benefits of such programs for students at CSUMB, a teaching-focused Hispanic Serving Institution.

Developing a strong TA program in a primarily undergraduate institution has its share of challenges. Firstly, being an undergraduate only program, we do not have the luxury of selecting graduate students as teaching assistants; our teaching assistants have to be selected from undergraduate students. Compounding this issue is the fact that significant portion of our students are underprepared for the rigors of college education. Secondly, aligning teaching assistants’ objectives that have traditionally been focused on reducing the instructors workload to a student centric model focused on improving academic outcomes requires significant effort for training. Lastly, the biggest challenge lies in creating a self sustaining TA program that requires minimal faculty or staff intervention for its operations.

The TA program at CSUMB (modeled after the section leader programs at the University of Arizona [2]) and Stanford [3], [4]) consists of specially trained tutors, providing necessary tutoring and mentoring support to CSIT students. Our TA program provides support for introductory programming and upper division computer science courses. To create a successful and sustainable TA program we recruit ‘top-of-the-class’ junior and senior students (TA scholars). Weekly workshops on effective tutoring and mentoring techniques are organized for TA scholars. TA scholars also share their experiences about the program (e.g., office hours, review sessions, workload) during this workshop. Program continuity is being ensured by having existing TA scholars share their experiences and provide guidance to new TA scholars.

The TA program is currently in the third semester of its implementation. To assess the success of our TA program we performed extensive data collection during the Fall 2014 semester. Our data suggests that nearly 60% of surveyed students availed TA services during the fall semester. We also observe that approximately 85% of students who availed TA services rate the TA program highly. Additionally, the program has been beneficial to TA scholars; many of them note that the program has helped improve their communication and presentation skills.

The rest of the paper is organized as follows. We provide a brief description of the ongoing projects and cohort programs in the CSIT program at CSUMB in Section II. We describe the growth and development of the TA program in the CSIT program in Section III and evaluate the effectiveness of the program in Section IV. We conclude the paper with a discussion of our current and future work in Section V.

II. BACKGROUND

Since its inception in 2007, the CSIT program at CSUMB has been committed to providing high quality computing
education and opportunities to students identified in CSUMB’s vision statement. Over the past seven years this commitment has resulted in significant efforts to develop learning communities to support student success through cohort-based programs.

In 2013, the CSIT program in partnership with Hartnell College launched a cohort-based, three-year bachelors degree program called CSIT-In-3 [5] as a way to improve learning outcomes and increase student retention. The first and second cohorts of CSIT-In-3 began in Fall 2013 and Fall 2014 respectively, each with 32 students. Cohort-based learning communities have been proven to be effective in both short term success and long-term retention [6]; learning communities also increase the success of underrepresented and first generation students in STEM majors [7].

Inspired by the initial success of the CSIT-In-3 program (e.g., high retention rate experienced so far), starting in Fall 2014, computer science faculty from CSUMB launched a cohort-based, 4-year bachelors degree program called CSIT++ [8]. The objective of the CSIT++ program is to create a rigorous, competitive curriculum and to provide additional student services so as to enable students to graduate with their CSIT degree in 4 years.

These cohort-based programs have provided CSIT faculty a launchpad for starting a number of initiatives such as TA programs, enrichment workshops, professional development and job preparation workshops. We have leveraged this opportunity to provide academic support services to all our students - the CSIT-In-3 students, CSIT++ students and our traditional non-cohort students. In this paper, we describe the development of our TA program and its positive impact on our students.

III. TA Program

As mentioned earlier, the CSIT program caters mainly to first generation, low income students. Many of these students are motivated, but fail to cope with the rigorous requirement of a computer science degree due to gaps in their academic preparation. Additionally, a large fraction of our students have to work part-time to support themselves financially, thereby leaving them with limited opportunity to attend instructor office hours. CSIT faculty thus realized that our students will greatly benefit from a strong TA program primarily aimed at providing tutoring and outside classroom assistance.

Establishing a strong and sustainable teaching assistantship program at CSUMB comes with its fair share of challenges. Firstly, the CSIT program being an undergraduate only degree program, our teaching assistants have to be selected from a pool of undergraduate students. Secondly, aligning the teaching assistants’ objectives from decreasing instructor workload to a more student-oriented model requires considerable training. Compounding the difficulty of the task is the fact that currently the CSIT program has only four tenure track faculty and two academic support staff. We entrusted one of the academic support staff members with the role of being a TA coordinator. Table I provides an overview of the activities of the TA scholars. We note that TA scholars receive remuneration at the hourly student rate.

Recruiting TA scholars: The first batch of TA scholars was selected from the ‘top-of-the-class’ juniors and seniors. Care was taken to ensure that TA scholars themselves had secured an ‘A’ grade in the courses they were selected as teaching assistants. TA scholars provide academic support in the form of tutoring and mentoring for all our students (CSIT-In-3, CSIT++ and traditional CSIT students). The interest in the TA program has increased over time and for the Spring 2015 semester, we had a large pool of applicants. The recruited TA scholars not only had good grades but were also screened via an interview process.

Training TA scholars: The primary task of the TA scholars is to hold office hours and to conduct review sessions and discussions. At the beginning of each semester, TA scholars receive training on effective tutoring and mentoring practices. The TA scholars meet weekly with the TA program coordinator and discuss their experiences over the past week. During the weekly workshop TA scholars are provided relevant material for the coming week; they are also given guidelines and tips related to improving overall student experience.

Program continuity: We plan to create a sustainable model for the TA program by having older TA scholars share their experiences and provide mentoring support to new TA scholars. Having older TA scholars guide new TA scholars will increase program scalability by utilizing older scholars as resources for training newer scholars. As the TA program is still at an early implementation phase, we are in the process of implementing the above mentioned program continuity model.

Tutoring in Study Hours: To improve student outcomes, CSIT faculty aim to reinforce good academic practices such as regular attendance, mandatory study hours and good note taking in our students. We note that certain activities such as attending study hours is mandatory for cohort students, but our traditional students are also given equal opportunity to participate. Apart from holding office hours, TA scholars provide additional assistance to students during study hours, thus helping them to be on top of their courses.

IV. Evaluation

To evaluate the benefit of the TA program for our students as well as the TA scholars, we conducted extensive data collection during the Fall 2014 semester. We collected data by having students fill out a questionnaire; the survey consisted mainly of quantitative questions, where the respondents had to select from a few options. We also included some qualitative questions to seek the students’ and TA scholars’ opinion on the effectiveness of the TA program and to explore avenues for future improvement.

Our main objective behind this evaluation is to answer the following two questions - i) Do CSIT students perceive the TA program as being an useful academic support service? ii) Do TA scholars perceive the TA program as having helped them improve their teaching and communication skills? Our analysis in the section answers both these questions in the affirmative.

A. Benefit to CSIT students

We made the survey available to all our students and obtained responses from 101 students. Among the 101 respondents there are 32 CSIT-In-3 cohort students, 33 CSIT++ students and 36 traditional CSIT students. We observe from
the data that we obtained larger number of responses from the cohort students than the traditional CSIT students. This skewed distribution can be attributed to the fact that filling the questionnaire is voluntary; cohort students were allocated time during their weekly enrichment workshops to fill in the questionnaire. We are aware of the biases introduced by data collection via voluntary filling of surveys, but we believe that our initial data collection provides us valuable insight about the impact of our TA program.

Table II shows the distribution of the number of times a student availed teaching assistantship services. It is evident from the table that nearly 60% students availed TA services, with some students attending office hours almost regularly. Table III provides an overview of the types of assistance sought during the TA office hours. We observe form the data that while some students used the TA scholars office hours to clarify points of confusion, a majority of them used the office hours as tutoring services and to seek assistance on specific projects and assignments.

We offered TA services for most lower and upper division computer science courses in the department. Table IV shows the number of respondents who sought help for the various courses. One can observe that a large number of students availed TA services for the Physics of Computing course; the primary reason is that the course is mainly project based and all CSIT++ cohort students were enrolled in that course. We also observe from the data that TA services for most other courses were availed equally. We would like to note that though we observed a large number of students availing TA services for CS1 and CS2, the lower number of responses is due to the fact that all students enrolled in these courses were traditional CSIT students.

Table V shows the overall satisfaction of the students with the teaching assistantship services. From the table, we observe that most students (approximately 85%) found the TA office hours helpful. Table VI provides examples of some qualitative questions and sample responses. Evaluating the responses to both qualitative and quantitative questions, we observe that students found the TA office hours helpful. We also observe that the TA program has helped build a sense of learning community for CSIT students; it has provided a platform for students to get together, exchange ideas and to help each other.

B. Benefit to TA scholars

In this section, our goal is to understand the benefits of the TA program for the TA scholars. Table VII provides an overview of some of the questions and sample responses. Most TA scholars identified the TA program as helping them improve their communication skills. The TA scholars also appreciated the opportunity to be able to work with other students and to help them solve their problems. We also believe that being a TA scholar helps students revise prior material and retain information.

Through our TA program we hope to create role models for our freshman and sophomores. We believe that we have partially succeeded in the endeavor by providing an avenue for freshman and sophomores to interact with ‘top-of-the-class’ juniors and seniors. We have already noticed an increasing popularity of the TA program. In Spring 2015, we obtained applications from a large number of students for becoming TA scholars and selected the TA scholars after personal interviews.

V. DISCUSSION AND CONCLUSION

Encouraged by the initial success of the program, CSIT faculty have been incrementally increasing the responsibilities
We observed that approximately 85% of students who availed TA services rate the TA program highly. The program has been beneficial to TA scholars as well; many of them noted that the program has helped improve their communication and presentation skills.

VI. ACKNOWLEDGMENT

This research was supported in part, under National Science Foundation grant NSF STEP award 1317649. We would also like to acknowledge the effort of Julie Shattuck who helped us in designing the survey questions and in data collection.

REFERENCES


<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>What type(s) of help do you seek most often in the TA office hours?</td>
<td>Clarification on topics discussed in class.</td>
</tr>
<tr>
<td>Help with assignments, test preparation, and understanding missed questions from tests and assignments.</td>
<td></td>
</tr>
<tr>
<td>What difference has attending TA office hours made for you academically and/or personally?</td>
<td>Academically, it has helped me improve my grades and understand the topics covered in the course much better.</td>
</tr>
<tr>
<td>I believe that the TA office hours helped me improve my academic performance on quizzes and exams.</td>
<td></td>
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</table>

TABLE VI. QUALITATIVE QUESTIONS AND SAMPLE RESPONSES FROM STUDENTS

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please reflect back on the training that you find most useful for you now, as new TAs?</td>
<td>The most effective training I had was to positively encourage students at all times. Students usually show much more willingness to do the project rather than just give up; if you work with them, they go all the way through.</td>
</tr>
<tr>
<td>I believe we were all picked because we have very good communication skills, but during the first training session some ground rules were explicitly stated on how to communicate and how not to put someone down, even unknowingly.</td>
<td></td>
</tr>
<tr>
<td>What are you getting out of this professionally?</td>
<td>It has helped me strengthen my fundamentals. It has also increased my soft skills, because I have to be able to communicate with students and professors regarding what I know or what I am thinking of in a way that they can understand.</td>
</tr>
<tr>
<td>I feel like there is a lot of leadership that you have to take out of it. You cannot explicitly solve problems for students, but you have to be able to lead them to the solution. You have to show that you care for the students and I feel like that translates to leadership skills.</td>
<td></td>
</tr>
</tbody>
</table>

TABLE VII. QUALITATIVE QUESTIONS AND SAMPLE RESPONSES FROM TA SCHOLARS
Title of Presentation: Thinking in Numbers: Psycho-educational Testing for Dyscalculia

Topic: Educational Psychology

Format: Paper session presentation

Presented by:

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Summary: A 16 year-old young man with no known academic, behavioral, or attentional issues who uncharacteristically refused to attend school from the age of 14. This presentation details the psycho-educational testing process used to tease out an underlying hidden learning disability of dyscalculia. A lack of awareness of this disability coupled with increasing frustration with concepts of numeracy led the student to disengage from education, emphasizing the importance of psycho-educational testing for students with atypical conduct.

Word count = 75
Abstract

“John” is a 16 year-old young man with no known academic, behavioral, or attentional issues who refused to attend school from age 14. The behavior was uncharacteristic given John’s average school grades, stable family support, good peer relations, lack of attentional or behavioral issues, and model social behavior. Norm referenced tests were used to evaluate John’s cognitive abilities and academic achievement at 16 years, two years after disengagement from school began. Despite placing in the above average range on the General Ability Index, WISC subtests of cognitive ability revealed significantly divergent scores. In particular, any subtest involving numerals greatly skewed scores downward. To tease out the suspected learning disability of dyscalculia, domain specific subtests incorporating only numerals were administered and compared to same-domain subtest scores utilizing only language. Thus, “number only” subtests could be separated out to positively identify a LD of dyscalculia, whereas “language only” subtests revealed a more accurate representation of John’s true cognitive ability beyond his disability. Results demonstrated that testing material entailing numerical retention, manipulation, or numerical retrieval resulted in scores as low as the 1st percentile. What distinguishes dyscalculia from a “lack of opportunity” for learning basic math facts is exceptionally poor performance in subitizing tasks and retention/recall for numerals, both of which do not entail mental manipulation or operation of numerals. The segregated method of cognitive testing uncovered extensive difficulties in mastering a sense of numbers, grasping and understanding the size or quantity of numbers, learning number facts, and performing calculations, all characteristic of developmental dyscalculia.

Word count = 252
Shaping the Future of Post-Secondary Education Programs: Parents' and Students' Perspectives

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Abstract

Parents of children with autism spectrum disorder and intellectual and developmental disability play a major role as advocates to facilitate the access of their children to higher educational institutions. Therefore, this study investigated American, Saudi and Arab-American parents’ of young adult with ASD and ID perspectives toward post-secondary education programs to explore whether cultural background or the availability of post-secondary education programs had any influence on shaping their attitudes. The researcher conducted 24 semi-structured interviews with six different American parents and their young adult with autism and intellectual and developmental disability, in addition to three American parents and their young adult with autism and three Arab-American parents and their young adult with intellectual and developmental disability to analyze their perspectives. Using an inductive approach researchers thematically analyzed the data. These findings were presented under four main headings or themes: 1) cultural and religious conflicts, 2) availability of programs, 3) students’ needs and 4) social advocacy. Parents’ reflections highlighted the lack of post-secondary education programs for individuals with autism and intellectual disability in the Middle-East and the impact of that lack on the whole family. These findings reveal the importance of providing post-secondary education programs in the Middle East

Keywords: Autism spectrum disorder, intellectual disability, post-secondary education, parents’ perspective, cultural diversity
Title of submission- What classroom assessment techniques actually make the difference? One schools journey moving from a beginning to an end that is both highly focussed and collaborative between student and teacher to enhance 21st Century learner capabilities.

Affiliations - WAPPA Western Australian Primary Principals Association
ALEA- Australian Literacy Educators Australia

Presenting Author- Principal Dardanup Primary School- Melanie Clark
Email addresses-Melanie.clark2@education.wa.edu.au
Chalkiemel@gmail.com

In education we often focus on evaluative feedback. We as educators place a high value on end products rather than the learning destination and the process for the learner along the way. As we assess and value quizzes, tests, and learning area content descriptors we put ourselves at educational risk if we do not include the process of learning, the learning destination and often ignore moments where students are given the forum to articulate their learning with proof of their learning. I commenced as Principal in July 2014 at Dardanup PS after returning from a yearlong exchange stint in Ontario, Canada. During that time I was fortunate enough to attend a series of workshops titled ‘Advancing Student Engagement and Learning in the 21st Century through distributed Instructional Leadership.’ One area of the workshops was facilitated by Canadian presenter Sandra Herbst, and detailed primarily on how assessment is a journey, not necessarily the end product.

At Dardanup PS this was most definitely the case and the only data collected was post evaluative data in the forms of testing and online testing. This data was proving to be almost ‘too late’ in terms of data driven analysis used as an impetus to drive teaching in the school. Staff examined their own practice in terms of classroom content, engagement of students, depth of work, and the presence of thinking in students. The following tool, ‘Looking at Opportunities’ (Ritchhart, 2003), from the Project Zero group at Harvard was the beginning of a whole school process to see how classroom practice can be enhanced and ultimately of greater benefit to students.

As part of an action research project the staff were then exposed to a School Development Day focussed on assessment-based learning. We identified collectively what was already in place and evaluated this against some fundamental principles of student-based assessment and the use of high quality descriptive feedback to improve student learning. As a staff we looked at how we give feedback to students in our school. When we mark a test, a quiz or a project we are giving feedback, but it is usually post data. There is far more powerful learning attributed to unpacking curriculum requirements or expectations and the sharing of what these expectations look like in concrete examples provided to students and with students acting as co-constructors of what success looks like.

Qualitative research was undertaken and centred largely on discussions around the concepts and ideas of knowing what counts in classrooms and our results from examination of individual practice. A series of questions was discussed to elicit evidence of when and how we set criteria for learning in our school. We embedded a whole school data cycle and formed a professional learning community to moderate student responses, and to create visible learning goals and success criteria.

Our first question during professional learning meetings was ‘How do we ask students to show proof of learning at our school?’ As a staff we examined deconstruction of curriculum expectations and looked at what groups of expectations made sense to plan and teach together. Alongside this was an identification of the success criteria used to evaluate learning. Teachers must be clear on the success criteria they will use to verify learning before they can bring students into the role of co-constructing criteria.
It is important therefore to not only know what curriculum expectations are being taught but be clear in what success will look like. Teachers at this school often give rubrics as a prelude to the learning activity but we found as a staff that we rarely did was provide examples of what success looked like matched against the criteria. We also discussed the pitfalls that can happen with student learning with the child that receives rubric but aims for the middle ground as this will be safer.

As a whole school example we looked at an oral report in a year 5/6 classroom as the discussion point for our action learning research. When working on this particular aspect of the curriculum students need to be very clear what is expected in an oral report. Students were also given opportunities to moderate samples of student oral reports as well as visual representations of this and identify what makes a good oral report or fits a grade descriptor. Students at Dardanup PS were also part of the identification and posting of the success criteria against the grade descriptors.

This was also displayed in the classroom for future reference during the learning pathway. As a group, students identified the learning destination that was being 'looked' for in the grade but also what that meant in terms of what the assessor was looking for. What became very evident to us a learning group was that this process of success criteria identification must be carried out in the beginning and is not effective if this is attempted half way through or at the end of the learning trajectory.

Criteria were revisited by students and teachers throughout the process and the result of this was that students gained a greater understanding of what high quality work looks like. As teachers we also got better at the process along the way. Results from our findings indicated that when teachers were able to clearly communicate to students what they were looking for, a process of high quality feedback commenced with the process becoming one of elimination. Learning destinations became clear and concise as missing criteria was listed and students knew exactly what they had to change about their presentations to select the most important element they had to improve on.

As a group we scheduled continued professional learning meetings to further our understandings of learning pathways in our particular grade levels. Time is always a factor for teachers and it was agreed that set meetings to talk about construction of criteria and actively examining samples of what success criteria looks like was the only way to proceed to co teach and lead professional opportunities at the school and district.

The second shift in our school was that in order for assessment to become student based as well as teacher based only comes from teachers understanding that they are not the only ones who have to assign marks. When we talk about skills that 21st century learners need for the future we need to be clear about what those skills are and how they are taught. Students as 21st century learners need to develop skills of reflective thinking but must be taught to do so. Learners need to be able to determine next steps in their own learning and our reporting in schools must also convey this message. We developed our own motto where students learning must be on the ‘cusp’ of their learning.

As educators we often remind a student to get ‘back on track’ with their learning but we always assume they know what they are learning in the first place. How often do we ever give kids a second chance at learning? The oral report example was examined as a group and feedback that could be given was determined. We examined powerful prompts that make thinking visible derived from the LNS, Ontario Ministry of Education SIM Session II, Fall 2010 and applied to this particular learning trajectory.
Prompts included providing reminders, but specific reminders linked to context. Providing scaffolding where specific feedback was explained alongside what the student must do to attain success. As a group we examined how many times we say to a student ‘You are doing a great job’, or ‘Wow that looks good!’

What were we actually talking about here? Asking direct questions, asking for clarification of connections, and giving students thoughts they must be the ones to complete. Students were also provided with three examples of an oral report and were asked to identify elements of those presentations they felt addressed criteria. The terms ‘Learning Destination’ and ‘Proof of Learning’ were to be used at the beginning of each clarification of success criteria.

From this beginning with an oral report we have found as a staff that when students are engaged in the process of constructing and moderating their own work they are were deeply successful. Students began to set their own learning targets and rate their performance on a continuum. We also provided opportunities for students to be able to give feedback to each other. Students were asked to collate feedback and determine leaning targets.

As a school we have found this process very powerful as well as a shift in pedagogy. After trialling this in the initial lesson in the production of an oral report we were able to apply to other areas of the school. This is a continued focus and point of need in our school. Our professional learning community continues to discuss best practice in this area of student learning. Staff surveys demonstrated that 98% of staff felt that they had improved the quality of set tasks and reported greater depth in student attainment of curriculum an understanding.

More importantly from our action learning we found as a staff from collated student responses that students found great value in co construction of criteria with responses indicating they felt successful and knew what was expected of them. As teachers we reported that there were gains in student engagement and the resultant learning. Staff felt the concept of giving high quality and descriptive feedback led to in depth and rich task evidence. Students were also able to pinpoint learning proof and use statements such as, ‘I used to do this but now I know how to do this.’

Using surveys, video reflections and classroom observations, pre and post work samples improvement in student learning and perception of tasks was clear and insightful. Students were able to clearly see themselves on a continuum of learning. Increase in engagement and use of direct feedback was evidenced in oral and written work samples. Purposeful and specific feedback given to students was addressed in final work samples. Students reported they felt the teacher ‘knew’ what they needed help with.

Collaborative data focussed discussions have now become the norm at DPS. Student data is tracked and continued building of teacher capacity remains a factor at this school. Research findings from this action-learning project showed that 96% of teachers surveyed felt that the quality of their classroom delivery and depth of learning tasks increased substantially. Student data showed improvements in literacy gain and quality of work samples. Teachers are focussed on next steps for this school where high quality conversations to improve student learning are the norm and the process followed forms the basis for further building of teacher capacity through active learning and whole school improvement agendas. The journey continues.

http://www.pz.harvard.edu/

Http://www.pz.harvard.edu/vt/VisibleThinking_html_files/05_SchoolWideCultureOfThinking/LookingatOpportunities.pdf

http://www.edu.gov.on.ca/eng/policyfunding/growSuccess.pdf

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Title: Investigating the Implications of Flipped Teaching Method on Preservice Teachers’ Academic Achievement and Self-efficacy

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Description of Presentation: The purpose of this study was to investigate the implications of the use of the flipped teaching strategy on preservice teachers’ learning outcomes, self-efficacy and perception. Full paper attached.
Investigating the Implications of Flipped Teaching Method on Preservice Teachers’ Academic Achievement and Self-efficacy

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Abstract: The purpose of this study was to investigate the implications of the use of the flipped teaching strategy on preservice teachers’ learning outcomes, self-efficacy and perception. The investigators employed a within-subject design with an independent variable: the teaching method (flipped-based (FB) or lecture-based (LB) and two dependent variables: (1) learning outcome (2) students’ perception of self-efficacy. The first group of participants were 60 preservice teachers (39 undergraduates, 21 graduates, average age 22-25 years). The second group of participants were approximately 70 pre-service teachers enrolled in two sections of an adolescent development course. The results of the first group showed that there were differences between students’ mean test scores and the differences were statistically significant (higher in FB). The results also showed that students’ self-efficacy mean scores were higher after using FB compared to LB and the differences were statistically significant. The results of the second group which only addressed learning outcome indicated that there was no significant difference in the mean test scores in the FB compared to the LB. Finally, the investigators collected the results of 12 questions from the students to assess their perception on the FB teaching strategy and found that preservice teachers favor the use of FB strategy in both the technology integration course and the adolescent development course. These results suggest that FB teaching strategy can have a positive effect on preservice teachers’ test scores, self-efficacy and the majority of them are in favor of its use in a technology integration course. Furthermore, the majority of students who prefer the FB indicated that a reason for favoring this strategy is that it promotes collaboration and hands-on activities during the class time. Other students found that the FB strategy had less lecture time, they can work at their own pace, they are able to interact more with the teacher and ask questions, and that they do not have to sit and listen to an hour long lecture that “goes in one ear and out the other one”.

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1. Objective

Although the lecture-based teaching strategy (LB) has been used for decades as an effective way to help students acquire new knowledge (e.g., Hattie, 2009; Schwerdt, 2009), many educators argue that this teaching model is mostly static, passive and not suitable for teacher candidates preparing for extended field experience and careers in teaching. Students reported also that the information delivered during lectures may come too slowly or cover what they already know; other students have trouble taking in information so rapidly, or they may lack the prior knowledge needed to understand the presented content (Goodwin & Miller, 2013).

A growing number of teachers started recently using a different teaching strategy through creating flipped or inverted classrooms. This teaching strategy involves moving the lecture content before class and working on homework and hands-on activities during class time. For example, the data from the Flipped Learning Network (2012) indicated that membership on its social media site rose from 2,500 teachers in 2011 to 9,000 teachers in 2012. In the flipped teaching strategy (FB), educators can employ online asynchronous educational videos, recorded lectures or readings and spend time in class working on problems or exercises through active, group-based problem solving activities. The learning materials can incorporate multimedia visual representations, such as interactive graphs, photos or animation. While watching the video, lectures or reading the text, students have the chance to control the pace of the multimedia streaming to match their own learning preferences. Students can also watch or listen to recordings of class lectures on their computers, tablets, smart phones, or personal media players outside of class, leaving class time to engage in learning activities that might otherwise be assigned as homework (Frydenberg, 2013).

Reports of student perceptions of the FB have been found to be somewhat mixed, but are generally positive overall. For example, some prior research found that students tend to prefer in-person lectures to video lectures, but prefer interactive classroom activities to lectures (Bishop & Verleger, 2013). Although there is steady increase in the number of teachers who adopt the FB in classrooms, there is little research on the effect of this teaching strategy on preservice teachers. Therefore, the purpose of this study is to examine the implications of the use of the flipped classroom teaching strategy on preservice teachers’ learning outcomes, self-efficacy and perception in a technology integration course.

2. Theoretical Framework

Cognitive Theory of Multimedia Learning:

Since the introduction of television, a large body of empirical studies on the use of multimedia in education have demonstrated that students not only prefer it over text, but are also more likely to gain deeper learning from multimedia than from words alone (Baggett, 1984; Mayer, 2002, 2003, 2005; Mayer & Moreno, 2002; Salomon, 1984; Shepard, 1967; Wetzel, Radtke, & Stern, 1994). Researchers suggested that because multimedia contain two representations, visual that conveys information about objects and its relation to other objects, and verbal that communicates abstract meaning and special attributes of this information, a combination of both representations should increase the learning effect (e.g., Guttormsen Schar, Kaiser, Krueger, & th, 1999; Lowe, 1999). A major assumption underlying this empirical work is that humans can construct a mental representation of the semantic meaning from either auditory
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or visual information alone, but when instruction is presented in both formats, each source provides complementary information that is relevant to learning (Baggett, 1984).

Cognitive theory of multimedia learning (CTML) (Mayer, 2001), proposed several assumptions regarding the relationship between cognition and learning from dual representation information formats. Four of these assumptions are particularly relevant to learning from multimedia learning materials. First, the cognitive architecture assumption postulates that the human mind consists of an unlimited, long-term memory (LTM) in which all prior knowledge is stored and a limited working memory (WM) in which new information is processed. Second, the dual-channel assumption proposes that WM has two channels for visual/pictorial and auditory/verbal processing and that the two channels are structurally and functionally distinct (Clark & Paivio, 1991). Third, the limited capacity assumption states that each cognitive channel has limited capacity for information that can be processed at one time (Baddeley, 1986; Baddeley & Logie, 1999). Fourth, the active processing assumption explains that humans actively engage in the cognitive processes to select relevant verbal and non-verbal information from the learning materials, organize the selected information into cognitive structures, and integrate these cognitive structures with the existing knowledge to construct a new (or update an old) mental representation (Mayer, 1996).

Flipped Classroom:

Researchers on the flipped classroom do not agree on the type of activity that constitutes the flipped teaching model. For example, some researchers tend to delineate the flipped classroom in a broad definition and suggest that assigning video or reading outside of class and having discussions in class constitutes the flipped classroom. Bishop & Verleger (2013) reject this definition and describe the flipped classroom as an educational technique that consists of two parts: interactive group learning activities inside the classroom, and direct computer-based individual instruction outside the classroom. According to this definition, the flipped teaching strategy may use videos or readings as an outside of the classroom activity. For example, Demetry (2010) provides lecture notes for students to read at home prior to the class session, rather than providing video lectures to help meet the goal of increasing “time on task” to complete course-related activities. Other researchers identified flipped classroom as “events that have traditionally taken place inside the classroom, now take place outside the classroom and vice versa” (p.32) (Lage, 2000). Therefore, the flipped classroom is based on the idea that students are engaged in group interactive learning activities inside the classroom. To make sure that students watched the videos or completed the reading at home, students can respond to “clicker questions” to report their progress as they work on the exercises (Houston, 2012). Finally, the learning activities as well as the assigned homework in the flipped teaching model vary widely between studies. For example, some activities are made up of asynchronous web-based video lectures and closed-ended problems or quizzes, while others consider that the flipped classroom actually represents an expansion of the curriculum, rather than a mere re-arrangement of activities (Bishop & Verleger, 2013).

Self-efficacy and Learning

According to social cognitive theory (Bandura, 1997) self-efficacy is a form of self-judgment that influences decisions about what behaviors to undertake, the amount of effort and
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persistence put forth when faced with obstacles, and finally, the mastery of the behavior. According to Bandura, self-efficacy is not a measure of skill; rather, it reflects what individuals believe they can do with the skills they possess. For example, in discussing self-efficacy in computer use, Compeau and Higgins (1995) distinguished between component skills such as formatting disks and booting up the computer and behaviors individuals can accomplish with such skills, such as using software to analyze data. Thus, preservice teachers’ perception of their self-efficacy focuses on what they believe they can accomplish with the knowledge they master during their learning. It does not refer to a person's skill at performing specific learning related tasks (e.g. class management, integrate technology in their teaching and mastering a content area). Instead, it assesses a person's judgment of his or her ability to apply knowledge and skills in a broader context.

Preservice teachers participating in a technology integration course learn skills and knowledge of teaching with technology in an actual classroom. Self-efficacy beliefs are a key component for preservice teachers’ success in overcoming the fear they may experience in this new area. For example, Compeau and Higgins (1995) empirically show that there is a relationship between computer self-efficacy and computer use. Staples (1999) found that those with high levels of self-efficacy in remote computing situations were more productive and satisfied, and better able to cope when working remotely. Consequently, novice teachers enrolled in a technology integration course are required to develop a set of skills to perform successfully a distinct set of behaviors required to establish, maintain and utilize effectively teaching with technology beyond basic personal Internet and computer skills.

Research questions

The focus of this study was to investigate the implications of the use of the flipped teaching strategy on preservice teachers’ learning outcomes and self-efficacy in a technology integration course. Based on previous studies of CTML and self-efficacy, this study will be guided by the following questions:

1. Will the flipped teaching strategy improve preservice teachers’ learning outcomes compared to the lecture-based teaching strategy in a technology integration course and adolescent development courses?
2. Will the flipped teaching strategy improve preservice teachers’ self-efficacy in a technology integration course?
3. What is the perception of preservice teachers regarding the use of the flipped teaching strategy in a technology integration course?

The first question: Will the flipped teaching strategy improve preservice teachers’ learning outcomes compared to lectures-based teaching strategy in a technology integration course and adolescent development courses? This primary research question was at the heart of the study, as the answer to this question will inform instructors and trainers about the effect of the use of flipped teaching strategy on preservice teachers’ learning outcomes. In general, prior research found that the flipped teaching strategy resulted in improvement of students’ learning outcomes. Other studies, however, found that overall class testing scores do not support that flipping the classroom improved the entire class (Sparks, 2013). Therefore, the result of this
study will examine the effect of the flipped teaching strategy on students’ learning outcomes in the context of a technology integration course and an adolescent development course.

The second question: Will the flipped teaching strategy improve preservice teachers’ self-efficacy in a technology integration course? According to Bandura’s social cognitive theory, it is important to assess students beliefs and ability to apply the knowledge and skills they acquire during a lesson as indication of understanding the learning content (Compeau, 1995). The answer to this question will help instructors and trainers to evaluate the effect of the flipped teaching strategy to improve preservice teachers’ self-efficacy in applying the knowledge they acquire in the context of the technology integration course.

The third question: What is the perception of preservice teachers regarding the use of the flipped teaching strategy in a technology integration course? The answer to this question attempts to recognize the perception of preservice teachers’ toward the use of flipped teaching strategy in the technology integration course. The answer will help instructors and trainers to use the appropriate teaching strategies for students with different learning preferences. Particularly, the question focuses on whether learners will perceive the flipped teaching method positively or not.

Research Hypotheses:

In this study, the investigators hypothesize that:

- The flipped teaching strategy will improve preservice teachers’ learning outcomes in a technology integration course and adolescent development courses.
- The flipped teaching strategy improves preservice teachers’ self-efficacy in a technology integration course.
- The majority of preservice teachers will prefer the use of flipped teaching strategy in a technology integration course.

3. Methods

This study employed a within-subject design to assess the effect of using the flipped teaching method on preservice teachers’ learning outcome and self-efficacy in technology integration courses. The study has one independent variable: the teaching method (lecture-based or flipped-based method) and two dependent variables: (1) learning outcomes (2) students’ perception of self-efficacy to integrate technology in teaching.

The participants in the first group were sixty preservice teachers (39 undergraduates, 21 graduates), enrolled in technology integration courses at a Midwestern university. Participants were non-science majors and attending three sections: section one: 19 undergraduate students, section 2: 20 undergraduate students and section three: 21 graduate students (10 male, 50 female). Students were from four different majors: 32 in early childhood education, 2 in elementary education, 14 in middle-level education, 9 in high school education and 3 other education major such as physical education or speech/theater. English was reported as the native language of all participants. The average reported age of the participants was 22-25 years (SD = 1.415 years). Participants were 53 White, 4 African American, 1 Hispanic and 1 Asian, among them 4 freshmen, 11 sophomores, 23 juniors, and 22 seniors.
Participants in the second group which only addressed learning outcomes were 55 undergraduates enrolled in an adolescent development course at the same Midwestern university. Participants were preservice teachers attending two sections: section one 25 undergraduate students (15 males, 10 female), section 2: 30 undergraduate students (18 male, 12 female). Students were from 3 different majors: 29 secondary, 25 other, and 1 elementary education. The average reported age of the participants was 18-21, among them 13 sophomores, 27 juniors and 15 seniors.

The lessons and activities used in the first experimental group of participants were adapted from the textbook “Integrating Educational Technology into Teaching” by Roblyer and Doering, Sixth Edition (2012). Participants were taught with two different teaching methods: the traditional lecture-based method to teach one topic: learning with technology in special education and the flipped-based method used to teach four topics: Technology tools for 21st century teaching, hypermedia tools for 21st century teaching, distance teaching and learning and the role of the internet and developing and using web-based learning activities and teaching.

The lessons and activities used in the second experimental group(s) of participants were adopted from the textbook “Adolescence” by Santrock Fourteenth Edition (2012). Both groups of students covered the same material over the same period of time. The first group (control group) was taught utilizing a standard lecture followed by an activities format. The second group was taught utilizing a flipped classroom strategy.

4. Materials

All learning materials used in the flipped teaching method, including videos, post-tests and surveys were online as part of the Blackboard course content and released to students every week based on the topic covered in that week. The instrumentations consisted of the following items in the first group of participants: demographic survey, 10-question multiple-choice post-test for each of the five learning topics, 10-question 11-level Likert scale to assess students’ perceived self-efficacy based on Bandura’ measure (Bandura, 2006). All learning measures were selected or developed by the course instructor and were used regularly with students attending the technology integration courses and adolescent development courses.

Pre-test

Demographic survey: This questionnaire was designed to collect information about the participants’ makeup, such as students’ gender, years in college, area of specialization and age.

Students’ self-efficacy survey (pre and post): This questionnaire was designed with 11-point scale ranges from "Cannot do at all" at zero to “Highly certain can do" at 100. Students were asked to answer how confident are they in their belief that they have this ability". For example, in question number three, students were asked the following question: “How certain are you that you can identify and use technology tools and information resources in your content area to increase productivity, promote creativity, and facilitate academic learning. Rate your degree of confidence by recording a number from zero to 100 using the scale given below”.
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Participants could rate their confidence by selecting a number starting from zero "Cannot do at all" to 100 “Highly certain can do”.

The investigators developed the self-efficacy measure based on Bandura’s “Guide to the construction of self-efficacy scales” in (Pajares, 2006). The measure was tailored to assess students’ ability to integrate technology into their teaching. The initial ratings of the measure indicated that all items adequately reflect and assess the topics covered in all conditions and the scores averaged across the 10 items. Mean for the total sample $M = 83.00$, $SD = 11.30$, range $= 8.38$. The investigators calculated the inter-rater reliability of the measure by intra-class correlation coefficients to evaluate the consistency of the ratings. The reliability for the measure Cronbach’s alpha (an estimated of internal consistency) was .92 (across all sections). Further, the investigators used this measure as self-efficacy assessments in other classes related to teaching technology for preservice teachers (face and construct validity). Finally, the investigators examined the measure’s scale results and scale results of other concepts in the technology integration courses such as computer-assisted instruction, virtual classroom and course management system, and found that the results of this measure significantly correlated with the results in other concepts and Cronbach’s alpha was .88 (criterion-related validity).

The second group, adolescent development courses, were given pre- and post-tests over material covered within the indicated time span. Students in both sections covered the same material. Their demographics was also recorded to be included in the analysis and interpretation. Data was analyzed using ANCOVA and Correlation Coefficient Analysis.

Post-test

The learning outcome test measure consisted of five quizzes covering five different learning topics to elicit participants’ retention and transfer of knowledge of these topics. The five topics were: learning with technology in special education (lecture teaching method), technology tools for 21st century teaching, hypermedia tools for 21st century teaching, distance teaching and learning and the role of the internet, developing and using web-based learning activities and teaching (flipped teaching method). The questions about these measures were based on the topics covered in this experiment. An example of the multiple-choice questions in the topic “learning with technology in special education” is: “Technology offers potential to help address this characteristic, which arises when an individual is unable to fulfill a role due to a limiting condition:” Participants could choose from the following responses: “Impairment, handicap, disability, or deficit”. Another example of a multiple-choice question in the topic “hypermedia tools for 21st century teaching”: “In this system, as originally conceptualized by Ted Nelson, items of information from all over the world could be logically connected with links”. Participants could choose from the following responses: multimedia, hypertext, hypercard, linkway. Each correct answer yields 1 point, for a total of 10 points and scores ranged from zero (no correct responses) to 10 (all correct responses) for every quiz.

The retention and knowledge transfer measurements developed by the textbook’s author, were selected, and reviewed by the course instructor to assess participants’ understanding and application of the five topics. The initial ratings of the measures indicated that all quizzes adequately reflected and assessed the five topics covered in this study.
Materials

The learning materials used in the present study were five topics to help preservice teachers integrate technology in teaching. The materials were identical in all sections and released every week with the related activities. There were two different teaching methods: traditional (lecture-based) and flipped. Traditional method was based on lectures and direct teachings conducted by the instructor and the information was delivered during the meeting, while students listened to lectures and learned from them. In this method, the lesson's content and delivery was the most important aspect of instruction and students learned knowledge through the assignments completed at home. For example, to teach the topic “learning with technology in special education”, the instructor lectured about the topic and used a power point presentation during the class time and covered the following points: Introduction to special education, current issues in the use of technology in special education, effective ways for technology to be integrated into special education and the Tech-PACK needs and challenges in special education. Students in all sections attended the class in a computer lab and worked and submitted their work through computers.

The assignment of this teaching strategy was based on lecture notes and the textbook. The assignment was in the form of essay questions and students had to complete all work at home with no help except from their notes. For example, an assignment asked students to review the teaching notes and textbook (pages, 398 -400) regarding impairment, disability and handicap. Students were asked to “explain in no less than 600 words the difference between Impairment, Disability and Handicap with examples for each definition.

In the flipped teaching strategy, the instructor did the following: Students read the chapter or online materials before class (at home). For the difficult points, students were asked to watch a video or screencast. To insure that students completed the assigned readings or videos, the instructor conducted a Q & A in the first five minutes of the class and then the assigned topic was introduced in another five minutes. The instructor dedicated the class time for hands-on activities. Students worked through activities related to the assigned topic with the guidance of the instructor and the support of their peers. In this method, the instructor emphasized collaborative learning and students had the opportunity to ask questions to the instructor and their peers as well. For example, in the flipped teaching strategy, the instructor started the topic “Distance teaching and learning and the role of the Internet”, by asking students questions based on the home reading such as why teachers should develop rationale to use internet or what are some of the internet’s problem areas teachers have to address before using the internet for teaching and learning. Students’ answers included, accessing sites with inappropriate materials, safety and privacy issues for students, fraud, computer viruses and hacking, and copyright and plagiarism issues. After the Q & A, instructor introduced the topic using a short power point presentation and covered the following points: Distance education: an evolving use of the internet, developing an internet use rationale, using and implementing the internet effectively: navigation, searching and storing, communicating and social networking. After the Q & A and the topic introduction, students were guided to complete hands-on activities related to the week’s topic. For example, student were asked to develop a WebQuest including: deciding the lesson to be taught through the WebQuest, using Google to collect the information web links, images and
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videos and finally creating a free website for the WebQuest that includes these pages: Introduction, Task, Process, Resource, Evaluation, Conclusion and Teacher Page. During the activity, students were free to ask for help or ask questions of their peers or instructor.

Procedure

First, students in all sections completed demographic and self-efficacy surveys. Second, the instructor used the flipped-based method to teach four topics in four consecutive weeks to all sections. In the fifth week, instructor used the traditional lecture-based method to teach one topic to all sections. At the end of every week students completed a quiz related to the week’s topic and at the end of the fifth week, students completed self-efficacy survey (post). All surveys and learning activities were presented and submitted through Blackboard.

The students in the adolescent development courses also completed the demographic survey and were given a pre-test over the material to be covered during a three week time period. This included three chapters from the text. To insure that students completed the assigned readings or videos, the instructor administered a quiz the first five minutes of the class and then the assigned topic was introduced in another five minutes. One group then followed the lecture-based teaching strategy, while the other group was exposed to the flipped learning strategy. At the end of the three week time period students were given the post-test (identical to the pre-test).

5. Results

Prior to the main analyses, the data was screened for normality, out-of-range responses and systematic patterns of missing values. It was found that the data is normally distributed with no apparent patterns or clusters emerging.

First question: To answer the first question: Will the flipped teaching strategy improve preservice teachers’ learning outcomes compared to lectures-based teaching strategy in a technology integration course?”

To answer this question, the investigators conducted a paired-samples t-test to compare students mean test scores in the two conditions flipped and lecture-based. The analysis show that there were significant differences in the students’ mean test scores in all flipped teaching method test scores: Test 1 (M=6.61, SD=1.62), test 2 (M=11.48, SD=4.44), test 3 (M=5.56, SD=1.42), test 4 (M=6.79, SD=1.76) compared to lecture-based mean test scores (M=9.4, SD=1.14) conditions; \( t(30)=8.399, p = 0.001 \), \( t(30)= 9.017, p = 0.001 \), \( t(26)= 5.498, p = 0.001 \), \( t(28)= 8.681, p = 0.001 \). These results suggest that the flipped teaching strategy does have positive effect on preservice teachers’ test scores in a technology integration course. Specifically, our results suggest that when students engage in class activities using the flipped teaching strategy, the test scores improved. Table 1 summarizes the paired-samples t-test results.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>The Mean scores and standard deviations for the paired-samples t-test results of the all test in flipped and traditional teaching strategies</th>
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<tbody>
<tr>
<td>Paired Differences</td>
<td>95% Confidence Interval of the Difference</td>
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</table>

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The results from the adolescent development groups suggest that the flipped teaching strategy does not have a significant positive effect compared to lecture-based mean test scores.

Second question: Will the flipped teaching strategy improve preservice teachers’ self-efficacy in a technology integration course?

To answer the second question, the investigators conducted a paired-samples t-test to compare students’ self-efficacy mean scores before and after using the flipped teaching strategy. The analysis show that there were significant differences in the students’ self-efficacy mean scores after flipped teaching strategy (M=830.00, SD=113.014) compared to before the use of the flipped teaching strategy (M=737.30, SD=170.516); \( t(36) = -4.652, p = 0.001 \). These results suggest that the flipped teaching strategy has a positive effect on preservice teachers’ self-efficacy in a technology integration course. Specifically, our results suggest that when students engage in class activities using the flipped teaching strategy, their confidence to apply what they learn improved. Table 2 summarizes the paired-samples t-test results.

Table 2 The Mean scores and standard deviations for the paired-samples t-test results of students’ self-efficacy before and after the use of flipped teaching model

<table>
<thead>
<tr>
<th>Paired Differences</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
<th>95% Confidence Interval of the Difference</th>
<th>( t )</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before - After</td>
<td>-92.703</td>
<td>121.213</td>
<td>19.927</td>
<td>-133.117 -52.288</td>
<td>-4.652</td>
<td>36</td>
<td>.000</td>
</tr>
</tbody>
</table>

Note: Significant at \( p < 0.001 \) level

Third question: What is the perception of preservice teachers regarding the use of the flipped teaching strategy in a technology integration course?
To answer this question, the investigators collected data from 60 students through answering 12 questions to assess their perception on the flipped teaching strategy. The results were reduced to three answers regarding favoring the flipped teaching model (Agree, Disagree or Neither agree or disagree). The number of responses from the 12 questions were 452 (62.9%), disagree 104 (14.5%) and neither agree or disagree were 163 (22.7%). Figures 1 summarizes statistics of students’ responses.

6. Scientific or scholarly significance of the study or work:

The main finding of this study is that the use of the flipped teaching strategy indeed has the potential to help preservice teachers to improve their learning outcomes in the technology integration course. This benefit demonstrated by the statistically significant differences in learning outcomes between students taught by flipped and lecture-based teaching strategies, with the highest scores achieved by students in the flipped condition and the least was in the lecture-based condition. The results of the present study support previous findings produced in the context of other content areas and with different population and provide empirical evidence that validates the flipped teaching strategy ability to improve students’ learning outcomes (Sadaghiani, 2012; Sparks, 2013; Walker, 2011). Specifically, the preservice teachers' test scores improved in all tests after they engaged in flipped teaching activities compared to their test scores after lecture-based activities. A possible interpretation of this result is that students during the flipped classroom had the opportunity to work together and engage in hands-on learning activities, which allowed them to participate in an authentic and collaborative learning environment. According to prior studies, the effectiveness of the flipped classroom on student learning is due to the additional opportunities for students to collaborate and work on problem solving together (Demetry, 2010; Strayer, 2007).

Furthermore, assigning multimedia learning materials for students to review outside the classroom allows them to learn content at their own pace and permits them to view and listen again to those sections that present important or complex concepts (Gibbons Jf, 1977). This interpretation is consistent with prior cognitive research, which noted the positive effect of allowing students to control the pace or stream of learning content. If students lack control over the pace of the learning content, this might burden their limited cognitive resources, especially learning from multimedia materials. According to cognitive theory of multimedia learning
Implications of Flipped Instruction

(CTML), the human cognitive system can process only small portions of the large amounts of visual and auditory stimuli received. Unlike processing printed text, learners in formal educational contexts typically do not have the opportunity to stop the multimedia presentation and reflect on what they are learning and identify potential gaps in their knowledge. Thus, information processing in this situation frequently requires longer and more intense periods of cognitive and metacognitive activity. Regardless of the amount of information presented in each sensory channel, the learner’s working memory (WM) will accept, process, and send to long-term memory (LTM) only a limited number of information units (Attneave, 1954; Jacobson, 1950, 1951). Thus, working memory requires pauses or direct prompting to accept, process, and send to the long-term storage only the most crucial information (Clark, Nguyen, & Sweller, 2006).

Another significant finding of this study is that students’ self-efficacy perception was significantly improved after engaging in flipped teaching strategy compared to their self-efficacy perception after lecture-based. This benefit demonstrated by the statistically significant differences in the reported self-efficacy scores after the flipped activities compared to lecture-based, with the highest scores reported by students after the flipped activities and the least was in the lecture-based.

A possible interpretation for this result is that the flipped teaching activities promote students’ cognitive engagement and help them to interact more efficiently with learning content than in the lecture-based teaching activities (as reflected by the higher test scores in all tests after flipped teaching strategy) and consequently improved and promoted their self-efficacy perception. This interpretation is consistent with prior self-efficacy research. According to this theory, self-efficacy reflects what individuals believe they can do with the skills they possess and they can accomplish.

Finally, this study found that preservice teachers favor the use of the flipped teaching strategy in a technology integration course compared to the lecture-based teaching strategy and this was demonstrated by the statistically significant differences in the number of students who were in favor of the flipped strategy compared to lecture-based, with the highest numbers for the flipped strategy and the least was for the lecture-based (452 vs. 104) or (62.90% vs.14.50%).

A possible interpretation for this result could be found in students’ rationalizations in the perception survey. Although the majority of students who preferred the flipped classroom indicated that it promotes collaboration and hands-on activities during the class time, other students have different reasons such as: “had less lecture time”, “work at my own pace”, “using technology”, “being able to interact more with the teacher and being able to ask questions as I worked” and “we do not have to sit and listen to an hour long lecture that goes in one ear and out the other one”.

Although opinions tended to be positive, there were invariably a few students who strongly disliked the change. One very interesting case was a student reported that she dislike the flipped teaching model because “Everyone asking questions. I wasn't able to concentrate and do my work in the classroom. I am a very ADD person. I have to be somewhere without distractions to do well”. Although this student reported her dislike of the flipped teaching model, she received higher grades in all the quizzes completed after flipped classes were compared to her quiz grades after the lecture-based class.
Implications of Flipped Instruction

References


Houston, M. L. L. (2012). Humanizing the Classroom by Flipping the Homework versus Lecture Equation.


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Title page

a. **Title of the submission**: Effects of Different Listening Speeds on Different Comprehension Levels of Japanese EFL Listeners in Filling the Recognition Gap Between Content and Function Words in English

b. **Topic area of the submission**: ESL/TEFL

c. **Presentation format**: Paper Session

d. **Description of the presentation**: The participants were divided into three groups, high, medium, and low, according to their listening comprehension levels. Two different listening speeds, the normal speed and the slower one, about 0.7 times the normal one, were used in the experiments. The results will be discussed to see if the slower listening speed has had any effects on closing the recognition gap of each level of participants between content and function words in English.

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Effects of Different Listening Speeds on Different Comprehension Levels of Japanese EFL Listeners in Filling the Recognition Gap Between Content and Function Words in English

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Abstract

The aim of this paper is to empirically examine whether different listening speeds have any effects on different levels of Japanese EFL listeners in filling the recognition gap between content and function words in English. English is a stress-timed language and its prosodic structure is featured by the alternation of weak and strong syllables. This means speech length or duration time in spoken English differs greatly from that in written English since weak syllables are pronounced short or occasionally omitted. Function words usually consist of these weak syllables so that Japanese EFL learners, who have a syllable-timed language as their native tongue, presumably find it harder to recognize them in connected speech. The logic is that Japanese EFL learners expect those weak syllables to be pronounced the same length as they are in written forms or in their native language. To confirm this, an experiment was conducted and the results show that function words are significantly more difficult to recognize than content words across all listening comprehension levels and listening speeds. However, they also show that slower listening speed has a role to play in closing top-level listeners’ recognition gap between content and function words.

Introduction

The aim of this paper is to empirically examine, if there is a recognition gap in listening by Japanese EFL learners between content and function words and how different listening speeds affect listeners’ word recognition, especially the gap in lexical recognition between content and function words, depending on their listening comprehension levels. The definitions of content and function words are first discussed, followed by general look at the literature concerning why word recognition in listening
matters. After the brief look at the literature pertaining to the differences in listening processes between content and function words and to the prosodic features of English, research questions are raised and experiments conducted. Finally, following discussion, conclusions are drawn and pedagogical implications referred to.

**Content and Function Words**

English words fall into a number of grammatical classes and grammarians have long found it useful to identify two categories of lexical unit: content words and function words. The former group includes nouns, adjectives, adverbs, and verbs, which have context-independent meaningful content, whereas the latter includes prepositions, pronouns, determiners, conjunctions, modal auxiliary verbs, and primary verbs, which principally exercise syntactic functions (Cutler, 1993; Quirk, Greenbaum, Leech, & Svartvik, 1985).

**Importance of Word Recognition in Listening**

L1 speakers of English is said to identify word boundaries by relying on such cues as prosodic and phonotactic patterns of the language (Saffran, Newport, & Aslin, 1996). However, lexical segmentation in L2 listening from connected speech is no easy matter. Field (2003) argues that finding where the word boundary falls is a greater problem for L2 listeners than is generally recognized. In addition, Rost (2002) mentions that, in listening to continuous speech, there is no auditory equivalent to the white spaces between words found in continuous written text and no reliable cues marking word boundaries whatsoever. Word recognition is, therefore, an approximating process marked by continual uncertainty. He also insists that recognizing words in connected speech is a very basis of spoken language comprehension and that the development of automaticity of word recognition is a critical aspect of language acquisition.

Rost (2002) further insists that exposure to speech during childhood alters neural organization so that individuals, born capable of listening and speaking any language, develop perceptual and cognitive processes specialized only for their native language. This means that adult L2 learners may find it difficult to segment L2 speech into words and that different phonemes in L2 can sound as if they are the same. Rost (2002) also refers, as one of the intriguing aspects of auditory decoding, to allophonic variations (e.g. *gonna*), which are alternate pronunciations of citation forms; that is, pure forms uttered in isolation (e.g. *going to*). These allophonic variations occur due to context and efficiency principles in production. They are brought about through co-articulation processes of assimilation, vowel reduction, and elision, which shorten both production and reception time. These simplifications make continuous speech more efficient in both
production and perception, but this only holds true for native speakers of the language. L2 listeners often find these co-articulation processes difficult to process, particularly if they have learned the written forms of the language and citation forms of the pronunciations of words in the language before they have begun to engage in natural spoken discourse, just as Japanese EFL learners do.

Vandergrift and Goh (2012) also claim that the major challenge in listening for L2 learners is segmentation of sound stream into words. Listeners do not have any cues, like the spaces in reading, which would help them recognize word boundaries. They assert that phonological features in English, stress patterns, elisions, schwas, and other reduced forms make it all the more difficult for L2 listeners to recognize words. Even if they recognize individual words, when spoken in isolation or presented in written forms, L2 listeners may not be able to recognize the same word in connected speech. Moreover, in order for the listener to be successful in word recognition, they need to activate prior knowledge such as related schema and grammatical knowledge and to make use of top-down processing such as inferencing strategies. However, a certain threshold of accurate linguistic recognition, information from bottom-up processing, needs to be attained before listeners successfully use top-down processing to compensate for gaps in understanding. This threshold of information from bottom-up processing that enables listeners to utilize top-down processing remains to be explored.

When content and function words are recognized, different subparts of the brain are activated, depending on whether the tasks are semantic or syntactic (Friederici, Opitz, & Cramon, 2000). Field (2008) also says that children learn to recognize function words rather early but only later can they fully utilize them despite their frequent appearance in everyday discourse, because content and function words are dealt with differently in the brain.

Concerning this, Vandergrift and Goh (2012) state that it is not surprising for content words to be more easily recognized in listening by L2 listeners, since content words have meanings and listeners have to be selective in paying attention because of their limited working memory and because content words are often identifiable by stressed syllables.

Takanashi (1982) concludes that recognition of weak syllables correlate positively with listening comprehension scores and that recognition of weak syllables and reduced forms is essential for successful word recognition. Yonezaki (2014) also suggests that Japanese EFL learners, even though they are excellent readers, perform badly in listening because of their poor recognition of function words.
Recognition of Content and Function Words and English Prosodic Structure

The phonemic system of English is quite different from that of Japanese. In addition, most of the Japanese words are made up of open syllables and almost every consonant is followed by a vowel, while in English closed syllables are the norm and many basic words end with a consonant. Therefore, consonant clusters, which are not uncommon in English, rarely appear in Japanese. On top of that, English, a stress-timed language, in which strong and weak syllables alternate, has a very different prosodic structure from that of Japanese, a syllable-timed language, in which each syllable has the same length and strength.

Ur (1984) holds that L2 listeners have difficulty with the sequences and juxtapositions of sounds typical of English words, particularly with consonant clusters. He also claims that L2 listeners are not used to the stress and rhythmic patterns of English, that is alternation of strong and weak syllables, and also confused by unfamiliar English phonemes that are nonexistent in their L1 or by the fact that some allophones in their L1 are found in English as two different phonemes. In particular, Ur (1984) cites the following speech as an example of stress-timed rhythm; it takes roughly the same to say ‘the CAT is INTERested in proTECTing its KITTens’ as it does to say ‘LARGE CARS WASTE GAS’ (p. 13), since they both have 4 strong syllables, even though the number of total syllables each sentence contains, 14 and 4, is very different. This is the characteristic of the English rhythm, which makes listening to and understanding English oral discourse difficult. In another language, it takes twice as long to pronounce a phrase that has twice the number of syllables.

Grosjean and Gee (1987) conducted gating experiments. The results and the conclusions they drew can be summarized in the following four arguments.

1. Lexical search in the speech stream does not follow the process of written dictionary units getting recognized sequentially, left to right, one word at a time but the lexical access is based on a tightly bound phonological unit, or a phonological word that is made up of one stressed syllable and a number of weak (unstressed) syllables that are phonologically linked to it. The boundaries of phonological words are not always the same as those of syntactic structure.

2. The weak syllables in the phonological word may be the unstressed syllables of a content word, affixes attached to a stem, clitics attached to a content word, reduced function words lexically attached to a content word, or function words phonologically linked to content words. In segmenting the speech stream into a string of words, the knowledge of phonotactic and morphophonemic rules is used, and, based on the information retrieved from the knowledge, a content word,
which contains a strong syllable, is searched first and then a number of function words on either side of the content word are recognized.

3. Lexical access, in parsing the speech stream into words, is done through two types of analyses. On the one hand, the processing system searches for stressed syllables and uses these to initiate a lexical search. On the other hand, the system identifies the weak syllables on either side of the stressed syllable by subjecting them to a pattern-recognition-like analysis. These two types of analyses constantly interact with one another and the speech stream is segmented into a string of words with constant help from other sources of information and listeners’ linguistic and situational knowledge including that of grammar, syntax, and schema.

4. Of the two types of analyses, the one initiated by the search for stressed syllables is the more complex than the other type, in which weak syllables, function words, and other affixes are searched for, because in the former analysis the mental lexicon that has to be searched for is larger and there are many more possible candidates. On the other hand, mental lexicon to be searched for function words is smaller. In addition, the system often refers directly to a separate lexicon specifically stored for such function phrases as ‘might’ve been’ and ‘out of the’, which is located apart from general lexicon, independent of the other lexical search for content words. This separate lexicon allows more direct recognition so that the search for function words is faster.

Eastman (1993) further claims that the two-way lexical search model based on prosodic structure, which was presented by Grosjean and Gee (1987), shows difficulties that syllable-timed language speakers have in listening to English and also pedagogical clues. His arguments are as follows.

1. Of the two systems stress-timed language speakers use in parsing the speech stream into a string of words, the one shared by syllable-timed language speakers is the system in which lexical access is initiated by a search for a content word that contains a stressed syllable. The other high-speed and pattern-recognition-like search system for weak syllables on either side of a strong syllable does not exist. Therefore, L2 listeners whose L1 is syllable-timed depend more on content words in parsing the speech stream. In order for them to recognize function words, the high-speed and pattern-recognition-like search system must be developed.

2. In a stress-timed language, function words are reduced to weak forms and often with phonetic changes including assimilations and elisions. Vowels are reduced to schwas or occasionally totally eliminated, which is a difference not only between speech and written language in English but also between speech in English and spoken language in a syllable-timed language. L2 learners of English whose L1 is syllable-timed pronounce every word literally, reproducing every phoneme and
syllable, and stressing all syllables or avoiding distressing them while speaking. This in turn illustrates how these L2 learners listen, attempting to reconstitute unstressed syllables to their full salient form. They attempt to listen to unstressed syllables and weak forms just the way they do to content words which contains a stressed syllable. Especially, schwas, which appear frequently in English, are most challenging. All these are due to the fact that they lack the high-speed and pattern-recognition-like search system for unstressed syllables. As a consequence, this reconstituting process occupies their mental energy and diverts attention away from recognizing even content words, thereby reducing the amount of words they can identify, which leads to unsatisfactory comprehension.

**Literature Review on the Difference in Lexical Recognition Between Content and Function Words**

From the discussion above, it can be assumed that, for L1 speakers of a syllable-timed language, recognition of English function words, which mostly consist of unstressed syllables, are more challenging than that of content words. Voss (1984) and Pemberton (2004) carried out the research on the recognition gap between content and function words. In Voss’ study, participants’ L1 was German while Pemberton’s study was conducted in Hong Kong. In Voss (1984), the number of errors involving function words is greater than that of content words and Pemberton (2004) reported very little difference between recognition rates for function and content words. However, in these two studies, participants’ L1 was not syllable-timed and they were allowed to rewind and listen to the text as often as they wished. This opportunity for recursion means the levels of accuracy and types of errors might have been different from those that could be obtained in real life.

On the other hand, Field (2008) examined, under a more real-life circumstance, whether there was any significant difference in recognition rates between content and function words. Those who participated in the Field’s study had various languages as their L1.² Field claims that the two-way lexical search model, in which recognition of content words takes a different route from that of function words, is beneficial for L1 speakers of English. In search of content words in the sound stream, a wide range of lexical candidates must be accessed before one that accords with the context is chosen, while a simple pattern match is all that is required in order to identify function words. Function words appear quite frequently and potential candidates are not more than 300. Therefore, listeners do not need to give any consideration to their senses. On the other hand, in speech, vowels of function words are often elided and consonants not very clearly pronounced, making recognition of these weak syllables challenging. Thanks to
this alternation of stressed and unstressed syllables, however, L1 speakers find it easy to understand the connected speech. Given this seemingly contradictory traits of function words, Field (2008) conducted experiments, using both L1 and L2 speakers as participants, examining which of these two traits shared by function words, high frequency vs. weak perceptibility, has more profound effects on L2 listeners.

In Field’s study, pauses were inserted into the recording at irregular intervals and whenever a pause occurs, participants were asked to transcribe the last few words. In addition, participants were allowed to listen to the recording only once, without the possibility of rewinding, just as they do in real life. The non-native and native participants were divided into two groups respectively according to their English proficiency levels so that there were four groups altogether.

The results of the study found no significant difference in recognition between content and function words for both native groups, but for L2 listeners, recognition of function words were significantly more difficult than that of content words regardless of their English proficiency levels. In the study, correlation between English proficiency levels of L2 listeners and their accuracy in recognition of content and function words were also examined. Correlation of accuracy in word recognition with English proficiency was significant for both content and function words, which means that the higher their English proficiency level, the more accurately they can recognize both content and function words. However, the recognition gap between content and function words did not become smaller as their English proficiency level went up. Furthermore, the correlation of accuracy in recognition of function words with English proficiency was less strong than that of content words. In other words, as L2 learners of English became more proficient in the language, their recognition of content words in listening became more accurate. This was also the case with function words, but the relationship was not so linear as in the case of content words. This indicates that there would be another factor involved in the process of function word recognition. Field (2008) says that as L2 learners’ listening vocabulary becomes larger, recognition of content words improves, but that this is not the case with function words. He concludes that recognition of function words in listening is more challenging than that of content words regardless of learners’ English proficiency.

**Hypotheses Drawn From the Discussion Above**

Based on the discussion above, the following hypotheses have been drawn concerning the recognition of content and function words by Japanese EFL listeners.

1. As Eastman (1993) claims, of the two lexical search systems shared by L1 speakers
of stress-timed languages including English, Japanese EFL listeners, whose mother tongue, Japanese, is syllable-timed, lack the high-speed and pattern-recognition-like search system for function words. Therefore, it is challenging for Japanese EFL listeners to recognize function words in the speech stream.

2. Since the process of recognizing function words in the connected speech thus involves a different system than the one used in recognizing content words, in case of Japanese EFL learners, recognition of content words in listening may become more accurate with the improvement of their English proficiency, but as for function words, accuracy does not improve so much as it does for content words. This means that the gap in lexical recognition in the speech stream between content and function words is near constant and does not get closer as the listener’s English proficiency improves.

3. What is a factor or factors that might influence word recognition, especially recognition of function words, in listening? One plausible approach would be to add listening speeds (speech rates) as a variable in order to increase the amount of information that listeners can pick up through the bottom-up processing from the sound stream. A slower listening speed might have an influence on lexical access by the listeners.

4. If a slower listening speed leads to a better lexical recognition, the increased amount of information through the bottom-up processing might initiate the top-down processing that would have otherwise never happened. Thanks to this activation of top-down processing, there is a possibility for Japanese EFL listeners to improve word recognition in the speech stream, especially the recognition of function words that they have found very challenging.

Given the hypotheses above, an experiment was conducted in the present study to address the following three research questions.

Research Questions

1. Is recognition of function words more challenging than that of content words for Japanese EFL listeners?

2. Is there any relationship between English proficiency, especially listening comprehension, and accurate recognition rates of content and function words in the connected speech? Is the gap in lexical recognition in the speech stream between content and function words near constant across all listening comprehension levels and do even advanced-level listeners find recognition of function words challenging?

3. How does the difference in listening speeds affect the respective accuracy in lexical
recognition of both content and function words? Are listeners belonging to a different listening comprehension level affected differently?

**Research Design**

**Participants**

158 third-year and fourth-year technical college students in Japan, majoring in engineering, participated in the study. Of them, 39 were third-year students and the remaining 119 were fourth-year with 126 male and 32 female students. Data from the participants who were absent either from the listening comprehension test or from the test of paused transcription and those of exchange students were removed and the data from the remaining 142 participants were analyzed. They speak Japanese as their first language. Their proficiency levels of English were estimated using the reported Test of English for International Communication (TOEIC, developed by Educational Testing Service) score, $M = 395.71$, $SD = 119.97$.

**Materials**

For the preliminary test of listening comprehension aimed to divide the participants into 3 groups according to their listening proficiency, the second and pre-second grade STEP (Society for Testing English Proficiency, 2004) listening tests consisted of 60 questions, 30 questions for each grade, were adopted.

For listening material of the transcription test to measure the participants’ lexical recognition, one dialogue and an expository text recorded by English native speakers, adopted from ‘Kyukyoku-no-eigo-listening (Ultimate English listening)’ series level 1 (published by ALC Press), the texts of which are written, using the 1000 most commonly used words in the graded vocabulary list of Standard Vocabulary List 12000 (SVL 12000), developed by ALC Press Inc, were used. The listening speed or the speech rate of the material (standard speed) was 157 w.p.m. on average, 178 w.p.m. for the dialogue and 141 w.p.m. for the expository text.³

On adopting the above-mentioned materials, participants’ level of English proficiency, their average score of a little less than 400 in a TOEIC test and the fact that about half of the participants had passed the pre-second grade STEP test, was taken into consideration. Especially, as for the transcription test, the listening texts made up only of the most basic 1000 words on the SVL list of 12000, the first level on the list’s scale of 1 to 12, was used to ensure that the participants of the above-mentioned level could
recognize every word in the texts if given the written version of the test. All the words in the texts were so commonly used that the students in Japan should learn while in junior high school or in the first year of senior high school. Therefore, if given the written scripts of the listening tests and asked to recognize the words, the participants would have had no trouble recognizing and understanding them.

Method

The transcription method used in the present study was paused transcription, as was the case in Field (2008).

The participants listened to the recordings only once without any possibility of rewinding and were told beforehand that there would be pauses inserted at irregular intervals. They were asked to write down the last four to five words they thought they heard before the pause, every time the pauses occurred. Each pause lasted about 10 seconds. Short sections of four to five words were targeted with a view to limiting possible working memory effects. The length of the pauses, 10 seconds, was designed to ensure that it would give enough time for the participants to write down five and not six or more words at average writing speed. The aim was to prevent them from attempting to recall larger sections of the text and in the process reducing the accuracy of their responses. This expedient also ensured that the participants did not have time to review their answers once they had written them down. Furthermore, the general specification of four to five words was used so as not to create unnecessary cognitive demands by encouraging participants to count the number of words to be transcribed.

As a means of testing word recognition in listening, cloze tests, which are more common, were not adopted to ensure that the participants not be given any additional cues such as word boundaries and the context. There is also psycholinguistic evidence (Jarvella, 1971) that we briefly retain a verbatim record of the words we hear until the onset of the next clause. The method in the present study was adopted to ensure that the participants should be listening the way they would in real life and it was judged to be a suitable one to test word recognition in the natural sound stream.

Quirk et al. (1985) was referred to as it was in Field (2008) to distinguish content words from function words. Content words include nouns, adjectives, adverbs, and verbs, and function words are prepositions, pronouns, determiners, conjunctions, modal auxiliary verbs, and primary verbs (such as be, have, do).
Procedures

The 142 participants were grouped into two, according to the listening speed, the standard-speed group \((n = 73)\) and the slower-speed group \((n = 69)\), who listened to the recording made mechanically slower, at 0.7 times the rate of the normal speed. Following this grouping, the preliminary listening comprehension test was given to divide the participants into different groups, depending on their respective proficiency in listening comprehension.

The participants were grouped into three, with their proficiency in listening rated as high, medium, and low, on the basis of the deviation values \((DV)\) of the listening comprehension test. As a result, 42 participants belonged to the high-proficiency group \((DV \geq 55)\), 56 to the medium-proficiency group \((55 > DV \geq 45)\), and 44 to the low-proficiency group \((45 > DV)\). Therefore, the participants were grouped into six in total, according to the listening speeds and their proficiency in listening. Table 1 shows the respective number of participants in each group and the listening speeds (w.p.m.).

<table>
<thead>
<tr>
<th>Average Listening Speed (w.p.m.)</th>
<th>The Number of Participants in Each Proficiency group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard-Speed Group ((n = 73))</td>
<td>high</td>
</tr>
<tr>
<td>157</td>
<td>21</td>
</tr>
<tr>
<td>Slower-Speed Group ((n = 69))</td>
<td>110</td>
</tr>
</tbody>
</table>

Table 1

The Respective Number of Participants in Each Group and the Listening Speed \((n = 142)\)

Pauses were inserted in the same place in the same text across all these six groups and participants transcribed the last four to five words they heard before each pause. They were also asked not to use *katakana* when they were unsure of the spellings, but to use alphabets they thought they had heard. Pauses were inserted 16 times, 8 each for the

Table 2

Sections of Recording Targeted for Transcription

<table>
<thead>
<tr>
<th>No.</th>
<th>Function word</th>
<th>Function word</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><em>is in</em> the hospital</td>
<td>9</td>
</tr>
<tr>
<td>2</td>
<td><em>will be</em> all right</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td><em>to eat after</em> dinner</td>
<td>11</td>
</tr>
<tr>
<td>4</td>
<td><em>want to</em> kill him</td>
<td>12</td>
</tr>
<tr>
<td>5</td>
<td><em>them to</em> come here</td>
<td>13</td>
</tr>
<tr>
<td>6</td>
<td><em>asking them to</em> come</td>
<td>14</td>
</tr>
<tr>
<td>7</td>
<td><em>who would</em> marry <em>her</em></td>
<td>15</td>
</tr>
<tr>
<td>8</td>
<td><em>up at school now</em></td>
<td>16</td>
</tr>
</tbody>
</table>

Function words are in italics.

No. 1 to 8 are the sections from the dialogue and 9 to 16 from the expository text.

Pauses were inserted in the same place in the same text across all these six groups and participants transcribed the last four to five words they heard before each pause. They were also asked not to use *katakana* when they were unsure of the spellings, but to use alphabets they thought they had heard. Pauses were inserted 16 times, 8 each for the
dialogue and the expository text. Judgment of whether the participants’ handwritten responses were accurate or otherwise was limited to the last four words before each pause. Therefore, 64 items, four each for every pause (16 times), were the maximum accurate responses possible. Of the 64, 28 were content words and the remaining 36 were function words. Sections of recordings targeted for transcription are shown in Table 2.

In the present study, content and function words were classified based on Quirk et al. (1985). Due to the contextual and syntactical functions, however, No. 2 ‘all’ and No. 5 ‘here’ were judged to have meaningful content and to be stressed, so that they were classified as content words, whereas No. 13 ‘there’ and No. 15 ‘none’ were judged to be functional and so unstressed, getting classified as function words.

In the judgment of accuracy for participants’ transcription of acoustic information, the following were considered.

1. Each target item in the written responses was recorded as either accurate or inaccurate and if there were wrong lexical segmentations, that is, if word boundaries were incorrect, they were recorded as incorrect across all the word items involved (e.g. the river → for ever, were tents for camping → wonst on care, none of → nana).

2. If they segmented a particular item correctly and phonemes were recognized and distinguished accurately (e.g. l/r, b/v), that target item was regarded as accurate transcription of the speech and orthographic variants were recorded as correct (e.g. beautiful → beutiful, basket → bascket, camping → kamping).

3. As to the conjugal suffixes of content words, these suffixes are quite functional so that, from the perspective of accurate or inaccurate recognition of content words or stressed syllables in the present study, the attitude to inflection should not be prescriptive so that lexical words which were identified accurately but wrongly inflected were treated as correct answers.

4. Of the four words which should be transcribed in a particular targeted section, when a blank in the first item, in the last item, or in the middle of the section was found, the remaining transcribed item or items, if they were accurately identified, were treated as correct answers.

5. If the respondent had written words which fell outside the targeted string in question, that is the fifth or farther words from the pause, or if an unnecessary word or words had been added between items in a particular targeted section (e.g. by car → by a car), then those words were counted out.45

All the data were computed into the percentage of accurate word recognition, with the
number of items (content and function words) correctly identified being the numerator and the total number of items in all the sections targeted for transcription (28 content and 36 function words) the denominator.

Results

Results of the Listening Comprehension Test

Table 3

<table>
<thead>
<tr>
<th>Groups</th>
<th>Listening Speeds</th>
<th>n</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Standard</td>
<td>21</td>
<td>40.38</td>
<td>4.84</td>
</tr>
<tr>
<td></td>
<td>Slower</td>
<td>21</td>
<td>42.38</td>
<td>5.44</td>
</tr>
<tr>
<td>Medium</td>
<td>Standard</td>
<td>26</td>
<td>29.62</td>
<td>2.38</td>
</tr>
<tr>
<td></td>
<td>Slower</td>
<td>30</td>
<td>29.63</td>
<td>2.24</td>
</tr>
<tr>
<td>Low</td>
<td>Standard</td>
<td>26</td>
<td>22.23</td>
<td>2.80</td>
</tr>
<tr>
<td></td>
<td>Slower</td>
<td>18</td>
<td>22.11</td>
<td>3.61</td>
</tr>
</tbody>
</table>

Descriptive statistics of the preliminary listening comprehension test (Cronbach’s $\alpha = .82$) is shown in Table 3. Means of the six groups are shown in the graph (Figure 1). Based on these data, a two-way (proficiency in listening / listening speeds) between-subjects-design ANOVA was conducted (Table 4).  

![Figure 1](image)

*Figure 1. Comparisons in means of the six groups in the preliminary listening comprehension test.*

The results of the ANOVA demonstrated that the interaction ($F(2, 136) = 1.184, \ p = .309, \ ns, \ partial \ \eta^2 = .003$) and the main effect in listening speeds ($F(1, 136) = 1.062, \ p = .305,$
ns, partial $\eta^2 = .001$) were not significant and that only the main effect in proficiency in listening ($F(2, 136) = 305.722, p = .000 < .001$, partial $\eta^2 = .806$) was significant. The results of multiple comparisons in proficiency in listening (Tukey-Kramer Method) are summarized in Table 5.

Table 4

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
<th>$\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Proficiency in Listening</td>
<td>7946.15</td>
<td>2</td>
<td>3973.08</td>
<td>305.722</td>
<td>.000 ***</td>
<td>.806</td>
</tr>
<tr>
<td>B: Listening Speeds</td>
<td>13.80</td>
<td>1</td>
<td>13.80</td>
<td>1.062</td>
<td>.305</td>
<td>.001</td>
</tr>
<tr>
<td>Interaction (AB)</td>
<td>30.78</td>
<td>2</td>
<td>15.39</td>
<td>1.184</td>
<td>.309</td>
<td>.003</td>
</tr>
<tr>
<td>Error</td>
<td>1767.42</td>
<td>136</td>
<td>13.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>9857.08</td>
<td>141</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

***: $p < .001$

Table 5

<table>
<thead>
<tr>
<th>Group 1 (I)</th>
<th>Group 2 (J)</th>
<th>Difference in Means (I - J)</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Medium</td>
<td>11.76</td>
<td>15.976</td>
<td>.000 ***</td>
</tr>
<tr>
<td>High</td>
<td>Low</td>
<td>19.20</td>
<td>24.688</td>
<td>.000 ***</td>
</tr>
<tr>
<td>Medium</td>
<td>Low</td>
<td>7.44</td>
<td>10.249</td>
<td>.000 ***</td>
</tr>
</tbody>
</table>

***: $p < .001$

As is seen in the analyses above, no significant difference in listening comprehension proficiency was found across the two different listening-speed groups on all the proficiency levels.

Results of the Transcription Test

Table 6

<table>
<thead>
<tr>
<th>Groups</th>
<th>Listening Speeds</th>
<th>n</th>
<th>Percentage in Accurate Lexical Recognition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>A: Content Words</td>
</tr>
<tr>
<td></td>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>High</td>
<td>Standard</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td>Standard</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Slower</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>Standard</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Slower</td>
<td>18</td>
<td></td>
</tr>
</tbody>
</table>

Table 6 shows descriptive statistics of the paused transcription test (Cronbach’s $\alpha = .79$). Means in percentage of accurate content as well as function word recognition for
each group (three different proficiency levels in listening by two different listening speeds) are shown in the graph (Figure 2).

![Graph showing comparisons of the means in percentage of accurate content as well as function word recognition for six groups (three different proficiency levels in listening by two different listening speeds) in the paused transcription test.]

Based on these data, a three-way mixed ANOVA (3 levels of proficiency in listening / 2 levels of listening speeds / 2 levels of percentage in accurate word recognition) with two between-subjects factors (proficiency in listening and listening speeds) and one within-subjects factor (percentage in accurate word recognition) was conducted (Table 7).8

### Table 7

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
<th>η²</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Proficiency in Listening</td>
<td>11390.08</td>
<td>2</td>
<td>5695.04</td>
<td>27.587</td>
<td>.000 ***</td>
<td>.090</td>
</tr>
<tr>
<td>B: Listening Speeds</td>
<td>3084.30</td>
<td>1</td>
<td>3084.30</td>
<td>14.940</td>
<td>.000 ***</td>
<td>.024</td>
</tr>
<tr>
<td>Interaction (AB)</td>
<td>365.04</td>
<td>2</td>
<td>182.52</td>
<td>.084</td>
<td>.415</td>
<td>.003</td>
</tr>
<tr>
<td>S: Error (AB)</td>
<td>28075.87</td>
<td>136</td>
<td>206.44</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C: Accurate Word Recognition</td>
<td>72660.31</td>
<td>1</td>
<td>72660.31</td>
<td>1269.550</td>
<td>.000 ***</td>
<td>.576</td>
</tr>
<tr>
<td>Interaction (AC)</td>
<td>3.15</td>
<td>2</td>
<td>1.58</td>
<td>.028</td>
<td>.973</td>
<td>.000</td>
</tr>
<tr>
<td>Interaction (BC)</td>
<td>30.98</td>
<td>1</td>
<td>30.98</td>
<td>.541</td>
<td>.463</td>
<td>.000</td>
</tr>
<tr>
<td>Second-Order Interaction (ABC)</td>
<td>469.53</td>
<td>2</td>
<td>234.76</td>
<td>4.102</td>
<td>.019 *</td>
<td>.004</td>
</tr>
<tr>
<td>Error (CS)</td>
<td>7783.70</td>
<td>136</td>
<td>57.23</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>126197.76</td>
<td>283</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

***: p < .001, *: p < .05

The results of the ANOVA demonstrated that a significant second-order interaction was found ($F(2, 136) = 4.102, p = .019 < .05$, partial $\eta^2 = .004$) so that simple interaction effects at each level of the three factors were examined. The simple interaction effect of listening speeds and percentage in accurate word recognition at high proficiency in
listening ($F(1, 136) = 6.174, \ p = .014 < .05$, partial $\eta^2 = .043$) was all that was significant (Table 8).

**Table 8**

**Simple Interaction Effects at Each Level of the Three Factors ($n = 142$)**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Simple Interaction Effect</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>$p$</th>
<th>$\eta_p^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Proficiency in Listening</td>
<td>BC at High</td>
<td>353.37</td>
<td>1</td>
<td>353.37</td>
<td>6.174</td>
<td>.014*</td>
<td>.043</td>
</tr>
<tr>
<td></td>
<td>BC at Medium</td>
<td>139.99</td>
<td>1</td>
<td>139.99</td>
<td>2.446</td>
<td>.120</td>
<td>.017</td>
</tr>
<tr>
<td></td>
<td>BC at Low</td>
<td>7.15</td>
<td>1</td>
<td>7.15</td>
<td>0.125</td>
<td>.724</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>7783.70</td>
<td>136</td>
<td>57.23</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B: Listening Speeds</td>
<td>AC at Standard</td>
<td>221.65</td>
<td>2</td>
<td>110.83</td>
<td>1.936</td>
<td>.148</td>
<td>.027</td>
</tr>
<tr>
<td></td>
<td>AC at Slower</td>
<td>251.03</td>
<td>2</td>
<td>125.51</td>
<td>2.193</td>
<td>.116</td>
<td>.030</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>7783.70</td>
<td>136</td>
<td>57.23</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C: Accurate Word Recognition</td>
<td>AB at Content</td>
<td>375.05</td>
<td>2</td>
<td>187.53</td>
<td>1.422</td>
<td>.243</td>
<td>.010</td>
</tr>
<tr>
<td></td>
<td>AB at Function</td>
<td>459.51</td>
<td>2</td>
<td>229.76</td>
<td>1.743</td>
<td>.177</td>
<td>.013</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>35859.58</td>
<td>272</td>
<td>131.84</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* $: p < .05$  
** $: p < .01$  
*** $: p < .001$

The fact that no other simple interaction effect but the one of listening speeds and percentage in accurate word recognition at high proficiency in listening was significant implies that only in the high proficiency group was the gap in correct recognition percentage closer between content and function words because of the slower listening speed, which can also be seen from the graph in Figure 2. This was not the case with the other two listening proficiency groups, medium and low.

**Table 9**

**Simple Main Effects of Three Factors at Each Level of the Combinations of the Other Two Factors ($n = 142$)**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Simple Main Effect</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>$p$</th>
<th>$\eta_p^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Proficiency in Listening</td>
<td>C at High &amp; Standard</td>
<td>15017.16</td>
<td>1</td>
<td>15017.16</td>
<td>262.386</td>
<td>.000***</td>
<td>.186</td>
</tr>
<tr>
<td></td>
<td>C at High &amp; Slower</td>
<td>9208.34</td>
<td>1</td>
<td>9208.34</td>
<td>160.892</td>
<td>.000***</td>
<td>.114</td>
</tr>
<tr>
<td></td>
<td>C at Medium &amp; Standard</td>
<td>10304.99</td>
<td>1</td>
<td>10304.99</td>
<td>180.053</td>
<td>.000***</td>
<td>.127</td>
</tr>
<tr>
<td></td>
<td>C at Medium &amp; Slower</td>
<td>13982.16</td>
<td>1</td>
<td>13982.16</td>
<td>244.302</td>
<td>.000***</td>
<td>.173</td>
</tr>
<tr>
<td></td>
<td>C at Low &amp; Standard</td>
<td>12745.57</td>
<td>1</td>
<td>12745.57</td>
<td>222.696</td>
<td>.000***</td>
<td>.157</td>
</tr>
<tr>
<td></td>
<td>C at Low &amp; Slower</td>
<td>11905.76</td>
<td>1</td>
<td>11905.76</td>
<td>208.022</td>
<td>.000***</td>
<td>.147</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>7783.70</td>
<td>136</td>
<td>57.23</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A: Proficiency in Listening</td>
<td>B at High &amp; Content</td>
<td>242.31</td>
<td>1</td>
<td>242.31</td>
<td>1.838</td>
<td>.176</td>
<td>.006</td>
</tr>
<tr>
<td></td>
<td>B at High &amp; Function</td>
<td>1776.68</td>
<td>1</td>
<td>1776.68</td>
<td>13.476</td>
<td>.000***</td>
<td>.045</td>
</tr>
<tr>
<td></td>
<td>B at Medium &amp; Content</td>
<td>1285.63</td>
<td>1</td>
<td>1285.63</td>
<td>9.752</td>
<td>.002**</td>
<td>.032</td>
</tr>
<tr>
<td>A: Proficiency in Listening</td>
<td>B at Medium &amp; Function</td>
<td>365.69</td>
<td>1</td>
<td>365.69</td>
<td>2.774</td>
<td>.097</td>
<td>.009</td>
</tr>
<tr>
<td></td>
<td>B at Low &amp; Content</td>
<td>95.63</td>
<td>1</td>
<td>95.63</td>
<td>0.725</td>
<td>.395</td>
<td>.002</td>
</tr>
<tr>
<td></td>
<td>B at Low &amp; Function</td>
<td>183.92</td>
<td>1</td>
<td>183.92</td>
<td>1.395</td>
<td>.239</td>
<td>.005</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>35859.58</td>
<td>272</td>
<td>131.84</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B: Listening Speeds</td>
<td>A at Standard &amp; Content</td>
<td>2912.86</td>
<td>2</td>
<td>1456.43</td>
<td>11.047</td>
<td>.000***</td>
<td>.061</td>
</tr>
<tr>
<td></td>
<td>A at Standard &amp; Function</td>
<td>1545.41</td>
<td>2</td>
<td>772.71</td>
<td>5.861</td>
<td>.003**</td>
<td>.032</td>
</tr>
<tr>
<td>C: Accurate Word Recognition</td>
<td>A at Slower &amp; Content</td>
<td>2980.51</td>
<td>2</td>
<td>1490.25</td>
<td>11.304</td>
<td>.000***</td>
<td>.062</td>
</tr>
<tr>
<td></td>
<td>A at Slower &amp; Function</td>
<td>4789.02</td>
<td>2</td>
<td>2394.51</td>
<td>18.163</td>
<td>.000***</td>
<td>.100</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>35859.58</td>
<td>272</td>
<td>131.84</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*** $: p < .001$, ** $: p < .01$  
** $: p < .01$  
* $: p < .05$
For further analyses, examinations of simple main effects were carried out. Table 9 shows all the simple main effects and the results of multiple comparisons (Ryan’s method) are shown in Table 10.

Table 10

<table>
<thead>
<tr>
<th>Factor / Level</th>
<th>Group 1 (I)</th>
<th>Group 2 (J)</th>
<th>Difference in Means (I - J)</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Proficiency in Listening at Standard &amp; Content</td>
<td>High</td>
<td>Medium</td>
<td>13.13</td>
<td>3.897</td>
<td>.000 ***</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>Low</td>
<td>14.36</td>
<td>4.264</td>
<td>.000 ***</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>Low</td>
<td>1.24</td>
<td>0.388</td>
<td>.698</td>
</tr>
<tr>
<td>A: Proficiency in Listening at Standard &amp; Function</td>
<td>High</td>
<td>Medium</td>
<td>6.92</td>
<td>2.055</td>
<td>.041 *</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>Low</td>
<td>11.52</td>
<td>3.419</td>
<td>.001 ***</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>Low</td>
<td>4.59</td>
<td>1.443</td>
<td>.150</td>
</tr>
<tr>
<td>A: Proficiency in Listening at Slower &amp; Content</td>
<td>High</td>
<td>Medium</td>
<td>7.14</td>
<td>2.186</td>
<td>.030 *</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>Low</td>
<td>16.07</td>
<td>4.358</td>
<td>.000 ***</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>Low</td>
<td>8.93</td>
<td>2.608</td>
<td>.010 **</td>
</tr>
<tr>
<td>A: Proficiency in Listening at Slower &amp; Function</td>
<td>High</td>
<td>Medium</td>
<td>13.72</td>
<td>4.199</td>
<td>.000 ***</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>Low</td>
<td>19.95</td>
<td>5.410</td>
<td>.000 ***</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>Low</td>
<td>6.23</td>
<td>1.821</td>
<td>.070</td>
</tr>
</tbody>
</table>

***: p < .001, **: p < .01, *: p < .05

First, as for the percentage in accurate word recognition, recognition of content words is significantly better than that of function words at all levels of proficiency in listening and listening speeds (p < .001). Next, as for difference in word recognition by different proficiency groups, there was a significant difference across both the listening speeds and both content and function words between high and medium proficiency groups (standard speed & content words t = 3.897, p < .001, standard speed & function words t = 2.055, p < .05, slower speed & content words t = 2.186, p < .05, slower speed & function words t = 4.199, p < .001). However, difference at standard speed and function words as well as at slower speed and content words was smaller than that at standard speed and content words and slower speed and function words. On the other hand, between medium and low proficiency groups, difference was significant only at the combination of slower listening speed and recognition of content words (standard speed & content words t = 0.388, p = .698, ns, standard speed & function words t = 1.443, p = .150, ns, slower speed & content words t = 2.608, p < .01, slower speed & function words t = 1.821, p = .070, ns).

Finally, as to an influence of different listening speeds on word recognition, recognition of function words by high proficiency groups (F(1, 272) = 13.476, p < .001) and that of content words by medium proficiency groups (F(1, 272) = 9.752, p < .01) were significantly better at slower listening speed than at standard listening speed. However,
no significant influence was found for all the other combinations except that recognition of function words by medium proficiency groups was only marginally significantly better at slower listening speed than at standard listening speed (high proficiency & content words $F(1, 272) = 1.838$, $p = .176$, ns, medium proficiency & function words $F(1, 272) = 2.774$, $p = .097$, ns, low proficiency & content words $F(1, 272) = 0.725$, $p = .395$, ns, low proficiency & function words $F(1, 272) = 1.395$, $p = .239$, ns).

### Analysis of the Gap in Lexical Recognition

The results of three-way mixed ANOVA showed that there was a significant second-order interaction and that, of all the simple interaction effects, only the one of listening speeds and percentage in accurate word recognition at high proficiency in listening was significant. This means, as has been mentioned above, that only in the high proficiency group was the recognition gap between content and function words significantly closer at the slower listening speed. In this section, this was reexamined through an analysis of the recognition gap between content and function words. The following are results of a two-way (proficiency in listening / listening speeds) between-subjects' design ANOVA conducted on the recognition gap between content and function words (Table 11). A graph is shown in Figure 3 on the means of lexical recognition gaps at a different listening speed for three levels of proficiency groups.

**Table 11**

The Results of the Two-Way ANOVA on the Lexical Recognition Gap ($n = 142$)

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>$F'$</th>
<th>$p$</th>
<th>$\eta^2_\text{p}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Proficiency in Listening</td>
<td>5.84</td>
<td>2</td>
<td>2.92</td>
<td>0.026</td>
<td>.975</td>
<td>.001</td>
</tr>
<tr>
<td>B: Listening Speeds</td>
<td>61.97</td>
<td>1</td>
<td>61.97</td>
<td>0.541</td>
<td>.463</td>
<td>.004</td>
</tr>
<tr>
<td>Interaction (AB)</td>
<td>979.82</td>
<td>2</td>
<td>489.91</td>
<td>4.280</td>
<td>.016*</td>
<td>.059</td>
</tr>
<tr>
<td>Error</td>
<td>15567.41</td>
<td>136</td>
<td>114.47</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16574.00</td>
<td>141</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*: $p < .05$

**Table 12**

Simple Main Effects of Proficiency in Listening and Listening Speeds on Lexical Recognition Gap at Each Level of the Other Factor ($n = 142$)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Simple Main Effect</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>$F'$</th>
<th>$p$</th>
<th>$\eta^2_\text{p}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>B: Listening Speeds</td>
<td>A at Standard</td>
<td>452.86</td>
<td>2</td>
<td>226.43</td>
<td>1.978</td>
<td>.142</td>
<td>.027</td>
</tr>
<tr>
<td></td>
<td>A at Slower</td>
<td>533.88</td>
<td>2</td>
<td>266.94</td>
<td>2.332</td>
<td>.101</td>
<td>.032</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>15567.41</td>
<td>136</td>
<td>114.47</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A: Proficiency in Listening</td>
<td>B at High</td>
<td>645.72</td>
<td>1</td>
<td>645.72</td>
<td>5.641</td>
<td>.019*</td>
<td>.039</td>
</tr>
<tr>
<td></td>
<td>B at Medium</td>
<td>339.34</td>
<td>1</td>
<td>339.34</td>
<td>2.965</td>
<td>.087</td>
<td>.020</td>
</tr>
<tr>
<td></td>
<td>B at Low</td>
<td>13.24</td>
<td>1</td>
<td>13.24</td>
<td>0.116</td>
<td>.734</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>15567.41</td>
<td>136</td>
<td>114.47</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*: $p < .05$
A significant interaction was found so that simple main effects of proficiency in listening and of listening speeds at each level of the other factor were examined (Table 12). The results of ANOVA demonstrated that no other simple main effect than that of listening speeds at the high proficiency group was significant ($F(1, 136) = 5.641$, $p = .019 < .05$, partial $\eta^2 = .039$). This signifies that the slower listening speed enabled only the high proficiency group listeners to close the recognition gap significantly between content and function words. This was not the case with the other two proficiency groups (medium and low).

**Correlation Between Listening Comprehension and Lexical Recognition**

Finally, correlations between listening comprehension (the results of the preliminary listening comprehension test) and lexical recognition (percentage in respective recognition of content and function words and the gap between the two) were analyzed.
both for the standard and slower listening speeds, using Pearson product-moment correlation coefficients (Table 13).  

First, Pearson product-moment correlation coefficients suggested moderate positive relationships between listening comprehension and both content and function word recognition across all the listening speeds. Relationships between listening comprehension and recognition of function words were slightly stronger than those between listening comprehension and recognition of content words and, as for a comparison between two different listening speeds, the relationships were slightly stronger for the slower listening speed group.

Second, positive relationships were found between content word recognition and the recognition gap across all the listening speeds. This means that, as percentage in accurate recognition of content words becomes higher, the recognition gap between content and function words grows wider: that is, recognition of function words does not get better as that of content words does. On the other hand, as for relationships between function word recognition and the recognition gap, no significant relationships were found for the standard listening speed group, but there were moderate negative relationships for the slower listening speed group. This implies that, if the listening speed is fast enough, the recognition gap between content and function words stays near constant with the growth in accurate recognition of function words, but that, at slower listening speeds, the recognition gap gets closer as percentage in accurate recognition of function words rises; that is, recognition of function words becomes far better than that of content words does.

Third, as for the relationships between listening comprehension and the lexical recognition gap, no significant relationships were found for the standard listening speed group. This means that even highly proficient listeners cannot close the recognition gap between content and function words, which corroborates the study by Field (2008). However, for the slower listening speed group, weak but significant negative relationships were found between listening comprehension and the recognition gap, which implies that the recognition gap between content and function words closes as listening proficiency rises. This demonstrates that the slower listening speed has an influence on recognition gap between content and function words, especially if learners’ listening proficiency is higher.

Discussion

First, three research questions (RQs) will be discussed. As for the first RQ, Is
recognition of function words more challenging than that of content words for Japanese EFL listeners?, the results of the present study demonstrated that the percentage in accurate recognition of function words was significantly lower than that of content words across all the levels of listening proficiency and listening speeds. This means that recognition of function words is more challenging than that of content words for Japanese EFL listeners regardless of the listener’s proficiency or the speaker’s speech rate. This corroborates Field’s (2008) study and is also consistent with the discussion before the RQs were raised.

Second, the second RQ, Is there any relationship between English proficiency, especially listening comprehension, and accurate recognition rates of content and function words in the connected speech? Is the gap in lexical recognition in the speech stream between content and function words near constant across all listening comprehension levels and do even advanced-level listeners find recognition of function words challenging?, will be discussed. As far as the relationship between English proficiency and accurate recognition rates of content and function words is concerned, listening comprehension has positive correlations with recognition of content and function words. On the other hand, the gap in lexical recognition between content and function words at standard listening speed was 36.15% for the high listening proficiency group, 29.95% for the medium listening proficiency group, and 33.30% for the low listening proficiency group respectively. As the result of ANOVA on the lexical recognition gap showed, the simple main effect of proficiency in listening at standard listening speed was not significant ($F(2, 136) = 1.978, p = .142, ns$), and the Pearson product-moment correlation coefficient for the standard listening speed group suggested no relationship between listening comprehension and the lexical recognition gap. These results demonstrate that the gap in lexical recognition between content and function words is constant across all listening comprehension levels and that even advanced-level listeners find recognition of function words challenging, if the speaker’s speech rate is around 150 to 160 w.p.m. This is also consistent with Field (2008) and supports the discussion before the RQs were raised, implying that, in recognition of function words, there are some other factors involved than in recognition of content words.

Finally, intriguing results were obtained as for the third RQ. How does the difference in listening speeds affect the respective accuracy in lexical recognition of both content and function words? Are listeners belonging to a different listening comprehension level affected differently? The data obtained in the present study reveal that different listening speeds have different influences on lexical recognition by Japanese EFL listeners of different proficiency groups. According to the results in the present study, when the participants listened to the recordings at a slower listening speed (about 110 w.p.m.), 0.7 times the standard speed, percentage in their accurate recognition of
function words for the high listening proficiency group and that of content words for the medium listening proficiency group were significantly higher. In addition, only for the high proficiency group did the recognition gap between content and function words become significantly smaller. This is discussed in the following paragraphs.

For the high listening proficiency groups, the participants in the slower listening speed group identified function words significantly more accurately than those in the standard listening speed group, but no significant difference was found across both the listening speeds in the recognition of content words. As a result, the lexical recognition gap between content and function words became significantly smaller due to the difference in listening speeds.

One possibility is that the slower listening speed enabled the participants to identify word boundaries and words themselves more easily so that the recognition of both content and function words slightly improved through bottom-up processing. This increased amount of information retrieved from bottom-up processing was large enough to trigger, in turn, top-down processing. In other words, the amount of information that listeners gathered through bottom-up approaches went past the threshold (O’Malley, Chamot, & Kupper, 1989; Eastman 1993; Vandergrift & Goh, 2012), which enabled listeners to make use of top-down approaches and the participants were able to infer missed function words after turning to top-down processing such as schema and grammatical knowledge. Thus, their recognition of function words improved significantly better than that of content words.

Another possibility is that the slowness of the listening speed itself had some influence on participants’ lexical recognition. Many function words are not spoken independently or isolated from other words in a connected speech, but are usually spoken in a group of content and other function words. These groups of words, or phonological words (Grosjean & Gee, 1987), in the speech stream were supposedly recognized over a slightly longer time span, by a split second, which affected recognizing process positively and helped the participants identify more accurately the words they heard, even the unstressed syllables. This was presumably impossible when they were listening to the recordings at the standard speed. Quite possibly, there may also have been some cues from top-down processing. On the other hand, content words can be searched from stressed syllables so that they were identified easily enough at a faster speed, the standard listening speed. Therefore, recognition of content words was not affected even if the listening speed was slower.

For the medium listening proficiency group, however, participants’ recognition of content words were significantly better at the slower listening speed than at the
standard listening speed, whereas their recognition of function words were only marginally better at the slower speed. These results imply that top-down processing, which became available to high proficiency listeners, was still not in use by medium proficiency listeners, or that the threshold itself to initiate top-down processing may be higher than in the case of high proficiency listeners. One possibility is that medium proficiency listeners need more information retrieved from bottom-up processing in order to activate higher-order knowledge. Another is that, even with the increased amount of information from the bottom-up, they still cannot successfully identify function words because of insufficient syntactic and idiomatic knowledge.

However, the participants in the slower listening speed group recognized content words significantly better than those in the standard listening speed group. This implies that recognition threshold of content words, which divides recognition of content words in spoken English and that in written English, falls somewhere between these speed ranges for medium proficiency listeners, a threshold that did not affect in any way high proficiency listeners because of the difference in listening speeds. Simply put, the participants of this proficiency group recognized at the slower speed what they could have recognized in the transcribed version of the recordings. Due to the slower listening speed, participants were able to identify content words, made up of stressed syllables, which would have been impossible to identify at the standard listening speed. Nevertheless, this difference in listening speeds never affected their recognition of function words, which in the speech stream can be heard and recognized only in a phonological word, a string of words including a content word. This is probably because the slower listening speed was still too fast for medium proficiency listeners to identify function words, made up only of unstressed syllables, exclusively from the information they gathered from bottom-up processing. Furthermore, the increased information on content words from the bottom up due to the slower listening speed did not trigger top-down processing, which would otherwise have led to successful identification of more function words. Consequently, the lexical recognition gap between content and function words, though not significantly, widened. Insufficient grammatical knowledge may have played a part as well.

Lastly, for the low listening proficiency groups, neither influence was observed over the speed ranges in the present study. Possibly, there might be some changes measured, if the listening speed was to be made further down, or there might not be, however slow the listening speed becomes. Their vocabulary size may be too small to make a difference or identify words in the speech stream.

One possibility drawn from the discussion above is that the threshold enabling listeners to make use of top-down approaches may fall between the percentages in accurate
lexical recognition at the standard listening speed and the slower listening speed for the high proficiency group; that is, around 65% for content words and a little above 30% for function words. Granted that only the high proficiency listeners improved their recognition of function words significantly better than that of content words due to top-down processing triggered by the slower listening speed, the medium proficiency listeners did not reach this probable threshold, with 61% for content and 26% for function words even at the slower listening speed, leading to the failure to close the recognition gap between content and function words. There are other possibilities as well. The level of threshold itself may depend on listeners' proficiency and there must be other listening sub-skills closely involved including grammatical knowledge and the size of vocabulary, which necessitates further studies.

The present study did not verify what Grosjean and Gee (1987) and Eastman (1993) claimed. It did not directly validate whether there are two systems in parsing the speech stream into a string of words and whether a system used in recognizing function words is different from the one used in recognizing content words. Neither did it verify whether, of the two parsing systems, syllable-timed language speakers lack the high-speed and pattern-recognition-like search system for weak syllables so that even high proficiency learners of English find it difficult to recognize function words in the connected speech. In addition, it remains to be seen whether, in recognizing function words, the speech parsing system refers directly to a separate lexicon specifically stored for function words and located apart from general lexicon. However, the present study showed that the listening speed or speech rate is a variable that should be taken into consideration in syllable-timed language speakers' recognition of words in spoken English, which has a stress-timed prosodic structure featured by the alternation of weak and strong syllables.

**Conclusion and Pedagogical Implications**

The three major findings concerning the RQs in this study were:

1. Recognition of function words is more challenging than that of content words for Japanese EFL listeners.
2. There is a positive relationship between English listening comprehension and accurate recognition rates of content and function words in the connected speech, but at a standard listening speed, the gap in lexical recognition between content and function words remains near constant across all listening comprehension levels and even advanced-level listeners find recognition of function words challenging.
3. The difference in listening speeds affects the accuracy in lexical recognition of content and function words differently. When the listening speed is made slower, listeners in the high proficiency group not only improved their recognition of function words, but also the gap in their lexical recognition between content and function words significantly closed. Listeners in the medium proficiency group improved their recognition of content words at the slower listening speed, but there was no influence on the lexical recognition by listeners in the low proficiency group.

Finally, we would like to remark on some of the pedagogical implications derived from the present study:

1. If listening speeds affect lexical recognition, it may be effective to use high-speed listening in order to improve L2 learners’ lexical recognition in listening. By having the learners exposed to constant higher-than-standard-speed listening, and thereby having them get used to it, it may be plausible for the learners to improve lexical recognition, especially recognition of function words, at the standard speed. However, this would require further research.

2. If what Eastman (1993) claimed is true, that is, if English stress-timed prosodic feature is the gap that divides written and spoken English or a spoken syllable-timed language and spoken English, and if Japanese EFL learners attempt to recognize every syllable, stressed or unstressed, as a stressed one, then there certainly is an excessive cognitive load on them by listening to every single unstressed syllable as if they were stressed just the way they do when they deal with written English or a syllable-timed language. It is also highly probable that they read aloud or speak English without distressing any syllable. If so, as Rost (2002) claims, Japanese EFL learners should not learn and practice citation forms of the pronunciation from written English, but engage in natural spoken discourse and continue to practice pronouncing each syllable and word just as they hear in the speech stream, stressing and distressing each syllable distinctly, copying and tracing English prosodic feature including schwas in weak syllables, vowel reductions and elisions or consonant elisions, and other phonetic changes. This can be an effective way of improving their lexical recognition in listening. This may also be an effective method to develop in Japanese EFL learners’ mind a system of recognizing strings of unstressed function words accurately in the fleeting speech stream, claimed by Eastman (1993) and Grosjean and Gee (1987): the high-speed and pattern-recognition-like search system for function words and a separate lexicon specifically stored for direct search of function words. For this purpose, it may be important not to let English phonological knowledge of written words or isolated pronunciation of each word get into English listening practices. In
addition, it is also necessary to stick to the same measures in oral reading or shadowing practices so that the gap between Japanese EFL learners’ oral reading and English L1 speakers’ natural speech will be closed.

3. In second language acquisition (SLA), the input through listening is a prerequisite and in order for the oral input to work effectively in SLA, it must be taken into the interlanguage system as efficient intake (Ellis, 1993). However, if L2 learners cannot get hold of words, especially function words, sufficiently in listening, which is the essential input in SLA, then does the input work as an efficient intake to be taken into the interlanguage system? Content-words-centered listening may be all right in understanding speech passively, but it is not an efficient intake and will not lead to reconstitution of the interlanguage system and to the acquisition of a language. In order for Japanese EFL learners’ listening to work as an effective input in SLA, it is necessary for them to improve recognition of function words, thereby closing the gap that exists between their actual recognition in listening and the one that plays a role as an efficient intake in SLA. At least from the perspective of listening for SLA, content-words-centered listening for passive understanding of the speech is not sufficient and percentage in accurate lexical recognition, including that of function words, must be brought up to near 100%. If so, in making use of listening as the effective input in SLA, it is useful, depending on the learners’ listening proficiency, to slow down the listening speed to the one which will raise the percentage in accurate lexical recognition, especially that of function words, in English classes.

With these being the future research orientation and tasks to be tackled, we would like to conclude this study.

Notes

1. Gating is a research technique in which participants hear successively longer pieces of a word in increments of 0.03 to 0.05 seconds, where a syllable lasts 0.2 seconds on average, and the participants are asked to say, after each presentation of accumulated increments, what they believe that the word is. According to Grosjean and Gee (1987), using this gating technique, they carried out an experiment on sentences of the sort ‘I saw the bun in the store’, gated from the beginning of the word ‘bun’ and measured how accurately participants recognized the word ‘bun’ after each presentation. The results showed that 45% of the participants accurately recognized the word before the syllable ‘bun’ ended, but that the remaining 55% did not recognize ‘bun’ until ‘in’ or ‘the’ ended or some even until ‘store’ ended. This demonstrates that words are not necessarily recognized sequentially from left to right.
right and that the beginning of a word is not necessarily crucial to its recognition or to initiation of lexical access.

2. L1 of 46 non-native participants in the Field’s study were as follows: Spanish 12, German 8, Portuguese 5, Korean 4, Italian 4, Japanese 3, Arabic, Czech, and Mandarin Chinese 2 respectively, and French, Russian, Albanian, and Hebrew 1 respectively.

3. Materials used for paused transcription, testing accuracy in lexical recognition, were a dialogue of 342 words and an expository text of 382 words, which make 724 words in total. On the other hand, the recording time was 115 seconds for the dialogue and 162 seconds for the expository text, which make 277 seconds in total. In terms of words per minute, there seems to be some difference in speeds between the dialogue and the expository text, but both were materials of ‘Speed Range 3’, the fastest in ‘Kyukyoku-no-eigo-listening (Ultimate English listening)’ series level 1. Materials were used to test participants’ accuracy in lexical recognition so that the ones with simple vocabulary but high speech rates were adopted. Readability of the script in Flesch-Kincaid Grade Level was 1.6 for the dialogue and 5.8 for the expository text.

4. All these counted-out words were excluded from the denominator, thus from the computation of percentage in accurate word recognition. Therefore, [percentage in accurate recognition of content words] = [the number of content words correctly identified] × 100/28, and [percentage in accurate recognition of function words] = [the number of function words correctly identified] × 100/36.

5. In Field (2008), content words that possessed three syllables or more were excluded from the results, but in the present study, three-syllable words, hospital and beautiful, were included. Both items have a strong syllable, hos and beau, respectively, and the other two syllables are pronounced weak in stress-timed English, featured by the prosodic structure of the language. Therefore, these longer items, even if they have three syllables, are pronounced short, roughly the length of a one-strong-syllable word in the speech stream, according to the stress and rhythmic patterns of English. Accordingly, listeners must initiate the search for and identify these content words from the strong syllable and that is the system of lexical access for content words. For the reasons stated above, it must be thought that these longer items are recognized just the same way the other shorter (at least in written English) content words are and that no advantage of length is to be found.

6. As far as analyses of the data are concerned, an online software, ANOVA 4, was used for the three-way ANOVA and a Microsoft add-in software for Excel was used for the two-way ANOVA and for the analysis of Pearson product-moment correlation coefficients.
References


Pemberton, R. (2004). *Spoken word recognition in a second language* [Research Reports, Vol. 6]. Hong Kong SAR, China: Hong Kong University of Science and Technology.


First Semester College in High School™ Program
Addressing Rising Tuition and Soaring Student Debt

Lawrence A. Tomei
Francis E. Perry

By the time Madyson graduates from high school in 2017, she will have completed an entire semester of courses at Robert Morris University (RMU), allowing her to earn a college degree in less time and for less money than many freshmen. Mady is very happy in the program, certainly her parents are happy, and perhaps most important for Robert Morris University, it is making their board of trustees happy.

A Question That Affects Us All

At the Robert Morris University Board of Trustees annual retreat in June 2013, its members discussed two issues drawing recent national attention to higher education; specifically, the soaring cost of tuition and the rising amount of debt for college graduates (Bakersfield, 2010; NCES, 2013). The heated debate focuses on asking the really tough question: What can colleges and universities do to reduce the harbinger of debt hovering over college seniors as they make their way across the commencement ceremony stage?

Madyson is among the first group of students at one nearby high school to participate in the RMU First Semester College in High School Program, a cohort-based curriculum in which participants join a select cohort of 12-15 students during their rising junior year of high school for a series of five undergraduate courses. Each of the target courses was selected because (a) they are freshman-level courses; (b) require no prerequisites; and (c) have a history of unproblematic transfer to colleges and universities. Every course in the program must meet these criteria.

Target Courses

Research has found that most colleges and universities accept transfer credits into their general education curriculum. English composition, public speaking, history, sociology, philosophy, psychology, mathematics, and science are among the most common offerings in a core curriculum (MacDonald, 2013). The RMU program embraced this trend by offering a select number of common core courses to its high school participants, including: Reading and Writing Strategies (English Composition); College Math (Algebra); General Psychology; Principles of Sociology; and, Environmental Science.

Participating high schools make their choices based on the preference of the students (and parents); some offer the program in the evenings, others on Saturday mornings. Courses are
taught by regular RMU faculty on the high school campus. The program begins in the cohort’s rising junior year: one course per semester starting in fall and another course during the spring semester. The third course is offered in the summer term and may be hosted either at the high school, on the University’s main campus, or online. The senior year repeats the pattern with courses four and five in students’ senior year. The result: participants graduate with their high school diploma in one hand and a full 15-credit semester transcript in the other. Sure, Robert Morris University would like those students to attend RMU when they graduate, but the courses are equally transferrable to nearby or national institutions of higher learning.

**Let’s Save Parents Some Big Bucks**

The five courses in the FSCHS program are offered at 30 percent of the published University traditional undergraduate tuition at the start of the cohort’ first academic year. And, these rates remain in effect for both years of the program. As an example, students who began the program in Fall 2013 saved over $8,000 compared with those students who enter as first semester freshmen. (See Table 1).

Students pay for books. And, since cohort students are treated as on-campus students, they are eligible to purchase new or used texts or rent their books from the campus bookstore. Other students find their texts in online textbook outlets (e.g., Amazon.com) and save even more. Still others will pass along their texts to a succeeding cohort.

**Table 1. Example of FSCHS Savings (Based on 2013-14 tuition rate of $775/credit)**

<table>
<thead>
<tr>
<th>Semesters</th>
<th>Undergrad Per Credit Tuition Rate</th>
<th>FSCHS Rate</th>
<th>Estimated Books</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall Junior</td>
<td>2325.00</td>
<td>697.50</td>
<td>$80-180</td>
</tr>
<tr>
<td>Spring Junior</td>
<td>2325.00</td>
<td>697.50</td>
<td>$70-140</td>
</tr>
<tr>
<td>Summer</td>
<td>2325.00</td>
<td>697.50</td>
<td>$65-125</td>
</tr>
<tr>
<td>Fall Senior</td>
<td>2400.00</td>
<td>697.50</td>
<td>$55-100</td>
</tr>
<tr>
<td>Spring Senior</td>
<td>2400.00</td>
<td>697.50</td>
<td>$35-62</td>
</tr>
<tr>
<td>FSCHS Totals</td>
<td>11,775.00</td>
<td>3487.50</td>
<td></td>
</tr>
</tbody>
</table>

Participating high schools decide on minimum requirements for entry into the program. Some require their students to have at least a 3.0 grade point average to apply for the program and most demand that their student maintain that GPA to remain in the program. If their secondary schoolwork is negatively impacted in any way, students may be removed from the program.
“The First Semester College in High School program allows a number of our eligible students a valuable head start on their post-graduate educational career. With the tuition discount, it’s a win-win financially for our parents,” said one high school principal.

**Formal Agreements**
The University invites a limited number of schools to participate in the First Semester College in High School program; it’s a question of available resources. In the first year of the FSCHS program, two schools participated. By Fall 2015, there were 5 schools (10 cohorts) running simultaneously.

A formal agreement document spells out a number of important conditions, such as: a clearly stated purpose and background of the program; administrative responsibilities; courses, tuition and fees; withdrawal and refund policies; student conduct and parental involvement; and, program outcomes. Roles and duties for both the university and the high school are fully explained. As an example, the school district is responsible for determining student eligibility and selecting the members of each cohort; hosting the courses on their high school campus; and, closely monitoring satisfactory student progress. The university maintains student transcripts and appropriate records.

The design of the FSCHS program calls for a new cohort to be selected during the early summer months (no later than June) prior to the junior year. Student invitations go out in January and parent information sessions are offered before the students leave school for the summer. Cohorts are typically filled well before the start of the fall semesters. A timeline for Fall 2015 program start is shown below.

*Figure 1. Timeline for Implementation of FSCHS ™ Program (Academic Year)*
Students may withdraw or be removed from the program without penalty and retain their college transcripts showing credits earned to that point in their program. However, students may not return to the cohort once they leave and no new students may join the cohort after the start of the initial FSCHS semester. In other words, students and their parents have one opportunity to select the FSCHS program as rising juniors.

The University provides official transcripts each semester and upon requests by parents. In addition, at RMU, the University Registrar serves as the single point of contact for each of the schools and advises each of the participating students. It is important to remember that students participating in the FSCHS program are almost exclusively minors. University contacts outside the classroom are made with the school and parents unlike the FERPA-governed environment of colleges and universities.

“If this past admission year taught us anything,” related the RMU Registrar, “it’s that high school students are coming to meet their freshman admissions counselors with three, six, nine, sometimes as many as twelve to fifteen college credits already on their transcripts. The First Semester College in High School places these applicants well ahead of their peers, both academically as well as financially.”

Cohort members participating in the FSCHS program are considered RMU students and receive the usual student identification card for admission to the University library, bookstore, campus activities and even sports events. They are also given the same access as traditional students to online resources. They receive instruction for accessing library materials when working on research papers – a convenient alternative for those who may lack the time or transportation to conduct on-site research. Materials are posted to a standard online learning platform for students who might miss a class meeting or wish to review a previous lesson. During a typical semester, there are a sufficient number of weeks to accommodate special high school activities such as SAT exams, prom night, and sports banquets. The same minimum number of instructional hours applies to FSCHS as it does to any on-campus course. The hours are the same, the syllabus is the same, the text books are identical – it’s the same course.

**Students and Parent – and the Instructor – are Unanimous in Their Praise**

“Mrs. V makes the class so much fun. I think I can speak for the whole class in saying that it is amazing, interesting, and so different from high school. I am thoroughly enjoying the class and am so glad that I'm involved in this program,” said Madyson.

While there is no “typical” FSCHS student, two traits are common to cohort members: an extremely strong work ethic and the desire to succeed. Students who are willing to
come back to school in the evenings or early on a Saturday morning do not take their studies lightly. Their commitment to academic success in the program is apparent. One student in the Saturday cohort is a member of the football team. He spends Friday nights under the lights, but he is in class at 8:30 the next morning prepared for extensive class discussions. Another student in an evening cohort has given up her place on a traveling softball team so that she can take these courses.

Courses taught in the FSCHS program mirror those offered on-campus. Table 2 displays the most popular courses chosen by the currently participating cohorts.

<table>
<thead>
<tr>
<th>Recommended Term</th>
<th>Course Title</th>
<th>Course Nr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1 – Fall</td>
<td>Reading and Writing Strategies</td>
<td>COSK 1220</td>
</tr>
<tr>
<td>Year 1 – Spring</td>
<td>Argument and Research</td>
<td>COSK 1221</td>
</tr>
<tr>
<td>Year 1 – Spring</td>
<td>Principles of Sociology</td>
<td>SOCI 1010</td>
</tr>
<tr>
<td>Summer</td>
<td>General Psychology</td>
<td>PSYCH 1010</td>
</tr>
<tr>
<td>Summer</td>
<td>Environmental Health</td>
<td>ENVS 1170</td>
</tr>
<tr>
<td>Year 2 – Fall</td>
<td>US History I or II</td>
<td>HIST 1200</td>
</tr>
<tr>
<td>Year 2 – Fall</td>
<td>Introduction to Humanities: Art and Music</td>
<td>HUMA 1010</td>
</tr>
<tr>
<td>Year 2 – Spring</td>
<td>Environment Science: Weather, Climate</td>
<td>ENVS 1160</td>
</tr>
</tbody>
</table>

The Reading and Writing Strategies instructor for FSCHS also teaches the course on campus and has made no modifications to course work or expectations. FSCHS students have had little difficulty in meeting, and in some cases exceeding, expectations of the courses. The start and end term dates may vary, but all other aspects of the course are identical. The only perceivable difference is that, while students in the Tuesday/Thursday sections have the opportunity to meet with the instructor more often throughout their writing process, the Saturday students have only one opportunity per week to interact with their instructor. They have not only shown the discipline to read large chunks of material between meetings, but also email the instructor often throughout the week rather than holding questions for class meetings.

Students have expressed their surprise and enjoyment at meeting collegiate expectations while still in secondary school. They were somewhat surprised at the amount of class time devoted to discussion and the instructor’s decree of “no wrong answers, just poorly supported arguments,” and have embraced the opportunity to explore different interpretations and present their perspectives to their peers. As students were leaving their first class session, some were heard stating “That was an awesome class” and “I think I’m gonna like college.”

Cohort members have also been excited to break away from the conventions of high school writing. The idea of presenting an argument outside of a given formula has, for
the most part, been warmly embraced. Surprisingly, students have been especially engaged in discussions of grammar and mechanics, often taking copious notes during lessons focused on agreement, structure, word choice, and punctuation. They have shown a willingness to work through examples of both strong and weak writing and ask detailed questions when working to improve their own drafts.

FCSHS students have shown exceptional maturity in their approach to learning – some have gone so far as meeting in study groups on their own time or organizing their own “field trips” to the campus library.

Who Wouldn’t Want to Do This?

Examining recent statistics, approximately 51% of our freshmen applicants are bringing in between 3 and 18 credits through high schools sponsored dual enrollment programs, College to High School programs, or advanced placement programs. All credits are transferable; however, they may not all be applicable to a particular major. Like the First Semester College in High School, these programs provide the student an opportunity to graduate early and reduce their debt upon graduation. Unlike the other programs, the FSCHS is a cohort-based program, held on the students’ high school campus, with faculty hand-picked to work with high school juniors and seniors.

As one principal explained it to her parents at an evening information session,

“A full semester of college, taught right here on our campus, with a university faculty member, and a 70 percent discount – who wouldn’t want this for their child?”

Yet, both the University and the high school realize that the First Semester College in High School program is not for everyone. Cohorts are targeted for 12-15 participants. At one invited school, the initial cohort was started with only nine students. At a second school, a cohort of 17 was permitted based on the overwhelming response from parents. Too, high school students often are forced to make a choice. Sports, band, advanced placement courses, a host of intra- and intermural activities. Everyone recognizes that students have many competing choices in their high school years.

The First Semester College in High School Program grew out of two other dual-enrollment programs that allow high school students to take a solitary university course. The idea to expand those programs was a logical progression from what is already working at his campus. The thinking was that, if our dual-enrollment programs work for one course, why not do it for the entire first semester of college?
Our Success Rate

After two complete years of the FSCHS program, our experience so far has produced some startling statistics. Nearly all of the cohort students completed all five courses; only three students dropped out before their graduation. The grade distributions have told us another remarkable story: 85 percent of our FSCHS students received either an “A” or “A–” in their coursework while maintaining at least a 3.0 or higher (most much higher!) in their high school curriculum.

Impact on the University – Share the FSCHS Model!

The FSCHS program is a trademarked academic program; however, Robert Morris University is more than happy to share the program with other institutions of higher learning.

More than enough schools for everyone. Limited resources allow RMU to offer the cohort-based model to 5-7 school districts at most. Remember, by the second year, each of those schools is hosting two separate cohorts. There are nearly 500 districts in Pennsylvania alone; over 13,500 throughout the United States. So, there is no real competition for FSCSH schools. We are more than happy to talk with you about sharing the model and how to make it work.

Faculty union issues. Early and recurrent discussions with local school district unions are always a good idea to solicit their buy-in on the program. They need to be assured that the FSCHS will not intrude upon their student’s available study time, their own AP course offerings, or the school’s honors program. FSCHS classes are held outside the class day and the precedence of dual enrollment, college to high school, and other similar college prep courses have, most likely, already been established.

School board issues. School board members can be excellent advocates for the FSCHS program. Emphasize to your board members that a partnership with a local college or university is in their students’ best interests. Plus, parents are responsible for all costs, including books. District in-kind contributions call only for classrooms and facility expenses (e.g., light, heat, security, etc.). School and parent organizations often look at college-to-high school initiatives as indicators of truly innovative schools.

Parent issues. Unlike the college environment (and the application of Federal guidelines), the FSCHS program deals with the student, the school, and also the parents. A Parent Information Night (to which students are heartily invited) is highly recommended. The agenda highlights the program and its academic and financial benefits. High schools principals can share the application process while college officials can discuss the courses, grades, financial, and program objectives.
**Student issues.** High school students (like their college counterparts) have numerous choices when it comes to extra-curricular activities. It is imperative to everyone involved that students remain committed to the program – and that includes staying part of the cohort for all five courses. Students (or their parents) will invariably ask if they can “sit out” a semester to play football or head up the school play. Can my child come back next semester? The answer should be “no.” Certainly, students have been compelled to drop from the program because of personal reasons. Any credits they completed earn a transcripted grade. However, we hardly ever allow them to return to the cohort once they miss a course.

**Finding faculty.** Actually, this was the easiest task for FSCHS program administrators. College faculty that enjoy working with first-year undergraduates will also enjoy working with these high school students. Schools typically select from among many applicants those who already know they want to attend college and have, therefore, already developed the learning tools to be successful.

**Want to Learn More?**

One university is helping to answer the question, “What can we do to reduce the impact of rising tuition and student debt?” Mady and her parents know the answer: take your first semester of college while you are still in high school. Enroll in the First Semester College in High School™ program. If your institution would like to learn more about the program, please contact Dr. Larry Tomei (tomei@rmu.edu) or Mr. Frank Perry (perry@rmu.edu). We do webinars explaining the program!

**References**


Lawrence Tomei, Ed. D.

Lawrence A. Tomei is the Vice Provost for Academic Affairs and Professor of Education, Robert Morris University. Born in Akron, Ohio, he earned a BSBA from the University of Akron (1972) and completed his master’s degrees in Public Administration and Education at the University of Oklahoma (1975, 1978) and his doctorate in Education from USC (1983). His articles and books on instructional technology include: Integrating Pedagogy and Technology: Improving Teaching and Learning in Higher Education (2015); Designing Instruction for the Traditional, Adult, and Distance Learner (2010); and, Taxonomy for the Technology Domain (2005).

Frank E. Perry, MS.

Francis E. Perry is the Executive Director of Academic Services & University Registrar, Robert Morris University. Born in North Charleroi, Pennsylvania, he earned a BSBA from Robert Morris College (1970) and completed his master’s degrees in Counseling Education at Duquesne University (1979).
The popularity of transformative learning theory in the adult education literature over the last several decades speaks to the interest in understanding highly impactful learning experiences. However, in our zeal to grab ahold of a theoretical lens that would allow us to understand and convey some of the far-reaching affects of learning in people’s lives, the field has taken the well-theorized grounding that Mezirow provided and diffused it to accommodate almost any kind of learning outcome. The term transformative learning has now been used to refer to such a wide variety of phenomena that it has lost any distinctive meaning.

Building on social constructivist premises, Mezirow carefully articulated the learning outcomes he was describing. He used the terms transformative learning and perspective transformation to refer to the process of “becoming aware of one’s own tacit assumptions and expectations and those of other and assessing their relevance for making an interpretation” (Mezirow, 2000, p.4). Further clarifying, he said:

Transformative learning refers to the process by which we transform our taken-for-granted frames of reference (meaning perspectives, habits of mind, mind-sets) to make them more inclusive, discriminating, open, emotionally capable of change, and reflective so that they may generate beliefs and opinions that will prove more true or justified to guide action. … (Its) focus is on how we learn to negotiate and act on our own purposes, values, feelings, and meanings rather than those we have uncritically assimilated from others—to gain greater control over our lives as socially responsible, clear-thinking decision makers. (p. 7-8)

As the theory grew in popularity, scholars approached the study of TL from a variety of disciplinary perspectives. During the first 25 years of the theory, there were four primary approaches that scholars used to inform their approach to TL: the psychocritical approach of Mezirow, as well as the psychodevelopmental, psychoanalytic, and social emancipatory approaches (Taylor, 2008). More recently, other approaches have evolved, including the neurobiological, cultural-spiritual, race-centric, and planetary (Taylor, 2008). Every approach stems from different literature bases with their respective premises and foci, which result in widely differing descriptions of the learning outcomes that are transformative.

For there to be value in the theory, we need clarity about the terms we use. I believe there are indeed learning experiences that are so deep and profound that they can justifiably be considered transformative. Further, Mezirow’s formulation of transformative learning, although groundbreaking, has proven to be not quite sufficient to encompass the varieties of transformative learning outcomes that researchers have observed. What we need to do as a field is to delineate the variety of phenomena that can be understood as transformative so that we can articulate clearly the learning experiences we are trying to describe.

A Preliminary Typology of Transformative Outcomes
In 2014, a team of researchers performed an analysis of all the articles using transformative learning theory published in 1) Adult Education Quarterly; 2) Journal of Transformative Education; and 3) Adult Learning from January 2003 through October 2014. This search yielded 240 articles. After filtering out articles that made no inference to outcomes, our study examined 206 articles. For each article, we looked for the implicit and explicit ways that the authors defined transformative outcomes. Often, because of Mezirow’s influence on the theory, scholars described transformational outcomes simply as a change in one’s frame of reference. However, we felt that this term was too broad; it is frequently used to describe multiple ways in which a person makes meaning differently. Therefore, we sought for finer articulations of learning outcomes. As this form of analysis is unique, an example may be illustrative. The “planetary” perspective offered by O’Sullivan, Morrel, and O’Connor (2002) offers the following partial definition of transformational outcomes:

Transformative learning involves experiencing a deep, structural shift in the basic premises of thought, feelings and actions. It is a shift of consciousness that dramatically and permanently alters our ways of being in the world. (p. xvii)

As this a particularly comprehensive definition, it offers insight into the approach to the coding of articles in this study. If an article used this exact definition, then we looked for specific outcomes that the article used to define the overall learning experience. In this case, we extrapolated each of the following:

- Shift in basic premises of thought, understanding of relations of power
- Shift in feelings
- Shift in actions
- Shift in consciousness
- Altered ways of being in the world

We then evaluated the excerpts and assigned codes, splitting or merging coding categories as seemed best to capture the intent of the authors. Almost every article had at least two distinct codes, and most of them had three or four. When an article had multiple excerpts with the same assigned code, we combined them so that multiple descriptions in the same article did not skew the overall results of the analysis. Among the 206 articles, there were a combined 1,023 coded excerpts, therefore averaging 5 codes per article. The excerpts resulted in 28 different codes, which we eventually coalesced into six broad categories.

This process yielded the following general categories of transformative learning outcomes.

- Worldview
- Epistemology – Ways of Knowing
- Self
- Behavior – Action
- Development – Increased Capacity
- Ontology – Ways of Being

The following descriptions provide more information about each category of transformative learning outcomes along with the number of articles in which each subtheme was found.
A Typology of Transformative Learning Outcomes

**Worldview** refers to changes in underlying worldview assumptions or conceptualizations. The subthemes from which it was derived were:
- Changes in Assumptions, Beliefs, Values, Expectations
- Ways of Interpreting Experience
- More Comprehensive or Complex Worldview
- New Awareness / New Understandings

**Self**
Outcomes related to Self refer to changes in one’s sense of identity, relatedness to others, self-efficacy, empowerment, and so forth. Subthemes were:
- Self-in-Relation
- Identity or View of Self
- Self-Knowledge
- Empowerment or Responsibility
- Change in Personal Narrative
- Change in Meaning or Purpose in One’s Life
- Change in Personality

**Epistemology – Ways of Knowing**
These outcomes refer to changes in epistemic habits, including more autonomous, systemic, authentic or embodied ways of knowing. Subthemes were:
- More Open
- More Discriminating
- Utilizing Extra-Rational Ways of Knowing

**Ontology - Ways of Being**
These outcomes refer to changes in deeply established dispositions and tendencies that affect the way a person affectively experiences life and how they physically and emotionally react to experiences.
- Affective Experience of Life
- Ways of Being
- Attributes

**Behavior – Action**
Behavioral or Action outcomes refer to changes in observable behavior.
- Actions Consistent with New Perspective
- Social Action
- New Professional Practices
- New Skills

**Capacity**
These outcomes refer to development of cognitive abilities in one or more domains.
- Cognitive Development
- Change in Consciousness
- Increased Spirituality
A Typology of Transformative Learning Outcomes

A Problem with Definitions
These learning outcomes demonstrate that Mezirow’s definition of transformative learning is too limited; although it describes one way in which a person’s frame of reference can be transformed, it does not encompass many other ways. The same critique can be leveled at the planetary definition offered as an example above. The research literature has demonstrated that there are a wide variety of learning outcomes that can justifiably be considered transformative. We should define transformative learning broadly in order to accommodate these outcomes. A suitably broad definition is: Transformative learning refers to processes that result in significant and irreversible changes in the way a person experiences, conceptualizes, and interacts with the world.

Our meta-analysis revealed that many scholars used the term transformative learning to refer to relatively minor changes – changes that are almost certainly not transformative for the learner. To be considered transformative, learning outcomes must present both depth, breadth, and relative stability of change. Depth refers to the impact of a change, or the degree to which it affects any particular component listed above. Breadth refers to the variety of contexts in which a change is manifest. Relative Stability means that the change is not temporary.

Implications for Future Research and Theory
Researchers should reserve the use of the term transformative learning for use only with learning experiences that result in significant and irreversible changes in the way a person experiences, conceptualizes, and interacts with the world. They should specify the ways that learning outcomes impact the way a person experiences, conceptualizes and interacts with the world, and ensure that such changes are indeed dramatic by providing evidence of depth and breadth of change. Following is a tool that researchers can use that incorporates a typology of transformative outcomes and focuses attention on clarifying the impact of each component.

<table>
<thead>
<tr>
<th>Transformational Outcome</th>
<th>Depth / Evidence of Deep Impact</th>
<th>Breadth / Evidence of Impact on Multiple Life Contexts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worldview</td>
<td></td>
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<tr>
<td>Self</td>
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<td>Epistemology – Ways of Knowing</td>
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<td>Behavior</td>
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<tr>
<td>Development – Increased Capacity</td>
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</table>

This typology aids scholars to articulate changes to the way that learners experience, conceptualize and interact with the world. For each type of outcome, scholars should articulate one or more specific ways that learners have changed in the way they experience, conceptualize, and/or interact with the world, possibly using the subthemes described above as a framework. Any particular transformative experience will likely include several of the learning outcomes in this typology, and scholars should be comprehensive and explicit about the types of learning outcomes they are describing.
A Typology of Transformative Learning Outcomes

References


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Exploring Cultural Education And Preservation Of An Indigenous Population

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Abstract

An important and often overlooked component of American history is the accounts of the enslaved Africans that fought for their freedom. Isolated and unacknowledged for years due to location, the descendants of these enslaved Africans live culturally intact on coastal Carolinas, Georgia, and Florida and are known as the Gullah and Geechees. The Gullah-Geechee culture is vital to the completeness of American history and knowledge of the culture can provide African-Americans with self-identity and pride by providing them with a connection to their African heritage. Despite numerous research studies and federal legislations, the Gullah-Geechee culture is now in jeopardy of extinction. The purpose of this paper is to explore social science in the area of preservation and sustainability efforts of indigenous cultures to understand the best methods to foster survival of an indigenous population.

Keywords: Gullah, Geechee, sustainability, preservation, culture
Exploring Cultural Education And Preservation Of An Indigenous Population

Most Americans were taught that the Civil War was the only war fought on American soil that involved slavery. However, the years from 1739 to 1858 were marked by ongoing revolts by enslaved Africans and battles with American colonists along the southeast continental coast (Goodwine, 1998). Margaret Goodwine (1998) argues, based on extensive reviews of contemporary documents and other artifacts, that these battles were purposefully undocumented and unacknowledged since the success of the enslaved Africans and the development of alliances with Native Americans threatened the enslavement system and global misconceptions that the slaves were content. Unlike the mainland slaves that adapted to Euro-American cultures, the isolated resistant slaves formed their communities along the marshlands of coastal Carolinas, Georgia and Florida (National Park Service, 2005).

Today, the descendants of these enslaved Africans are known as Gullahs and Geechees. They remain isolated beyond the Spanish moss and sand gnats of the Low Country and surrounding regions unscathed by Western civilization. Unbeknownst to most Americans, including African-Americans, the Gullah-Geechee community offers African Americans a direct connection to their African heritage (Cross, 2012). “Gullahs” are African slave descendants that reside in the Carolinas while “Geechees” are descendants of the Georgia and Florida region (National Park Service, 2005). Although Native Americans were the first population in the region, the Gullahs-Geechees are considered “indigenous” to the coast because of their affinity for the land and the distinctive Gullah-Geechee culture was developed in North America (National Park Service, 2005).
The Gullah-Geechee population’s affinity for the land is based on an ancestral connection to the Rice Coast of Africa, known today as the region that extends from Senegal to Liberia (Opala, n.d.). According to Opala (n.d.) these slaves were imported to the coastal region mainly for their expertise in rice cultivation and irrigation systems. In addition to the Gullah-Geechee community’s indigenous ecological knowledge, the culture’s uniqueness and resiliency has been recognized globally for its ability to sustain its African heritage for over 400 years, across two continents, despite slavery, wars, tropical diseases, oppression, major hurricanes and most recently tourist development (National Park Service, 2005).

**Background**

The recording of Gullah-Geechee history and culture was challenging for slaves since they were not afforded the opportunity to properly document their history, and the purposeful manipulation of written American history to favor the colonists (Goodwine, 1998). With only an oral means of historic preservation, the Gullah-Geechee culture is often a missing component in America’s published or understood heritage. In addition to the challenges of recording Gullah-Geechee history, the mass diaspora of African-Americans to other regions created a disconnection from African heritage maintained along the coast (National Park Service, 2005).

Du Bois (1903) noted the earliest account of the Gullah-Geechee culture. Du Bois (1903) detailed the accounts of the Port Royal experiment where the white Northerners met the Southern slaves for the first time. The slaves of this region were described as primitive and untouched by the world around them. The Northerners met with the Gullah-Geechee community with the intention to change the community by
adopting Western standards. Freire (2012) argued that the theory of anti-dialogical action leads to cultural invasion due to a disrespect of the invader’s belief in the invaded culture’s potential that eventually leads to cultural conquest and inauthenticity. Smalls (2012) concurred that during 1862-1954, schools for Gullah-Geechee students known as the Penn School and Avery School demoted Gullah selfhood and oral communication by their teaching strategies and educational philosophies. The Penn School was founded by two Northern missionaries to provide a formal education for the Gullah community (Pollitzer, 2005). Freire (2012) would describe the formal education at these schools as a cultural invasion and “camouflaged with the invader assuming the role of a helping hand” (Freire, 2012, p. 153).

Conversely, others described the same period at the Penn School (later named Penn Center) as “successful, [The Penn School] helped serve to preserve their culture and left a continuing legacy, nowhere more enduring” (Pollitzer, 2005, p. 67). Smalls (2012) later described the Gullah Schools as defining the culture by educating the public with a different set of ideologies. However, as established by Cross (2013), without a written language the passing of knowledge from an oral culture could not be upheld with only a school; furthermore, a culture can quickly disappear when there is a gap in passing along traditions primarily because younger generations become ashamed of the traditions and seek a more accepted culture.

During the late 1950’s and early 1960’s the family-oriented Gullah-Geechee community was self-sufficient as well as interdependent (Goodwine, 1998). The community was able to maintain their lifestyle with the fishing, timber, and farming industries (National Park Service, 2005). The availability of air-conditioning, newly
constructed bridges and beachfronts made coastal properties more appealing to tourists (Cross, 2012). The once undesired marshland and coastal properties would also become ideal properties for commercial fisherman and high-class resort communities; therefore, causing a population explosion and increased property values and taxes to the residents of the region (National Park Service, 2005). New resorts, golf courses and gated communities created fences and gates that inhibited the Gullah-Geechee community from natural resources for hunting and fishing (Cross, 2012). To add insult to injury, the high-class resorts to many Gullah-Geechee community leaders were considered to be a reincarnation of the slavery system, since most of the resorts had “plantation” as part of their names and the Gullah-Geechee community was forced to work in the resort industry for little pay, losing self-sufficiency and autonomy (National Park Service, 2005).

To further add to the challenges in the preservation of this community, the Gullah-Geechee people speak a creole-based language called “Geechee,” which has also been the subject of debate by Americans (National Park Service, 2005). Du Bois (1903) noted his fascination with the oral language used by the Gullahs-Geechees because of the use of accents and cadences from Africa. Green (2013) argued that the Gullah-Geechee language was viewed negatively not only by Europeans but also by African Americans and the Gullahs themselves. To illustrate, Supreme Court Justice Clarence Thomas (as cited in Weimel, 2002) was raised in a Gullah community southeast of Savannah and stated:

"But I’m going to give you a more personal reason, and I think this is probably the first time I ever even told anybody about it...When I was 16, I was sitting as the only black kid in my class, and I had grown up speaking with a kind of
dialect. It’s called Geechee. Some people call it Gullah now, and people praise it now. But they use to make fun of us back then. I was self-conscious…I was trying to speak Standard English. I was thinking in Standard English but speaking another language…I just started developing the habit of listening…I didn’t ask questions in college or law school. And I found that I could learn better just listening (p. 318)

Some members of the Gullah community have negative feelings toward Judge Thomas because he was initially ashamed of his heritage (National Park Service, 2005). Green (2013) described African-Americans, like Justice Clarence Thomas, as being brainwashed into believing that any deviation from the European culture is inferior. Public schools in the region discouraged the use of the Gullah language and taught the community to move toward “progression” rather than a balance and appreciation of the heritage (Pollitzer, 2005). Historically, members of an invaded culture are separated from their culture and want to pattern themselves after the invaders and lose their true identity, like seen in the African American experience (Freire, 2012).

**Importance of Cultural Education**

The African American experience can be incorporated into common humanity by cherishing individual differences and taking pride in the distinct heritage of African descendants (Pollitzer, 2005). According to Racism No Way (n.d.), cultural identity starts at birth and is shaped by values and attitudes expressed in the home and community. On the other hand, Schiele (2005) concurs that most social problems experienced by African Americans are linked to lack of cultural identity or cultural oppression. Furthermore,
mass media and popular culture can create new cultures and cause cultural estrangement and override the cultural values prevalent at home and in the community if there is not a strong appreciation of one’s culture heritage (http://www.racismnoway.com.au/index.html). Another social theorist states,

Cultural estrangement may prelude many African Americans from recognizing the presence and importance of their human particularity. This acknowledgement is critical, some say, to a group’s ability and willingness to truly express its positive potentiality, to educate others about its contribution to human history, and to form institutions that infuse its interpretive frameworks and that protect its political and economic interests. (Schiele, 2005, p. 807)

African American and other minorities must be free to express and learn the uniqueness of their culture and any denial of culture can negatively impact how minorities view themselves. For example, in the movie *A Soldier’s Story*, Sergeant Vernon Waters told the character CJ,

See, the Black race can't afford you no more. There used to be a time, we'd see someone like you singin', clownin', yassuh-bossin'... and we wouldn't do anything. Folks liked that. You were good. Homey kind of nigger. When they needed somebody to mistreat, call a name or two, they paraded you. Reminded them of the good old days. Not no more. The day of the Geechee is gone, boy. And you're going with it (Jewison & Schwary, 1984).

Furthermore, in the movie *Inkwell*, one character describes the unattractive, less-desired girl as “Geechee.” Moviegoers accepted the screenwriters’ descriptions of a
“Geechee” as someone with a stereotypical buffoonery behavior or unattractive person not as the highly esteemed carrier of the African American culture. Unfortunately, African Americans were “robbed” of an allegiance to the Gullah-Geechee culture. In addition, understanding one’s cultural heritage leads to an understanding and valuing of other cultures and most importantly overcomes racism (http://www.racismnoway.com.au/index.html).

**Preservation and Education**

Africans were known for their storytelling abilities to preserve their traditions and to pass on communal wisdom. The official storyteller of the African tribe was known as the griot, and this esteemed member was also the historian, advisor, spokesperson, musician, poet and teacher (Hale, 1997). Along with storytelling, enslaved Africans shared with plantation owners their ecological knowledge of how to cultivate rice and rice growing techniques orally, which is called the “diffusion of an indigenous knowledge system” (Carney & Porcher, 1993, p. 130). Other scholars studied the importance of the Gullah-Geechee oral communication and its direct connection to Africa.

The first scholar to study the Gullah language and oral communication intensively and made it a legitimate language was Lorenzo Turner, who published his findings in 1949 (Campbell, 2011). His pioneering work promoted the unique history and folklore of the Gullah-Geechee culture in a positive light by dismissing the idea that the people were using poor English (Campbell, 2011). The Gullah-Geechee culture was shown by Turner’s research to be a product of merging diverse cultural experiences and
communication to retain African roots and is the only African American creole language in the United States (National Park Service, 2005). Turner’s finding led to a sense of pride and respect for the culture that had been previously described as inferior (National Park Service, 2005). Turner sparked a desire for African-American to discover their ancestral roots; however, many researchers credited the Civil Rights Movement for inspiring African Americans (Campbell, 2011). Regardless of the origin, this sense of pride was vividly expressed in the works of Gullah resident and historian, Cornelia Bailey.

Bailey (2003) detailed in her book the oral traditions of her Gullah community called Hog Hammock. In this book, themes of pride and self-identity emerged to the reader. Bailey recalls the stories told by her father that would hold the children spellbound. As established by Bailey and Crook (2003), paralinguistic features found only in the Gullah language included tones, pauses and inflections brought poetic elements to the folklore. Bailey stated that the oral history of the Gullah culture “connects the living with the dead”. Bailey’s work focused on the oral histories and traditions of the Gullah-Geechee culture including the Creole language and farming skills. Bailey’s work has been used to study African-American history, anthropology, and linguistics, and she won the 2004 Governor’s Award for her preservation efforts (National Park Service, 2005).

Along similar lines, Patricia Jackson identified the link of oral traditions in the Gullah-Geechee community to West Africa. Jackson (1987) detailed the singing and storytelling abilities of the Gullah-Geechees. The *Brer Rabbit* and *Uncle Remus* tales originated in the Gullah-Geechee community and common with other African folklores.
by the use of metaphors and proverbs (Jackson, 1987). Jackson (1987) studied the traditional worship services especially unique ring shout with traces back to Africa. The ring shout is a call and response spiritual singing with hand clapping and rhythmic movements to complement the spiritual songs. After the Gullahs became Christians they still maintained their African roots with ring shouts, and some non-Gullah observers described the ring shout as savage without knowledge of its cultural significance and ties to Africa (Pollitzer, 2005). Turner linked the ring shout to Mecca, and many singing groups have passed on shouting traditions to present-day shouters (National Parks Service, 2005) Jackson (1987) concluded that effective oral storytelling is more memorable than written literature. For example, in oral communications the storyteller must be able to create images in the audience’s mind by mesmerizing them with the kinesics including gestures and hand movements not seen in literature (Jackson, 1987).

Other verbal techniques used in storytelling of the Gullah-Geechee community with African origins are mimicry, repetition and rhetorical questions (Jackson, 1987). Pollizer (2005) noted that improvisation and intonation add to the appeal of storytelling and folklore of the Sea Islands. The literature from both Jackson (1987) and Bailey (2003) showed how preserving an oral culture was more intense and involve more than content alone; good folklores and songs included proxemics, body languages, atmosphere and audience participation, all found in the Gullah-Geechee and West African cultures. In order to preserve a culture holistically, the literature suggests that with changes in society, preservation efforts must also change. Dervine & Mitsch (2007) establishes:

The important societal changes that have overwhelmed almost every part of Africa do not in any case allow us to maintain a mode of transmission of oral
literature such as existed in the middle of the twentieth century. Moreover, there is nothing surprising in that. It is the common lot of any cultural manifestation to always be subject to the laws of social evolution. The question is whether to allow this manifestation to disappear (which is in large measure what is happening) or in any case to only collect it in a form and with a goal that is museographer, where it will only exist as a testimonial of memory inscribed in the Universal (p. 160).

Yenika-Agbaw (2011) suggests how storytelling can evolve to print and still preserve the oral uniqueness of African tales that include the use of graphic novels, YouTube videos, bilingual picture storybooks, and picture books with illustrations from African art. Current thinking indicates that a measure of the pride in one’s heritage can be seen by the increasing efforts to preserve and publish oral histories (Yenika-Agbaw, 2011). For example, the Anansi African tales are featured on YouTube with three different perspectives: traditional read aloud; theatrical performance in village setting accompanied by drumbeats, and bilingual read aloud with traditional music (Yenika-Agbaw, 2011). This authentic and innovative medium for cultural transmission provides visual and verbal narratives with the ability to capture the attention of twenty-first-century children and adults proving that cultural preservation can be adaptive to societal changes.

Global research showed a paradigm shift in cultural preservation by the actions to add oral and intangible cultures, which includes language, literature, dance and other forms of communication and information to the World Heritage List that previously only contained archaeological sites and landscapes (Nas, 2002). This initiative to include oral
traditions gave value to the collective memories of a people of culture in order to create a self-identity. According to social theorists Petrilli, and Ponzio (2001), the tradition of oral communications creates a new form of humanism of otherness or a polyconic identity.

Preservation efforts have been ongoing throughout the Gullah-Geechee region. For example, the Gullah-Geechee community banded together to create legislation to make it illegal to develop private properties with gated communities on St. Helena Island (Green, 2013). In addition, Sapelo Island, off the coast of Georgia, is protected by the Georgia Department of Natural Resources as a natural wilderness and ecosystem (Cross, 2012). Cross’s (2012) research examined the seventy-residents of Sapelo Island and the fact that they have successfully maintained their Gullah-Geechee heritage. Visitors of Sapelo Island experience the richness of the Gullah-Geechee culture and lifestyle with tours and festivals on the secluded island. Even with preservation efforts and cultural awareness with festivals and federal legislations, the Gullah-Geechee culture was named one of the Most Endangered Historic Sites. Therefore, the National Parks Services performed a special report to research and preserve the Gullah-Geechee culture, which lead to the development of the Gullah-Geechee Heritage Corridor Commission (National Parks Service, 2005).

**The Gullah-Geechee Heritage Corridor Commission**

The Gullah-Geechee community remained intact culturally for two primary reasons: most slaves brought to the region were from the same regions in West and Central Africa and the community was considered diseased with malaria (Cross, 2012).
Today, without a substantial land base and economic means to maintain cultural lifestyles, preservation efforts have often been viewed as ineffective especially with the diminishing Gullah-Geechee population, land ownership, and cultural lifestyles of the region. Therefore, in 2007 federal legislations under the leadership of Congressman James E. Clyburn established the Gullah Geechee Heritage Commission (GGHC) to develop strategies to provide cultural education and public awareness of the Gullah-Geechee culture. The GGHC is also a resource for the Gullah-Geechee communities to preserve their culture through empowerment and economic development (Campbell, 2011). According to Wolfe (1994), locals within the Gullah-Geechee community have always used governmental agencies, like the GGHC, to construct their purpose in relation to power and domination. However, even with government assistance, most of the land and culture have been lost due to what close observers conclude is excessive property taxes and encroachments and the community has limited economic resources and employment opportunities to continue their cultural lifestyles. Yunus (2007) concurs that governmental programs are not sufficient to address serious social problems since governmental initiatives are historically proven to favor the interests of powerful groups. Another social theorist concluded:

There is hardly a study of an ethnic group now that does not describe how the locals use ‘agency’ to “construct themselves’ in relations to power or interest. It transcends the bland, power irrelevant relativism of much of the talk about ‘culture’ (Wolfe, 1994, p. 6).

However, the locals in the Gullah-Geechee community have come to together to sponsor many activities in the region despite the fact that the community must “grapple with the
increasing forces of modernization, urbanization, and globalization that endanger their collective cultural memory and their traditional social identities” (National Parks Service, 2005, p. 93).

Current Preservation and Educational Activities

There are many festivals in the Gullah-Geechee region that are organized by community leaders and some leaders have partnered with national sponsors. For example, the Original Gullah Festival is held annually in Beaufort, SC. The festival includes consumer and educational workshops, along with art exhibits, music, and traditional Gullah-Geechee cuisine. Furthermore, the Gullah-Geechee Nation hosts many cultural activities throughout the year including The International Music and Movement Festival. The International Music and Movement Festival provides quilt and sweet-grass basket-making classes and workshops for cast netting and crab trapping. Another event held the entire month of February is the Gullah Celebration on Hilton Head Island. The organizers of this event have established partnerships with national sponsors like Coca-Cola and the Westin and regional organizations like the Chamber of Commerce and the Arts Center of South Carolina. Activities include the Taste of Gullah, Arts, Craft, and Food Expo, storytelling, African dance and gospel music. In fact several cultural-based non-profits were developed in the region including the St. Simons African Heritage Coalition (SSAAHC) and the Daufuskie Island Historical Foundation (DIHF) to provide cultural learning and preservation of the Gullah-Geechee culture (National Parks Service, 2005).
Community leaders have also endorsed educational programs in the Gullah-
Geechee region to provide a deeper understanding of the culture. For example, the
Gullah Studies Summer Institute at the Penn Center is a two-week program providing
students an overview of the history, language, music and heritage of the Gullah-Geechee
culture (Cross, 2012). Cross (2012) notes the other educational programs on regional
college campuses including a course at the University of South Carolina that provides an
introduction to Gullah culture covering the key components of the Gullah-Geechee
lifestyle.

The Need for Technology Implementation

The World Summit on the Information Society (WSIS) noted that with advances
in information technology, our society must pay attention to the special needs of
indigenous people especially with the preservation of their heritage and cultural legacy
information technology should be used to preserve and promote the language, distinct
identities, and exchange of knowledge of indigenous populations. Further research shows
that e-commerce through technology implementation integrates the poor in the process of
globalization by providing job opportunities, broadening the marketplace, accessing the
government and accessing other useful information (Yunus, 2007).

By integrating information technology, the indigenous community can decrease
the digital divide between the “have and the have-nots” which exacerbates the social
disadvantage of poor communities due to limited broadband connection and Wi-Fi, which
in some cases is due to the remote geographical location (Dukes, 2015). Freire (2012)
concurs with the need for information technology and adds that information technology
removes the dichotomies of the oppressor-oppressed and leads to open constructive dialogs for the emergence of vision sharing and aspirations. Srinivasan (2006) outlined several technology-driven projects within indigenous communities worldwide and discovered from his research that local communities were able to utilize information technology to advance political and cultural agendas and develop community-created information and media.

According to Borreo (n.d), indigenous community access to information technology presents many challenges. Indigenous communities have low computer ownership, literacy, connectivity, and access while digital technology is expensive especially in remote regions because of Internet connections and repair services (Borrero, n.d). Government IT initiatives have not been successful in rural areas. Pigato (2001) researched long-term success of government-sponsored programs in the rural areas of South Asia. The drawback from governmental programs include:

- Competence and motivation of the initial pilot without the ability to sustain the momentum
- Lack of improvement mechanisms for administration
- Inadequate financial resources to maintain program
- Lack of governmental agencies to develop suitable applications (Pigato, 2001).

**Conclusion**

In sum, with an ever-changing society, the Gullah-Geechee community, like other indigenous populations, must also change their traditional lifestyles and views without
sacrificing the richness of their heritage for ownership in the efforts to revitalize and educe others of their culture. Social theorists have researched methods to better equip an economically challenged population in order to sustain their lifestyles and preserve their cultural uniqueness. Most theorists would agree that government intervention alone is not enough to sustain an indigenous community. Furthermore, sustainability and preservation efforts can be successful with community involvement and the integration of information technology. By sharing the success of other sociocultural projects like the Grameen Bank, future sustainability and preservation efforts of indigenous cultures and populations can be improved in other communities globally like Russia, Canada, the Philippines, Australia, Cambodia, Mongolia, the Amazon, all over Latin America and Papua New Guinea to name a few.

References


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1. TITLE PAGE

A. Title of Submission:  
*An Exploration on the Experiences of the Alangan Mangyan’s Consciousness in relation to their Ancestral Domain*

B. Topic area: Indigenous Education

C. Presentation format: Paper Session

D. The Alangan tribe of Mangyan Indigenous people in Occidental Mindoro, Philippines has struggled and fought for 17 years to claim legal rights for ancestral domain. 
This paper attempted to explore the experiences of Mangyans using phenomenological research to look into their consciousness, life and worldview about their ancestral land. 
From first thematic reflections to second thematic reflections, the theory of “Trinitarian Consciousness of Alangan- Mangyan” as an eidetic insight has been drawn to conclude it. 
Video presentation will highlight the summary of this paper.

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2. ABSTRACT

AN EXPLORATION ON THE EXPERIENCES OF THE ALANGAN MANGYAN’S CONSCIOUSNESS IN ANCESTRAL DOMAIN

Researchers: Gladiolus M. Gatdula, Phd
Atty. Genesis M. Gatdula

The ancestral domain is the core content of this study. Since, it is a phenomenological research, the researchers explored on the meaningful experiences of the Alangan Mangyan and looked at their personal life, worldview and consciousness in the land of this tribe in Sitio Siapo Baclaran, Barangay Pinagturilan Sta. Cruz, Occidental Mindoro Philippines. It is also a context of a human – land relationship. Their struggles to own Certificate of the Ancestral Domain Title (CADT) are also highlighted.

The ancestral domain is a very relevant issue in the world and in the Philippines. The research tackles its significance in the social and government sector, in the mission of the Church, for future researches and the educational discipline. That’s why, theories and comprehensive review of literatures and related studies in relation to ancestral domain here and abroad are well documented.

It is a qualitative research with phenomenology as a specific method. The steps are done through: immersion, choose of co-researcher, Indigenous style of FGD (focus group discussion), strategy in recording the experiences, use of necessary documents about ancestral domain and presentation of these meaningful experiences.

The description of the indigenous people in Mindoro, the lived – experience of the co-researchers, thematic phenomenological reflections are freely written.

The eidetic insight as a fruit of the first and second thematic reflections is summed up in a particular personal theory of the researcher, though an open-ended. This is called “Trinitarian Consciousness” of the Alangan Mangyan in relation to their ancestral domain. This specific Trinitarian consciousness which is a meaningful consciousness of the Alangan tribe is a interconnectedness of Amang Sa ugbos (God), Life and Land. The land is life from God, this land as life has become holy through a meaningful act of burying the placenta in the land considered as the extension of their life. In Philosophy “Cognatus ergo sum,” or I am related, therefore I am. (Phoebee). God-Life-Land (which connects in all aspects of life) deepens and enriches the experiences of the Alangan in Trinitarian consciousness.

The last chapter tackles the theoretical implications, creative summary, creative symbol and the suggestions.
Introduction

School represents the most critical context outside the family for the development of self-concept. An analysis of student/teacher perceptions of self-esteem related to students with and without disabilities reveals discrepancies between both groups. Three distinct areas of self-esteem underscore the development and impact on self-concept—academic competence, peer popularity and personal security.

Rationale

Recently a renewed focus has drawn researchers and educator alike to consider the influence of one’s self-concept as it pertains to a students’ personal experience of success. Hattie (2013) conducted a meta analysis of the influences in student achievement highlighting factors related to self esteem and perception of others. Historically and classically, Purkey (1988) states, “There is a growing awareness that all the perceptions we experience in the course of living, none has more profound significance than the perceptions we hold regarding our own personal existence—our concept of who we are and how we fit into the world”. It is one’s self-concept that helps to define the complicated and dynamic system of individual views, values and thoughts, which the individual cleaves to for their own existence. Purkey encourages educators to address the concerns of a positive self-concept in order to do away with the “negative self-talk” which leads to irrational views of oneself. The effects of self-concept reach educator’s area of concern, including academic competence, peer acceptance and general sense of self.

A large body of research has shown that children without disabilities have a higher self-concept globally and academically than their peers with disabilities however, studies suggest that students with disabilities compare themselves to non-disabled peers. Further, teacher perceptions of a student’s self-concept tend to be higher for average achievers and lower for students who struggle with academics. Teachers also tend to view higher achieving students as putting forth a higher degree of effort to situations and being harder workers. (Metzer, Katzir-Cohen, Miller, Roditi 2001).
Methodology

The Self-Esteem Inventory (SEI) developed by Brown and Alexander (1991) was adapted for the purpose of this study. The subcomponents selected for the comparative study were 1) academic competence, 2) peer popularity and 3) personal security. The student population consisted of a total 154 students in general education and in special education classes. Disability categories included behavior disorders, learning disabilities, mild mental retardation, other health impairments and autism/Asperger. The majority of students were receiving special education services in a resource room for grade level K-8th grades.

Overall Results

Teachers consistently reported typical students having the highest self-esteem in all subcomponents and students with behavior disorders as having the lowest self-esteem. Student reports paralleled the teacher reports.

References


Test-Based Accountability: A Civil Rights Issue?

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Abstract

The controversy over test-based accountability began with the passage of No Child Left Behind (NCLB) during the Bush Administration and has continued throughout the Obama Administration. NCLB holds schools accountable for student scores on standardized tests and sets goals for annual yearly progress, with sanctions for schools that do not meet the goals. The Obama Administration has given incentives to states to hold individual teachers, as well as schools, accountable by establishing the Race to the Top Fund, a competitive grants program, and also offering waivers on some of the requirements of NCLB for states meeting the Administration’s criteria.

When NCLB was originally passed, in 2001, it was supported by the majority of mainstream Republicans and Democrats in Congress. An unlikely coalition opposed it: conservative Republicans, who were concerned about federal control of education and liberal Democrats, who felt that the education of low-income and minority children would suffer as a result of the requirements.

The controversy (which is now about both testing and Common Core) has become more heated on both sides of the issue and is reflected in the current attempt to reauthorize the legislation. For conservative Republicans, test-based accountability is a cause célèbre and a symbol of federal intrusion in local decisions. Many others, both Republicans and Democrats, also oppose the emphasis on testing because of a concern that it weakens education; some parents have joined the “opt-out” movement and do not permit their children to be tested.
The Obama Administration and many mainstream Democrats and Republicans, however, continue to support testing requirements. Civil Rights organizations have also been particularly strong advocates of the testing requirements, which they view as essential to ensuring equality of educational opportunity for low-income and minority students. They make two main arguments: first, testing is essential to ensure that the achievement gap based on poverty is visible and, therefore, not ignored by policymakers and educators and, second, holding educators accountable for student test scores will strengthen education in high-poverty communities. The preponderance of research evidence, however, shows that both assumptions are questionable. Test-based accountability is having precisely the opposite effect from that hoped for by its advocates.

The presentation will examine the assumption that testing is required to ensure that policymakers and educators are aware of the achievement gap. It will draw on the vast research literature that shows the link between poverty and low achievement. A milestone of this literature is “the Coleman Report,” published almost 50 years ago, which shows the overwhelming impact of poverty on academic achievement. The presentation will also discuss the laws that were enacted 50 years ago in an attempt to alleviate the problem, most notably the Elementary and Secondary Education Act and the Higher Education Act. NCLB is not needed to demonstrate the link between poverty and low achievement; that link is all too apparent.

The main point of the presentation is to describe the ways that test-based accountability has exacerbated the already significant gap in opportunities available in high-poverty schools as compared to schools serving more affluent populations. The discussion will focus on the following findings:

1. The opportunities for a broad-based education have been diminished in high-poverty schools in order to free up time to cram for reading and mathematics tests. Especially in elementary school, the time spent on other subjects or activities has been reduced; in some cases, untested subjects—social studies, science, art, music—as well as in-depth projects have been completely eliminated.

2. The opportunities for the top students in high-poverty schools have also been diminished, both because they are denied access to a broad-based education and because teachers under extreme pressure to raise test scores have little time left for the students who they know will do well on the tests.
3. The opportunities for students in high-poverty schools have been weakened because the focus on test scores has added to the existing problems in recruiting and retaining teachers. Many teachers are concerned about the sanctions and negative image that might result from teaching in a low-performing school or prefer not to teach in an environment that is focused on test scores.

4. Perhaps the most serious outcome for high-poverty students is the increased segregation that has resulted from policies implemented in response to low test scores. Charter schools, the most visible of these, have exacerbated the already severe segregation in high-poverty schools. Recovery school districts, a more recent “fix,” create separate, non-geographical school districts composed only of low-achieving schools in a state, thereby segregating the high-poverty, typically minority students from other students. Brown v. Board of Education (1954) concluded that “separate educational facilities are inherently unequal.” The evidence of the past 50 years has continued to demonstrate the wisdom of that conclusion. The recent Supreme Court case, Texas Department of Housing and Community Affairs v. Inclusive Communities Project, Inc. (2015) might also be relevant to school segregation resulting as an unintended consequence of government policy. The Court found that “disparate-impact claims are cognizable under the Fair Housing Act”—“a shift in emphasis from an actor’s intent to the consequences of his actions.”

5. In addition to weakening education in high-poverty schools, the preoccupation with test scores has detracted attention from the underlying problem of poverty, the major correlate of low academic achievement.

Standardized test scores do not demonstrate meaningful academic benefits of test-based accountability. Although research findings for some programs do show small gains on high-stakes tests—the tests for which students have crammed--these gains are not sustained over the years. And when students are tested on the same material (typically reading and mathematics) using a different test, any advantage shown on the high-stakes test is no longer apparent. Moreover, the losses that have inevitably occurred from narrowing the learning experience are not accounted for in these studies.

Yes, testing is a civil rights issue. But test-based accountability, rather than strengthening equality of educational opportunity, may in fact be weakening it.
Title Submission: Teacher effectiveness in Trinidad and Tobago: The perceptions of the major stakeholders

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ABSTRACT

Research has shown that it matters who the teacher is. This study aims to contribute to the discussion on teacher effectiveness, but in relation to teacher effectiveness in Trinidad and Tobago, based on the perceptions of the major stakeholders in education. Findings have confirmed that strong pedagogy, commitment and dedication to the profession, caring, patience and good communication skills are traits which are valued in effective teachers. The study revealed that what the teacher does, positive or negative, can impact students; e.g., ineffective teaching can contribute to student indiscipline and disaffection with school. Stakeholders longed to see more ongoing professional development in schools, better teacher preparation which focuses on pedagogical skills; and the provision of adequate resources and facilities for teachers to aid their effectiveness.

Keywords: Perceptions, major stakeholders, effective teacher, teacher effectiveness
Introduction:

Albert Ramdin (2013) p. 1, the then Assistant Secretary General of the Organization of American States (OAS), speaking about education in Trinidad and Tobago said:

We must re-examine our priorities and our subsequent investments in our people. We are interacting and competing with counterparts from around the world, and the question we must ask ourselves is, are we on equal footing to compete in this age of advancing technology?

Steinbach (2012) p.75 laments the deteriorating standards of performance in both primary and secondary schools as reported by various newspapers in Trinidad and Tobago. There are increases in repetition rates, especially at the primary level; the low level of achievement of a significant number of children at the Secondary Entrance Assessment (SEA) examination (formerly the Common Entrance and 11+); and consequently a large cohort of children are entering secondary school totally unprepared. Other issues are the level of and the increase in school violence which continue to worry all citizens. This has raised questions about the commitment and competency of teachers and also about their preparation. (Ministry of Education, 2005, p. 42).

Bernard (2015) p. 13 supports the above concerns when he states the following with respect to education in Trinidad and Tobago:

Despite our annual commendation on the performance of our students at our high stakes tests – SEA, CSEC and CAPE, we are not getting value for money in education. With an annual budget of $10 billion representing about six per cent of GDP, there are too many schools under-performing, especially at the public secondary level.

There are dropouts unaccounted for at the primary and secondary levels and wastage of money on students who register for courses, courtesy GATE, but do not attend the classes or sit the exams. There is also a continuing reduction of functional literacy, even at the tertiary level and a prison population that is increasing exponentially.
Matthews (2013) p. 5, writing for the World Bank found that despite the high level of investment, quality of education in the Caribbean remains low. Pass rates for standardized tests in core subjects like English and Mathematics are less than 50%; many students lack basic skills in information and communication technology and other disciplines deemed critical for success in the workplace. What is even more worrisome are the reports of poor student Caribbean Secondary Education Certificate (CSEC) examination performance on test items that require critical thinking, analysis or communication. Despite eleven (11) years of formal education school leavers struggle to find employment. This situation begs the question, what is happening in classrooms in the Caribbean, including Trinidad and Tobago?

The implication of this challenge for Trinidad and Tobago is that teachers, the backbone of the education system, need to be effective in the classroom and facilitate students’ academic and life preparation.

Unfortunately in Trinidad and Tobago the violence in society has infiltrated many schools. According to the United Nations and World Health Organization’s Global Status Report (2014), Trinidad and Tobago is listed as number ten of the most homicidal countries in the world. In Trinidad and Tobago 77% of persons are killed by firearms and there are 35.3 murders per 100,000. The message that this may be sending to the youths is that life has no value and there is little purpose in working hard to achieve academically when you could be killed at any time.

This researcher feels that it is necessary to explore the concept of teacher effectiveness from the perspective of the main stakeholders in education, i.e., the students at all levels, teachers, parents, school and business leaders. The rationale for this is that if qualified teachers, graduates of the University of Trinidad and Tobago (UTT), the University of the West Indies (UWI), the Catholic Religious Education Development Institute (CREDI), the University of the Southern Caribbean (USC) and other teacher preparation institutions are in classrooms in Trinidad and Tobago, then effective teaching should become the norm. It is possible that the perceptions of teacher effectiveness as seen by the stakeholders are not in sync with what the teacher preparation institutions deem to be effective teachers. If this study yields relevant results, then the teacher preparation institutions can better align their programmes to accommodate the expectations of
the stakeholders and actually produce effective teachers who can positively impact student learning in all spheres of the education system.

Pretorius (2012) p. 310 contends that if teacher effectiveness in this complex era is the single most important school-based factor in student achievement, education reform movements should look anew at teacher effectiveness in all school phases and the factors contributing to effective teaching. The training that teachers receive is most surely one of the critical factors contributing to whether they would be effective or not. Teacher success is inevitably linked to good and effective teacher training.

Hunt (2009) p. 7 admitted that there is relatively little in the current literature about students’ views of teacher effectiveness. This study should fill this void and go a step further by soliciting the perceptions of other key stakeholders in education, apart from students, about teacher effectiveness in Trinidad and Tobago. This study looks at what an individual needs to do and to possess to become an effective teacher. The focus is not on teacher quality, but teacher effectiveness.

Research has shown that effective teachers (also referred to as outstanding, excellent, exemplary, good, competent, and highly skilled and master teachers) are vital to the improvement of the quality of education, school improvement and improving the chances for success for all students. (Darling-Hammond, 2009; McArdle, 2010; Arnove, 2010; and Christenburg, 2011). The teacher and the effectiveness of instruction are important variables which contribute to student success. Kelchtermans (2009) p. 258 puts it this way: Teaching is an act done by someone and it matters who the teacher is. The teacher is held to be the centre of, not only the classroom, but also the educational process.

**Research Aims and Questions:**

The research objectives are to determine:

1. The perceptions, and qualities of effective teachers;
2. how effective teaching impacts students at all levels of the education system;
3. some activities that teachers engage in which cause them to be ineffective
4. how exposure to ineffective teachers impacts students
5. suggestions to ensure teacher effectiveness in Trinidad and Tobago classrooms

Based on the findings the qualities and competencies that constitute teacher effectiveness in the Trinidad and Tobago context should be revealed. In addition the teacher preparation institutions should be able to align their programmes with the competencies and qualities which are valued by the main stakeholders. Ultimately, the society should benefit as students will be taught by effective teachers who possess the competencies valued by the society and necessary to prepare students for 21st century living.

Methodology:

This study is a qualitative descriptive research. Descriptive research is also referred to as survey research and it determines and describes the way things are. (Gay, Mills and Airasian, 2006, p. 159). The researchers state that: Typically descriptive studies are concerned with assessing attitudes, opinions, preferences, demographics, practices and procedures. Qualitative descriptive research focuses on the participants' views of a situation; whereas with quantitative, the researcher’s view is presented. The data for this study were collected through a self-report survey approach which required participants to respond to a series of statements or questions about themselves. (Gay and ors., 2006, p. 161).

The population used in this study comprised business leaders and parents from the society; school leaders, teachers and students from ten primary and ten secondary schools in Trinidad and Tobago; and tertiary students from the University of Trinidad and Tobago, the University of the West Indies, St. Augustine and the University of the Southern Caribbean. Both male and female participants were selected and they ranged from 10-50 plus in age.

While the ideal would have been to have a balance of male and female participants, this was not possible. For example, in coeducational schools this researcher had no control over the gender mix in the classroom. For the non-school participants, e.g., parents and business leaders, this researcher made an effort to strike some gender balance, but females were more inclined than males to complete the questionnaires. This was not seen as a major problem because this researcher is of the view that to plan in advance for gender equity is somewhat artificial; in real life there is no gender equity in institutions or in societies. Overall female respondents (67%) completed the questionnaires and males (33%).
In this study purposive sampling was used so as to determine who would be best able to provide the information required. In purposeful sampling researchers intentionally select individuals and sites to learn or understand the central phenomenon. Gay and ors. (2006) p. 114 observed that because many potential participants are unwilling to undergo the lengthy demands of participation, sampling in qualitative research is almost always purposive. This observation by the researchers was borne out in this research as a few students and some teachers started to complete the questionnaires but did not finish. This is because the questionnaire required time spent in providing thoughtful responses.

The sample comprised seven hundred and eighteen (718) participants (business leaders – 13; parents – 45; school leaders – 20; primary and secondary teachers – 200; and students (primary, secondary and tertiary – 440).

Prior to the data collection process, this researcher sought and received the necessary Ministry of Education approval for the study and the use of the schools which were selected.

Primary data collection was undertaken through the use of seven (7) questionnaires comprising open-ended questions which were structured to suit the developmental ages of the participants. These questionnaires were used as the main data collection tool so as to give the participants the opportunity to respond in their own time. However, Fraenkel et al (2006) p. 126 note that when questionnaires are used for data collection, unclear or seemingly ambiguous questions cannot be clarified and the researcher has no chance to expand or react verbally to a question of particular interest or importance. This was borne out by this researcher when the questionnaires were personally administered at one of the school. The students asked questions and the researcher was able to clarify. It is unfortunate that the students from the other schools surveyed did not have this opportunity.

Woods (2006) p. 79 admits that questionnaires are not among the most prominent methods in qualitative research because they commonly require subjects to respond to a stimulus and thus they are not acting naturally. However, they have their uses, especially as a means of collecting information from a wider sample than can be reached by personal interview. The questionnaires used in this research presented the participants with limited stimulus as the responses required
them to articulate their own words in response to the open-ended questions asked. There were no prompts and the items used in all of the questionnaires required thought on the part of the participants so that meaningful responses could be given.

The questionnaires used in this study were piloted during the months of November, 2013 and February 2014. After this process the questionnaires were modified and finalized for use during the data-collection phase of the study with effect from May to July 2014. The return rate of the questionnaires overall was 57%.

This researcher distributed the questionnaires to all schools personally except for the Tobago schools; these questionnaires were sent by TT Post. This researcher also met with the principals, vice-principals, or dean of the schools in Trinidad. The researcher was in constant telephone contact with the principals of the schools in Tobago. Most of the principals recognized the value of the research being conducted by this researcher and the questionnaires were administered within the shortest space of time – at one primary school the questionnaires were administered immediately and were ready for collection in the afternoon. In other schools the questionnaires were administered within one day, one week and at most two weeks.

The completed questionnaires were collected from the various schools as they became available and collection was arranged by this researcher to coincide with the distribution of some of the packages to the other schools. It is to be noted that this researcher in no way coerced the participants and the exercise was totally voluntary.

The questionnaires were administered by school personnel except in the case of one school where the Vice Principal invited this researcher to come in at a scheduled time to administer the instrument. School leaders and teachers completed the questionnaires on their own time. In order to facilitate data collection in the Tobago schools, this researcher hired a temporary research assistant who administered the questionnaires at one of the schools and collected the completed questionnaires from the other school and posted them to this researcher.

This researcher wanted to reward the students who participate in this research and to this end
Packages were prepared for the school leader or teacher assigned to assist with the research; and for the students who participated. Items bearing the logo of the University of Trinidad and Tobago (UTT) where the researcher works (items such as bags, note pads, pens, key rings were given to the school leaders and the students were given folders, and UTT pencils purchased by this researcher. In one unsponsored primary school this researcher donated a set of reading books and reference books for the library. The appreciation packages for the Tobago schools were sent by TT Post courier mail.

Secondary data collection was done by the examination of archival documents and records where necessary; and an overview of the relevant literature.

**Theoretical Framework:**

Researchers are discovering what parents have always known, it matters who the teacher is. Haycock (1998) p. 4 said that parents have always known that it matters a lot which teachers their children get. That is why those with the time and skills work so hard to assure that, by hook or by crook, their children are assigned the “best” teachers.

Witcher, Jiao, Onwegbuzie, Collins, James and Minor (2008) p. 281 offered this definition of effective teachers: effective teachers are described as those who have strong cognitive skills, are subject specialists, and are able to vary their teaching strategies to meet the needs of their students.

Acheson and Gall (2003) p. 18 define the concept of effective teaching in this way:

> Effective teaching involves the ability to provide instruction that helps students to develop the knowledge, skills, and understandings intended by curriculum objectives, create an instructional climate that causes students to develop attitudes toward school and self, adjust instruction so that all students learn, irrespective of their ability, ethnicity, or other characteristics, manage the classroom so that students are engaged in learning all or most of the time, make sound decisions and plans that maximize
students’ opportunity to learn, and respond to initiatives for curriculum change so that the new curriculum’s intents are fully realized.

Williams, Sullivan and Kohn (2012) p. 107 admit that effectiveness is an elusive concept. The word seems to characterize a teacher’s worth and ties directly with being successful in the classroom. Effective and successful are synonymous in that they indicate achieving desired results.

It is important at this juncture to point out that this researcher is not suggesting that teacher effectiveness is the only contributor to student academic and life achievement. Rather, teacher effectiveness is the focus of this research but there are many other factors involved in this process.

Stumbo and McWalters (2011) p.10 explain that over the years there has been a shift in focus – there is now an emphasis on teacher “effectiveness” rather than on teacher “quality”. Teacher quality largely refers to how well teachers know their content as measured by the post-secondary courses they have taken. The shift towards effectiveness focuses on how well teachers perform with students. Rather than measuring inputs (such as how many academic degrees the teacher has or how long he/she has been on the job), the outcomes of a teacher’s work should be measured to see how effective the teacher is (the extent to which the educator has met crucial student needs, such as an increase in student achievement). Stumbo et al (2011) p. 10 contend that this is analogous to the shift from paying attention to student inputs (how many courses a student has taken, or seat time) to looking at outcomes (how much the student knows and can do, or performance).

Kennedy (2008) p. 59 defined teacher effectiveness but, like Stumbo et al (2011) placed it as a component of teacher quality. Teacher quality has different meanings depending on the context and the user. It can mean to some a teacher’s test scores; a teacher’s credentials; their classroom practice and student achievement; or teachers’ beliefs and values. However, Kennedy (2008) p. 60 suggested that the term should be “teacher qualities” and not “teacher quality” given that
there are various dimensions of the concept teacher quality. The researcher therefore proposed three (3) broad groupings of teacher qualities:

- Personal resources (attitudes and personality traits)
- Performance (what teachers actually do on a daily basis)
- Effectiveness (how good teachers are at raising students’ scores on achievement tests)

Kennedy (2008) p. 61 went on to explain that even if reliance were to be placed on a very narrow definition of effectiveness there are still to be found multiple qualities within the term. Teachers might be more effective in some subjects than in others, or they might be more effective with some types of students than with others. Darling-Hammond (2009) p. 2 also recognizes that a high quality teacher in one circumstance may not be a high-quality teacher for another. An example of this would be subject-specialists teacher who are only effective in their area of expertise.

Pretorius (2013) p. 238 asserts that the term “teacher quality” subsumes teacher effectiveness, qualifications, professional capacity, performance, et cetera. The definition is brought down to specifics by delineating teachers’ contributions to student outcomes as final criteria.

Darling-Hammond (2009) p. 1 believes that standards have been rising for teachers. The average teacher today is in the top half of his/her college class. Some states are choosing from the top third. This researcher takes issue with this type of view on the selection of teachers. A high academic achiever may not be a “good” or “effective” teacher. Even with the best of preparation the passion and enthusiasm may not be present, and that person may not be effective in the classroom. Teacher selection should not be based solely on academic scores. Credence for the above view is found in Goldhaber (2007) pp. 766 who observed that despite the testing, many teachers whom we might wish were not in the teacher workforce based on their contribution toward student achievement are nevertheless eligible because they score well on their licensure test. Conversely, many individuals who would be effective teachers are ineligible due to their poor test performance.
Added to the above, Goodwin (2011) p. 80 warns that being credentialed, being experienced or holding an advanced degree is no guarantee of effectiveness. Rather, leaders must look more deeply, in other words, they should look below the surface at the intangibles. Support for this approach is found in Wong and Wong (2009) p. 5 who agree that a “highly qualified teacher” may not be an effective teacher. Effective teachers are the ones who produce student learning and achievement, not highly qualified teachers. Therefore, you hire for qualification then train for effectiveness.

It is this researcher’s position that it is important for all students to be exposed to high quality education and effective teaching. Clifford (2010) p. 64 agrees and referred to the UNICEF (2002) p. 5 statement that access to education of a poor quality is tantamount to no access at all; the quality of education children receive is critical to genuine learning and human development; and quality is influenced by what goes on in the classroom and beyond.

Goodwin (2011) p. 79-80 said that while good teachers possess a few quantifiable attributes (such as verbal and cognitive ability; adequate knowledge of their content area and of how to teach their subject areas). Great teachers also possess many intangible attitudes which are sometimes overlooked. Some of these intangibles are: the belief that all students can learn, belief in their own abilities/sense of efficacy and an ability to connect with students. A study by Cornelius-White (2007) found that teachers warmth, empathy and “non-directivity (student initiated and student regulated activities), strongly correlated to higher levels of student participation, motivation and achievement. Therefore, the softer or intangible qualities of teachers do matter and should be addressed in teacher preparation programmes.

O’Brien (2010) p. 114 advises educators to let students know that they care about them. The idea is not new, but still teachers have a problem with how to care and show that they care. The researcher states: they (students) would not care to learn until they learn that you (the teacher) care.
Lumpkin (2007) p. 159 believes that:

Caring teachers nurture relationships with students through affirming students’ efforts and talents. These teachers realize that learning is much more likely to occur when positive, reinforcing comments outnumber critical comments. While teachers will, at times, provide constructive critiques of the performance of students, caring teachers persistently reward the efforts of students, their learning from mistakes, and their not giving up even though they sometimes struggle to learn. Caring teachers’ expectations contribute to students’ feeling that their efforts will be rewarded as learning outcomes become more meaningful.

Dozier (2009) p. 8 stated that when students see that teachers care about them personally and are willing to spend time helping them succeed, teachers build trust between themselves and their students; and the students are willing to work harder to succeed, if for no other reason than to please the teacher who wants them to succeed. Believing in students’ abilities to achieve is the theory of the Pygmalion effect or self-fulfilling prophecy and when applied to education posits that if teachers continuously show that they believe in students’ abilities, almost all students will respond with greater effort.

A study by Ribie-Davies (2007) compared the classroom practices of teachers categorized as having high expectations with teachers categorized as having low expectations. It was reported that the teachers with high expectations spent more time providing a framework for their pupils’ learning, provided their pupils with more feedback, questioned their pupils using more higher-order questions, and managed their pupils’ behavior more positively. In effect, it appears that teachers with high expectations are purposively more committed through their teaching to creating a classroom climate within which pupils must make greater progress.

Hayes (2006) p. 47 recognized that effective teaching is not a paper and pencil exercise or a
vehicle for governments to flaunt policy achievements. It profoundly affects the lives and welfare of teachers, assistants and pupils. He says:

The role of teacher encompasses more than the act of teaching (significant though it is). It also involves relating to and influencing a large number of people, particularly the children and young people with whom teachers have daily contact. Every word spoken, decision taken and action witnessed makes a difference to their lives and welfare. Over succeeding years, when much of school life is forgotten, men and women will not only continue to benefit from the good teaching they receive, but also from the moral and ethical example they received from teachers.

It is to be noted that students are well able to determine if their teachers are effective or not. They know when the teacher is making an effort to teach well, whether the teacher has planned for instruction and whether they care. When students are given “busy work” they recognize that their time is being wasted and can lose the zeal to learn. This is why many students in Trinidad and Tobago are placed in private lesson classes and that culture of private lessons, a costly venture for parents, has become endemic in the education system in Trinidad and Tobago.

Goa (2014) p. 104 has stated: Children naturally love to learn, but might not like to be taught in certain ways. Teachers’ improper ways of teaching might make a child shut down his or her willingness to learn, which is called not-learning. Not-learning does not refer to an incapability to learn, but is rather a choice a child intentionally or unintentionally makes to resist learning.

Clifford (2010) p. 70 recognized that the views of teachers and students are essential in making decisions pertaining to education. The reality is that not only students and teachers’ views of effective teaching are needed, but the perceptions of all major stakeholders; and it is
this deficiency which this study hopes to address, and therefore profile an effective teacher in the Trinidad and Tobago context.

Delaney (2008) p. 1 has observed that traditionally high school students have not been given many opportunities to offer their insights and comments on education and schooling. In fact, there appears to be a dearth of information regarding high school students’ perceptions of effective teachers. Delaney (2008) p. 1 describes these views or perceptions as “authentic sources” as students personally experiences classrooms firsthand. Soo Hoo (1993) p. 388 is of this view also and states that:

Somewhere educators have forgotten the important connection between teachers and students. We listen to outside experts to inform us, and consequently, we overlook the treasure in our own backyards: our students. Students’ perceptions are valuable to our practice because they are authentic sources; they personally experience our classroom firsthand.

Wang, Gibson and Slate (2007) p. 293 found that students can blossom or wither because of the affects, behaviours and methods of a particular teacher. A teacher can positively or negatively impact students both in and outside the classroom. How one teacher treats or teaches a child has rippling effects that permeate and continue throughout the individual’s educational journey. There is no denying that it matters who the teacher is.

Chetty, Friedman and Rockoff (2013) p. 4 revealed that a good teacher not only improves a child’s test scores in the classroom but also enhances his/her chances to attend college, earn more money, live in a better neighborhood, avoid teenage pregnancy and save more for retirement. Furthermore, effective teaching tended to be effective with all types of students from all types of backgrounds; likewise, ineffective teaching tended to be ineffective with all types on students from all types of backgrounds.

Schacter and Thum (2004) p. 411 have observed that in the last decade a series of studies have confirmed that access to an effective teacher is the single most important school-related
factor responsible for increased learning. The quality of the teacher, then, is the most important school-related factor and can be more powerful than many out-of-school factors. Phillips (2011) p. 18 lends support to this when she says that great teachers are the most important school-based ingredient for student success.

Findings:

Perceptions of an effective teacher

The main stakeholders in education gave their perceptions of an effective teacher (Figure 1). Male (63%) and female (72%) stakeholders perceive an effective teacher as one who possesses strong pedagogical skills. This encompasses the following:

- Engaging in advance planning
- Make learning fun and enjoyable
- the ability to explain content clearly
- Being able to complete the syllabus
- Using a variety of instructional strategies
- Using relevant teaching and learning aids during one’s lesson

![Figure 1 Stakeholders’ perceptions of an effective teacher](image-url)
Another perception of male (42%) and female (40%) stakeholders is that effective teachers should be committed or dedicated to the profession and be willing to go the extra mile in the exercise of his/her duties. It was felt that teachers should be willing to help children after school at no charge.

Male (25%) and female (35%) stakeholders perceive an effective teacher as one who cares about his/her students and who is able to develop the student holistically. In addition it was felt that caring teachers should be able to reach their students emotionally and touch students’ hearts.

**Qualities of effective teachers:**

Stakeholders went on to identify qualities which they perceive an effective teacher should possess. (Figure 2).

![Figure 2 - Stakeholders’ perceptions of the qualities of an effective teacher](image-url)

**Figure 2**  Stakeholders’ perceptions of the qualities of an effective teacher
Male and female stakeholders (58% and 49%) believe that teachers should be committed to the profession; possess strong pedagogical skills (53% and 49%); be caring (54% and 44%); have patience (44% and 33%); and possess good communication skills (39% and 44%).

**How students benefit when they are taught by effective teachers:**

Stakeholders next examined how students benefit by being taught by effective (Figure 3). Stakeholders (male, 69% and female, 71%) recognized that children taught by effective teachers develop a love for learning, experience improved academic performance, learn taught material and achieve excellence. They understand the material which is taught, their general academic performance would improve and they will go on to get good grades and have examination success.

![Figure 3 Stakeholders’ perceptions of how students benefit from being taught by effective teachers](image)

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![Figure 3 Stakeholders’ perceptions of how students benefit from being taught by effective teachers](image)
Male (55%) and female (48%) were of the view that students’ behavior would improve considerably if they were to be taught by effective teachers. There would be less indiscipline in schools and in society.

Male (40%) and female (41%) of stakeholders feel that children exposed to effective teachers are motivated and would want to come to school thereby reducing the dropout rate, thereby improving their life chances. Students would develop into well-rounded citizens who would be productive in the work force and become law-abiding, patriotic citizens.

Activities that cause teachers to be ineffective:

Stakeholders acknowledged that some teachers engage in activities which cause them to be ineffective (Figure 4).

![Stakeholders' perceptions of activities that cause teacher ineffectiveness](image)

**Figure 4  Stakeholders’ perceptions of activities that cause teacher ineffectiveness**

The major activities identified were teacher indiscipline (male 53% and female 66%); tardiness (male 58% and female 55%); and poor pedagogy (male 23% and female 27%). Teacher indiscipline includes the following activities/behaviours:
Teacher absenteeism was identified as the most serious form of indiscipline which teachers engage in. The students explained that while some of the teachers do not come to school or to class, others are present at school but do not show up for their classes as timetabled. In addition, if some of the teachers come to class, albeit late, there is an absence of instruction, so it is better if they are not there.

Stakeholders recognized that teachers tend to engage in tardiness (male 58% and female 55%). Teachers come to work late, and go to their classes late; they are late marking and returning scripts, and they do not meet deadlines for the submission of marks. The students said that some teachers are too lazy to come to class and even to school; they are tardy coming to class and they much prefer to “lime” (socialize) in the staffroom.

Stakeholders identified poor pedagogy (male 23% and female 27%) as an activity which causes teachers to be ineffective. The reality is that some teachers just do not teach for understanding/comprehension they just do not have the skills to break down material and explain properly. Teachers are accused of spending whole periods calling out notes from textbooks in a monotonous tone; they do nothing to make lessons fun; they rush through the syllabus and move on without ensuring that all students understand the concepts being taught. Students revealed that teachers gloat that even if they do not work they still get paid. They assign students busy work and retreat to the staffroom, thus leaving students unsupervised. Some teachers have been accused of teaching the wrong information.

Instead of teaching when they go to their respective classes some teachers engage in several time-wasting activities some of which are:

- Showing favouritism
- Teacher absenteeism
- Being abusive to students
- Engaging in time wasting activities
- Using students to run their personal errands
- Frequent quarreling with students and embarrassing them
• Reading books in class
• On social media in class
• Eating during class time
• Playing games on phones
• Talking about their life experiences
• Answering cell phones and texting during class

When some teachers come to class they sit and do nothing and at times engage in small talk with students and this causes non-productivity and some of the talk is “vicey” talk, which is inappropriate to have with students. When some teachers go to their classes they appear to be under the influence of alcohol.

*How students are affected when taught by ineffective teachers:*

It was recognized by stakeholders that when students are exposed to ineffective teachers they are impacted negatively. (Figure 5).

Male and female stakeholders identified several negative consequences for students: delinquency (43% and 38%); academic failure 50% and 55%); illiteracy (56% and 64%); students are demotivated (38% and 49%’ and some students may become dropouts (32% and 38%).

![Figure 5 How teacher ineffectiveness impacts students](chart.png)
Suggestions to ensure that most teachers are effective:

Stakeholders next expressed their perceptions of what can be done to ensure that most teachers are effective (Figure 6).

Retraining (male 46% and female 45%); provide teachers with the necessary resources (male 41% and female 20%) monitor constantly (male 34% and female 30%) and change the recruitment system (male 42% and female 33%).

It was felt that all teachers in the system should participate in mandatory in-service training which could be held as part of professional development activities. It was suggested that the initial training process for teachers should be properly done and that adequate resources be provided for teachers and facilities improved.

Another suggestion was that the recruitment system should be changed and all teachers entering the system needed to have a teaching qualification such as the Diploma in Education (Dip. Ed.) which is offered by the University of the West Indies, St. Augustine, School of Education.

Figure 6  Stakeholders’ suggestions to ensure that teachers are effective
Discussion and conclusion

The essence of this study is to identify, from the perspective of the major stakeholders, what an effective teacher looks like in the Trinidad and Tobago context.

The capacity to engage in good pedagogical practice was the most frequently identified expectation associated with an effective teacher. The teacher who stands in front of the class must be someone who knows how to teach, explain content properly and help children to learn. One can question the purpose of a teacher being in the classroom if no learning is taking place.

Therefore, an effective teacher is someone who can really teach. A study of seventeen (17) schools in four states in the United States of America examined the effects of longer school days giving teachers more time in class as not being as effective as the improvement of the quality of instruction. Ferguson (2015) from the Centre on Education Policy said: any effort to expand learning time should go hand in hand with a plan for improving the quality of instruction.

The importance of good teaching is supported by Ferriter (2011) p.84 who said that even with the presence of various digital tools that can be used in the classroom, they are useless without teachers who are armed with good instructional skills. Good teaching trumps good tools every time.

Ferriter (2011) p. 84 cited Nussbaum-Beach (no year given) who said that students sitting in high-tech classrooms armed with interactive white boards, iPods, and handheld video cameras, but staffed by teachers who can’t craft lessons that integrate the skills needed for success aren’t any better off than their counterparts in unplugged classrooms.

Good pedagogical practice involves knowing how to teach one’s subject area, how to teach for understanding, how to prepare one’s lessons to meet the needs of the various learners in one’s class and how to assess the different learners in one’s class. It is not only about instructional practice. It also needs to be stressed that having higher qualifications in a subject do not necessarily transfer into a person’s capacity to teach that subject for understanding.
The stakeholders identified several qualities that effective teachers should possess. The most frequently cited qualities were: commitment, strong pedagogical skills, caring, patience and good communication skills.

Commitment refers to the level of dedication which one has towards one’s job or according to the stakeholders, one’s willingness to go the extra mile. Too many teachers in the school system in Trinidad and Tobago view teaching as only a job or a pay cheque and they lack passion for the job. Given this mindset, these teachers do not care about their charges and do not care if their students learn.

Johnson (2011) believes that student commitment depends on teacher commitment – the researcher suggests that:

When the teacher says, I am the one that makes learning possible in the classroom and I am committed to make it happen. And the student says, I will do everything that I can to learn. I am ready to learn. That is when the magic of learning really happens.

An important quality identified by stakeholders is a teacher’s capacity to care. Caring will ensure that a teacher exercises patience, and that teacher will display integrity by being fair to his/her students. A caring teacher is committed to the welfare of his/her students, will want them to learn and therefore will exercise good pedagogical skills. In addition caring will permit the teacher to be able to exercise good communication skills, in speaking and listening, to his/her students. A caring teacher will generally have a student-centred orientation.

A teacher who does not care about his/her students will not have the patience to teach them well and this spells a lack of commitment. This researcher views an uncaring attitude being linked to a lack of integrity. A teacher’s main responsibility is to ensure that their students learn and even if the job as a teacher is to be used as a stepping stone to other things, then at least that job should be done well. This is not happening in many schools in Trinidad and Tobago.

Lumpkin (2007) p. 2 explains this about caring:
Teacher-learner relationships are founded on the fundamental human need of knowing that another person genuinely cares. Students know when they are recognized, understood, and respected for their unique abilities and interests by their teachers. Teachers are effective when they deeply care about the learning of each student.

Lumpkin (2007) elaborates by saying that when teachers care they believe in their students’ abilities and teachers demonstrate that they care by placing the learners at the centre of the educational process. Thus teachers are able to engage students actively in the learning process and learning becomes fun, meaningful and enduring for the students.

Teachers need to have good communication skills so that they can positively interact with their students, the students’ parents, colleagues and management. In addition having good communication skills would indicate to the students that this teacher is approachable and is one who can listen. Students have to know that they are able to go to their teacher for clarity or advice, and that they (the students are welcomed by the teacher).

The stakeholders recognized that when students are taught by effective teachers they benefit in several ways:

♣ Learning occurs
♣ Students are motivated to achieve
♣ Students cultivate a love for learning
♣ Students tend not to engage in delinquent behavior
♣ The country benefits as students turn out to be good citizens

It was recognized that when teachers are ineffective students are disadvantaged in many ways. Students experience academic failure; they become disaffected with school and eventually drop out; and they tend to engage in delinquent behavior. What is really happening is that the educational institution is not achieving its goal, as student learning is not taking place. This researcher sees this as a failed system.
Stakeholders identified several activities which teachers engage in that cause them to be ineffective, e.g., teacher indiscipline (e.g., absenteeism, showing favouritism, being abusive to students, engaging in time wasting activities).

Teacher absenteeism simply means that the provider of education in an institution of learning is not around to do his or her job. This is a serious problem and the Education for All Global Monitoring Report (2015), p. 205, says that: teacher absenteeism takes a toll on student learning by reducing the number of hours that children are actually taught.

In Trinidad and Tobago teacher absenteeism is not only about a teacher taking legitimate leave available to him/her under the terms and conditions of service, e.g., sick leave, casual/business days. Rather, it extends to teachers being present in the school but absent from classes. Some teachers simply stay in the staff room and do not go to their classes. This researcher would like to extend teacher absenteeism to the practice where teachers may be forced to go to class but they do not teach. There is an absence of instruction as teachers engage in a lot of time-wasting activities, as identified by the students in this study. The teachers are busy on social media, communicating on their cell phones, marking assignments or are outside of the class chit-chatting. This means that there is an absence of supervision and an absence of teaching. This practice is not unique to Trinidad and Tobago but is a problem being faced in many developing countries such as Ecuador, Kenya, India, Pakistan, Papua New Guinea, Zambia and South Asia (World Bank, 2004).

Because of poor administrative planning some teachers are absent as they have to attend to official duties, e.g., workshops, seminars and meetings. However, one questions the rationale for scheduling meetings and workshops during the term and during class hours. Workshops should be conducted during the school vacation periods and meetings can be held after school is dismissed. Given the school culture in Trinidad and Tobago having meetings after school would be a problem as many teachers leave the school compound when the students are dismissed or at the end of their last teaching period for the day. However, there should be specific hours of work for teachers; and it should be specified that they need to stay on the compound.
In terms of the vacation periods: Easter, August and Christmas, teachers tend to forget that they are on paid vacation and should be attending to school business. Rather, many of them view these vacation periods as sacrosanct and their own by right, and the teachers’ union tends to facilitate this belief. The Ministry of Education in Trinidad and Tobago should take the lead in amending the Education Act to explicitly state that teachers are on duty during the vacation periods and if they do not wish to be they should apply for vacation leave. Teachers’ vacation leave days need to be clarified just as their sick leave and casual days are, and in the way in which vacation leave for public servants is specified. So based on a teacher’s years of service s/he may be entitled to 21 days (1-10 years’ service); 28 working days (10+ years of service) or 35 working days based on one’s salary range. These vacation days should not be approved during term time, except in emergencies.

If the above method were to be utilized then the authorities would be better able to monitor their teachers and get replacements or substitute teachers.

Students are the biggest losers when their teachers choose to be indisciplined. Children need to be supervised at school. When teachers are tardy going to class or are frequently absent, children are idle and they get themselves involved in many deviant acts of mischief, which can graduate into outright indiscipline and even violence. Added to the fact that students have become indisciplined, they are also not engaging in formal learning, they are doing badly in tests and examinations and they may be illiterate. This causes them to have a feeling of a sense of failure; in addition they feel less worthy because their teachers are not coming to class; then their self-esteem and sense of motivation will be diminished. These students will eventually become angry and lash out at society; in the school they become bullies, disruptive in class and eventually drop out voluntarily or forced out through frequent suspensions. Without an education and lack of training in any skill some of these dropouts may become menaces to the society as they turn to a life of crime. Those who are able to secure employment can expect only minimum wage and many will not be productive workers as the one thing they would have learnt from their teachers is an unhealthy work ethic.

Shaw, Conti and Shaw (2013) p. 34 explain that the students who become disaffected with school and drop out become at-risk because of various societal factors, such as chemical dependency, teenage pregnancy and poverty.
Kassam (1989) p. 531 explains that literacy empowers and to be illiterate is to be disempowered and marginalized. Pedriana (2010) p. 78 supports this and listed several factors which he calls the “inestimable costs of illiteracy”. These include: the inability to attain higher levels of education; the risk of imprisonment; the cost to a country when it cannot produce a workforce capable of addressing the increased demands of a society that must compete globally. In addition people with low or marginal literacy are more likely to be unemployed and therefore less likely to be covered by health insurance, thus becoming a burden on the State and taxpayers. Illiteracy even impacts the effective functioning of democratic principles as an illiterate electorate cannot sort through printed material and make judgments based on deep knowledge. Even the act of voting itself requires the ability to read and follow procedures necessary to make a vote count. So there may be many “spoil votes” in various polling stations. Illiteracy causes its victims to follow a path of violence and aggression as they engage in high-risk behaviours that often land them on the wrong side of the criminal justice system. It can be seen that lack of a proper education and illiteracy have crippling, lifelong effects.

It is important for teachers to undertake mandatory professional development activities during the vacation periods; and for principals to monitor their teachers closely in terms of their performance in their classrooms, and their punctuality and regularity. Principals can assume the role of instructional coaches and help their teachers to improve their pedagogical skills by visiting them in their classrooms, unannounced, and assess their pedagogical skills. In addition, the provision of necessary resources is vital and there should be proper facilities for teachers and students at schools.

The provision of resources and improvement of physical facilities are imperatives and cannot be over-emphasized. For example, it is interesting that secondary students are given laptops, but class teachers are not; a laptop for every department is not adequate. If teachers want to guide students on the proper use of laptops for learning they too must have access to laptops at the school. Granted, there may be a teachers’/staff’s computer lab in schools, are there sufficient computers for every teacher? This researcher feels that all teachers should be given laptops/tablets for use in the school, they should not be taken home. With this arrangement if a substitute teacher comes to work on any given day, that person will have access to the laptop/tablet and material relevant to the lesson including student assessment records. In addition
there would need to be Internet access in all classrooms so that the use of laptops can be integrated into lessons.

In terms of other resources all classes should have a proper chalk board, notice board for displaying students’ work and a white board; chalk and markers should be readily available. Teachers should have access to all of the various materials which they would need to make teaching and learning aids. In many instances this is not happening and some teachers have to purchase their own materials.

In some schools teachers have no access to educational journals. The school library is equipped to cater for the needs of the students, but the school is a learning community and academic staff should be able to access online journals, research databases and other materials. In addition as a learning community teachers should be encouraged to collaborate and engage in action research at the classroom and school levels.

Stakeholders were of the view that principals and other Ministry of Education officials should monitor and discipline delinquent teachers. No more should teachers be tardy in regularity and punctuality, not attend their classes, fail to mark scripts and meet deadlines. Yet, these same teachers successfully obtain part-time employment to mark the National Test for primary students and the Caribbean Examination Council (CXC) examinations for secondary students. Principals need to identify delinquent teachers and help them to reform their practice and attitudes and recommit to the profession, or recommend disciplinary action and/or dismissal if necessary. The lives of children are at stake.

Stakeholders want to see a change in the recruitment system used for teachers. It was suggested that all teachers should enter the profession armed with a Diploma in Education as offered by the University of the West Indies. No longer should teachers be sent to schools without having formal teacher training, with emphasis on strong pedagogical skills.

What would be useful is if the teacher preparation institutions can adjust the programmes to focus more on pedagogy (practical instruction) than on theory. Trainee teachers need more practice in pedagogy in a real-world situation and not simulated. Less attention needs to be placed on reflective practices and more on developing the softer skills in teachers, caring, good communication, patience and empathy; and on introspection more than reflection.
Trainee teachers should be sent to schools from the first year of their training. In year one they should go to private/independent schools in Trinidad and Tobago and observe how that system is structured. This can be for a period of one month. In years 2 and 3 they should be sent to government schools for a full term; and in year 4 for two terms.

Trainee teachers should have maximum exposure to hands-on teaching and be given the opportunity to apply their theoretical learning in real world/authentic situations.

**Conclusion:**

This research has attempted to profile an effective teacher based on the perceptions of the major stakeholders. It was expected that an effective teacher should possess strong pedagogical skills, which would include the teacher having strong content knowledge, being able to explain work for clarity, be willing to reteach if students do not understand and have the capacity to engage in relevant assessment methods. However, commitment and dedication overshadowed good pedagogy as a necessary quality. In addition an effective teacher should be kind, caring, possess good communication skills and be able to motivate students to learn, develop a love for learning, have high expectations for his/her students and also possess good pedagogical skills. Added to this the teacher should not engage in indiscipline and must be punctual and regular for work.

Teacher preparation programmes tend to focus on the theory of teaching and trainees are not given sufficient hands-on exposure in the classroom. Yes, they do have classroom encounters, but not enough and they seem to lack the capacity to transfer the theory taught into practice. While there is focus on producing a reflective practitioner, trainee teachers need to be guided in the art of introspection. Teachers should look at their attitude to their jobs, contribution to student learning and their attitude to their students. If as a teacher your students are not learning and are dissatisfied with your performance, then there is definitely a problem and that teacher should rethink his/her continued presence in that classroom.

A teacher must model to students positive practices such as efficiency, integrity, diligence and passion for one’s job or subject area. Students should want to come to class. No action on a teacher’s part should cause students to become so demotivated that they want to drop out of school.
A teacher needs to always remember that he/she is preparing the next generation and that teacher would be living in that world. Children should be given a fair chance to achieve their fullest potential and not be stymied by a negative academic experience. Some children are facing many challenges at home due to socio-economic and other factors, school is their escape and they should not be subjected to negative experiences there also. To ensure that this happens principals need to accept the challenge and become genuine guardians of students by ensuring that teachers attend their classes and teach the students properly so that learning can occur.

It is hoped that the perceptions of the stakeholders in education have provided an opening as to what is valued in teachers and the creation of an effective teacher in Trinidad and Tobago.
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Abstract:

The Japanese English language education system and its policies have often been the center of much debate and discussion between administrators and teachers. Those with vested interests in the system often decry the many "lip-service" changes in curriculum and this, coupled with comparatively low scores on international standardized tests, leads many to conclude that something is simply not working. Furthermore, despite the fact that the subject of English language in Japan is compulsory from junior high school, the low communicative abilities of young Japanese English language students should be cause for serious examination and reconsideration. The Ministry of Science and Education (MEXT) has set guidelines and goals for the communicative ability (MEXT, 2011) for students from junior high school through university and this poster session will focus on the actual amount of communicative learning and teaching which takes place, in English, within the junior high school English classroom by surveying both
students and teachers concerning their usage of English in the classroom. Data from a questionnaire given in 2000 will be compared to a current 2015 questionnaire with matching inquiries concerning the amount of English first-year university students felt was used in their junior high school classrooms. These results will be discussed alongside the results from a separate survey for Japanese teachers of English and foreign assistant language teachers (ALTs) in the context of the current guidelines put forth by the Japanese Ministry.
Say What?

A Survey on the Use of Jargon by Academic Librarians at San Jose State University

Cross-disciplinary Areas of Education

Paper Session: Work-in-Progress

This first stage of an extended research project will, via the use of a survey, provide insight into the jargon used by the academic librarians at San Jose State University. The results will inform future research on the impact of jargon use on students’ success in conducting research, aid with the redesign of information literacy instruction sessions and instructional materials, and help facilitate day-to-day interaction with students.

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Abstract

This work-in-progress will, via the use of a survey, provide insight into the jargon used by the academic librarians at San Jose State University. Knowing more about what type of jargon is frequently used, and in what context, can reveal the extent to which librarians use language that has the potential to be uninformative, confusing, or incomprehensible to those the librarians interact with in-person and virtually.

The results of the survey will inform future research on the impact of jargon use on students’ success in conducting research, aid with the redesign of information literacy instruction sessions and instructional materials, and help facilitate day-to-day interaction with students.

Introduction

Academic success at the university level is achieved by a combination of many skills, not the least of which is the ability to conduct individual research in the student’s chosen field of study. Usually, the library is the primary place for such research, and librarians offer a wide variety of in-person and online services in order to help students navigate the increasingly complex information landscape. All too often, however, librarians employ specific library jargon, something most students are unlikely to be familiar with, and especially those who are English Second Language (ESL) speakers. Amsberry (2008) writes that jargon has been described as a “third language” in the library literature, requiring students to add multiple meanings to words they might still be struggling with in the first place, or assign entirely new meanings to words that exist in their native language but have different (yet related) meanings where jargon is concerned. A prominent example for the latter is the word “journal,” which in French means newspaper but in English-language library jargon refers to academic, peer-
reviewed publications that contain research articles (Amsberry, 2008). Amsberry summarizes a number of studies which have shown that native English speakers and ESL students alike struggle with library jargon and are oftentimes unable to correctly define even the more commonly used jargon terms. Additionally, these studies have revealed that there is a “significant disparity between what students reported to understand and what they actually understood,” a finding that suggests that “students may be afraid or embarrassed to admit that they lack understanding of some of the library-related terminology” (Amsberry, 2008, p. 355).

**Background**

*Definition of Jargon*

“ALA,” “call number,” “ILL,” and “weeding.” What do these words have in common? They are all examples of jargon. The term jargon (also known as argot) is defined in a number of ways, as exemplified by dictionary.com’s entry, which states that jargon generally is “the language, especially the vocabulary, peculiar to a particular trade, profession, or group” but also “any talk or writing that one does not understand,” and even “language that is characterized by uncommon or pretentious vocabulary and convoluted syntax and is often vague in meaning” (dictionary.com, n.d.b). Looking at the example words above, one can understand how these definitions came to pass.

*Distinguishing Jargon from Dialect or Slang*

Jargon is quite often confused with dialect or slang, or considered to be one and the same. Dialect is defined as “a variety of a language that is distinguished from other varieties of the same language by features of phonology, grammar, and vocabulary, and by its use by a group of speakers who are set off from others geographically or socially” (dictionary.com, n.d.a). As such,

Slang is the “very informal usage in vocabulary and idiom that is characteristically more metaphorical, playful, elliptical, vivid, and ephemeral than ordinary language” (dictionary.com, n.d.c). Contrary to this upbeat and positive definition, slang is by many perceived to be the type of speech and writing that is “characterized by the use of vulgar and socially taboo vocabulary and idiomatic expressions” (dictionary.com, n.d.c).

Distinguishing jargon from slang can be difficult: “Both introduce new words into a language by recombining old words into new meanings;” “introduce entirely new words;” and “ascribe entirely new meanings to old words” (Fromkin, Rodman, & Hyams, 2014, p. 319). To further complicate matters, just as jargon has its communities of practice, so does slang. San Jose State University linguist Dr. Manjari Ohala sees no real difference between jargon and slang but points out that persons tend to ascribe one or the other based on the prestige of the speaker (personal communication, November 20, 2014).

**Development and Use of Jargon**

Jargon is primarily formed within communities of practice. The term *communities of practice* is defined as an “aggregate of people who come together around some enterprise [...]” however, “unlike a speech community, a community of practice is not defined by region, race or ethnicity” (Curzan & Adams, 2009, p. 76). Rather, speakers within communities of practice “simultaneously fashion their own identities and contribute to the group’s identity. Speech is not isolated but embedded in other social practice surrounding the common enterprise” (Curzan & Adams, 2009, p. 76).
Within communities of practice, word formation processes are common occurrences. Generally, jargon words are formed in three major ways: By inventing a new word, changing or altering existing words, or borrowing extant words from other languages (K. Glover, personal communication, September 15, 2014). In addition, word formation processes include alterations such as abbreviations and acronyms; words that have been clipped, blended, or compounded; were formed because of conversion, functional shift, or branding; were derived from proper names (eponyms); or were modified over time due to changes in language and/or social identity (Jannedy, Poletto, & Weldon, 1994).

It is with one or more of these processes that words are formed which are unique to the specific community of practice. These words build common ground, serve as identifiers for a community of practice, and facilitate communication between its members, but also create an environment that may be perceived as exclusionary to those on the outside. In many instances, words that have been created by means of word formation processes are described as “jargon” (K. Glover, personal communication, September 15, 2014).

Methodology

*Chosen Community of Practice*

To investigate the jargon used by academic librarians, the library faculty of San Jose State University’s Dr. Martin Luther King, Jr. Library has been chosen as the community of practice. Currently, twenty-one library faculty assist students, teaching faculty and staff with their research; teach information literacy sessions; build and maintain the library’s extensive book, eBook and electronic journal database collections; devise and complete projects related to information science; and conduct research and subsequently publish their findings. While each librarian’s general position description is that of an academic liaison librarian, individuals tend
to, over time, specialize in certain fields, e.g. special collections and archives, digital initiatives, information literacy and unbounded learning, reference, or collection development.

Survey instrument and parameters

To collect academic librarian jargon, each librarian is provided with a survey and asked to provide the following information (see Appendix A for the survey instrument):

- Degrees earned
- Years of experience in librarianship
- Short-answer question on the usefulness of library jargon
- Short-answer question on the drawbacks, if any, to the use of library jargon
- Picking of 10 library jargon words, providing definitions and stating usage

Analysis of Survey Results

Upon completion of the survey phase the results will be analyzed for the following:

- Communalities and differences in jargon use by the various librarians
- Frequency of use of jargon terms
- Correlation between specialized positions and types of jargon used
- Correlation between years of experience and types of jargon used
- Benefits and drawback of jargon as stated in the short answer questions

The results of the survey will determine the authors’ future direction of research, but the overarching goal is to find and implement practical ways to limit the use of jargon wherever possible and feasible. Experience has shown that the expectation of being able to affect immediate and lasting change across the board with a single research project is unrealistic; as a result, the authors have chosen to take a grassroots route that seeks to devise, implement, and
practice change on a small-scale level and to subsequently spread what has been learned and observed with colleagues and the larger community in a persistent and consistent manner.

**Conclusion**

The authors hope that this study will be the first step in raising awareness among fellow librarians of their word choices when working with students. Is the use of jargon really necessary or desirable when instructing or otherwise interacting with students? If so, what ways can be found to familiarize the students with the necessary terminology? If not, what are lasting and efficient ways of limiting, as much as possible, the unnecessary jargon that builds walls and hinders communication? Based on the findings of this survey and subsequent research in the scope of an extended, multi-phase project, the authors seek to replace theory with practical ways to bring lasting change in the amount and frequency of jargon use in their own institution and beyond.
References


They Said What?
Word Formation and Alteration Process Analysis of the Jargon Used by Academic Library Faculty at a Large, Urban University Library

1. **Degrees Earned** (check all that apply)
   - [ ] Associate Degree
   - [ ] Bachelor's Degree
   - [ ] Master's Degree
   - [ ] Master's Degree in Library Science
   - [ ] Ph.D.
   - [ ] Other (please specify: ____________________________)

2. **Years of Experience in Librarianship** (include internship time, volunteer and part-time work, previous positions, etc.)
   - [ ] 0 - 5 years
   - [ ] 6 - 10 years
   - [ ] 11 - 15 years
   - [ ] 16 - 20 years
   - [ ] More than 20 years

3. **Do you believe (library/librarian) jargon to be useful and meaningful?** Briefly explain your answer in the space provided below.

4. **Do you believe there are drawbacks to the use of (library/librarian) jargon?** Briefly explain your answer in the space provided below.
5. **Pick your Jargon Words and/or Phrases**

   Fill in the table with the jargon words and/or phrases you believe you use most often during a typical workday:
   a. In the first column (**Jargon word/phrase**), enter the word/phrase.
   b. In the second column (**What the jargon word/phrase means**), explain what the jargon word/phrase stands for (think about words you would use to explain the jargon to someone who had just exclaimed "huh?")
   c. In the third column (**Used most often with/while...**), fill in the persons you most often use the jargon word/phrase with and/or the occasion(s) during which you most often use the jargon word/phrase.

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High Impact Task-based Learning Strategies for your Classroom

Topic area of submission: Higher Education

Format of presentation: Workshop

Description of presentation:
This workshop will discuss how to build meaningful interactive individual and collaborative learning strategies for your teaching/classroom. The workshop will focus on four key components to incorporating these strategies into your classroom: creative design, thoughtful preparation, fearless execution and tactical debrief and reflection. Examples of high impact active task based learning strategies from practice will be integrated throughout the workshop.

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**High Impact Task-based Learning Strategies for your Classroom**

Do your students like coming to class and listening to you lecture? Is there a way to deepen your student’s learning while increasing student engagement? Have your student’s learned how to play school and take the role of the passive recipient? If you are asking yourself these questions then this workshop is for you! Come learn about active task-based learning and accompanying strategies that will make your classroom come alive.

Task-based or activity based learning is an innovative pedagogical approach that not all teachers understand or are comfortable utilizing. By incorporating task-based /activity-based learning instructors are able to step out of the traditional lecture focused class and become learning designers and facilitators. Student’s experience deeper learning and have increased opportunities for engagement with their instructor and peers.

This workshop will discuss how to build meaningful interactive individual and collaborative learning strategies for your teaching/classroom. Included will be things to consider such as what you want your students to know, level of interaction, personal choice, level of comfort and level of student experience.

The workshop will focus on four key components to incorporating these strategies into your classroom: creative design, thoughtful preparation, fearless execution and debrief and reflection. Examples of high impact active task based learning strategies from practice will be integrated throughout the workshop.
Title of the submission: Exploring the Student Experience of Learning in a Flipped Classroom

Topic area of submission: Higher Education

Format of presentation: Workshop

Description of presentation: In this session the results of a research project exploring the student experience of learning in a flipped classroom model of instruction in higher education will be presented. After a brief overview of the flipped classroom the author will present data gathered through focus groups, online survey and classroom assessment techniques to demonstrate how the flipped classroom increased student engagement and supported learning.

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Exploring the Student Experience of Learning in a “Flipped Classroom”

In this session the results of a research project exploring the student experience of learning in a flipped classroom model of instruction in higher education will be presented.

The flipped classroom model was applied to an introductory health research course in a nursing degree program. This is a required course that is content heavy with a lot of new concepts and terminology. Students have difficulty linking the theoretical concepts to evidenced based practice. As well, as student populations and their expectations of the learning environment become increasingly diverse, maintaining their engagement during class and meeting different learning styles has become increasingly challenging. It was believed that a flipped learning model would allow this to happen more readily.

The flipped classroom is emerging as an area of interest for researchers exploring teaching and learning. Flipped classrooms use digital technologies to shift direct instruction outside of the classroom. In this instructional model students explore concepts before coming to class through video/audio lectures, content-rich websites and/or podcasts. Taking advantage of the student’s preparation, the teacher devotes more time to opportunities for integrating and applying their knowledge, via a variety of student-centered, active learning strategies. Through the flipped classroom model, time becomes available for students to collaborate with the professor and peers, engage more deeply with content, practice skills and receive feedback on their progress.

The following research question was explored through a mixed methods approach: What happens with student learning and engagement when the flipped classroom is used to teach students Health Research? Three data sources were gathered to explore the research question. Focus group interviews were conducted at the end of the semester to more deeply explore student reactions, perceptions, and/or feelings about experiencing the flipped classroom model of instruction and how it impacted their engagement and learning. Classroom Assessment Techniques were gathered to assess student’s understanding of concepts covered in pre class and in class learning activities. Students responded to questions about the most important thing they had learned, what helped their learning and questions they still had about the material in the online lecture or classroom application of that material. Lastly, an anonymous on-line survey allowed students to evaluate functional aspects related to the flipped classroom along with advantages and disadvantages of learning in this approach. The findings from these three data sources will be presented to demonstrate how the flipped classroom increased student engagement and supported learning.
This session would be of interest to individuals considering moving away from a traditional lecture-centered instructional model and interested in devoting more time to opportunities for integrating and applying knowledge, via a variety of student-centered, active learning strategies.
Sandtray Interventions in Counselor Supervision

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Abstract

This article examines the use of sandtray interventions as a tool in the clinical supervision of counselors and counselors in training. General knowledge of the therapeutic use of sandtray or similar expressive arts intervention in clinical work is assumed. A description of how the sandtray can be used to build supervisee-supervisor alliance and aid in supervisee insight and reflection is discussed. Case illustrations and suggested prompts to use in integrating sandtray interventions into clinical supervision are provided.

*Keywords:* Counseling, Sandtray, Supervision
Sandray Interventions in Counselor Supervision

Introduction

For many counselors and therapists whose training and experience is predominantly rooted in talk-therapies, sandtray (ST) interventions represent a significant shift in processes and required skills within counseling or counselor supervision. The term sandtray work is used here to describe the therapeutic use of a sandtray within the counseling and counselor training or supervision settings and can include a wide range of theoretical orientations or interventions (Boik & Godwin, 2000). Therapeutic sandtrays are generally smaller than traditional children’s sandboxes (roughly 30 inches by 20 inches and approximately 4 inches deep) and are primarily offered at waist height or on a table top when working with adults (Boik & Godwin, 2000).

When used as an expressive arts or play-based intervention, sandtrays are partially filled with wet or dry sand and presented to the client or supervisee with an assortment of small figures or items selected to represent people, places, and concepts from the client’s world (e.g., people, real or imagined animals, plants, buildings, etc.). The client or supervisee then creates or builds a world or scene in the sand and this experience is assessed or processed within the counseling or supervision session (e.g., Homeyer & Sweeney, 2011). With adults, the level of direction given to clients regarding what to build or create in the sand is determined by the theoretical orientation of the therapist and the type of work being done in therapy (Garrett, 2013). Small children more typically play in the sandtray without direction from the therapist rather than creating a static scene prompted by the therapist (Weinrib, 1983). Within many theoretical orientations, processing the sandtray can be done verbally, but as ST is largely an experiential intervention, the potential therapeutic gain in using ST not always heavily based on the verbal intervention (Boik & Godwin, 2000; Amatruda & Helms-Simpson, 1997). Within clinical supervision, the
focus of sandtray work may be experiential, or more emphasis can be placed on the completed sandtray scene. Depending on the theoretical stance of the supervision and the goal(s) of the supervision work there may be more or less emphasis placed on verbally processing the sandtray in the supervision session. Because of this, additional counseling or supervision skills in play or expressive-arts therapies may be required when working with ST interventions in supervision.

According to nationally recognized ethics and standards of practice within the counseling profession, before engaging in any new specialty areas, counselors should receive adequate education, training, and supervised experience (American Counseling Association [ACA], 2014). As a form of play-based intervention or an expressive arts intervention, ST would require additional and specialized training for many counselors and therapists who are most often trained primarily in verbal interventions (e.g., Association for Play Therapy [A4PT], 2014). When sandtray is used as an expressive-arts or play-based intervention it is recommended that ST counselors have adequate training and supervision specifically in the use of ST in addition to play therapy training, expressive arts training, and generalized counselor education coursework (e.g., A4PT, 2014; Turner, 2005; Zoja, 2011; Vernon, 2011). DeDomenico (1995) suggested that counselors and therapists who use ST in their clinical work should also have created and processed a minimum of 30 to 50 trays in their own clinical work before using ST with clients.

In clinical supervision, ST can provide a creative outlet with concrete, touchable examples in the tray allow supervisees to increase their reflection skills, develop awareness and insight, or conceptualize challenging cases. Ishiyama (1988) described a Visual Case Processing Method for clinical supervision of art therapists that relied heavily on supervisees generating visual imagery and metaphors to process clinical cases in supervision. ST work in counselor supervision can be considered an extension of this type of expressive arts supervision process -
asking supervisees to create a ST scene (vice a drawing) to be used in supervision. Recent work in this area has shown that the sandtray can be used within the counselor supervision session to better understand client processes or to further develop supervisee skills (e.g., Anekstein, Hoskins, Astramovich, Garner & Terry, 2014; Cunningham, 2013).

Before practicing clinical supervision of counselors or counselors in training, supervisors are required to have adequate clinical experience including and appropriate training in supervision and supervision theory (ACA, 2014; Bernard & Goodyear, 2009). Furthermore, many state laws also set standards for clinical supervisor training and legal parameters for supervision practice. For example, Texas State law (§681.93) specifies supervisors have a number of years of practice and specific training in supervision methods and theory (see Texas State Board of Examiners of Professional Counselors [TSBEPc], 2015). Texas State law also sets additional regulations for conduct of clinical supervisors (TSBEPc, 2015). In order to ensure competent and ethical practice, counselor supervisors who use ST interventions in their supervision work should not only meet the minimum training and practice requirements for clinical supervision, but they should also have supervised experience specifically in ST work (Warr-Williams, 2012).

*Is ST supervision a good fit for your supervisee?*

Before considering introducing the ST into clinical supervision, the supervisor should consider the current skill level of the supervisee, the relationship between the supervisor and the supervisee, and specifically how ST may help or hinder the specific supervision process. For example, novice or beginning supervisees who are new to the practice of counseling often experience high anxiety and fear of evaluation (e.g., Smith, 2009). Beginning supervisees who may still lack core counseling skills and are highly anxious or fearful in supervision may not be
appropriate candidates for ST supervision interventions as adding new supervision interventions might increase supervisee anxiety and/or shift the focus of the supervision work to resolving supervisee issues at the possible expense of client safety (Bernard & Goodyear, 2009). New or different supervision interventions may be best suited for more experienced and secure supervisees working on developing specific skills in supervision (Falender & Shafranske, 2004). Once the supervisor has determined that a specific supervisee might benefit from ST supervision, many of the fundamental aspects of therapeutic ST use in counseling transfer to the use of ST interventions in the supervisory relationship.

What are the benefits of integrating ST into clinical supervision?

While there are many potential benefits to integrating ST into clinical supervision, the most obvious benefits of including ST work in supervision are related to the kinesthetic qualities of working in the sand, the potential for symbolic work with miniatures in the sand, and the potential for exploring and encouraging expressiveness within the supervision relationship. ST work allows for the movement from one modality of processing to another (e.g., seeing your feelings or touching your feelings). This is referred to as synesthesia (Homeyer & Sweeney, 2011) which has been demonstrated to increases insight, awareness, and reflection skills (Deaver & Shiftlet, 2011). ST offers a unique kinesthetic opportunity within counselor supervision and can provide a break from traditional verbal feedback that can often be perceived as negative by the supervisee (Rae, 2013; Bernard & Goodyear, 2009). Focusing on activity-based learning in clinical supervision may be more appealing to those supervisors and supervisees who have less-developed or limited verbal language skills or who don’t share the same first language or culture (Homeyer & Sweeney, 2011) and can help develop the supervisor-supervisee relationship by facilitating rapport building and alliance building with the supervisor (Lahad, 2000). Because
ST is action-based and doesn’t necessarily need to rely as heavily on verbal responses, ST can be used to help the supervisee maintain a less-defensive position in supervision. ST can be used to help visualize power differentials; to emphasize symbolic relationships or themes; or to play out a scene allowing different solutions to emerge (Homeyer & Sweeney, 2011).

**Introducing ST into Clinical Supervision**

The following guidelines for introducing ST into counseling sessions help inform how ST can be introduced into the clinical supervision environment while maintaining a safe and growth-conducive environment for the supervisee (Homeyer & Sweeney, 2011; Boik & Godwin, 2000). First, the supervisor should set a positive expectation and manage the supervisee’s possible anxieties by providing a brief orientation to the tray and miniatures and explaining how ST will be used in supervision. This is especially critical if the supervisee has little or no training in the use of ST or other expressive arts-based interventions within the supervision relationship. The supervisor should be clear in helping the supervisee to understand the focus of the ST work in supervision and what will be required on the part of the supervisee. Additionally, when using the ST in supervision, the supervisee should be provided with the same level of concern and respect afforded to counseling clients when they build or create sandtrays. Supervisors should be mindful of the supervisee’s personal space when the supervisee is creating and processing trays; supervisors should never touch or move items in a supervisee’s tray without permission, and supervisors should avoid labeling any miniatures or scenes until the supervisee has named them (Homeyer & Sweeney, 2011; Boik & Godwin, 2000). Finally, any photos taken of ST creations in supervision should be treated with same level of privacy as client-created art or play products.

*Ideas for integrating ST into counselor supervision*

ST work in clinical supervision can be used to address issues related to the supervisee-
supervisor alliance and aid in reaching supervision goals. Images in the sand provide a three-dimensional, touchable, action-based intervention which can provide a hands-on method of making meaning (Zoja, 2011). ST work has been described as useful in working with clients who are therapeutically “stuck” or struggling with progress in addressing their issues (e.g., Homeyer & Sweeney, 2011). Because STs can be photographed and compared over time, ST can be used to show small or vague changes in the therapy or supervision process. For example, the supervisee can be prompted to “create a tray that shows where you are in your professional goals” and this tray can be compared to similar prompts given over time as the supervisee progresses through clinical experiences and works towards professional goals. While trays may be similar in appearance when built with the same prompt, it may be helpful for the supervisee to see and explore small changes over time – especially if the supervisee is frustrated by the realities of working at lower pay while under supervision for licensure.

Some suggested ST prompts to aid in building rapport within the supervisory relationship, to help build the alliance between the supervisor and the supervisee, or to explore supervision goals include:

“Create a tray to help me understand your theory of change.”

“Create a tray showing your path to becoming a therapist.”

“Create a tray that shows the kind of therapist you want to be.”

“Create a tray that showcases 3 things you want to get out of this supervision.”

“Create a tray with 5-10 items that will help me to get to know you on a professional level.”

“Create a tray to show how you think your client sees you.”

“Create a tray to show how you would like your client to see you.”

“Create a tray to show how you see our supervisory relationship.”
“Create a tray about how your life would be different if you already had your license.”

“Create a tray about how I can help you in this supervision process.”

“Create a tray about the qualities you think will make you a better counselor/therapist.”

When addressing the supervisee’s counseling skills and his or her work with clients, ST may be helpful to demonstrate where changes can be made to help the client move forward in therapy. For example, the supervisor can ask the supervisee to “create a tray with your understanding of where the client is right now.” This tray is then verbally processed with the supervisee with the hope of gaining insight and understanding of the client’s current situation and status. The supervisor can then take a photo of the tray. This photo will allow future discussion if the scenarios is too complex to fully process in one supervision session, or can be printed if only one tray is available. Next, the supervisor can ask the supervisee to “create a tray of what it would look like when this client’s situation is resolved.” This sandtray prompt can be considered a supervisory equivalent to the miracle question (e.g., Wetchler, 1990). The supervisor and supervisee can then verbally and emotionally process the differences between the two sandtrays - the client’s current situation and what the client’s world would look like without the presenting problem. Again, it may be necessary to take a photo of this second, solution tray, if time does not permit further work or if only one sandtray is available. Setting the two trays side-by-side on the table allows the supervisor to physically move the two trays (or photos) apart and prompt the supervisee to create a link or bridge from the first to the second, “create a tray that shows how you see the client getting from here (the current situation tray) to here (the solution tray).”
Kielo (1991) used post-session work such as this in art therapy supervision to help build supervisees reflection skills. Additional post-session ST prompts that might help supervisees develop a deeper understanding of their clients’ motivations and feelings include:

“Create a tray of the emotion that was behind what the client was describing in this session.”

“Recreate what the client talked about in this session in the ST and bring this to life by dialoging within the tray” (give voice to various components or parties involved in the therapy).

Assigning specific or directed STs outside of the supervision session to encourage supervisee in-depth thought about a case or professional growth or development is referred to as “response” work and is a common in art therapy supervision (Fish, 2008). Supervisee growth can be encouraged by outside ST work or other similar journaling assignments (Bykofsky, 1990). Examples of how this type of response work could in ST include:

“Recreate a ST about a specific moment or turning-point in your session.”

“Create a tray about your wish for this client.”

“Create a scene about who this client reminds you of.”

It is often useful in clinical supervision to have supervisees explore and address relational issues in order to gain insight, increase awareness, and build reflection skills about relational issues in their clients’ lives (Smith, 2009). Based on the work of Gil (1994) it may be helpful for supervisors to direct supervisees to:

“Create a genogram, sociogram, or family map for your client in the tray.”

“Use miniatures to describe the relationship between the key players in the client’s family.”

“Create a family map using only one category of miniatures” (e.g., addictive behavior-related miniatures for clients who have a strong family history of addictive behaviors; foods may be used to address eating disorder issues, etc.).
Creating a three-dimensional work in the sand may also help supervisees visualize complex transference and countertransference issues more clearly. Expressive-based interventions like ST work in supervision may be helpful in: developing empathy with the client; seeing clients as more than their problems; clarifying therapists feelings; exploring the preconscious and unconscious issues in the client, or in the client-counselor or supervisee-supervisor relationships; differentiating between the therapists feelings and the client’s feelings - building separate trays from these different perspectives; and exploring the therapeutic or supervisory relationship - having the supervisee and supervisor build similarly-themed trays for comparison (Kielo, 1991).

Some suggested ST prompts to help the supervisee focus on client issues include:

“Create a tray about how you are helping your client.”

“Select 3 to 5 items that demonstrate the progress you have already made with this client.”

“Create a tray about how you are not able to help your client.”

“Create a tray about a specific intervention you used with your client.”

“Create a tray about how that intervention was received by your client.”

“Create a scene that shows how you anticipate this client will push your boundaries.”

“Create a tray about your goal(s) for your work with this client.”

“Create a tray about the potential obstacles you see in working with this client.”

“Create a scene showing other ways you might get to this same therapeutic goal.”

“Select 3 to 5 items to demonstrate the strengths you have as a therapist so far.”

“Create a scene of your client’s world.” then “add a character or miniature to show how you fit into this world.”
Because of the potential calming effect of sandtray work (e.g., Bradway, Signell, Spare, Stewart, Stewart, & Thompson, 1990), including ST in the supervision process can offer an opportunity for a mini-break or respite when the supervisory process becomes intense or overwhelming to the supervisee (Deaver & McAuliffe, 2009, as cited in Deaver & Shiftlett, 2011). The following prompts can be used to facilitate mini-breaks within the supervisory work:

“Take five minutes to create a mini-scene or just play in the tray before we get started today.”

“This was a challenging supervision session – why don’t you take the last ten minutes of our time today to create a tray that will help you to relax before you head back to work.” or

“Pick approximately 5 items that show what you would do if you had a totally free hour today with no deadlines hanging over your head.”

Lahad (2000) suggested expressive work in supervision to help new counselors build brainstorming skills and to rely more on imagination and intuition in their counseling work. In the ST, this could include prompts such as:

“Create a tray showing the client’s issue or presenting problem.” In a separate tray, “create as many solutions to this issue as you can.”

“Create a tray about what is holding this client back” (or what is holding you back as his/her therapist); and

“Create a tray that shows the various emotions this client has been experiencing.”

The power of symbolism and metaphors in ST

Perhaps the greatest potential benefit of incorporating ST interventions into clinical supervision is that ST offers a unique emphasis on symbolism and metaphor and the ability to highlight cultural aspects within the client or supervisory relationship (Siegelman, 1990). Discussion of what is included or excluded from a miniature collection can be used to spark
discussion of cultural differences between the client and counselor or the supervisee and supervisor. Specific miniatures can be explored for their potential and differing symbolic or cultural meanings or value (to the supervisee or client or both). Laminated photos can be included in the tray to allow for connection to specific concrete images. Supervisees can bring in a specific miniature or item to represent themselves in their supervision trays. Some ST prompts to address cultural issues or symbolism could include:

“Create a tray about the underlying symbolism or cultural aspects from your client’s tray.”

“On this side of the tray, create a scene about what this miniature might mean to you; on this side, create a scene about what this might mean to your client.”

“Select 3 to 5 items that speak the unique family culture of your client.”

“Select 3 to 5 items that speak to your client’s cultural background and 3 to 5 items that speak to your cultural background. Create a tray that shows how these worlds interact.”

Summary

Supervisors who have expressive-arts or ST training can expand the level of creativity they use in their supervisor work by including ST in the supervision process. ST is a flexible medium that can be used in most if not all of the same ways that other play or art prompts can be used (Lahad, 2000). ST has unique strengths that can add to almost any supervision experience. Supervisors should always work within their areas of training and expertise, but also be creative and not be afraid to integrate skills they have used in counseling.
References


Sandtray interventions in Counselor Supervision: Play-based Interventions

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Objectives for today’s training:

1. Develop an understanding of how the sandtray can be used as an expressive arts or play-based intervention within the counseling supervision setting;

2. Understand the value of the sandtray in helping to build the supervisor-supervisee alliance; and

3. Understand the unique benefits of the sandtray in addressing cultural issues in supervision, and building supervisee insight and reflection skills.
Knowledge I am assuming you already have:

1. General training and experience in the use of sandtray (ST) as an expressive arts or play-based counseling intervention with adults;
2. Training and experience in counselor supervision;
3. General understanding of legal regulations and ethical codes that apply to counseling and clinical supervision.

Reminder of essentials of therapeutic ST use:

1. Manage expectations; set the environment with positive expectations; orient the user to the tray and miniatures; point out the blue sides and bottom; reassure the user as needed; explain your role; address the issue of time.
2. Be mindful of your physical presence when the user is creating or processing the tray.
3. Never touch the users ST items without permission.
4. Avoid labeling or naming items until the user has named them.
Overall Benefits of using ST in Supervision (that we will cover today):

1. ST is a touchable, action-based intervention which breaks from the traditional oral supervisor feedback process.
2. ST has been shown to increase reflection, awareness, and insight skills for trainees.
3. ST can provide the opportunity to tap into cultural or symbolic dimensions of clinical and/or supervisory work.

Benefits of using ST in Supervision:

- ST can provide a three-dimensional, touchable, action-based intervention.
  - ST can be used to facilitate rapport building and alliance building with the supervisor or as a form of respite in the supervisory process (mini-break).
  - ST provides a hands-on method of making meaning:
    - Appeals to those supervisors and supervisees who have less-developed or limited verbal language skills or who don't share the same first language.
    - Appeals to learners who prefer activity-based learning;
    - Can be used to demonstrate counseling or supervisory goals and relationships.
  - ST can be used to visualize transference and countertransference issues.
  - ST can provide a break from traditional talk-therapy basis of providing feedback that is often perceived as negative by focusing on action or play-based activities to develop the supervisor-supervisee relationship.
Example: Mini-break/respite with ST in supervision

Creative process breaks as stress reduction for internship students (Deaver & McAuliffe, 2009, as cited in Deaver & Shiftlett, 2011).

- “Take five minutes to create a mini-scene or just play in the tray before we get started today.”
- “This was a challenging supervision session—why don’t you take the last ten minutes of our time to create a tray that will help you to relax before you head back to work.”
- “Pick approximately 5 items that show what you would do if you had a totally free hour today with no deadlines hanging over your head.”

Example: Goal work with the ST in supervision

- “Create a tray with your understanding of where the client is now.”
- Process this tray with the supervisee.
- Take a picture of the tray for later (or to use as a reference if you only have one tray, or if the counseling situation is so complex that this process may take several supervision sessions).
- “Now create a tray of what it would look like when this client’s situation is resolved.”
- Processes the noticeable differences between the two trays.

“How do you see the client getting from this tray (now) to this tray (solution)?”
Example: Addressing Countertransference with ST in Supervision

ST can be helpful in:

- Developing empathy with the client - seeing clients as more than their problems;
- Clarifying therapists feelings;
- Exploring the preconscious and unconscious issues in the client, or in the client-counselor or supervisee-supervisor relationships;
- Differentiating between the therapists feelings and the client’s feelings (building separate trays from these different perspectives);
- Exploring the therapeutic or supervisory relationship (having the supervisee and supervisor build similarly-themed trays and comparing).

Based on the work of Kielo (1991) who worked with art therapists.

Example: Providing feedback with ST in Supervision

Because ST is action-based and doesn’t necessarily need to rely as heavily on verbal responses, ST can be used to help the supervisee maintain a less-defensive position in supervision.

- ST can help visualize power differentials.
- ST can help emphasize symbolic relationships or themes.
- Playing out a scene can allow different solutions to emerge.

Note the size differential in this scene (very small fox) and the two-headed dragon.

Based on the work of Homeyer and Sweeney (2011).
Example: Processing growth with ST in Supervision

Prompt: “Create a tray that shows where you are in reaching your professional goals.”

Using pictures to document STs from the supervision process allows these pictures to be viewed in comparison to earlier creations.

Example of two trays covering similar themes completed several months apart. Notice the use of similar items, but less fencing and more openness.

Prompt ideas to help build rapport or supervisory alliance with supervisees or goals for supervision:

“Create a tray to help me understand your theory of change.”
“Create a tray showing your path to becoming a therapist.”
“Create a tray that shows the kind of therapist you want to be.”
“Create a tray that showcases 3 things you want to get out of this supervision.”
“Create a tray with 5-10 items that will help me to get to know you on a professional level.”
“Create a tray to show how you think your client sees you.” or
“Create a tray to show how you would like your client to see you.”
“Create a tray to show how you see our supervisory relationship.”
“Create a tray about how your life would be different if you already had your license.”
“Create a tray about how I can help you in this supervision process.”
“Create a tray about the qualities you think will make you a better counselor/therapist.”
Additional ST prompt ideas focused on supervisee’s client sessions (vice supervision or supervisory relationship):

“Create a tray about how you are helping your client.” or
“Select three to five items that demonstrate the progress you have already made with this client.”
“Create a tray about how you are not able to help your client.”
“Create a tray about a specific intervention you used with your client and how it was received by your client.”
“Create a scene that shows how you anticipate this client will push your boundaries.”
“Create a tray about your goal(s) for your work with this client and the potential obstacles you see in this process.”
“Create a scene showing other ways you might get to this same therapeutic goal.”
“Select 3 to 5 items to demonstrate the strengths you have as a therapist so far.”
“Create a scene of your client’s world.” then “Add a character or miniature to show how you fit into this world.”

Benefits of using ST in Supervision:

ST can provide a creative outlet or concrete, touchable examples allowing for supervisees to increase reflection skills, develop awareness and insight, or conceptualize challenging cases.

- Visual Case Processing Method (based on the work of Ishiyama, 1988): (1) Reflecting on a case and responding with words to a series of verbal prompts. (2) Generating imagery and metaphors. (3) Drawing the case or creating a ST scene. (4) Presenting the case in individual or group supervision.

- Synesthesia (Homeyer & Sweeney, 2011): ST allows for the movement from one modality of processing to another (e.g., seeing your feelings or touching your feelings). Deaver & Shiftlet (2011) describe several studies demonstrate this increases insight, awareness, and reflection skills.
Example: Building counselor imagination and intuition with ST in Supervision (brainstorming)

To help supervisees rely more on imagination and intuition in their counseling work:

- “Create a tray showing the client’s issue or presenting problem.” In a separate tray, “create as many solutions to this issue as you can.”
- “Create a tray about what is holding this client back” (or what is holding you back as his/her therapist).
- “Create a tray that shows the various emotions this client has been experiencing.”

Based on the work of Lahad, 2000.

Example: Developing insight with ST in Supervision

To help supervisees gain insight, increase awareness, or build reflection skills:

- “Create a genogram, sociogram, or family map for your client.”
- “Create a family map using only one category of miniatures” (e.g., addictive behavior-related miniatures for clients who have a strong family history of addictive behaviors).
- “Use miniatures to describe the relationship between the key players in the client’s family.”

Based on the work of Gil (1994).
Example: Developing insight with ST in Supervision

Develop a deeper understanding of client motivations or feelings: “Create a tray of the emotion that was behind what the client was describing in this session.”

“Recreate what the client talked about in this session in the ST and bring this to life by dialoging within the tray” (give voice to various components or parties involved in the therapy).

Example: Encouraging growth outside of the supervision session using ST

Ideas to help supervisees gain insight, increase awareness, or build reflection skills (post-session work as suggested by Kielo, 1991):

- Assign specific or directed STs outside of the supervision session to encourage in-depth thought about a case or professional growth or development. This is referred to as “response” work and is a common in the art therapy world (Fish, 2008).
  - “Recreate a ST about a specific moment or turning-point in your session.”
  - “Create a tray about your wish for this client.”
  - “Create a scene about who this client reminds you of.”

- Assign journaling (written or visual based [including photos of other STs]) to follow up on client STs or STs created in supervision (or about supervision-related topics).
### Benefits of using ST in Supervision:

Because of the unique use of intact symbols, ST can be used to visually highlight cultural aspects of the client or supervisory relationship (or experiential backgrounds).

- Discussion of what is included or excluded from a miniature collection can be used to spark discussion of cultural differences between the client and counselor or the supervisee and supervisor.
- Specific miniatures can be explored for their potential and differing symbolic or cultural meanings or value (to the supervisee or client or both).
- Laminated photos can be included in the tray to allow for connection to specific concrete images (see earlier slide for example of photo genogram).
- Supervisees can bring in a specific miniature or item to represent themselves in their supervision trays.

### Example: Exploring cultural boundaries and underlying symbolism with ST in Supervision

- “Create a tray about the underlying symbolism or cultural aspects from your client’s tray.”
- “On this side of the tray, create a scene about what this miniature might mean to you; on this side, create a scene about what this might mean to your client.”
- “Select 3 to 5 items that speak the unique family culture of your client.”
- “Select 3 to 5 items that speak to your client’s cultural background and 3 to 5 items that speak to your cultural background. Create a tray that shows how these worlds interact.”
Summary: Using ST in Supervision

- ST is a flexible medium that can be used in most if not all of the same ways that other play or art prompts can be used.
- ST has unique strengths that can add to almost any supervision experience.
- Work within your areas of training and expertise, but also be creative as to how you can use the skills you already know from clinical work in your supervision work.
- Ensure you guard the privacy of all ST supervision creations with the same level of concern that you afford to client-created art or play creations.

References:


Abstract

Given a choice of going to a mall or to a science museum, which will your students choose? How do we make students not only aware of the possibilities that a science background will open for them, but also of its relevance in their daily lives? The introduction of the Next Generation of Science Standards makes it even more imperative that we seek ways to show how science is done in the real world. Many groups of professionals are exploring ways to motivate young generations, especially women and minorities, to pursue STEM careers. This presentation describes one such initiative. During this session, participants will be actively involved in learning about teaching science in a department store venue. The opening presentation will review research on the importance of contextual learning, will provide the history of the project, and will share science lessons developed for the Macy’s in Philadelphia. During the second half of the session, we will demonstrate with participants one or more activities and explore how these can be adapted for any shopping venue.
Abstract

This session will address the creative diversity inherent in learning by using sports as the context through which scientific principles can be explored. Through the vehicle of sports not only are students learning the underlying principles of science embedded in the mechanics of performing a sport; but also, they are learning the scientific principles in an atmosphere that embraces the psycho-social-creative-emotional connection to learning. For instance, everyday students learn how to ride a bike, throw a ball, and/or jump rope. They learn these activities in an environment that is non-competitive and non-threatening academically. What they are not aware of is the scientific and mathematics principles laden in performing these activities. In the classroom students learn these scientific and mathematical principles in a context that is foreign to their everyday experiences. They learn about the trajectory of a golf ball without connecting this principle with the actual practice of hitting a golf ball.

What is unique about the concept of this program is that the academic and the everyday experiences of students can be bridged through the creative process of using sports as a mechanism to learning science and mathematics. By using sports as a creative vehicle for learning scientific and mathematical principles, the program is responding to the call for creating innovative and creative programs that provide access to the latest strategies in promoting science literacy. The following objective is pursued: To increase science and mathematics achievement of middle school students through the creative use of sports.
Abstract

We are proposing to discuss an article series called “Engaging the Scientist Within”. The presentation will feature discussing the article series which will include seven articles for parents and teachers on how to practically and easily develop in young children skills required by future scientists and engineers. The article series draws from the Next Generation Science Standards. The feeling is that it is never too early to begin to “engaging the scientist within”.

We are proposing to discuss the following strategy. Using a logical framework we discuss the questions parents and teachers already ask children to show that early positive questions about science are significant in molding children’s attitudes about science. We will also demonstrate that everyday conversations with our children contain questions that support the development of scientific and engineering practices outlined in the Next Generation Science Standards.

The strategies that we will discuss are the importance of questions’ parents and teachers ask children and the awareness of those questions on the impact of children. We will focus on how parents and teachers can stimulate curiosity in children through the impact, intent, and awareness of the questions.

The seven strategies we will discuss are:
1. Asking questions (for science) and defining problems (for engineering)
2. Developing and using models through questions
3. Planning and carrying out investigations through questions
4. Analyzing and interpreting data through questions
5. Using mathematical and computational thinking through questions
6. Construction explanations (for science) and designing solutions (for engineering) through questions
7. Engaging, obtaining, evaluating, and communicating information through questions.

We will explain through the discussion how empowering parents and teachers is the first step toward engaging a child’s appreciation and wonder of science.
Title: Reflective and Transformative Critical Thinking Skills in Two Online Graduate Nursing Research Courses

Topic Area: Distance Education or Higher Education

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Abstract:

The objective of this paper is to identify reflective and transformative critical thinking skills in two online graduate nursing research courses in the College of Nursing and Health Professions at Drexel University. Three abilities: analysis, evaluation and inference (Profetto-McGrath, Smith, Hugo, Patel, & Dussault, 2009) appear to be important issues in critical thinking used for learning strategies. These abilities are described as: 1) examination of information, 2) consideration, and 3) linking data for problem solution.
Reflective and Transformative Critical Thinking Skills in Two Online Graduate Nursing Research Courses

Abstract

The objective of this paper is to identify reflective and transformative critical thinking skills in two online graduate nursing research courses in the College of Nursing and Health Professions at Drexel University. Three abilities: analysis, evaluation and inference (Profetto-McGrath, Smith, Hugo, Patel, & Dussault, 2009) appear to be an important issue in critical thinking which are used for learning strategies for graduate research students at Drexel University in the two research courses. These three abilities are described as: 1) being able to examine information and context, 2) then considering all aspects, and 3) understanding and discriminating data so as to link information together in order to solve problems (Chan, 2013). The hope is that the students in these two graduate research courses will take their problem solutions and apply to their practice setting.

Background

Critical thinking has been one educational outcome to learning in all Nursing programs and has been found to be paramount (Hunter, Pitt, Croce & Roche, 2014; Kong, Qin, Zhou, Mou & Gao, 2013). Nurses need to make critical judgments about many patient care issues. There also is agreement by credentialing bodies that universities need to initiate learning experiences to improve critical thinking skills (American Association of Colleges of Nursing, 2008).

Definitions vary but most agree critical thinking is a cognitive skill which requires logical thinking (Hunter, Pitt, Croce & Roche, 2014). Two graduate research courses at Drexel University take this approach to critical thinking as others have defined this term in a more traditional sense – identifying models for basic Nursing courses where the goal is the acquisition of clinical skills (Morrall & Goodman, 2013). Students in the graduate research courses at Drexel University are to think in a transformative manner (Sterling, 2001) which means that instead of acquisitions of skills which is first order thinking in critical thinking, focus is on second order thinking or “reflective thinking” and third order thinking which is “thinking about thinking.” In
other words, students need to engage more in the “new” (transformative thinking) rather than in more of the “same” thinking (adaptive thinking). This moves Nursing students at Drexel University out of the realm of vocational thinking into the realm of intellectual thinking which can move our profession into a more positive direction. Additionally, students in the research courses are increasingly called upon for increased use of research utilization in the practice setting in order to facilitate evidence based practice.

Three abilities - **analysis, evaluation and inference** (Profetto-McGrath, Smith, Hugo, Patel, & Dussault, 2009) appear to be an important issue in critical thinking which are used for learning strategies for graduate research students at Drexel University in the two research courses. These three abilities are described as: 1) being able to examine information and context, 2) then considering all aspects, and 3) understanding and discriminating data so as to link information together in order to solve problems (Chan, 2013). The hope is that the students will then take their problem solutions and apply to their practice setting.

**Objective**

The objective of this paper is to identify reflective and transformative critical thinking skills in **two** online graduate Nursing research courses in the College of Nursing and Health Professions at Drexel University.

**Application of Research Course Learning Strategies**

In an effort to apply these three abilities of analysis, evaluation and inference, the first course used for illustration is the graduate research course at Drexel University titled *Research Methods and Biostatistics*. This course uses a paper titled a “Nursing Problem Analysis Paper.”

The purpose of this paper is to provide students with the opportunity to analyze concepts or variables of interest within the context of a problem, in **Nursing**, using published research studies from peer-reviewed journals.

The following guidelines are used within the paper to accomplish this goal:

1. Select **two concepts or variables pertaining to a problem**. This could be a problem encountered in one’s practice setting, one heard about or one interested in, or, a problem based on Healthy People 2020, World Health Organization, or other National/International Health Agendas. Choose a problem in **Nursing**. Choose a problem which best fits under **one** of the following themes from the National Institute of Nursing Research. The National Institute of Nursing Research has 4 major themes and 2 cross-over ones for priorities in Nursing Research so choose a problem which fits under **one** of them. They include: 1. **Symptom Science**: Promoting personalized health strategies (some examples are: chronic illness and adverse symptoms such as symptoms resulting in pain, fatigue, disordered
sleep or strategies to treat and prevent symptoms of illness across diverse populations and settings; 2. Health: **promoting health and preventing illness** (such as physical, behavioral and environmental causes of illness, behaviors that lead to a healthy lifestyle and choices to develop evidenced-based interventions to promote illness); 3. **Self-Management**: Improving quality of life for individuals with chronic illness (some examples are: strategies to help individuals with chronic conditions and their caregivers to create a better understanding of these strategies for management of their illness); 4. **End of Life and Palliative Care**: The science of compassion (some examples are: science to manage the symptoms of life limiting conditions and planning for end-of-life decisions); 5. **Promoting Innovation**: Technology to improve health (some examples are: science in promoting innovations) and, 6. **Innovative Strategies for Research Careers**.

2. Search the literature by using either key words or concepts (depending on the search engine used) from the problem and locate 10 research, peer-reviewed studies (less than 10 years old-preferably 5 years or less) which address these two concepts or variables.

3. Using **5 quantitative, peer-reviewed research** articles (out of the 10 selected from the literature search) in Nursing, identify and describe elements of the research process within each of these articles. Include: a. **research problem and purpose, or hypotheses if any**, b. **literature review**, c. **design**, d. **sampling strategies**, e. **descriptive and/or inferential statistical analyses for the major study concepts or variables**, f. **summary, conclusions and limitations to the study**

4. Explain the statistical results (descriptive or inferential) in your own words.

5. Provide a summary of the **Research-based interventions** from all of your research studies related to your **identified Practice-based Nursing Problem**.

The second graduate research course in the College of Nursing and Health Professions at Drexel University, *Evidenced Based Approaches to Practice*, uses an end of term paper titled, “Final PICOT Paper”. The purpose of this assignment is to evaluate evidence based practices researched in the health literature and then to analyze current clinical practice. If there is discordance between the evidence in the literature and the actual clinical practice, an evidence based suggested practice is designed, an implementation of that design is planned, and an evaluation plan of the process is written.

1. Generate a PICOT question using Melnyk’s “how to formulate a PICOT Question”. A well formulated PICOT question is essential to doing a successful literature search and writing a meaningful evidence based practice project. Identify each component of your PICOT question. This question is the foundation of this paper.

2. Now search in multiple databases for the answer to the PICOT question. Students must use at least four databases, and each search is to be demonstrated in a Search Table. There will be as many Search Tables as databases searched in. Prior to your search, identify all synonyms for each component of your PICOT question. All articles must be current (five years or younger in
Articles must be research articles, practice guidelines are not acceptable. Additional narrative explanation to replicate the search should be beneath the appropriate search table.

3. Select five articles from the search that will provide the answer to the PICOT question asked. Use the highest level of evidence possible, the most controlled research design. Review your search to verify your search is exhausted and you have the answer to your PICOT question.

4. After selecting the five articles that answer the question, complete the appropriate Critical Appraisal Tool appraising that article of evidence. Complete an Evidence Table including each of the five articles. The headings for the Evidence Table are: Citation/Sample/Setting, Research Design, Data Analysis, Findings (or Results), Level of Evidence and Comments. Synthesize the evidence gleaned in the five articles noting unique/unusual or inconsistent findings, similarities and dissimilarities in the articles. Compare and contrast the methods and results across all articles.

5. Answer the PICOT question using the evidence. Respond to: Is your practice the same as recommended by the evidence? IF not, develop an implementation plan and an evaluation plan that incorporates the evidence based evidence.

Conclusions

Three abilities -analysis, evaluation and inference- (Profetto-McGrath, Smith, Hugo, Patel, & Dussault, 2009) appear to be an important issue in critical thinking which are used for learning strategies for graduate research students at Drexel University in these two research course assignments. These three abilities are described as: 1) being able to examine information and context, 2) then considering all aspects, and 3) understanding and discriminating data so as to link information together in order to solve problems (Chan, 2013).

In these two graduate nursing courses, examination of information within its context did occur. Within the second research course, the “PICOT Paper”, the PICOT search results analysis and construction of the Evidence Table examination of information within its context did occur. In the “Nursing Problem Analysis Paper” this information examination occurred by searching the literature and identifying ten articles containing two concepts or variables. In both of these assignments, abilities 2 and 3 were seen in the analysis of the literature and the development of an implementation plan using that new knowledge in the second course and in the summary of research based interventions in the first course.

One can conclude that analysis, evaluation and inference is an important issue in critical thinking.

References


Distance Education Programs for Early Childhood Educators (ECE)

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Early childhood is a growing field, as is distance education. Although online learning has become common within most universities it presents a challenge for areas where field based experience are necessary. The purpose of this paper is to address methods and strategies which have been found effective for early childhood education (ECE) programs to support both the mastery of content knowledge and the field based experience.

According to the National Association for the Education of Young Children (NAEYC) both federal and state legislations have recognized the need for funding for ECE programs (About NAEYC, n.d.). Programs that promote high quality early childhood educators are needed to support the developmental and cognitive growth of these children to ensure that they will be able to be integrated into the school system with the skills sets to be successful. Statistical evidence supports the needs for early childhood education (ECE) programs. Currently the number of children enrolled in programs such as Head Start is an under-represented population with less than four percent of eligible babies and toddlers enrolled (Explore an archive of resources and
press related to the Early Head Start-Child Care (EHS-CC) Partnership initiative. One common limitation found in the ECE field is the lack of quality educators in the field with the necessary educational requirements.

The body of knowledge in relationship to teaching techniques and strategies for the ECE educator have been growing as the realization of the importance of education for this population of learners becomes more evident to those in the field of education. In order to meet the needs of educators in this field, innovative ways to bring this information to educators needs to be implemented. Learning in the online venue is a learning management system that is already in place serving a vast population regardless of location. Utilizing such learning opportunities cannot be overlooked by educators in the field. Obstacles must be overcome in relationship to the acquisition of knowledge for educators to meet the needs of this population of students.

Luckily, early childhood education has gained in popularity as research continues to demonstrate the value of early learning experiences. Working with students who have an age span of birth to age eight requires a specific set of teaching abilities that are especially designed for this population (Noe, 2014). Many early childhood professionals are returning to the classroom to enhance their current knowledge and skills which creates a unique group of learners who are both students and practitioners.

In order to meet the educational needs of these educators, many ECE programs realize that traditional classroom hours and settings are not the ideal solution for those students currently in the field. After working a full day with young children, attending evening courses is often the only option. Programs which offer online degrees in early childhood education help meet the needs of current educational practitioners to update their credentials in addition to offering new educational opportunities for those who wish to enter the field.
Most early childhood programs center on the concept of constructivism, allowing the learner to be actively involved in the learning experience through relevant “hands-on” interactions. In a typical face to face classroom, college instructors in this field often provide many group activities, observations and field experience to create this type of learning environment. In an online setting, these activities must shift to accommodate the virtual classroom. This shift in instruction can be accomplished however online educators must possess the skills to facilitate such learning. Pedagogical expertise in early childhood education alone does not suffice in relationship to the “hands-on” instruction strategies that need to be taught. Attending an online degree program of study that is specially designed for preschool instruction is necessary to ensure that the preschool educators acquire the skills needed for the face to face classroom environment.

Effective online ECE programs often use the following strategies – peer collaboration through discussion boards, videos, observations, and field based assignments. With peer collaboration, students engage in a variety of activities to mirror the dialogue or group interactions found in a traditional classroom setting. Discussion boards are a common method used in online classrooms to promote student interaction. In early childhood education focused courses, students often share their own experiences working in early childhood and gain relevant ideas for others currently in the field (Adler & Iorio, 2013). Creating effective discussion thread in the online venue is a skill that needs to be practiced before implementation. Discussions need to provide the teachers with an opportunity to share about their experiences in addition to being able to interject solutions to problems and concerns that may arise in the face to face classroom setting. The instructor also adds insight into the class discussion, typically incorporating research or relevant examples to extend the learning further. Students often report the discussion
boards as a valuable method to gather insight into topics and gain new ideas to use in the classroom.

The use of videos has become increasingly effective with the use of YouTube to teach about various circumstances that can occur in the face to face classroom environment. By having online students watch videos and then discuss these with one another this activity provides another useful “hands-on” approach to learning in the online environment. The students can also make their own videos in order to demonstrate how they would teach a topic to their students. By watching videos of peers and one’s self a tremendous amount of learning can take place due to having the ability to actually see how what they do in the classroom as a teacher comes across to their students. Nuances such as body language, voice intonation, and hand gestures are all subtle when interacting on a daily basis however these can affect the overall effectiveness of a lesson being taught.

A critical piece of the teaching experience for those who are seeking to update their credentials or enter into education as a career is conducting observations and field based assignments in the classrooms of other teachers. In the online venue this type of learning activity depends upon the learner getting in touch with a school that will cooperate with the university providing the degree program and to mutually agree upon the appropriate protocol in which to make observations. The first step in creating this type of relationship with a school is to contact the administration to seek permission. Documentation regarding policies and procedures for this type of observation need to be clearly defined and well laid out so that all involved have a very clear understanding as to the roles and responsibilities of the student observer.

A unique element of online programs is the diverse make-up of the learners within the classrooms which often comes about through random enrollment. Students who enroll in the
class typically come from a variety of backgrounds and work with a wide range of students in their own personal classrooms. When engaging in the discussions, students often share examples from their own experience which can provide others with knowledge of students and family issues they have yet to encounter. For example, a student working in an early childhood classroom in a small rural community may have limited experience working with second language learners. As a result, the student may be unprepared to provide the support an EL (English Learner) student may need if enrolled in her classroom. However, through the class discussions other students have shared methods and strategies which have been effective to support EL students in their urban classrooms. While the settings in these two situations vary greatly, the knowledge shared assists in creating a supportive classroom experience for the ESL student in the rural area. If the student from a rural area had been enrolled in a local ground classroom, the examples shared by her classmates would very likely be similar to her own, limiting the applicable knowledge she gained in this scenario.

Another common method used in the ECE online programs is to provide students with readings and additional learning material which merges both classic and current theories and practices. Most ECE programs focus on developmental theory and provide instruction on how these concepts translate to real-world settings. In a traditional classroom, it is common for information to come for a course lecture or reading. Online programs follow a similar pattern, providing relevant readings to link the concepts (Garvis & Lemon, 2015). In addition, most online programs include videos or other technology based resources to enhance the examples and information share in the classroom. As the field of education becomes more and more infused with various technologies it is incumbent for everyone in the field of education to use these modalities for instruction to student and further teacher development as well.
As educators across various fields look to the future, the use of technology is a growing trend. For practitioners in the ECE profession, the virtual learning environments provides quality instruction and exposure to more experiences than what they might encounter in a traditional classroom setting. The flexibility also provides a great advantage without reducing the educational experiences. EGE is developing into a field requiring specialization and expertise in order to ensure children receive an education that will prepare them for lifelong learning. In order for educators in this field to remain current they must actively engage in learning about the newest techniques, expanding upon their current knowledge. Online Early Childhood Education programs offer this opportunity in a cost effective manner.
References


1. Title: Matching Flight Attendants' Educational Needs

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6. 
Abstract

Matching Flight Attendants' Educational Needs

Each year, mandatory education courses are provided to flight attendants to develop their personal and work skills. These courses cover topics such as effective customer service skills, crisis coping, and teamwork building. In the present study, we evaluated flight attendants' educational needs and explored ways to reflect these needs in the flight attendant education classes. Upon completion of the education courses, the participants completed course evaluations. Based on their responses, we developed a questionnaire that asks about flight attendants’ needs and goals. A total of 319 participants were included in this study, with the majority being women (89%) and the average years of service ranging from 1 month to 31 years (mean=7 years, 10 months). Preliminary analysis revealed that the flight attendants found the teamwork-promoting classes to be most helpful and that these classes were most effective if all team members participated at the same time. As flight attendants are required and experience pressure to be friendly and patient all the time when working, the flight attendant participants also reported emotional problems which negatively affect their performance. Relatedly, the flight attendants reported a need for more education courses covering well-being and application of psychological principles to strengthen self-help skills. Other ideas and suggestions for improved education courses for flight attendants will also be discussed in the study.
Searching for a Visual Arts Pedagogy in the Digital Age (ID: 320)

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Introduction

In recent decades, digital technology use in online art classrooms has pervaded art education in the United States (Sweeny, 2010). Art educators now view digital technology not only as a new medium for creating art but also as a new tool for enhancing educational content, contexts, and processes. They have fully participated in the creation of online courses and incorporated social media, Web 2.0 tools, digital games, multimedia, 3D immersive worlds, and online learning management systems into their courses (Black & Browning, 2011; Buffington, 2008, 2010; Engdahl, 2014; Knochel, 2013; Lai, 2010; Liao, 2010; Sweeny, 2010). This trend reflects recent national surveys on the use of digital technology in postsecondary education. For instance, tracking online education in the United States over a 10-year period, the Babson Survey Research Group and Quahog Research Group (Allen & Seaman 2013) observed rapid growth in postsecondary enrollment in online courses, including Web-facilitated, blended, and online courses. Specifically, the survey reported that 32% of postsecondary students took at least one online course in the fall of 2011, a sizable increase from 9.6% in the fall of 2002. Moreover, according to the Babson Survey Research Group and Pearson Learning Solutions (Seaman & Tinti-Kane, 2013), among the different disciplines, the humanities and arts faculty used social media in their teaching at the highest rate.
As a faculty member teaching and developing online arts and art education courses for more than 15 years, I have witnessed growing enthusiasm in integrating digital technology in art classrooms, on or offline. I have also conducted case studies to examine students’ perceptions of and experiences with online learning and online learning technology (Lai, 2010, 2013). My experiences and research have taught me that knowing how to use or employing certain new technologies because of their popularity among students or institutions is not a sufficient pedagogical rationale to implement those technologies and does not necessarily lead to better learning experiences and outcomes. My case studies, along with the National Telecommunications and Information Administration (NTIA, 2013) publication *Exploring the Digital Nation*, have also demonstrated that in spite of nationwide improvement in the access and price of technology, digital inequality continues to exist, disfranchising learners of low socioeconomic status, non-Asian minority groups, and advanced age, learners from rural areas, female learners, learners with disabilities, and adult learners. As Prensky (2010) asserted, the vital challenge for 21st century teachers is not becoming technology competent but finding an effective pedagogy that is responsive to 21st century digital learners’ techno-social realities while also supporting educational equality for all learners.

Concerning technology-related educational issues, I began reviewing the literature and conducting an empirical case study to help identify a techno-socially responsive and empowering visual arts pedagogy for today’s digital learners. In this paper, I summarize my findings. First, through explaining postmodern feminist theories, I discuss the social and educational trends in this postmodern digital era and identify postmodern feminist pedagogy as an empowering and relevant pedagogy for 21st century learners. Then, I present a “student-led discussion” assignment in an online women’s art in history course as an example of a postmodern feminist
learning activity. Lastly, I use the students’ feedback to specify the most effective aspects of the postmodern feminist pedagogy.

**Postmodern Feminist Theories and Pedagogy**

Scholars (Genz & Brabon, 2009; Rosser, 2006) have asserted that postmodern theories defy modernism’s emphases on essentialism, foundationalism, universalism, and dichotomous thinking, which privilege an androcentric structure and grand narratives; challenge “the idea of the autonomous and free agent and articulate a self that is always within power structures and subjected to multiple discursive formations” (Genz & Brabon, 2009, p. 107); and reject the deep-seated notion of a fixed conception or category of gender identity. Postmodernism’s rejection of essentialism and the patriarchal ideal has raised significant concerns about the formation of individual identity, agency, and power structures between and among sexes, races, and socioeconomic classes as well as between teacher and student and canonical knowledge and individual experience. Postmodernism advocates decentered, non-universal, fluid, and deconstructive notions of identity construction. Postmodern ways of knowing, therefore, underscore the contextualization of knowledge, legitimize personal experience, and incorporate a critique of power structures.

Informed by postmodern theories, today’s visual arts curriculum, as Freedman (2003) asserted, “makes imperative a connectedness that undermines knowledge as traditionally taught in school, highlighting the importance of interactions between individuals, cultural groups, forms of representation, and professional disciplines” (p. 108). Freedman urged educators to employ technology in their teaching, as today’s Internet and Web 2.0 digital technology provide connectedness, interaction, and access to multiple professional and disciplinary resources to enhance visual arts learning. Moreover, postmodern visual arts education asks students to
“contextualize their work within a contemporary value system” (Hardy, 2006, p. 13). This approach prompts students to create art that is responsive to their time and sociocultural conditions, through which students may produce new artistic genres or aesthetic stances while challenging the traditional canon of art.

Drawing on postmodern theories and placing women at the heart of the theorization, postmodern feminist theories, as Rosser (2006) pointed out, open up the identity category to women and urge women to reclaim their agency and actively engage in the process of “becoming” women. Considering the different micro experiences of race, class, nationality, creed, bodily ability, and so forth, Rosser specified, “The category of woman can no longer be regarded as smooth, uniform, and homogeneous” (p. 33). Postmodern feminist theories, in this way, recognize and welcome individual differences and experiences, embrace pluralistic and even contradictory ways of knowing, confront the patriarchal hierarchy, and support the kind of feminist agency established through critiquing and overturning social/gender injustice.

Following postmodern and critical theories, Brady and Dentith (2001) proposed six principles of a postmodern feminist pedagogy:

[S]tudents' experiences as central to teaching and learning; provisions for safe spaces in the development of students' voices; the revision of centers and margins to understand power and agency; the recognition of difference as central to the reconfiguration of existing social boundaries; the development of a language of critique and possibility; and the evolution of teachers as intellectuals. (p. 165)

Likewise, applying feminist and critical theories, Chick and Hassel (2009) described feminist pedagogy in the postmodern era as follows:
Feminist pedagogy produces a classroom environment of mutual respect where both teacher and all students take active, responsible, and shared roles in the learning process. This dynamic is achieved through classroom relationships that don’t hide or glow over the differences in experience and perspective within a community of learners. Within this community, students care about others’ learning and well-being as well as their own, and they feel free to use their sites of authority – where they already stand and what they already know – to help contribute to the knowledge of the course. (p. 199)

Today’s digital technologies can be understood from a postmodern feminist standpoint. Based on Castro’s (2014), Prensky’s (2010), and NITA’s (2013) studies, one can argue that the interactivity, networking capacity, assorted (a)synchronous communication tools, easy access to information, and various multimedia features that a dazzling array of digital technology provides have increased opportunities for today’s learners to (de)construct and perform identity, knowledge, and agency in a postmodern feminist manner. Castro argued that the creation and sharing of (personal) images, videos, and texts have become a daily activity for many people today and that they should be considered as a form of online identity (de)construction and performance. Through such performance, young people “navigate, interact, and resist normative cultural and gender stereotypes online” (p. 32).

Digital technology, especially social media, is omnipresent in 21st century learners’ social life and educational experience. In the past decade, several art educators have taken into consideration the techno-social realities of today’s learners and postmodern feminist pedagogical principles when implementing digital technology in their online or technology-enhanced visual arts courses (Castro, 2014; Collingwood, 2012; Keifer-Boyd, 2012; Lai, 2010; Liao, 2010). Castro observed that the asynchronous communication in online courses allows students to
“consider, share, interpret, and critically engage with their own experiences, values, and practices” (p. 36). Lai illustrated that in an art history class, through the posting and ongoing discussion of students’ own texts, images, and media arts, students also contextualized their interpretations of arts, which differed from those of canonical texts. Prolonged online discussion and easy access to virtual museums and information on the Internet allowed students to continue examining personal narratives and canonical knowledge collaboratively. Keifer-Boyd developed a participatory learning and social network online to motivate students to engage in a dialogue about personal cultural experiences and cultural differences; this further facilitated students’ collaborative art making and critique of gender and cultural assumptions. Collingwood and Liao demonstrated that avatar creation projects in 3D virtual learning environments, such as Second Life, can allow students to explore, critically interrogate, and resist gender stereotypes and other normative images of self in popular culture.

In short, postmodern feminist pedagogy would emphasize connected, dialogical, participatory, and engaged learning; employ a situated knowledge construction process; invite women to articulate their ideas and experiences and consider them a central (not supplemental or peripheral) source of knowledge; challenge the teacher or textbook as the sole authority in the classroom; and accept personal narratives and experiences as legitimate knowledge that should be examined in a classroom.

**Online Student-Led Discussion: Instruction and Feedback**

Following postmodern feminist pedagogical principles, I designed a student-led discussion activity aiming at prioritizing the student’s own identity, narratives, and choices of visual arts work; enhancing active, participatory learning; and undoing the “hidden curriculum” or “sage on the stage” teaching style, in which male students or the professor often dominates
class discussion. Rather than having the instructor decide what specific visual arts work to examine, topics or issues to explore, or questions to ponder, in the student-led discussion students took turns assuming the role of online discussion leader and selecting and preparing their own visual arts work, topics or issues, and questions they deemed relevant to their personal context for the class to explore together. The activity framework and the instructor provided guidance for the discussion content and activity. The content of the student-led discussion derived from the individual student’s own choice of visual arts work and topics or issues that he or she selected from the course texts. To ensure that the discussion would be successful and meaningful, the instructor also offered timely and intellectual guidance. Giroux (2004) argued that while postmodernism rejects the teacher as the sole or main knowledge holder, he or she still plays an authoritative role in the classroom, and he or she still has responsibility to guide the students to explore and construct knowledge. Therefore, the instructor in this student-led discussion activity did not simply serve as a silent observer or occasional moderator; rather, the instructor guided the student leaders in preparing their initial discussion posts and helped them to continue developing their own discussion threads by joining the discussion as a participant.

Below is a sample description of the student-led discussion activity all the students received when the semester started. It includes the structure and schedule of the activity; the tasks for the discussion leaders, participants, and instructor; and brief suggestions of how to prepare a leading post and lead online discussion.

<table>
<thead>
<tr>
<th>Student-Led Discussion Instruction</th>
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<tr>
<td>During Week 1 of the course, please sign up for the TWO weeks that you wish to lead the online discussion by posting your choices in this leading discussion sign-up area. Your</td>
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instructor will confirm your choices via this area as well.

Each week starting from Week 3, there will be an online class discussion led by you or your classmates. This learning activity is implemented to enhance your active learning skills, as you will have the chance, twice in this semester, to choose your discussion themes, design your discussion questions, and lead the class to explore together what you find important and meaningful. Your course instructor will be available to assist you to prepare and lead the discussion.

**As a discussion leader,** you are expected to prepare and initiate a discussion topic and post early, usually a few days before Monday of the week that you sign up to lead a discussion. This will allow your classmates time to read your initial post, begin reviewing the text, and prepare their responses.

Each week, there may be more than three discussion leaders. Before submitting your leading post, please check to see if other discussion leaders have posted a similar topic, issue, or visual arts work. If so, please revise your post to focus on a different topic, issue, or visual arts work.

In your first post, provide a brief analysis of a topic or issue you take from a chapter of the assigned readings for that week; select visual arts work from the readings, your own creation, or other external but reputable visual repositories to illustrate your topic or issue; and raise a few questions to help the class examine the topic with you together.
Please make sure to include a citation or caption for each visual arts work used in your post.

As your classmates begin responding to your leading post, you should continue to follow up with your own discussion thread by asking for clarification (if needed), building on each other’s points to enrich the analysis, identifying conflicting points, challenging the text author’s points, adding further resources to support your or your classmates’ points, sharing personal experience relevant to the topic, and/or offering more questions to explore the topic further. If no one responds to your leading post in 2-3 days, consider revising your leading post or initiating a new topic.

Your role as a discussion leader is not to provide answers or lecture. Nor are you expected to respond to every classmate’s posts. However, to practice a leading/leadership role in an online learning community, you should review the selected readings and your classmates’ posts carefully and use them to facilitate and enrich the discussion. As discussion progresses, you may continue to raise questions, encourage active participation, occasionally summarize recurring points, and/or mediate conflicting points. The discussion leaders are welcome to contact the instructor, if there are any questions.

**For all class members as discussion participants**, you are expected to read the selected readings beforehand in order to respond to the leaders’ questions as well as other class members’ postings. You are expected to offer thoughtful and resourceful responses, challenge the questions, “deconstruct” each other’s points, find more information, add
additional visual arts work, and/or raise other relevant questions. As the discussion unfolds, everyone should try to continue to provide more sophisticated analyses. Your instructor will also participate in discussion by moderating the discussion, offering correct facts or relevant resources, and following the above expectations for the participants.

I implemented the student-led discussion activity via Moodlerooms (a learning management system) twice in an undergraduate women’s art in history course in the fall and spring semesters of the 2014-2015 academic year. At the end of each semester, the college administered an anonymous learning survey to all the students to collect their feedback on the courses. In the anonymous survey, nearly 70% of the students from the spring 2015 course who responded named the student-led discussion “the best aspect of this [course’s] learning experience” (End-of-Term Learning Survey administered by Empire State College, June 2015).

Based on the students’ feedback, I identified the following factors contributing to their positive online discussion experience: The instructor’s active participation in the student-led discussion; the opportunity for the students to not only voice their own ideas but also be seriously heard and responded to by others; a learning experience that was fun and engaging; acceptance of different interpretations and approaches to understanding visual arts; and the student-led discussion as a site of critical thinking and in-depth knowledge construction rather than fleeting exchanges of quick thoughts or social interactions. The feedback also suggested that when the students assumed the discussion leader role, they felt a strong sense of responsibility, not only to facilitate the flow of their discussion threads but also to raise “valid” topics and questions and “quality” visual arts. A few students noted that the student-led discussion allowed
for in-depth engagement with ideas, readings, and the arts. This could be due to the fact that each student was asked only to lead class discussion twice a semester, which resulted in no more than five leading discussion threads each week. This appeared to be a reasonable number of discussion threads per week, enabling the discussion leaders and class members to focus on the selected topics. Both the strong sense of learning responsibility and time for serious engagement contributed to higher order learning and better learning satisfaction.

**Final Thoughts**

When the students chose their own topics and visual arts work for the class to explore, they placed their own curiosity, identity, and sociocultural context over the instructor’s preferences or the disciplinary traditions. Following postmodern feminist pedagogical theory, the student-led online discussion allowed this type of participatory, active, and self-empowering learning process. It resulted in students’ examining a wide range of visual arts, critically and creatively exploring the meaning of each work, uncovering the influence of the patriarchal system in the discipline, and challenging the contemporary bias against certain artists or social groups. Art history textbooks and the art world have been harshly criticized as male dominated and elitist (Chadwick, 2012). I used Chadwick’s book *Women, Art and Society* to counteract androcentric visual arts pedagogy, but the book still largely represented white, heterosexual, and elitist standpoints. Thus, the student-led discussion played a key role for the students to uncover less-explored but personally meaningful artists, artworks, and issues. In fact, many student discussion leaders chose topics and issues reflecting their marginalized identity, such as adult learner, single parent, person with a disability, and member of the LGBTQ community, or those relating to gender stereotypes, underrepresented ethnic groups in the art world, and so forth. The leaders also took the time to search for artists and artworks that were not included in the
textbooks to accompany their topics or issues. Consequently, the students learned about artists and artworks that were rarely introduced in a traditional visual arts curriculum.

While seemingly serving as a neutral or even invisible “landscape” in the student-led discussion activity, digital technology formed an integral part of postmodern feminist visual arts pedagogy. The discussion forum chosen for the student-led online discussion enabled multi-linear threads, dynamic interactions, multiple ways to search texts and organize discussion posts, a convenient copy-and-paste (as opposed to the cumbersome file size-limited attachment) function for visual arts work, the capability to attach large audio-visual files, and HTML capacity to easily insert a hyperlink or manipulate images and page layout. These features made it easy for the instructor and students to search and sort through several dozens of discussion posts each week; then they could quickly and precisely summarize recurring interpretations of an artwork or compare comments on an artist among different students under different threads.

In this women’s art course, while the majority of the students were non-arts majors, the course subject matter, along with the digital technology, spurred the students to consider artistic elements in their discussion posts. As class discussions continued, the students grew more familiar with the technological features, and their posts became more visually oriented or sophisticated. Toward the middle of the semester, many students’ posts looked as if the students had carefully designed them, purposefully intertwining the visual images with texts of different sizes or colors. Some students designed the posts (manipulating the visual images) to allow for easy downloading, easy viewing, or special effects aiming at accentuating the key point in the post. Some students began commenting on the visual quality of their classmates’ posts. The online discussion technology had encouraged and enabled the students to practice art/design that was not feasible or practical in verbal-only discussion. Freedman (2003) noted that this
postmodern digital era is saturated with visual information and images; being able to communicate effectively through visual images is an important goal of visual arts education. The online discussion technological features selected appeared to be techno-socially responsive to the digital learners in the postmodern era.

I cannot stress enough the importance of the dynamic yet user-friendly online discussion technology employed in the student-led discussion. Research (Collingwood, 2012; Lai, 2013; Rosser, 2006) has indicated a digital gender divide in which female students have less confidence in learning to use new technology and more trouble with technology than male students. In order to level the playing field, it is important to implement user-friendly and intuitive technological features. The learning curve involved in the online discussion technology was relatively low. By the time students started leading class discussions in Week 3, none of the students had raised a question about the basic features in the discussion forum. The user-friendly discussion technology reduced female students’ anxiety in learning to use the discussion forum or male students’ superior sense of technological competency. Indeed, by the middle of the semester, none of the students demonstrated or expressed a lack of confidence or frustration or faced problems with technologies.

In searching for a visual arts pedagogy that is responsive to 21st century digital learners, I have identified a postmodern feminist visual arts pedagogy exemplified by a student-led discussion activity. Based on the students’ feedback, I gather that postmodern feminist pedagogy supports today’s digital learners’ preferences in active participation in knowledge construction, the teacher as a co-learner or non-judgmental participant, multiple examples of visual arts, multiple approaches to interpreting art, dynamic yet user-friendly technology, and an emphasis
on following one’s own curiosity and constructing or presenting self-identity through the visual arts.

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The H.A.C.K. Model of Innovative Instruction:
A Systematic Approach to Technology Integration in Education

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The H.A.C.K. Model of Innovative Instruction was developed to serve as a systematic guide for educators faced with integrating technology into teaching practices. The model was designed to transform a classroom to a student-centered, project-based environment where students take ownership and personalize their learning. This session will give a complete overview of the H.A.C.K. Model of Innovative Instruction, practical applications, and share 'lessons learned' on implementing a strong blended learning culture into a classroom, building, or district.
The H.A.C.K. Model of Innovative Instruction:

A Systematic Approach to Technology Integration in Education

The traditional school environment is changing. The established educational system born out of a standardized industrialized America is challenged by not only the needs of today’s society, but also society’s unknown needs of tomorrow (Horn & Staker, 2015). This shift of societal change demands a change in educational instruction. No longer are the ‘stand and deliver’, ‘drill and kill’ old-school approaches to teaching sufficient in equipping our students with the 21st Century Skills needed to be innovative, technology-minded, self-directed, life-long learners (21st Century Skills Definitions, 2015).

Tony Wagner states in his book Creating Innovators (2012), “The world no longer cares how much you know; the world cares about what you can do with what you know.” This statement sparks many questions. How do we facilitate this paradigm in an educational system? How do we ensure purchased technology is used to promote student innovation successfully? Most importantly, how as educators do we change the characteristics of our instructional practices so we are actually meeting the needs of 21st Century learners?

The H.A.C.K. Model of Innovative Instruction was designed to build capacity and boost self-efficacy of educators while systematically integrating technology and student innovation into instruction. Using defined stages of technology integration, the H.A.C.K. Model ensures that student standards and rigor remain at the forefront of the integration process and moves educators forward in the development of a 21st Century, student-centered learning environment.
Literature Review

The 21st Century demands students acquire an innovative skill-set. Students will need the ingenuity to gather information efficiently and effectively, analyze, and creatively construct new information using technology (21st Century Skills Definitions, 2015). The Information Technology and Innovation Foundation determined that the United States has been the least successful of 40 nations or regions studied in showing improvement in international competitiveness and innovation capacity over the last 10 years (Wagner & Compton, 2012). Wagner states "Most policymakers, and many school administrators, have absolutely no idea what kind of instruction is required to produce students who can think critically and creatively, communicate effectively, and collaborate versus merely score well on a test.”

Although many acknowledge the need for change, it can prove to be a challenging task. In 2013, the former Superintendent of Los Angeles Unified Schools, John Deasy, had a vision of creating a 21st Century district by implementing a massive district-wide 1:1 iPad initiative. Unfortunately, this effort fell disparagingly short of expectations (Blume, 2015). Some critics point to a lack of organization, insufficient instructional technology leadership, and an absence of adequate professional development in using devices to achieve education goals as key errors in this massive initiative (Gliksman, 2014). Michael Horn expresses (2015), “Blended learning, at this point in its evolution, is not a walk in the park.” Although difficult, Horn strongly believes it is a blended learning, student-centered environment that will ultimately transfer the ownership of learning to students. “This translates into an ability to become a lifelong learner, which is
necessary in today’s rapidly changing world, in which knowledge and skills become outdated quickly (Horn, 2015).”

Integration of technology into the educational system is one of the most dramatic, costly, and widespread initiatives in modern educational history (Bebell & Kay, 2010). Although Los Angeles Unified was an extreme case, studies indicate a relationship between a teacher’s self-efficacy in regards to technology, the degree of which technology is integrated, and a student’s overall performance (Bebell & Kay, 2010; Waxman & Huang, 1996).

Bebell and Kay (2010) conducted a study with five middle schools in western Massachusetts. This three-year pilot program provided 1:1 technology access to all students and teachers. The pilot program’s objectives were fundamentally to change teaching strategies, curriculum delivery, classroom management, and enhance capabilities among students to conduct independent research and collaborate with peers. Through a series of yearly surveys, interviews, and observations this quantitative study found a dramatic increase in technology use among teachers and pupils. Teachers who reported adoption of new and novel approaches across curriculum also reported an increase of student motivation, engagement, and academic performance. A vast number of teachers also conveyed experiencing a distinct shift in their teaching. As reported in the final survey, over 80% of pilot teachers indicated that instructional practices within their classrooms had transformed as a result of the 1:1 implementation.

Furthermore, a study that included over 2000 middle school math students examined whether classroom interaction, selection of instructional activities, organizational setting of the classroom, and student on-task/off-task behaviors in the
classroom significantly differed according to the degree in which implementation of technology was taking place in mathematics classrooms. Using a classroom observational protocol and trained observers, the findings revealed significant differences in instructional techniques based on the level of technology integration in a given classroom. Waxman and Haung suggest that the more technology was integrated into the classroom setting, the more there was a significant shift from a traditional teacher-directed model of instruction to a more student-centered, student-independent instructional approach of learning (Waxman & Huang, 1996).

A 2011 U.S. study revealed how a teacher’s self-efficacy can affect an educator’s willingness to implement technology into their classrooms. The goal of the research was to pinpoint elements and obstacles that would keep an in-service educator from utilizing, or not utilizing Web 2.0 tools into their instruction. This quantitative, web-based study surveyed 559 in-service K-12 teachers from across the nation. Results from this study revealed that if a teacher self-assessed as having low self-efficacy in the use of Web 2.0 tools, they also reported a low integration of Web 2.0 tools in their classroom instruction. The study also revealed three key indicators they feel can notably predict whether the integration of Web 2.0 tools will occur in the classroom setting: teacher’s self-efficacy, professional development, and school administrative support (Shu Chien & Franklin, 2011). The H.A.C.K. Model of Innovative Instruction accounts for each of these areas.

H.A.C.K. Model Development

Who knew the words ‘start small’ would become words that sparked and inspired a model for instruction? What does ‘start small’ mean when it comes to integrating technology into a classroom environment? This is the challenge Amy Ackley and Gregg
Russell, a fifth grade teacher and principal at Ronald Reagan Elementary school, faced while looking to implement a 1:1 iPad initiative in a single classroom at a public elementary school in Nampa, ID. Even as experienced veteran educators, with vast content and pedagogical knowledge, Ackley and Russell wrestled with initial implementation and how to successfully leverage technology to meet student outcomes. Although, in the end, the implementation would be considered successful, it did not come without struggle and lack of available resources.

Now working for Northwest Nazarene University’s Doceō Center, Ackley and Russell were determined to focus attention on the technology integration process and finding a way to provide support to others who were working to incorporate technology into the educational setting. Ackley and Russell carefully examined and mapped the natural progression of integration that occurred in Ackley's classroom throughout the year. With student pedagogy & learning at its core, the model was infused with Bloom’s Revised Taxonomy (Anderson & Krathwohl, 2001) and Webb’s Depth of Knowledge (Miller & Linn, 2013) to ensure student rigor and complexity of instruction was addressed throughout the implementation of a blended learning environment.

The H.A.C.K. Model of Innovative Instruction was crafted to create a common language, build capacity, and boost self-efficacy of educators while systematically integrating technology and student innovation into instruction. The strategic model allows not only the educator, but also students to build technology skills and achieve device proficiency. At the same time, the H.A.C.K. Model changes instructional practice. Using four defined stages of technology integration, the model moves an educator from
teacher-directed instruction to teaching that focuses on innovative student-centered instructional activities (see Appendix A).

**Essential Elements of the H.A.C.K. Model of Innovative Instruction**

**Learning Platforms**

The H.A.C.K. Model of Innovative Instruction exists to leverage technology as a tool for learning in the classroom. Ackley learned early on in the 1:1 iPad initiative that the student perception of technology, especially when it came to an ‘app’, could present a challenge. Most students referred to an ‘app’ as a toy or game. To combat this perception, Ackley focused on the words ‘Learning Platform’ when referring to applications on the device. This simple change of terminology manifested the mindset and culture shift needed for students to view technology in a new way. No longer games, applications transformed into Learning Platforms, or instruments, in which students can display evidence of their knowledge.

**H. -Highly Structured**

The first stage of the H.A.C.K Model of Innovative Instruction is ‘H’, Highly Structured. This stage guides educators through the ‘start small’ effect, giving them concrete first steps with technology in their classrooms. The Highly Structured stage is about replacement of activities. The model suggests that educators look for tasks they already do ‘traditionally’ in the classroom and replace those tasks with technology-based approaches. For example, if students traditionally filled out a graphic organizer using pencil and paper, the teacher would replace it by having students use a learning platform with a graphic organizer on a device. Although not all, most ‘H’ activities fall on the lower end of rigor when it comes to Bloom’s Taxonomy (Anderson & Krathwohl, 2001)
or Webb’s Depth of Knowledge (D.O.K) (Miller & Linn, 2013). This decision is purposeful. In the beginning, ‘H’ activities should be structured in such a way that rigorous content and heavy device instruction do not occur simultaneously.

This Highly Structured stage of replacement opportunities is important for many reasons. It allows educators the time to see what technology can ‘look like and feel like’ in their classrooms. This new vision allows teachers to incorporate management routines and procedures to use the new devices successfully in the learning space. This replacement process is not a ‘one and done’ practice (see Appendix B), but something that needs to occur over multiple times of use. Although the Highly Structured stage of the model is only the beginning of the integration process, its importance cannot be understated. During this time, the capacity building progression of not only the educator, but also the students begins.

A. -Allowed Choices

Allowed Choices is a very natural ‘next step’ for educators who have taken the time to do ‘H’ well. In Allowed Choices, teachers leverage the capacity built in ‘Highly Structured’ to initiate deeper levels of learning. Repeated replacements in ‘H' have developed the aptitude of students not only on the device, but also on different learning platforms presented. This newfound competence allows opportunities in the classroom that would not have been possible previously: increased rigor and student choice (see Appendix C).

In Allowed Choices, the lesson design begins to promote student choice in how they evidence their learning. With foundational learning platforms and management procedures in place, the capacity building process of ‘A’ shifts to teachers and students


learning to navigate student choice and deeper level independent learning in the
classroom.

Lessons in Allowed Choices begin the ‘ownership shift’ of learning, giving more
choice and responsibility to the students in how they show evidence of their learning.
Once again, ‘starting small’, allows educators and students to transition into this new
culture of learning experiencing only ‘growing brains’, instead of ‘growing pains’.  For
example, during an Allowed Choices activity, a class may study the different structures
of a cell. The student’s objective is to know, name and state the functions of at least five
different cell structures. Through repeated Highly Structured activities, the class has
experience with such learning platforms as Educreations™, Screenchomp™, Explain
Everything™, and Movenote™. Although used individually in the past, in an Allowed
Choices activity, students can now choose which of the given platforms would be best to
evidence their learning (see Appendix D).

Allowed Choices activities force learners far beyond remember/understand,
recall/reproduction levels of understanding. Educators and students alike begin to
experience the power of student-centered instruction that requires students to apply,
analyze, and think strategically through deeper complexities of Revised Bloom’s
Taxonomy and Webb’s Depths of Knowledge.

C. -Consistent Application

The transitional swing that takes place after Allowed Choices and Consistent
Application is perhaps the most significant shift that occurs in the H.A.C.K. Model of
Innovative Instruction. A Consistent Application classroom exhibits four major
characteristics: Change of culture, consistent use of technology, deeper levels of complexity in learning, and student choice.

When observing a ‘C' classroom, the cultural shift that has occurred in this room is evident in a variety of ways. Instruction is student-centered, where the role of a teacher has shifted to that of a facilitator in the student learning process. Students are not only actively engaged in learning, but also providing and receiving feedback and instruction from their peers. In a Consistent Application classroom, the technological capacity of educators and students is no longer an issue or obstacle in instruction.

The built technological aptitude of educator and students leads to another observable trait, consistent use of technology in the classroom setting. Technology is now seen as an aide, or essential tool, in the learning process to access and share information that may not have been possible before.

With devices no longer an issue, the push for deeper levels of complexity in instruction should be the focus of any Consistent Application Classroom. Intentional and purposeful planning of lessons that increase rigor and student understandings is vital. At this point, outcomes should be asking students to analyze, synthesize, create, evaluate, and extend their thinking beyond the given task, or when possible, across content areas.

Perhaps the most prominent and significant attribute of a Consistent Application is student choice. Although Allowed Choices had the beginnings of student choice, the instructor was still prescribing what those choices would be. In a ‘C' classroom, the students are encouraged to choose a learning platform independently to evidence their learning. In fact, at this point students’ technological capacities are such that they may ‘appsmash’ (Kulowiec, 2014), or choose a variety of platforms, to showcase evidence of
their knowledge (see Appendix E). When feasible, students are also encouraged to choose topics or concepts, and personalize aspects of their education. This aspect of student choice boosts student engagement and the likelihood of students' expressing their thoughts and feelings on a given topic or issue due to the sense and meaning that subject holds to a particular pupil (Marzano & Pickering 2011; Sousa, 2006).

**K. Knowledge Centered**

A Knowledge Centered classroom focuses on identifying student outcomes, mentoring, and providing a learning environment that allows your students to take control, personalize, and achieve their targeted educational goals. This student-driven, rubric centered, inquiry/project-based instruction pushes students far beyond the traditional brick and mortar classroom. It contextualizes knowledge to real-world problems/issues facing them globally.

The intent of this type of complex instruction is to develop highly independent learners that think cross-circularly and acquire the experiential learning skills needed to be our innovators of tomorrow. Lesson design should emphasize and require students to interact with real-world sites, experiences or experts. Whether physically or virtually, these concrete experiences are necessary to create tangible and authentic understandings in the brain to deepen student’s learning (Zull, 2002). Instructors should consider employing such learning platforms as Skype™, Facetime™, or other Web 2.0 tools to achieve this process with students.

Other than clearly designed, standards-based student objectives, no other stipulations should be placed on how students choose to show competency or mastery of their learning. The process of analyzing a problem, gathering and synthesizing needed
information and the persistence required for inquiry/project based learning, support the 21st learning skills students’ need for the unknown jobs of tomorrow (see Appendix F).

**H.A.C.K. Wheel with Learning Platforms**

The H.A.C.K. Wheel with Learning Platforms (see Appendix G) was created as a support to educators who are ‘H.A.C.K.ing’ their districts, schools, or classrooms. H.A.C.K. Learning Platform Wheels developed for Apple™, Android™, and Google™/Web 2.0 identify platforms that can facilitate the type of instruction needed in each of the four various stages of the H.A.C.K. Model of Innovative Instruction. The wheels are not an inclusive list, or a list that should limit the use of the various platforms presented. The wheel is a visual aid in understanding the H.A.C.K. Model, and a pre-researched resource to offer platform ideas to assist in a particular level of instruction. In the fast-paced world of technology, the NNU Doceō Center considers the wheels to be fluid, living documents, subject to changes and updating as needed.

**Future Implications**

The Northwest Nazarene University’s Doceō Center believes the H.A.C.K. Model of Innovative Instruction has the potential of becoming a national model for technology integration in education.

**Uses for H.A.C.K. Model in K-12 Education**

The H.A.C.K. Model of Innovative Instruction’s impact on K-12 education is growing. Ackley and Russell, along with the Northwest Nazarene University’s Doceō Center Team, Eric Kellerer and Jesse Buchholz, continue to collaborate and create an effective professional development series (see Appendix H) that incorporates the values and principles of the model. The H.A.C.K. Model’s structure allows an educator to
identify where they currently stand in the technology integration process. It then provides an educator with a systematic process of moving forward towards competency in technology use in the educational setting.

Along with professional development, the H.A.C.K. Model has inspired a monthly program called ‘Platforms LIVE!’ (see Appendix I). ‘Platforms LIVE!’ is a hands-on platform experience building capacity of educators in innovative platform’s that influence instruction. The H.A.C.K. Model has allowed opportunity to work closely with districts, schools, and staffs, creating advocates that can produce the systemic change needed in education.

**Uses for H.A.C.K. Model in Higher Education**

Traditionally higher education pre-service and in-service graduate student programs have included some type of ‘technology’ course for educators. These courses have customarily ended up being ‘how-to’ sessions for teachers. While this kind of class has educated teachers on how to create websites, build documents, and become more technology-minded, it did not address the disconnect that exists for many educators on how to leverage technology to meet student objectives. The H.A.C.K. Model of Innovative Instruction offers an answer to that disconnect.

The H.A.C.K. Model provides guidance in constructing curriculum that incorporates changes in instructional practices while integrating innovative instruction. Influencing pre-service and in-service teachers at this level can begin to transform and support the systemic shift of instructional practices that support 21st Century Skills. The H.A.C.K. Model of Innovative Instruction will be a foundational instrument incorporated
into an undergraduate and graduate course entitled *Innovation in Education* in the fall of 2015 at Northwest Nazarene University.

The H.A.C.K. Model of Innovative Instruction also offers an approach to education that can influence and stimulate innovative practices in higher education. Just as in K-12 education, university level instructors and professors can look to the H.A.C.K. Model as a way to increase innovative instructional strategies and technological capacity into their general education, upper division, and graduate coursework.
References


Appendix A

H.A.C.K. Attributes Overview

![H.A.C.K. Model of Innovative Instruction](image)
Appendix B

H. Highly-Structured Graphic
Appendix C

A. Allowed-Choices Graphic 1
Appendix D

A. Allowed-Choices Graphic 2
Appendix E

C. Consistent Application Graphic

*App Smashing
Appendix F

K. Knowledge-Centered Graphic
Appendix G

The H.A.C.K. Model of Innovative Instruction with Learning Platforms

(Platform Wheel- Apple™ Based)
### Appendix H

**Cover Page and Objectives from H.A.C.K. Professional Development Series**

#### Session #3: Highly Structured “H”

<table>
<thead>
<tr>
<th>Objective/s:</th>
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<tbody>
<tr>
<td>Students will know:</td>
</tr>
<tr>
<td>1. The H.A.C.K. Model of Innovative Instruction, its relationship to Bloom’s Taxonomy &amp; Webb’s Depth of Knowledge, and how it influences instruction.</td>
</tr>
<tr>
<td>2. Multiple Platforms/Applications that can be used to leverage student outcomes.</td>
</tr>
<tr>
<td>3. That content and skill development of students can be supported by blended learning practices.</td>
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<table>
<thead>
<tr>
<th>Students will be able to:</th>
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<tbody>
<tr>
<td>1. Apply the H.A.C.K. Model of Innovative Instruction into lesson plan designs and educational practices.</td>
</tr>
<tr>
<td>2. Plan and design lessons based on the stages of the H.A.C.K. Model of Innovative Instruction, Bloom’s Taxonomy and Webb’s Depth of Knowledge.</td>
</tr>
<tr>
<td>3. Utilize and be fluent in various technology, platforms/applications and leverage those resources to meet student outcomes in the educational setting.</td>
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**Docebo Center Objectives:**

1. Increase teacher candidate knowledge and skill to prepare candidates to integrate technology into effective teaching strategies that support P-12 student outcomes. (Teacher candidates will be supported through their 3rd year in the field.)
2. Increase inservice teacher and administrator knowledge and skill to integrate technology into effective teaching strategies that support P-12 student outcomes.
3. Build an evidence base for effective strategies for integrating technology in the educational process that foster improved student outcomes.
Appendix I

Platforms LIVE! Monthly Program Flyer

Doceo Center
Inspire. Educate.

PRESENTS...

PLATFORMS LIVE!

THURSDAY
FEBRUARY 26TH
4:30PM - 5:30PM
at NNU LEARNING COMMONS
611 S. University Blvd.

A HANDS-ON APPS EXPERIENCE TRANSFORMING THE WAY YOU TEACH

This month’s topic: STUDENT ENGAGEMENT

COME EXPERIENCE THE FOLLOWING PLATFORMS (APPS):

*Both Platforms (Apps) this month are web-based/non-device specific. Please visit both websites and create accounts before our LIVE session.

KAHooti (FREE)
Discover how competition and a "game-based" approach to learning can increase student engagement.
Whatever the device, or even BYOD. Kahoot is a "game-changer!"

NEARPOD (FREE)
Ever struggle with keeping student attention? Nearpod may give you the edge you need. Nearpod is an interactive platform any teacher can put to use.

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Abstract

THE EFFECT OF MUSIC ON DISRUPTIVE BEHAVIOR IN STUDENTS WITH EMOTIONAL/BEHAVIORAL DISORDERS

ANTHONY ROTHFORK

The purpose of this study was to evaluate the effectiveness of listening to music as an intervention to improve disruptive behavior in middle school age children with emotional/behavioral disabilities. Five middle-school students participated in a single-subject design, which involved a multiple baseline across subjects and settings. Students listened to an eight-minute recording of classical music on an iPod before engaging in an independent math or reading assignment while seated at their desk. The researcher used fixed rate recording to collect data over a five-minute session. No significant differences were found between pre-treatment and post-treatment for the targeted behaviors observed during the study. The small sample size
of the study is cited as the possible reason for the negative results. Limitations as well as directions for future research are also discussed.
Meeting the needs of diverse learners is an ongoing challenge for educators. Students come from different cultures, with different interests, background experience, interests, and with a wide degree of readiness to learn. There is growing evidence that differentiated instruction has positive effects on student learning (Rock, Gregg, Ellis, & Gable, 2008). Some basic principles of differentiated instruction are simple (O’Brien & Guiney, 2001): every child can learn and
every teacher can learn. All children have the right to high quality education. There is a presumption of student competence and progress for all will be expected, recognized, and rewarded. Students have common needs, distinct needs, and individual needs.

Creating lessons that provide motivation, engagement, and appropriate levels of challenge for these diverse learners takes consideration and planning. Research has determined that differentiated instruction within the classroom is one way to meet the needs of diverse learners. Additionally, flipping the classroom is also an effective strategy. The flipped classroom allows the teacher to guide instruction on the side, often through the use of technology, much like mentoring. This presentation will provide participants with hands-on application of differentiated instructional practices.

**Differentiation**

Tomlinson and Imbeau (2010) state, “At the core of the classroom practice of differentiation is the modification of four curriculum-related elements—content, process, product, and affect—which are based on three categories of student need and variance—readiness, interest, and learning profile.” Teachers who differentiate lessons provide students with choice, flexibility, on-going assessment, and creativity in how concepts are learned.

When planning differentiated instruction, it is critical to consider different ways to offer content, engage students in learning, and provide opportunities for varied end products. The first step in planning for differentiated instruction is to know your students. Begin by creating learning profiles. Collect information that includes learning preferences, state assessment scores, academic scores, and other scores related to academic performance, and also collect personal information such as family structure, hobbies and interests (Anderson, 2007). Knowing where a student is in understanding a particular skill, allows the teacher to plan instruction to extend that
understanding. Students need to be challenged, and if tasks are too easy, they become bored and do not learn. Conversely, motivation is lessened when tasks are consistently too difficult. Getting to know students helps teachers provide meaningful and engaging lessons.

Content refers to the materials used for instruction. Differentiating content, the “what” of instruction, allows a teacher to vary the level of complexity of materials. Differentiating process, the “how” of instruction, means that teachers vary the learning activities based on the interests or learning styles identified when creating learning profiles. This can include grouping methods such as whole group, small group, pairs, fixed groups, flexible groups, etc. Differentiating product provides students with a choice in how they demonstrate what they have learned. This can include a variety of ways to express knowledge, degree of difficulty, as well as different types of evaluation (Tomlinson, 2001).

Several concepts have been included in literature about differentiation. One method of differentiating is to use a RAFT activity. The acronym RAFT stands for Role, Audience, Format and Topic. In a RAFT assignment, a choice of Role is presented, such as child, adult, workshop participant, or student. The writer takes on the persona of the person and writes in that voice. Audience describes to whom the person is writing. Format describes how the writing will convey the idea. Topic specifies the content for the writing. If a student is focusing on readiness levels, they can be assigned to a specific RAFT depending on their readiness. Other strategies for differentiated instruction include Tic Tac Toe assignments, where students need to complete three activities in a row, but have choice as to which ones they choose. Teachers can strategically place assignments on Tic Tac Toe boards to ensure that all concepts will be covered. Tiered instruction requires developing assignments with different degrees of complexity. Tiered assignments can be more abstract or concrete, require different amounts of support, different
resources, or different background knowledge and skill. Task cards are little cards that contain some task or activity for students to complete. They can be used for either individual or group learning and can be created to target a wider range of skills while promoting student autonomy (Tomlinson & Imbeau, 2010).

**Flipped Learning**

Flipped learning is a strategy where direct instruction is conducted outside of the traditional learning environment and active, interactive learning occurs during group time. Learners apply concepts and engage in creative activities, problem solving, and collaborative learning to show their content learning (FlippedLearning.org; Roehl, Reddy & Shannon, 2013).

When beginning to use flipped learning it’s important to plan and research the content and the activities used to engage learners. Videos for flipping are key to engaging students and knowing how to make a good video. Making the video, editing, and producing the video can be very basic to complicated, depending on the abilities and hardware/software available. Including the best strategies when producing videos helps to ensure students will complete the homework and be ready to apply the materials when entering the classroom (FlippedLearning.org).

The benefits of flipping include students are more engaged, there is an increase in class flexibility with more time available to answer questions, and students have a clearer understanding of expectations of what is needed for class (Mok, 2014; Roehl, Reddy, & Shannon, 2013; Yeung & O’Malley, 2014). Additionally, students have the opportunity to re-watch more complex videos giving them more opportunities to understand materials and formulate questions prior to class (Mok, 2014). Flipping is not a new concept but is being implemented with greater emphasis as new technology makes it more accessible to instructors.

**Conclusion**
Teachers, who effectively differentiate, employ numerous strategies to meet the needs of diverse learners. This paper has outlined some of the processes for providing differentiated instruction. Teachers who successfully differentiate instruction are consistently reflective of their practice, and stay apprised of effective pedagogy and how students learn (Parsons, Dodman, & Burrowbridge, 2013).
References


Parsons, S. A., Dodman, S. L., & Burrowbridge S. C. Broadening the view of differentiated instruction. The Phi Delta Kappan, 95(1) 38-42.


Title: Developing and Implementing an Interprofessional Service-Learning Internship: The Community Health Project (CHP)

Topic Area: Health Education

Presentation Format: Workshop

Description: This workshop will showcase the Community Health Project (CHP) as a model for development of a successful academic-community partnership between public health or social service organizations and an academic medical center. We will share specific developmental processes including funding, student recruitment, agency relationship building, project evaluation methods, and academic course requirements. Case studies will highlight mentor/student experiences. Examples of course projects will demonstrate the scope of student work and the depth of community contribution.

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ABSTRACT

The Community Health Project (CHP) is a long-standing and unique academic course at the University of Kansas Medical Center that is made possible by solid academic-community partnerships forged by University faculty, community organizations, and students. Established 22 years ago, the Community Health Project (CHP) provides a unique opportunity for students at an academic medical center to work with community agencies and the populations they serve in order to gain a better understanding of the health needs, health-related challenges, and real-life solutions. Directed by an interprofessional faculty, the mission of the Community Health Project is to provide an interdisciplinary, service learning internship that enhances the educational experience of students in the health professions by immersing them in public health and social service settings. Students enrolled in the course represent a variety of disciplines, including medicine, public health, pharmacy, occupational therapy, dietetics, health information management, health policy, and urban design.

During the eight-week service-learning internship, students are required to keep weekly journals, design and implement a project to be mutually beneficial to their education and to the needs of the agency, submit a comprehensive final report that includes the project and overall internship experience, and present their agency experiences at a campus-wide Showcase event. Partnering agencies are required to provide the organizational structure and mentorship to foster learning about public health issues and service and to support student success. Students participating in CHP were supported in their personal and professional development within three key areas: behavior, cognition, and skills. To facilitate development, six specific learning objectives shaped the intern projects. Students were asked to demonstrate 1) knowledge of the cultural, environmental, and socioeconomic factors that influence health promotion and disease prevention, 2) knowledge of health assessment, maintenance, and promotion within a community setting, 3) clinical and instructional skills as deemed appropriate with his/her agency, 4) project development, program implementation, and communication skills applicable to his/her agency and the population it serves, 5) reliability and dependability in performing his/her responsibilities within the agency, and 6) application of his/her abilities and recognition of his/her limitations with regard to knowledge, experience, and clinical judgment. Through the CHP experience, we aim to extend the prescribed reach of medical model instruction to include a lens into the intersection of public health, clinical best practice, social determinants of health, and real people.

This workshop will present the process of developing a model for successful academic-community partnerships from funding issues, student recruitment strategies, agency mentor development and retention of agencies, to enlisting guest speakers, creating evaluation tools, and engaging students in the work of public health and the social service sector. Case examples will highlight the mutual benefits of agency and student participation in CHP. Further, we will share a variety of projects undertaken by recent CHP students to demonstrate the scope of work and community impact.
Online Skills Training for Reflective Supervision in Nursing

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Abstract

Aim
The aim of the project was to develop a distance education course with an online design for skills training in reflective supervision in nursing; the aim was also to evaluate the online design scientifically.

Background
Being a nurse means meeting people in need of care and nursing and becoming a part of their lives, which often means illness, pain and suffering. It is well documented that health care professionals, regardless of what kind of care is given, often are affected by work stress. This work stress can result in prolonged illness for the
individual nurse and negative consequences for the patients; moreover, it means high costs for society. Several studies show that professional supervision in nursing strengthens nurses' professional development, contributes to increased creativity and reduces the risk of burnout and work stress. Professional supervision in nursing is traditionally performed as group sessions where the participants regularly meet face-to-face with their supervisor in a physical room. In practice, it is hard to arrange physical meetings for nurses working in different settings and in rural and remote areas. Therefore, the intention of this project was to enable course participation with only a few campus meetings and online supervision sessions.

**Method and Results**

To evaluate the participants' reflections while participating in the online supervision course, a qualitative approach was used. Focus group interviews were performed with two student groups, six participants in one group and seven in the other group. The interviews were performed before the course started, after the second semester (out of four), and when the course is completed. The course is to run for a duration of two years. The teachers were also interviewed before the course, and there will be another interview session after the course is completed. In addition, the students will answer a validated questionnaire about their experiences with online supervision. Qualitative content analysis will be used for the interviews and descriptive statistics will be used for the questionnaire responses. Preliminary results from the interviews and questionnaires will be presented.

**Keywords:** Online education, leadership and professional supervision in nursing
Rural Nursing Course Using Web-based Virtual Patients and Online Emergency Team Training

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Aim
To develop online virtual patients and virtual emergency room simulations for the examination of master student skills in health assessment and handoff communication in a rural nursing course via distance spanning technology.

Method
This project was part of the pedagogical development of an online course in rural nursing where acute care and health assessment skills were included in the curriculum goals. An immersive emergency room environment was built in the software “Open Sim”. Patient cases for Objective Structured Clinical Examinations (OSCE) were constructed and to each case, a corresponding patient avatar was created. After a teacher-led introduction, the students had free access to the room for additional scenario training. Team communication in the scenario and the students’ abilities to assess Airway, Breathing, Circulation, Disability and Exposure (ABCDE) were scored. Handoff communication according to Situation, Background, Assessment and Recommendation (SBAR) was also assessed. Performances were scored 0 to 10 points for each student and graded as pass or fail. The scenarios were recorded so that they could be reviewed for the final grading and for a second opinion from colleagues.

Results
Students clearly saw the advantages in the possibility of performing skills and team training online in a virtual emergency room. The technique is promising, though there is the potential for improvement when it comes to “game technology” and making the avatars perform more precise, hands-on tasks.

Teacher inter-rater assessments of the recorded scenarios will be presented.

Conclusion
The examination form was deemed fair and useful by both teachers and students. The immersive emergency room environment is an acceptable alternative to use in OSCEs.

Keywords: Clinical assessment, online education, virtual simulation, rural nursing
1. Title of the submission:
Free Interactive Online Health Education for the Underprivileged in India

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6. Abstract and/or full paper: See below
Abstract

Poverty, poor sanitation and lack of education attribute to poor health choices and diseases among the underprivileged in India. The World Health Organization’s 2015 statistical profile indicates stroke, heart diseases, tuberculosis, infections, and diarrhea, are common causes of death in India which are mostly preventable. Some underprivileged high school students and teachers in India are receiving health education via interactive webcam calls from Hawaii with videos, discussions and case studies which are considered actions for health promotion on the Nutbeam Outcome Model for Health Promotion. Emphasis is placed on students to share information learned with other students, family and neighbors. Maslow identified physiological integrity and safety as basic needs, which drive the motivational behavior of students to learn about disease prevention as well as share the same with others in the community. Results gathered via webcam discussions with students, teachers and the school principal indicate 90% of students are successfully sharing information. Outcomes such as changes in diet, physical activity, environment, and attitude toward health have been reported. This program has implications for global healthcare educational leaders to improve health literacy among the poor.
Revitalizing English lessons through PowerPoint

Presented by:

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Revitalizing English lessons through PowerPoint

Abstract

In this presentation participants will see how one teacher went “chalkless” by using PowerPoint for all his English as a Second Language lessons. The presenter will detail the many benefits he has recognized by no longer using chalk and a chalkboard. Using a projector and PowerPoint is implementing technology in the classroom without needing to be a computer expert, learning a new online management system or asking your school to buy new computers or servers. Making PowerPoint slides for your classes is easy. Through the use of PowerPoint in your classroom, students can check the answers to their homework easily. Teachers are able to give much information, teach new vocabulary in interesting ways and review previous lessons. Using PowerPoint is also an excellent way to manage your class time.

Many ESL teachers already use technology in their classroom, but some have not already embraced this trend. There are many reasons ESL teachers do not use incorporate technology in their teaching such as fear, lack of funds or lack of technological expertise. Using PowerPoint in the ESL classroom is one way to incorporate technology into a teacher’s lessons. In order to use it, a classroom must have a projector and a screen. PowerPoint is one part of Microsoft Office software and is readily available for both Windows and Mac
users. This paper will explain how using PowerPoint is very advantageous for ESL teachers.

Two years ago this author wanted to incorporate technology into the classroom because he heard of its many advantages and saw his colleagues using it. He had used PowerPoint only a few times, but then a sudden change happened in to his classes. Because the author had to teach twice as long (90 minutes instead of 45), he decided to use this change as a reason to go “chalkless” or in other words, use only PowerPoint and a screen instead of chalk and a blackboard or whiteboard. The changes in this teacher’s classes after using PowerPoint were immediate. The amount of time he spent writing on the board was eliminated because that time was now done before class writing PowerPoint slides. In his first class using PowerPoint, he went through all of first class material much faster than he had expected and had time left over. Though writing out the information on the slides before class is time consuming, in the long run it is a time saver in the classroom. Also the slides can be used again in the following semester or year, so writing out the information on the slides is really done only one time. Eliminating the time a teacher takes writing information on the blackboard or whiteboard is important because it makes the teacher more efficient.

Showing drawings and pictures for the whole class to see is not easy unless you are projecting them onto a screen. Getting pictures from a computer to a PowerPoint slide is easy. The only process a person must use is copy and paste. This is another reason why PowerPoint slides are beneficial for the ESL class.

A person with a basic knowledge of computers and the ability to type, cut and paste can start making slides right away.
There are even ready-made slides for teaching certain grammar points such as prepositions. PowerPoint is user friendly.

Recognizing that students have different learning styles and incorporating them into the ESL lesson plan is important. One way to incorporate these different styles into a lesson plan is by using PowerPoint slides. For example, the author uses a listening and speaking activity in his class of Japanese college students. In the past, the author used to write eight past tense verbs on the board, say the 8 sentences several times and have the students repeat the sentences to the person sitting next to them. This exercise requires students to memorize the sentences. The exercise was difficult for students who could not memorize easily without a visual aid. Using PowerPoint, the teacher now shows a sentence on the screen along with a picture that corresponds to the sentence. Students who are more visually motivated can attach the sentence to a picture and can memorize the sentence much more easily.

There are other advantages of using PowerPoint in the classroom. One is that the teacher no longer has to worry about inhaling chalk dust or getting it on his/her clothes. Hints to answers can easily be shown on PowerPoint slides. For example a teacher can prepare a hint such as the first or last letter of an answer in a close exercise.

Even if a teacher has limited technological expertise, the use of copy and paste can go a long way when making PowerPoint slide presentations. These days, college students are often recommended or required to make PowerPoint presentations as part of an end of the semester project. If the teacher is well-versed in using PowerPoint, she/he can help students when they are making their own.

College level students are very accustomed to seeing class material presented through PowerPoint slide presentations.
They have no problem with it as long as the font is large enough for all the students to see. The author recommends using just one or two sentences per slide and that the font should be 48.

PowerPoint presentations help a teacher manage her/his classroom time. For example, a teacher writes on a slide, “Mr. Bozek will hand out rhyme papers.” This is not necessary for the students to see, but it helps the teacher to remember to pass out those papers at a certain time in the class. In addition, teachers can write the answers to homework on PowerPoint slides. The teacher can still ask a student to say the answer and then the rest of the class can check the answer on the screen. Many teachers still spend a great deal of time writing answers on the board. Just think of the minutes that can be saved if the answers are ready to present to the class on PowerPoint slides.

When a teacher has developed slides for a class for a semester, then she/he can start going deeper by adding videos or animation to the slides. This is more difficult than just copying and pasting pictures.

PowerPoint is an excellent tool for ESL teachers. For those educators who do not already use it in their classrooms, there is no better time than the present to begin. Making and using PowerPoint slides will revitalize a class through its power to present pictures, give hints, and present large amounts of information to students while saving time.
1. Title
Improving Course Evaluations through the Use of New Technology: 80% Response plus Innovative Approaches to Improving Faculty Teaching Practice

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Abstract

Improving Course Evaluations through the Use of New Technology: 80% Response plus Innovative Approaches to Improving Faculty Teaching Practice

Since the advent of electronic course evaluations in the 1990s, two choices have existed for those charged with conducting evaluations: 1) Continue using paper evaluations, which results in response rates in the range of 80% or above. However, this process is expensive, time-consuming, and labor intensive. Or 2) use electronic evaluations which are more efficient and less costly, but produce response rates in the range of 30% to 50%. Most administrators, over time, moved to electronic course evaluations.

As the use of electronic course evaluations expanded, instructors and administrators complained – justifiably – about the loss in the quantity of evaluation data (Nowell, Gale, & Handley, 2010). The main purpose of conducting evaluations is to gather data from students about an instructor’s teaching practice. And basically, the more data, the better (Ebel, 1965; Palmer, 2012). In addition, new problems arose. For example, if only half the students completed evaluations, were the responses from this group representative of the class as a whole, or did response and sampling bias cast doubt on the results? Many techniques were tried in order to boost response rates to previous levels, mostly without success.

During the Spring 2015 semester at a large southwestern university, evaluations were conducted in person in four classes. An evaluator entered the classroom during the final week of class and guided students through the process of completing course evaluations via their mobile devices. The process also included a short discussion of several misconceptions about course evaluations that students had (Kuch & Schraw, 2015). The overall response rate for these classes was 78.4% as reported in Table 1.

This process overcomes the low response rates introduced with the advent of electronic course evaluations and restores the status quo of 20 years ago. In addition, this technology opens the door to new possibilities. For example, it would be possible to show students in real time the results of
the evaluation, both individually on their mobile devices and collectively on the screen in a smart classroom. It would be possible to delve more deeply into areas that showed up as special or troublesome by asking the students additional questions. It would even be possible to ask the instructor to re-enter the classroom and participate in a collaborative and reflective discussion, in real time, about potential ways the class could be improved. What this technology provides is a platform that opens myriad new creative possibilities for instructors to improve their practice and for students to participate more fully in the process of education improvement.
References


Table 1

*In-class Evaluation Results*

<table>
<thead>
<tr>
<th>Class</th>
<th>Initial Number of Responses</th>
<th>Final Number of Responses</th>
<th>Number of Students Enrolled</th>
<th>Response Rate</th>
<th>Previous Response Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting</td>
<td>48</td>
<td>52</td>
<td>56</td>
<td>94.6%</td>
<td>60.0%</td>
</tr>
<tr>
<td>Education</td>
<td>9</td>
<td>9</td>
<td>12</td>
<td>75.0%</td>
<td>42.9%</td>
</tr>
<tr>
<td>Business</td>
<td>98</td>
<td>123</td>
<td>169</td>
<td>72.8%</td>
<td>45.5%</td>
</tr>
<tr>
<td>Hospitality</td>
<td>29</td>
<td>30</td>
<td>37</td>
<td>81.1%</td>
<td>43.3%</td>
</tr>
<tr>
<td>Total</td>
<td>184</td>
<td>214</td>
<td>273</td>
<td>78.4%</td>
<td>49.0%</td>
</tr>
</tbody>
</table>

The Initial Number of Responses is the number of completed evaluations when the evaluator left the classroom. The Final Number of Responses is the number of completed evaluations when the evaluation period “closed,” usually several days after the evaluator visited the classroom. The Response Rate is calculated from the Final Number of Responses as a percentage of the Number of Students Enrolled in the class. The Previous Response Rate indicates the response rate the last time this class was taught by the same instructor.
HICE Proposal Title Page

a. Title: Backward Design Course Redesign
b. Topic area: Higher Education
c. Presentation format: Panel Session
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Panel Session Paper

Introduction

A Course Redesign Studio was created and offered to the Chaminade University faculty members for the summer of 2015. This panel session will allow each faculty member to describe the individual process, which they used to redesign their course and showcase their scholarly product. The application process was initiated by the following request for applications in May 2015.

“The Faculty Center invites faculty to actively engage in a weeklong Summer Course Redesign (SCR) studio. The purpose of the experience is to provide faculty with the time, resources, information, and collaborative support needed to revise and redesign an existing course in ways that will maximize student engagement and learning.

Faculty selected to participate and who produce a redesigned artifact will receive a stipend. Participants would be required to attend the entire day of all meetings during the week and produce all deliverables to receive the stipend. This faculty development opportunity aligns with the Faculty Handbook section 4.10.5. addressing Faculty Development Summer Funds.

“Each year the university will set aside funds, as the budget permits, to support projects designed by full-time or a team of full-time faculty for the purpose of improving teaching, learning and scholarly research at Chaminade.”

For this funding opportunity, participants will spend time integrating research-driven teaching and learning strategies into their selected course. At the conclusion of the studio, each faculty member will have a formal written course plan, redesigned class meetings, and updated, appropriate, relevant and meaningful course assignments with an associated assessment rubric. Faculty members will include a map of the relationship between learning and program outcomes as well as how each will be assessed, course materials, and course activities.

There will be two Course Redesign studios offered. The first studio will be held June 1-5, 2015 from 9 AM - 5 PM each day. The second studio will be held during the same hours on July 6-10, 2015. Faculty members are eligible to apply and may receive funding for both sessions if they submit an application to redesign different courses for each session.
The Application Process

The Faculty Development Committee and/or the current and prior Faculty Senate President will review the proposals. Preference will be given to applications, which present specific educational outcomes, procedures and time line, a philosophy of assessment, and a method for sharing the results. Ideally, successful proposals will share how they plan to engage students by integrating active learning strategies and appropriate, relevant, meaningful innovative technologies.

We would like to receive the applications by May 18, 2015. To apply, please review this document, answer the items below and complete the Faculty Development Application form to request summer funds. To submit your application, please respond to the prompts below and email to jace.hargis@chaminade.edu. Thank you.

Name: ____________________________
Division: ______________________ Discipline: __________________________
Years teaching at CUH: ____________ Years teaching in higher education: _____
Would you be interested in creating a Scholarship of Teaching and Learning manuscript from the outcomes of this Summer Course Redesign Studio? Yes/No/Maybe

1. What courses do you typically teach?
2. When would you be implementing this redesigned course (semester/year)?
3. How frequently do you teach this course?
4. Provide the title and brief course description that you would like to redesign (as it exists currently)(200 words maximum).
5. Reflect on the course you intend to redesign and identify what you perceive as its current strengths. Please include any data to support this (200 words maximum).
6. Reflect on the course you intend to redesign and identify the weaknesses – again, if you have data, please include (200 words maximum).
7. Describe the specific areas that are most important for you to improve and how you propose to implement these improvements. (200 words maximum).
8. How will you know if the redesign is successful? How will you evaluate the impact of the redesigned aspects of the course? (200 words maximum).
9. Briefly share your experience with instructional design – please share specific models that you may have used (200 words maximum).
10. Will you allow the Faculty Center to showcase your redesigned course as an example to other faculty who are considering redesigning their courses?"

Course Redesign Agenda

Day 1
○ Before Design: Higher Education Learning Theories
○ Wiggins & McTighe Backward Design
○ Results - Teaching Outcomes; Alignment; Course Outcomes

Day 2 - Evidence (Assessment) - Strategies; Matrix; Outcomes Matrix

Day 3 - Experiences - Planning; Interactive Strategies; Teaching Models

Day 4 - Syllabus Design - Guide to Teaching & Learning; Interactive Syllabus; Appropriate, Relevant, Meaningful (ARM) Technology
Day 5 - Share - Pilot, Reflect, Critique, Update

Formative Assessment
Throughout the week, research-based, effective practice learning modules were shared. Faculty members were asked to reflect on the activities and provide their insights to three prompts to encourage their reflection and provide useful formative assessment data to assist the facilitator. The prompts asked them to share

1. a ONE sentence summary (goal was to determine if they had gained a broad sense of the knowledge);
2. ONE idea they would use in their class (goal was to identify if they could apply the skills learned); and
3. ONE word that describes the way they feel right now (goal was to discover their current disposition).

The faculty wrote their responses on Post-It notes, anonymously, which were collected, aggregated and shared through Google Docs for everyone to view. The data was analyzed each day to help plan for subsequent days and at the end of the event, major themes emerged, which are presented below.

DAY 1, PART 1: Before Design: Learning Theories

One Sentence Summary of this Session

- Course backward redesign; Learning how we learn; Information processing theory: The way we help students encode should be how we assess.

“Learning with colleagues from different disciplines is helpful.”
“Truly feel like I am gaining something useful here.”

One Idea That You Might Use in YOUR Teaching & Learning

- Formative assessment; Concept mapping; Poll Everywhere; Backwards design; VARK teaching survey; Google Drive

One Word That Describes How You Feel Right Now

YOUR THOUGHTS – DAY 1, PART 2: Rewriting Student Learning Outcomes

One Sentence Summary of this Session

- Learning Outcomes; Alignment of assessment strategies to outcomes (LOs); Backward design; REEx
“Thank you for waking up my “AHA” moment. I am on the sun now!”
“Learning how to place teaching into more of a measurable framework.”

One Idea That You Might Use in YOUR Teaching & Learning
- Refined LOs; Sharing with my students; Integrating more technology; REEx; KWL; Backwards syllabus construction; Link course, program and institutional outcomes using rubrics; Revisit Program & Course LOs for alignment.

One Word That Describes How You Feel Right Now

YOUR THOUGHTS – DAY 2, PART 1: Alignment of LOs, Assessment & Topics
One Sentence Summary of this Session
- Holistic viewpoint; use assessments to help students improve; giving meaning to assessment; recognizing and understanding key point of the learning:

“I have been de-constructing to build up.”
“Assessment is ongoing.”

One Idea That You Might Use in YOUR Teaching & Learning
- Collaboration with non-division colleagues; Breaking down the class into modules and lining it up with the LOs; Share the information with students; Rubistar rubric creator; Poll Everywhere; Assessment before and after (during class); Formative approaches to assessment.

One Word That Describes How You Feel Right Now
YOUR THOUGHTS – DAY 3: Active Learning Strategies

One Sentence Summary of this Session
- Meta-active learning: If we really want students to learn, they have to be engaged! Active learning helps students move, speak and know others; Diversity of ideas - methods to use in online course

“Extremely practical and useful session.”
“Active learning is not simple but can be done.”

One Idea That You Might Use in YOUR Teaching & Learning
- List of 140 active learning strategies; Group learning self-assessment; Storyboarding; Use of “make a 30 second movie; Facilitating; Fun; Not to be afraid of active learning; Building relationships.

One Word That Describes How You Feel Right Now

YOUR THOUGHTS – DAY 4, PART 2: Appropriate, Relevant, Meaningful Tech

One Sentence Summary of this Session
- Process should promote humanness opportunities; we need to make sure technology is used to transform learning; I need to use the green room for my online classes now; we can get her done; new opportunities in tech.
“Wonderful new opportunities to redesign and be creative.”
“This was the best and most helpful session.”

One Idea That You Might Use in YOUR Teaching & Learning
- Green screen; iStop; Twitter; SAMR model; Interactive, hyperlink syllabi; Blog, Second Life, Google Scholar; Versatility; Explain Everything screencasting app; Wordle; About me.com for student work (eportfolio); Progress you can adopt;
  Need to revise ALL my syllabi.

One Word That Describes How You Feel Right Now

Summative Assessment
We were able to gather multiple types of summative assessment using appropriate, relevant and meaningful (ARM) technology. One method was using Poll Everyone.com open responses to ask faculty their attitudes towards topics before and after we shared information. A Comparison of Visual Pre/Post Dispositions on the topic of Syllabus is presented below.
Formal Evaluation

A formal course survey was provided at the end of the experience to gather data to help build future faculty development. The aggregate items and data are presented below (n=18).

Please rank the following items based from 1 (Highly Disagree) to 5 (Highly Agree).

1. I felt that the facilitator designed & created an authentic, active learning environment, where the main outcomes were well shared and supported.
Response Average: 4.94/5.0

2. I felt that the facilitator provided appropriate resources, well-aligned research & individual attention to help me develop & integrate teaching and learning strategies into my course.
Response Average: 4.94/5.0

3. I felt that the facilitator demonstrated knowledge, comprehension, analysis, application, synthesis and evaluation of the topics.
Response Average: 4.94/5.0

4. I felt that the facilitator was enthusiastic, accessible and involved.
Response Average: 4.94/5.0

5. This faculty development experience exceeded, met or fell below my expectations.
Response Summary: Exceeded 15; Met 2; Unsure (no point of reference) 1

6. In what significant ways did you modify your course teaching and philosophy as a result of this experience?
Summary Narrative: Several themes emerged, most common was the intentional focus on examining and assuring the alignment of Learning Outcomes/Backward Design (REEx) (6); secondarily, the integration of appropriate, relevant and meaningful (ARM) technology (5); and then embedding frequent opportunities for active learning (3); and various forms of formative assessment (3).

Notable Faculty Quotes:

• “[This experience] Significantly changed the way I will modify and refine my course in the organization and types of active learning activities and also the use of more ARM technology.”

• “I am applying the Backward Design model and this has allowed me a different way (& more deliberate) of going through the design of my course. I assumed the means to the goal would ultimately relate in the goal being met by default. Knowing and reflecting on this now, I feel I need to re-examine my courses in general to ensure that alignment is truly there.”

• “I'm willing to be much more creative in the way that I assign material and the ways that I'm going to assess learning. I also saw the value and necessity of linking all experiences to specific LOs and making those links clear to students.”
• “I walk away from this session with more questions rather than all the answers. More possibilities than restrictions. I think we are beginning to scratch the surface of what inspires, connects and engages the generation of students we have today. Redesigning my course gave me the opportunity to think in a broader vision. What can we do that sets the tone for all courses? How can it be an introduction to a new way of learning?”

7. What would have made this faculty development experience better for you?

Summary Narrative: Several themes emerged, which included direct responses noting that “Nothing” would have made the experience better (7); others shared that it was a long week (4); some needed more time to do work (3) and on the topic of technology (3); as well as a better (warmer) room (3). It appears that most were able to connect the substantial amount of empirically-based research into their own design as only one person requested additional research should be added.

Notable Faculty Quotes:
• “This is one of the best courses I have ever attended and I am taking it all in”.
• “I can’t think of anything that would have made this experience any better - the food, the information, the energy, the presentations, the sharing were all very helpful to me.’
• “The best part of the experience was sitting and talking with colleagues. I came up with so many ideas from this type of sharing.”

8. What did you like about this faculty development experience?

Summary Narrative: There were several reoccurring ideas, which faculty noted favorably about the studio, primarily how much they enjoyed the substantial time to work with and get to really know their wonderful and talented colleagues (11). In addition, they indicated that they were able to engage in a highly interactive environment (8); with high quality resources (human, content, food and coffee, 6); gaining new insights and perspectives about teaching and learning (4); while enjoying their time (4) to reinvigorate their passion to redesign learning experiences.

Notable Faculty Quotes:
• “I really liked working with my colleagues as we were all introduced to (new) educational theory and practices so that we might improve what we do. In addition to learning a lot, we had a great time!”
• “It was very interactive, good content, and made me more interested in HOW I teach instead of WHAT I teach.”
• “I enjoyed the energy and enthusiasm. Yes, the course was about redesigning a syllabus, but it was much, much more - it was about bringing a new energy into the classroom, challenging students from a new perspective, taking risks, offering creativity, and being comfortable with what we don’t know. It is what education and a learning environment should be and I feel that with more of these sessions we can begin to really get students excited about learning.”
• “I liked that the facilitator was so attentive and responsive. Our comfort, not just mental, but physical was always considered. You felt as if you were valued!”
• “The sharing of colleagues that added beauty and art to simple pages. Opened up a way of looking at something different. I got a chance to meet my colleagues in a new surrounding. Not committee work, so the time was enjoyable.”

9. Please share any other thoughts or comments that you have about this faculty development experience, which will help us improve.

Summary Narrative: Faculty members were very helpful at identifying ways in which we could enhance this event for the future. The prevailing suggestion was to offer more events such as this and drill down to make some concepts more focused (10) (btw, a special 3 hour session on ARM technology was requested and offered two weeks afterward, resulting in half of the 18 participants attending). Also, faculty suggested that the room could be have better (3); and more time allowed for work (2). Only two people thought that the experience should be shortened, which reinforces previous comments on how they appreciated both time to genuinely get to know each other and work, perhaps finish their course redesign. There were several people who strongly encouraged us to find ways to interest more faculty members to engage in this studio, which we hope to do over the coming year.

Notable Faculty Quotes:

• “This has been a terrific way to rejuvenate during an important time of the year. I do a lot of work during the summer that I cannot get done while teaching, and this week has increased my passion for this work.”
• “This should be a regularly offered workshop for all faculty; it made me realize how badly we need a faculty center for this kind of exchange and interaction.”
• “I would just say help the community of us educators continuously stay fresh (i.e. keep help us to continue to learn and adapt new tools as they continuously come out - given how fast technology and methods change)”
• “A mini version of this week’s session would be really cool.”

10. Please share your thoughts on the logistics for this Studio (e.g., location, food, suggestions for improvement).

Summary Narrative: Only three major themes emerged from this inquiry, which included the room temperature (9) was cold for many, although some liked it cold; many agreed that the food quality was great (7); and overall, the event was very well done (6).

Notable Faculty Quotes:

• “I like the theater as a space for this work. It is too cold in here, but this is often the case around campus. The food was wonderful.”
• “Loved the food, terrific breakfast, lunch, snack options. Good chairs and space with couch was a comfortable option.”
• “Food was 1st class restaurant. Makana was amazing with logistics and providing everything we need. Mahalo.”
• “The location was perfect because it wasn't a classroom, which would have made it seem like too much of a class, but in a location that truly had a design studio or Faculty Center ambiance.”
“I feel embarrassed to be receiving money for this experience as it is something I feel I should be paying big money for, such was the great experience that this week has been.”

**Conclusion**

The final piece of summative assessment evidence is the academic artifacts created by each faculty member at the end of the week. Most faculty members created an updated, redesigned syllabus, indicating which portions of their prior syllabi was updated with the information they learned during the studio. During the course, a substantial amount of information was shared, so to be able to actively listen, engage, interact AND produce an artifact in one week is indicative of exemplary faculty. Everyone created and many presented an artifact on the final day, which will be made available on the new Faculty Center website ([http://www.chaminade.edu/faculty-center/article/faculty-center-hosts-two-summer-course-redesign-studios](http://www.chaminade.edu/faculty-center/article/faculty-center-hosts-two-summer-course-redesign-studios)). One of the most significant results was how faculty translated the course information into their own teaching philosophy, which produced a wide range of products. Faculty showcased their course redesign products as iBooks, Screencasts, graphic visualizations, through the LMS, using track changes on a prior syllabus, spreadsheets, and through using the new syllabus template guide.
Title: Preservice Teachers Project Caring Experienced in the College Classroom Toward Future Elementary Students

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Preservice Teachers Project Caring Experienced in the College Classroom Toward Future Elementary Students

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Abstract

This qualitative pilot study examined preservice teachers’ perceptions of caring behaviors, as experienced in one teacher education course. Some considerations are given to how those same actions may be projected to their future elementary students. Researchers analyzed data using Noddings’ care ethic (2010) and present findings using exemplars (Mishler, 1990), explicitly connecting data to care ethic and relevant literature. Preservice teachers identified natural and aesthetic caring more often than ethical caring in their responses. Implications for teacher education programs are discussed.

Introduction

Since the early 2000s, school personnel in the U.S. have been held accountable for student achievement measured explicitly through standardized tests and adequate yearly progress (AYP) mandated by legislation such as No Child Left Behind (NCLB). This sole focus on academic achievement and sanctions for not performing well sometimes has resulted in school personnel neglecting other important aspects of teaching, such as nurturing social-emotional growth in students or considering the whole child, which can better prepare students for fulfilling adult lives and to contribute in democratic societies. This push for more rigorous accountability, which has become so strong in pre-kindergarten through grade twelve systems, has also become more evident in institutions for higher education, and, specifically, in teacher education programs.

As concerns over whether teachers in pre-kindergarten through grade twelve education adequately prepare students for life beyond high school, similarly teacher preparation programs have been scrutinized for their ability to prepare candidates. The Council for the Accreditation of Educator Preparation (CAEP) charges teacher preparation programs to “produce educators who raise student achievement” (caepnet.org), through candidate preparation in content knowledge, pedagogy, and clinical experiences, as well as to “establish and monitor...dispositions beyond academic ability (CAEP Commission Recommendations to the CAEP Board of Directors, p. 17, bold added). Included in these are “abilities to build trusting, supportive relationships with students and families during preparation” (CAEP ACCREDITATION STANDARDS 2013, p. 42, chart).

This inquiry focused on ideas of caring, at a point in the program when candidates are engaged predominantly in on-campus classes and not in clinical experiences. Noddings’ perspectives on care were used to interpret candidate perspectives. The results provide some indications of how teacher preparation programs may encourage non-academic dispositions within their candidates.
**Literature Review**

Throughout Noddings' writings (1984, 2010, 2012), she describes four approaches to caring. Natural and ethical caring revolve around people and their interactions. Aesthetic caring involves a person’s caring for ideas and things. Finally, in virtue-caring, the carer views her act of caring as a virtue or “morally admirable character trait” (130). For this paper, natural, ethical, and aesthetic caring are of central interest and further described.

Natural or relational caring involves two individuals, the carer and the cared-for, who focus on the caring *relation* and the basic human needs of security and attachment (Noddings, 2010). People engage in natural caring because they want to care and be cared for; they do not engage in it out of a sense of duty or moral principle (Noddings, 2010). A key element in the caring relation is the idea of reciprocity, the “mutual recognition and appreciation of response” (Noddings, 2012, p. 53 italics in original). The carer’s role is to be attentive to the cared-for, to identify, and empathetically respond to the needs she feels the cared-for is expressing. “Caring precedes the identification of needs” (p. 181, italics in the original). When unable to establish natural caring, Noddings suggested one turns to ethical caring.

Ethical caring is ‘a state of being in relation, characterized by receptivity, relatedness and engrossment’ (infed.org). It may result from tensions or other barriers between the carer and cared-for, such as when the carer cannot in good conscience provide what the cared-for wants. The carer uses her own ethical ideal of how to respond to the cared-for instead of relying on externally-imposed principles. Ethical caring is illustrated by the question, “What would I respond if I were at my best caring self?” (Noddings, 2010, p. 68), which is still focused on preserving the relation with the cared-for. The final type of caring, aesthetic does not involve relation with a cared-for or person.

Aesthetic caring is directed toward “things and ideas” (Noddings, 1984), such as when one cares about learning or art appreciation or pets. The current focus on U.S. achievement through standardized testing illustrates aesthetic caring. However, Noddings (2010) suggested that relational care and happiness in life are what students ultimately need to learn in school. Thus, Noddings three types of caring are used to analyze data in this inquiry. The objective for this pilot study is to discern 1) how prospective elementary teachers describe instances of caring experienced in the first author’s teacher education course and 2) how they anticipate extending similar caring to their future elementary students.

**Methodology**

This qualitative pilot study employed a researcher-designed questionnaire and results were analyzed using Noddings’ ethic of care (1984, 2010, 2012) as a framework. The questionnaire contained 10 open-ended items asking preservice teachers to describe instances of caring experienced in the teacher education course taught by one of the authors and that they anticipated extending to their future elementary students. (See Appendix A for list of the questions.) Human subjects review board permission was granted for this study.

The study participants attended a small liberal arts college in the Midwest of the United States and made up the course in two sections of 23 and 11 students. Of the 34 students, 29 were female and 5 were male. These preservice educators (PSTs), participated in the study at the end of the semester-long course, Instructional Strategies. The course content and procedures introduced PSTs to research-based instructional practices and classroom management techniques, including relationships with future students, families, and colleagues. Even though caring was discussed in general terms and candidates...
were asked to define care when they used that word in discussion, the ethics of care, per Noddings, was not directly discussed within the course.

The questionnaire was administered during the final exam period through the electronic course management system, which was set to allow PSTs to respond anonymously. Although answers were anonymous, an individual’s responses can be seen across the 10 questions or all responses for any one question can be seen from all respondents. PSTs were awarded 10 points toward their course grades for answering the questions or typing “decline” to any or all questions they chose not to answer. The same five (5) participants chose this option throughout the questionnaire; three (3) chose to decline to answer all questions, while two (2) selectively answered questions. The remaining 29 PSTs responded to all 10 questions with narrative comments. This particular paper reports responses from question 9: “How might the care you experienced in Instructional Strategies be similar to care you anticipate providing to your future elementary students?”

Researchers read, annotated, and coded responses using Noddings’ three types of care (natural, ethical, and aesthetic), and then further analyzed and interpreted the data using exemplars (Mishler, 1990). Mishler uses Kuhn’s definition based on studies in the sciences: an exemplar involves one learning in a given field of study by being presented with problems and research from that field in order to learn by example (1970, p. 187 as cited in Mishler [1]). Since Mishler claims that knowledge is socially constructed, it is imperative that the researcher make her or his actions visible at each point in the research process. Toward this end, the PSTs’ responses and researchers’ meaning-making of those responses are offered as the exemplars. The PSTs’ narrative responses used as data and in analysis are then made available to readers, with the researchers making explicit the methods “that transformed the texts into findings; and of the direct linkages between data, findings, and interpretations” (p. 429). Readers will then decide whether the researcher’s claims are trustworthy because they are rooted in the social world, discourse, actions, and praxis (p. 420). For this process, we take representative examples from the data and interpret it in terms of the literature on caring and effective teaching practices.

Results and Discussion

PSTs generated 34 responses. Researchers categorized the responses based on the type of caring that appeared most prominent in a response (Table I). However, many responses appeared to address more than one type of caring, which will be illustrated through the following exemplars.

To illustrate the complexity of the PSTs’ responses, three exemplars are discussed below in detail. The first response is coded as ‘natural’ in the above table, yet shows evidence of natural, aesthetic, and ethical categories of Noddings’ ethic of care.

“The care will be similar in the sense that it will be my job to help the students feel comfortable, respected, and welcome in the classroom. I want my students to feel like they have a voice and teach them the appropriate way to share their voice in order to respect others. I will also show an interest in what the students enjoy to show that I care about their interests and personalities. Differentiation can be a way of showing that you care by adjusting things in the classroom to suit the individual needs, learning styles, and interests of each student rather than expecting them all to be on the same page with everything. I would be doing my students a disservice if I did not treat them as individuals and care about them for who they are.” (Response b)
<table>
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<tr>
<th>Type of Care</th>
<th>Number of Responses</th>
<th>Example of Response</th>
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| Natural or Relational Focus appeared to be on   | 17                  | (b) The care will be similar in the sense that it will be my job to help the students feel comfortable, respected, and welcome in the classroom. I want my students to feel like they have a voice and teach them the appropriate way to share their voice in order to respect others. I will also show an interest in what the students enjoy to show that I care about their interests and personalities. Differentiation can be a way of showing that you care by adjusting things in the classroom to suit the individual needs, learning styles, and interests of each student rather than expecting them all to be on the same page with everything. I would be doing my students a disservice if I did not treat them as individuals and care about them for who they are.  
(g) making sure to be attentive to my students and making sure that they all feel welcome and important in my classroom. Whether that be by thanking students who answer questions in class or keeping calm at all times. Using a soothing calm voice when talking to students. I also plan to use lots of the instructional strategies and ideas we talked about in class within my future classroom. |
| Ethical - Focus appears on the teacher responding to student in manner that challenges her natural inclination and also preserves the relationship. | 2                   | (s) I will always try to remember that students can make mistakes, they can forget to complete assignments on time, or misunderstand assignments. Having an open mind while determining consequences or alternatives for the student will be good so that I can still be fair but still care for the student and help them learn from their experiences.                                                                                                         |
| Aesthetic - Focus appears to be on academic achievement, physical elements of the classroom, or the processes of teaching and learning. | 3                   | (d) As an elementary teacher, I will show that I care for my students by communicating to them the purposes for learning and showing that I put thought and care into making daily lesson plans.  
(j) I appreciated that the Professor in ED 222 was conscientious about the lighting in the classroom. I want to provide my students with the best lighting that encourages stimulated and active minds.                                                                                                       |
| Uncategorized - Responses lacked specificity     | 6                   | (n) I want my students to feel welcome and excited because of the care they have in the classroom.  
(cc) Making sure my students are doing alright and that there aren't other outside circumstances that are making their classroom experiences different.                                                                                                                                                                                                  |
| Declined                                        | 6                   |                                                                                                                                                                                                                                                                                                                                                      |
In this statement, the PST shows understanding of caring based in relationship, which falls under the natural or relational category for Nodding. The PST is focused on her relationship with the student. This is clear when she says, "I will also show an interest in what the students enjoy to show that I care about their interests and personalities," and "I would be doing my students a disservice if I did not treat them as individuals and care about them for who they are." Wanting the elementary students to feel comfortable, respected, and welcome is consistent with natural or relational caring in that the PST is addressing psychological and physical security of her students. Helping others be comfortable and welcoming them suggests this PST is thinking of a relationship built on trust and respect. When she ends by reiterating the importance of treating students and caring for them because of who they are she indicates that she is thinking of her future students as individuals and is interested in coming to know each of them as an individual.

She also demonstrates natural or relational care when she expresses concern about students’ relationships among peers. She says, "I want my students to feel like they have a voice and teach them the appropriate way to share their voice in order to respect others." This is especially emphasized when she then suggests that she will actually make an effort to make this happen by teaching them appropriate ways to share their voices. This idea of respecting others is consistent with building community in the classroom and helping students care for one another (Noddings, 2001), and helps make the reciprocal nature of relational caring evident.

As described by the PST, differentiation can be a way to individualize teaching for any given student. Varying instruction in order to support individuals instead of teaching to a generalized middle of the class is also a way of expressing care for students. Differentiation is a way to help students access curriculum and learning (Tomlinson & Imbeau, 2010) and also a way show care. Differentiation may fall into aesthetic caring in that the idea of differentiation is important to student success; therefore, effective teachers should differentiate instruction. However, this PST has a sense of differentiation of supporting individuals through techniques appropriate to them.

Finally, this PST’s statement indicates she has a moral obligation to care. This is evident in “I would be doing my students a disservice if I did not treat them as individuals and care about them for who they are.” This caring as a value or belief is more clearly aligned with Noddings’ relational care but is also evident in the idea of ethical care, in which the carer (PST) acts to support the cared-for (student) even when it may challenge the carer’s natural inclination. The statement also indicates that the PST will care about students as people and not just as students of academic learning. Her statement demonstrates a way of being (Noddings, 2001), which is more significant than an attitude of caring. This PST’s response does not indicate tension in deciding how or whether to care for students but instead suggests that it is her responsibility or belief to treat students as individuals and to care for them. This one response demonstrated several ideas about caring. The following exemplars, while shorter, still demonstrate the challenge in categorizing examples as one type of caring.

The next two exemplars were coded as natural but also demonstrate the idea of ethical caring.

I will similarly be flexible with my students, understanding their individual situations. I will also make sure I always have their best interests at heart when I make any decision. (Response r).

I will always try to remember that students can make mistakes; they can forget to complete assignments on time, or misunderstand assignments. Having an open mind while determining
consequences or alternatives for the student will be good so that I can still be fair but still care for the student and help them learn from their experiences. (Response s)

The statements “understanding individual situations” and “while determining consequences...for the student”, suggest natural caring, with a focus on the relationship between the teacher and student. These indicate that PSTs understand that caring is contextual and may be expressed and viewed differently depending who is involved (Noddings, 2001; Webb, et al., 1993). However, both of these responses also suggest that teachers, while caring about students, may make decisions that are unpopular with the student but can still support the student’s growth. When this thinking is considered, the comment also reflects ethical caring. This makes it difficult to code the response clearly as one type of caring or the other.

Determining the type of caring as articulated in PST responses was not a clear-cut task. While the majority of ideas were consistent with natural caring, many responses appeared to illustrate multiple types of caring or were not specific enough to make a clear determination. The actions of the teacher and how they are perceived by the student is paramount to caring; however, the intent of the teacher and other contextual factors would also help in categorizing the responses.

Results from this pilot inquiry do give insight to what one group of PSTs early in their teacher education program considered to be caring behaviors. Results and analysis also suggest the limitations of the research. Ideas of differentiation, relationships, and context were evident in the responses. The majority of responses demonstrated natural or relational caring. This is consistent with views of preservice teachers who believed that “a really good teacher” was one who has positive interpersonal relationships with students, and emphasized the social and affective domains while de-emphasizing academic preparation (Weinstein, 1989). Not only do PSTs believe that good student and teacher good relationships are important, but favorable student and teacher relationships have been identified as having a positive effect on student learning (Babonea & Munteanu, 2012).

Limitations of the research include the instrument and study design. Survey question 9 did encourage PSTs to describe experiences in one teacher preparation course that they might take forward into their own teaching. The interactions in the college classroom are distinctly different in some ways than the elementary classroom, and this likely limited the PSTs’ ideas. Also, the questionnaire did not allow researchers to return to participants to clarify statements. Had participants been asked to respond to the researchers’ interpretations, they likely would have provided additional information prompting their responses to be categorized differently. However, an explicit focus on caring as a disposition, and perhaps more importantly as a way of being (Noddings, 2001), is necessary in teacher education programs.

While this study is only a pilot with limited number of participants, good student and teacher relationships support increased academic progress for students (Babonea & Munteanu, 2012)

Implications

The increased focus on accountability for academic achievement in pre-kindergarten through grade twelve seems to de-emphasize the need for caring teachers, who will help all youth develop into adults who are not only college and career ready but ready for other aspects of life. Teacher preparation programs have Arnstine (1990) stated “The activities of students in teacher preparation programs are remarkably similar in character to those of their pupils in the public schools” (p. 241). These do not encourage PSTs’ caring or rational but may foster dispositions that are not desirable:
Not only do prospective teachers have few opportunities to be rational and to care in their teaching activities, but their experiences as students in a teacher preparation program continue to foster the dispositions to obey authority and to work alone and care little for others - just the dispositions that characterized their actions as public school students. (241)

This along with the known impact of positive teacher-student relationships on academic success and the results of this study suggest that a reasonable response to the current accountability pressures on teacher education would be to foster caring candidates. To do so, teacher education programs can do the following in the on-campus program:

1. Teacher educators can consciously decide to include caring as part of the curriculum. Many teacher educators model caring behaviors. Fewer explicitly talk about caring, its development, and how it can influence future teachers’ interactions with their prospective students. Directly addressing caring would highlight its significance for teacher candidates, which relates to development and measurement of the non-academic dispositions CAEP demands of teacher preparation programs. This can be accomplished by programs co-constructing ideas of care with candidates; this balances the affective and cognitive aspects of teaching (Rogers & Webb, 1991). Dialogue and listening within the classroom, related directly to care and other issues prompts critical examination of teaching practices and how they can support or hinder growth. Dialogue can also help PSTs be aware of the contextual nature of caring (Noddings, 2001).

2. Teacher education programs foster reflection as part of professional and personal growth. Reflection upon teaching and student learning can be further bolstered by learning about one’s biases, flaws, virtues, etc., which can engender PSTs to further learn about their students (Nieto, 2012). Developing an ally or mentor to help the PST and early career teacher can further this reflection.

3. Within on-campus courses, teacher educators can develop communities in which PSTs work closely together to learn and to care for one another. Geiser (1974) states that communities like these when used with children encourage competence, responsibility, and being responsible for one another; it is reasonable to suppose that similar communities in the college classroom would do the same for PSTs. Support from teacher educators through creating these opportunities, augmenting communication when needed, acknowledging caring acts (Rogers & Webb, 1991), and then reflect on these communities with PSTs can further develop understanding of and attitudes of caring.

In this paper, the authors have shared how one group of preservice teachers early in the program may extend caring to their future students. PSTs’ responses often demonstrated an understanding of care that could not be neatly categorized in one of Noddings’ categories of natural, ethical, or aesthetic.
References


Appendix

Questionnaire Prompts
Directions: Think about your experiences in ED 222, and then type your answer to each question.

1. How did the teacher demonstrate care for you?
2. Were there times when you felt you needed or expected care and it was *not* demonstrated by the teacher? Explain.
3. How did other preservice teachers demonstrate care for you?
4. Were there times when you felt you needed or expected care and it was *not* demonstrated by other preservice teachers? Explain.
5. Describe instances when you demonstrated care for class members. In each instance, why did you choose to respond as you did?
6. Describe instances when you did *not* demonstrate care for class members. In each instance, why did you choose to respond as you did?
7. What is your responsibility in caring for others in the college classroom? Give some specific examples showing how you carried out that responsibility in ED 222. Why did you choose those actions?
8. Did the professor in ED 222 provide the appropriate amount and type of care for you, as an individual? Please explain.

Now think about teaching your future elementary students.
9. How might the care you experienced in ED 222 be *similar* to care you anticipate providing to your future elementary students?
10. How might the care you experienced in ED 222 be *different* from that you anticipate providing to your future elementary students?
How Native Japanese Speakers Categorize Themselves and Non-Native Speakers in First Encounters

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Introduction

The aim of this research is to illustrate how native speakers of Japanese categorize themselves and non-native speakers in conversations of first encounters. With the increasing number of non-native speakers of Japanese in Japan, some researchers have claimed Japanese as a lingua franca (JLF), which is thought to have different norms from Japanese as used by natives. Because it concerns how natives talk with non-natives, the target of teaching JLF includes natives as well.

Previous research has shown that natives often play superior roles in conversations, which could lead to unequal relationships between natives and non-natives. For example, Sugihara (2003) illustrates how natives exclude non-natives from conversations, by categorizing them as “non-natives” who do not have rights to participate equally as natives. Sugihara (2003) uses Membership Categorization Device (MCD), claimed by Sacks (1972), as a tool of analyzing the categorization being employed in conversations. Not only by using the term “non-natives”, but also by evaluating their language or by not giving them a turn during conversations, natives could categorize their interlocutors as non-natives. Moreover, the problem often pointed out is that natives are not intentionally excluding non-natives. On the contrary, it is sometimes the case that what natives do with good intentions could work as MCD and categorize their interlocutors as “non-natives”. However by using JLF, it is expected that
natives and non-natives could build equal relationships in conversations since there is theoretically no “superior” or “inferior“ speaker in conversations of JLF.

Method

This research attempts to how natives categorize non-natives in first encounters between the two. For this research, sixteen conversations were recorded and videotaped. The hypothesis is that the experience of interacting with non-natives influences the way of natives’ categorization. The natives and non-natives were controlled according to their experience. The speakers groups are as below.

Natives A  eight natives with much experience with non-natives
Natives B  eight natives with a little experience with non-natives
Non-Natives  eight non-natives with a little experience with natives

Furthermore, all speakers were female students at a university in Tokyo and in their twenties. Eight non-natives were all native Chinese speakers and international students at the university. Eight first encounter conversations between Native A and Non-Natives and eight between Native B and Non-Natives were recorded and videotaped for the research. Altogether sixteen
conversations were transcribed and analyzed qualitatively focusing on categorizations and MCD.

Result

As a result, many categories were observed in conversations, such as native-non-native, Japanese-Chinese, language specialist-novice, graduate student-postgraduate student, females, and busy students. Native-non-native and Japanese-Chinese categorizations which were thought to be problematic in previous research were foregrounded mostly by asking and explaining sequences. Speakers often asked each other about issues of their interlocutors’ countries, and such asking was thought to work as MCD. Although previous research claimed that such categorizations of native speakers and non-native speakers are problematic, some of them were claimed to function as positive politeness strategies to non-native speakers from the perspective of politeness theory (Brown & Levinson 1987).

At the poster presentation, the result of analysis will be presented with the transcription and some suggestions to JLF teaching will be discussed.
References


Title of the Submission
Insights into Persistence among African American Males at a Predominantly White Institution
(Submission ID# 382)

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Abstract

Higher education administrators and professionals are confounded with how to promote persistence and graduation attainment for undergraduate African American males. While many studies have examined why students drop out of college, relatively few studies have addressed how African American males are staying in college beyond matriculation. This paper examines how traditional-aged undergraduate African American males were persisting at a predominantly White institution. Through qualitative inquiry, I illustrate how cognitive and non-cognitive factors are central to their African American male persistence. Interactionalist theory (1975) and the conceptual model of black student attrition (Bennett & Bean, 1984) were helpful in framing this study. Policy recommendations for enhancing educational outcomes for undergraduate African American males were also provided.
Background of Study

In recent decades, there has been strong research interest in student persistence (Tinto, 2006-2007). In the higher education community, persistence symbolizes a student’s desire and wherewithal to remain in college from matriculation to degree attainment (Seidman, 2005). The concept of persistence also relates to the personal efforts that students make in their study patterns and other aspects of engaging to their institutions so they are successful (Astin, 1993; Bailey, Jenkins, & Leinback, 2005). Notwithstanding higher education policies and initiatives (i.e., financial aid policies, pre-college interventions, TRIO support services, parental involvement, outreach programs) aimed to promote persistence (Kuh et al., 2006), still slightly more than half of all students enrolled at baccalaureate institutions fail to persist and earn a college degree (Museus & Quaye, 2009).

Ethnic minority students are less likely than non-minority students to complete their degree in a timely manner (Stage & Hossler, 2000; U.S. Department of Education, 2011). African American males in particular have the lowest degree completion rates (Harper, 2012). Kimbrough and Harper (2006) documented that 33.8 percent of enrolled African American males had earned a bachelor’s degree in 2000. In general, this student group lags behind their gender and ethnic counterparts in degree attainment (U.S. Department of Education, 2009). In 2001, for instance, almost 35 percent of matriculated African American males graduated from college within six years. This is compared to 46.2 percent of African American females, and 57.3 percent of Caucasian males who graduated from college during the same period.

Despite the dismal percentage for African American males, there is some indication that colleges and universities are working to improve persistence and graduation outcomes for African American males (DeSousa, 2011). For example, from 1990 to 2007, African American males “have improved their graduation rate from 28 to 37 percent” (“Here is Good News,” 2007/2008, p. 47). This increase suggests that a growing minority of African American males know what it takes to persist in college and earn a bachelor’s degree. It may also indicate the wherewithal of African American males to persist in the face of real or pending obstacles during the midst of their higher education experiences (Simmons, 2013). Despite the modest improvement in graduation, it still remains unclear as to how African American males persist in college. According to Flowers (2004-2005), not much research exists that analyzes and synthesizes the trajectories of African American college students. With limited research, higher
education professionals are unable to glean information that could reveal the knowledge, resources, skills, and attitudes that undergraduate African American males have to persist and earn a bachelor’s degree. This research gap presents an opportunity for inquiries that clarify what researchers already understand about African American male persistence, and what higher education institutions can do to improve the educational experiences of African American males across the postsecondary pipeline (Bean, 2005; Jackson & Moore, 2006).

The fact that many African American males disproportionately fail to persist and earn a bachelor’s degree remains one of the central, yet perplexing problems in undergraduate education (Harper, 2012; Jackson & Moore, 2006; Schwartz & Washington, 2002). Research studies that illuminate how African American males persist in college, particularly at predominantly White institutions, can produce quality information that counters the long-standing discourse on poor academic achievement among undergraduate African American males. Investigations in this area are especially needed since researchers rarely solicit the stories from African American males on how they negotiate their way through college beyond matriculation (Harper, 2012).

**Statement of Purpose and Research Question**

The purpose of this study was to understand how undergraduate African American males persist at a predominantly White institution. The study intrinsically examined how African American males were traversing their way toward earning a bachelor’s degree. The research question framing this study is, “How do undergraduate African American males persist at a predominantly White institution?” This question emanates from the need to uncover strategies used by undergraduate African American males who either know, or are learning what it takes to persist at a predominantly White institution. By asking this question, educators and researchers can learn how these students negotiate their experiences at a predominantly White institution. Perhaps most important, findings from this study should offer practical insights for young African American males who have expressed an interest in pursuing a bachelor’s degree or another formal postsecondary education credential. These insights can empower young men to learn about individuals who are similar to them, while understanding what it takes to persist and be successful in higher education.
Theoretical Frameworks

Despite the limited research on African American male persistence, the extant literature is replete with information related to persistence among the general population of college students (Tinto, 2005). The literature summarizes that the most important influences of persistence are parental education, family background, high school grade point average, standardized test scores, and institutional characteristics (Choy, 2002; D’Augelli & Hershberger, 1993; Lotkowski, Robbins, & Noeth, 2004; Townsend, 1994). These aspects underpin the majority of theories that explain student persistence; including Tinto’s (1975) widely accepted interactionalist theory of student departure. Researchers frequently use this theory in their own studies making it the most often cited theory that informs student persistence (Berger & Lyon, 2005). This groundbreaking framework incorporates “relevant personalogical, psychological, as well as institutional variables” (Flowers, 2004-2005, p. 24) that enable researchers and educators to understand the different trajectories that students take to earn a bachelor’s degree (Nora, Barlow, & Crisp, 2005; Tinto, 1993). More important, the model accounts exclusively for factors related to the background of students, their goals and commitments related to thriving in higher education, and their capacity to engage effectively with the academic and social spaces of the institution. As such, it is the confluence of these underlying constructs which represent the multitude of factors that influence student persistence (Berger & Lyon, 2005; Braxton, Hirschy, & McClendon, 2004).

Interactionalist theory has been regarded for its exemplary strong points, but also criticized by scholars because of the universal application of its findings. Attinasi (1989) in particular argued that interactionalist theory failed to explain persistence for culturally diverse students, students at commuter schools, non-traditional students, and community college students, among others. Others reasoned that the theory does not “acknowledge the influences of financial resources, connection with an external community (such as family and/or work), and classroom experiences on a student’s decision to persist” (Braxton & Hirschy, 2005, p. 68). Braxton et al. (2004) realized the shortcomings of findings generated from the application of interactionalist theory. They asserted that these findings have been generalized through the lenses of affluent, traditional-aged Caucasian students on residential campuses. More or less, these findings have led to erroneous assumptions that the variables which underscore
interactionalist theory aptly explain persistence for African American males and other underserved student populations.

Bennett and Bean’s (1984) conceptual model of Black student attrition compensates for the misapplication of findings from interactionalist theory. This theory draws on variables related to persistence for undergraduate African American students enrolled at predominantly White institutions. The model was first developed and employed at Indiana University-Bloomington to combat high attrition among African American students at that institution. Intrinsic to this model are nine independent variables, with “intent to leave” as the variable being predicted. The core predictor variables are identified as (1) precollege positive interracial contact, (2) precollege academic performance, (3) parent’s education attainment, (4) collegiate positive interracial contact, (5) stage of ethnicity, (6) preparedness, (7) satisfaction, (8) less trauma, and (9) college GPA (Bennett & Bean, 1984). The latter variables (satisfaction, less trauma, and college GPA) were all hypothesized to have positive effects on a student’s intent to remain in school. Noteworthy were findings showing that the predictor variables better accounted for explaining persistence or departure decisions for undergraduate African American students; an important consideration not examined in interactionalist theory.

Findings from Bennett and Bean’s (1984) study, specifically as applied to African American males, suggest that preparedness (ability to do college work), satisfaction (degree to which being a student is viewed positively), and less trauma (level of alienation that students experience when confronted with unfamiliar norms or expectations in a college setting) were significant variables to their persistence. As hypothesized, college grade point average was not significant for these students, and had a negative influence on their intent to persist in college (Bennett & Bean, 1984). Overall findings denote that colleges and universities should develop programs that enhance the academic and social experiences of undergraduate African American males. The findings indicate that policies and practices for promoting African American male persistence should include ways of increasing a student’s ability to perform college work (preparedness), and address ways to facilitate the adjustment for first and second year students into the college setting (less trauma). These findings enabled Bennett and Bean (1984) to recommend these strategies for enhancing African American student persistence at predominantly White institutions: (1) high schools to engage more African American males in college preparatory curricula, (2) colleges to develop or enhance peer and mentoring support
programs on campus, and (3) colleges to develop academic and social programs that encourage positive interracial contact experiences. Most important, Bennett and Bean’s (1984) recommendations inform ways of putting into effect best practices that enable African American males to persist in predominantly White campus environments (Flowers, 2004-2005).

**Methodology**

The study employed a case study design using a qualitative research framework. Participants were recruited from a large, public university in the Southern United States (hereafter referred to as Mid-Southern University). Purposeful sampling was used to select the study’s sample of 11 participants. The participants selected for this study met the following predetermined criteria: (1) currently enrolled student at Mid-Southern University during data collection, (2) traditional male college student (between 18-22) who identifies as Black/African American, (3) have earned at least 30 semester hours prior to their participation in the study, and (4) were willing to talk and share openly their experiences regarding their persistence. I decided on the criterion of 30 semester hours to ensure sufficient student experience, with the expectation that participants will draw on their experiences of persisting at the baccalaureate level.

Each participant completed one face-to-face, semi-structured interview. The semi-structured interview type is an important data collection choice because it offers flexibility for the researcher to probe for details and for the participants to expand upon responses in unique ways (Merriam, 2009). The interview method in general was particularly useful because it allowed the participants to discuss how they were persisting at Mid-Southern University. “How” these students persisted was assessed through questions that elicited responses related to their high school experiences, parental background, educational and career goals, and campus experiences. Follow-up member checking interview sessions served to clarify the accuracy of information provided from the initial interviews. They were scheduled and held 1-2 months after the initial interviews were transcribed and prepared for analysis. The member checking process as a whole gave participants an opportunity to offer a preliminary response to their transcripts prior to the follow-up interviews. The conversations during the follow-up interviews allowed for discussion on emerging data from the transcripts. In essence, member checking sessions allowed for collaboration in constructing some of the initial themes that derived from the participants’ experiences of persisting at Mid-Southern University.
Data Analysis

The initial interviews were digitally recorded and transcribed verbatim. I used an open-coding technique in reviewing and analyzing the transcripts. Comments that were potentially relevant to the research were made in the margins of each transcript. Following Stake’s (1995) recommendation for analyzing case study data, I employed an analytical technique called direct interpretation. Direct interpretation was useful to this study because it relies on the researcher “pulling the data apart and putting them back together in more meaningful ways” (Creswell, 2007, p. 163). Illustrative quotes from the interviews were used to strengthen the participant data, which enhanced the way I made sense of these data. After intensive analysis, I was able to develop natural generalizations and learn about how African American males persist at a predominantly White institution (Creswell, 2007).

Findings

Overall findings point to the complexity of African American male persistence (Braxton et al., 2004). Specific findings indicate mostly that non-cognitive factors are attributed to their persistence. But for some participants, taking advanced placement courses in high school positively impacted their persistence in college. The findings from this cognitive measure signify that exposure to a rigorous curriculum in high school enhanced their ability to perform well in college courses; thus increasing their self-efficacies to persist and succeed in higher education. In theory, students exposed to a rigorous curriculum have relative advantages of being academically prepared for college; especially since preparedness makes a difference in how college students traverse their educational trajectories (Educational Policy Institute, 2003; Strayhorn, 2008; Schwartz & Washington, 2002). As mentioned, the non-cognitive factors were dominant in explaining how the participants persisted at Mid-Southern University (D’Augelli & Hershberger, 1993; Townsend, 1994). For instance, many of the participants were encouraged by members of their family to persist. Some of the participants noted how their parents were their biggest supporters, while others were inspired to persist by witnessing vicariously the educational and professional achievements reaped by respective family members and same-raced peers.

Without saying, the participants possessed a healthy sense of motivation to persist. Their motivations were driven by core beliefs and values they hold for themselves, and by ideas about impacting the life of others. But for the most part, they were motivated to persist because of
better employment opportunities after earning a degree. This comes to no surprise, given the established correlation between earning a bachelor’s degree and stable employment and financial stability (Pascarella & Terenzini, 2005). The participants understood how having aspirations and goals relate to persisting at Mid-Southern University (Pascarella & Terenzini, 2005; Strayhorn, 2008). They each expressed lofty professional goals, and voiced an aspiration to earn at least one educational credential beyond a bachelor’s degree. According to Strayhorn (2008), having graduate school aspirations are critical to African American male college persistence. In fact, the mere ponder of attending graduate school, whether during formative years or in higher education, has some effect on their persisting behaviors. Wayne, for instance, realized early in life that persisting in college will help him make the transition into graduate school, and achieve his long-term goal of becoming an industrial organizational psychologist.

Kuk and Manning (2010) noted that students involved in campus-based organizations are more likely to persist in college. Many of the participants involved in these organizations had opportunities to build their character, enhance their leadership skills, and partake in the campus community in different ways. These opportunities were more common for participants involved in ethnic-based organizations. Mike and Chris’ involvement in an ethnic-based organization was important for them to bridge the cultural gap between their predominantly White campus and their home environments (Padilla, Trevino, Gonzales, & Trevino, 1997). They found comfort with a particular ethnic-based student support organization, which offered specific activities and resources to enhance their persistence. Important to this study was how organizational involvement provided the participants with meaningful opportunities to engage and interact with campus stakeholders. In most instances, these stakeholders functioned as gatekeepers for helping the participants successfully navigate their college experiences; and allowed the participants to gain access to capital (Allen, 2010).

Lastly, many of the participants realized how meaningful their interactions with faculty and staff were to their persistence. A few participants spent time with ethnic minority professors who were willing to support their persistence in college and beyond. These professors provided a sense of comfort and allowed the participants to feel relaxed during formal and informal interactions. Isaac had a momentous encounter with an African American male professor in his major field of study. He found the professor to be an inspiring soul who encouraged him to achieve his goals and to not give up; particularly in the midst of what Isaac perceived as hostility
and hazing from his Caucasian professors. Jordan acknowledged the importance of connecting with faculty, regardless of their racial or ethnic background. He expressed comfort in initiating interactions with a few Caucasian professors in his department, and felt that his connections were mutually beneficial.

**Conclusion and Implications**

Overall findings show that for the participants in this study, persisting at a predominantly White institution is predicated on personal and family background, the degree of academic preparation in high school, levels of support by family and peers, early insights into future education and career goals, and engagement with the academic and social communities that exist at Mid-Southern University. The findings present an opportunity for higher education administrators and professional staff to put into effect policies and practices that could enhance the capacities for African American males to persist toward graduation; inevitably improving their overall college experience. Policies should be geared toward enhancing academic performance prior to college matriculation. Summer Bridge or early intervention programs are common, and can assist students with transitioning from high school to college (Kezar, 2003-2004). Professional staff should be made available to connect African American males with other people or through activities that can nurture their motivations and aspirations. They must also be strategic in involving African American males early in ethnic-based student organizations, since their involvement enhances their persistence. Only a few of the participants had access to ethnic minority faculty. This speaks to the dearth of minority faculty (especially African American faculty) on predominantly White campuses. There is a need for policies aimed at recruiting additional faculty and retaining them. The presence of more minority faculty could allow African American males to have positive role models they can identify with; which can ultimately shape their persistence in college.
References


Introduction

Few studies of explicit practices for teaching and assessing oral skills in grades 5 and 6 exist (X and Y, 2011; Nolin, 2013), and research data related to teaching and assessing orality in disadvantaged communities are still more rare (Y, X and Z, 2014). To address this, our research team conducted an action-training-research (ATR) project (Guay and Prud’homme, 2011) with the collaboration of four elementary school teachers. The research team focused on collaboration – which is key to changing teaching practice – and the development of students’ oral competence. This paper will outline the research problem and theoretical elements guiding the implementation of our research process, as well as the study’s methodology. It will also discuss preliminary results that led teachers to renew their practice and allowed researchers to determine the impact of participating in this study on students’ oral skills.

1- Research Problem

Although oral skills are practiced in elementary classrooms in Quebec, direct instruction and assessment are still quite limited (Y, 2013; Nolin, 2013). Despite recommendations
from the provincial Ministry of Education, explicit practices used to teach and assess oral skills are not widespread, particularly in the case of grades 5 and 6 teachers (students aged 10-12) (Plessis-Bélair and Cauchon, 2010; X and Y, 2011). Although cooperation is essential for oral learning (Topping, 2005; X, 2008 and 2010), students rarely have the opportunity to cooperate during oral skills instruction (X, 2008 and 2010; Nolin, 2013). Teachers often spend more time speaking than do students who, to their detriment, frequently adopt a passive approach to oral learning (Le Cunff, 2009; Nolin, 2013). Also, because elementary students in general, and those from disadvantaged communities in particular, regularly express themselves through spontaneous and sometimes limited language, it can be even more difficult for teachers to know how to address these limitations (Tréville and Duquette, 1996; Y, 2005). Direct instruction of listening strategies is also rare (Y and Z, 2011). Moreover, there is a lack of explicit educational devices for oral skills instruction in elementary classrooms capable, first, of supporting instructional practice in ways that allow teachers to choose assessment strategies that take these activities into account and, second, of guiding teachers in changing their oral skills teaching and assessment practices, specifically, in grades 5 and 6 in disadvantaged communities (Y, 2005; Plessis-Bélair and Cauchon, 2010). Our action-training-research (ATR) project on orality, in collaboration with four grades 5 and 6 teachers working in disadvantaged communities, seeks to address these limitations and follows a collaborative approach to oral skills teaching and assessment (Y, 2001 and 2011).

2- Theoretical Framework

Studies of oral skills instruction show that orality must be considered an object of instruction (Dolz and Schneuwly, 1998; Y, 2007; Grandaty and Dupont, 2010). As such, researchers suggest that oral skills be practiced according to type. These types consist of popular and literary social practices of public orality, such as debate, literary criticism, and discussion. The use of types makes it possible to teach and assess oral production and comprehension. Furthermore, with types, content for instruction and assessment can be clearly defined, which facilitates evaluation and the development of assessment tools adapted to each type. This conception of orality is entirely consistent with activities proposed in Quebec’s provincial education guidelines. Orality must be taught in class
using formative strategies and specific workshops focused on the teachable dimensions of each type, including language register, structure, listening strategies, and more. (de Pietro and Schneuwly, 2003; Y, 2007).

This research project uses Y’s (2001 and 2011) instructional model of oral production, presented in Figure 1. Formative workshop stages (Figure 1, section 3.3) were developed by X (2011a). This model both facilitates student learning by promoting collaboration (Topping, 2005; X, 2008 and 2010; Li, Liu and Steckelberg, 2010) and encourages cooperation among teachers to stimulate mutual support and the development of oral skills learning and assessment situations (LASs). Using this device (model), we endorse student peer evaluation (X, 2008, 2010 and 2011b; Li, Liu and Steckelberg, 2010). According to X (2008, 2009, and 2011), peer evaluation can be divided into three stages: self-assessment, peer feedback, and teacher evaluation. It is important to note that the model on which this study is based has been adapted and enhanced through the collaboration, knowledge, and practice of the teachers who participated.

Figure 1: Educational device used in the ATR project: Instructional model of oral production in classrooms where French is the language of instruction (Y, 2001, p. 218)

1- Intention to communicate
2- Communication situation: integration of reading, writing, and oral practices; subject types presented to students (significant and insignificant); consideration of student interest; consideration of audience

3- Oral activities (planned and implemented):
   3.1 Initial production
   3.2 Student knowledge
   3.3 Five types of formative workshops on orality: complete modeling by the teacher and sometimes the student, learning roles to play, learning linked to practice types, learning linked to grammar points, learning listening techniques. Formative workshop stages developed by X (2011a): catalyst, knowledge level, instruction, application, large group discussion, meta-cognitive activity.
   3.4 Final production: final evaluation preceded by formative assessments (self-assessment, peer evaluation, observation and evaluation checklists, interviews, logbooks, etc.)

4- Student impact: assuming responsibility for their own oral communication

3- Research Question and Objectives

This study asks the following question: How do grades 5 and 6 teachers in disadvantaged communities adapt and implement an educational device and assessment tools related to oral production and comprehension in order to renew their practice? Our objectives are to: 1) train four teachers in oral instruction, specifically oral production and comprehension; 2) collaboratively adapt an educational device and assessment tools in oral production and comprehension; 3) implement the educational device and assessment tools in the classroom; 4) analyze the implementation of the educational device and assessment tools; and 5) attest to practice renewal in oral skills instruction. Because this research project will continue until June 2016, this article focuses primarily on results from Year 1.

4- Methodology
In this section we will describe our approach, sample, data collection instruments, research process, pre-test and post-test evaluation criteria, and learning and assessment situations (LASs) developed in collaboration with participating teachers.

4.1 Approach

The action-training-research (ATR) approach chosen for this study is well recognized for generating knowledge (Guay and Prud’homme, 2011). This research project seeks to advance knowledge concerning a specific teaching situation – orality – by bringing together researchers and practitioners to develop learning and assessment situations (LASs) related to orality. The ATR approach “is based on the idea that research benefits from a focus on action, being anchored in experience, and adopting a participative perspective in which practitioners and researchers collaborate to solve problems linked to practice development” (Guay and Prud’homme, 2011, p. 190-191, original translation). The methodology proposed is both rigorous and flexible due to an iterative process that encourages continuous reflection on each of its three objectives: action (creating change within the teaching situation), training (contributing to the development of participants within the teaching situation), and research (contributing to knowledge about the teaching situation) (Dolbec and Clément, 2004; Guay and Prud’homme, 2011).

4.2 Sample

Two grade 5 and two grade 6 teachers from two schools in disadvantaged communities were recruited through convenience sampling to participate in our research project. Following ATR principles, we established a research team whose members are most often in the classroom: three researchers, two research assistants, and four teachers. The experimental group consists of two teachers (EG: EG5, EG6¹) and the two others are control groups (CG: CG5, CG6). The latter groups received no training during Year 1 of the study.

¹ EG5 and CG5: grade 5, students aged 10-11 years; EG6 and CG6: grade 6, students aged 11-12 years.
4.3 Data collection instruments

Each meeting was recorded so that every event and comment could be summarized as accurately as possible in a report *in extenso*, a superior tool “to sustain participant actions between meetings” (Guay and Prud’homme, 2011, p. 203, original translation). To collect data outside the classroom, each year, EG and CG teachers were asked to complete questionnaires before and after oral skills instruction and assessment to better understand their perceptions, opinions, knowledge of oral skills instruction, and practices. We also conducted semi-directed interviews with each teacher to collect information, thoughts, emotions, intentions, conceptions, and examples related to the ATR process as well as the CG teachers’ personal processes. To collect data in the classroom, we filmed oral skills lessons given in both the experimental and control groups, collected instructional materials created by the teachers, and used a non-participant observation checklist to analyze teaching. Members of the research team, EGs, and CGs used logbooks to keep track of observations and the evolution of practice. Content analysis was conducted by theme, as proposed by Paillé and Mucchielli (2003).

4.4 Research process

Following the model developed by Dolbec and Clément (2004), this ATR project contains several stages: 1) starting point; 2) clarifying the situation; 3) planning action; 4) action; 5) evaluation; 6) sharing knowledge generated. This research process was formalized in August 2013 with the four participating teachers (ATR model, stage 1). Each class received six laptop computers and all the necessary equipment to film the activities. The research process for each group of participants will be presented next.

4.4.1 Year 1
In the fall of 2013, the research team and participating teachers chose a specific type of orality to work on, nonsense debates\(^2\), and researchers provided training in oral skills instruction and assessment (research objective 1). Pre-tests, in the form of initial nonsense debates that took place before researchers provided training, were filmed in each class (ATR model, stage 2). In the winter of 2014, the educational device and assessment tools were adapted to create LASs (research objective 2; ATR model, stage 3). In the spring of the same year, EG teachers tested the LAS and filmed the post-tests, i.e. nonsense debates conducted with students after teachers had received training and attended workshops on a variety of oral objects of instruction (research objective 3; ATR model, stage 4). CG teachers, who taught orality as they normally did, also filmed pre-tests and post-tests (CG5: advertizing; CG6: information bulletins), which provided comparative data on the educational device’s effect on student learning (research objective 4; ATR model, stage 5).

4.4.2 Year 2

During Year 2, in the fall of 2014, researchers and CG teachers chose to work with a different type of orality, film reviews. Teachers filmed a pre-test, received training in oral skills teaching and assessment, and collaboratively developed an LAS (research objectives 1 and 2; ATR model, stages 2 and 3). The LAS was tested in March 2015 (research objective 3; ATR model, stage 4). EG teachers also developed a new LAS for the same type of orality as in Year 1 to show how to adapt an LAS after testing it the previous year (research objective 4).

4.5 Pre-test and post-test evaluation criteria

For each of the four groups participating in the study, Year 1 pre-test and post-test evaluation criteria for each type of orality are defined in Quebec’s provincial guidelines (Programme de formation de l’école québécoise [MÉQ, 2001], Progression des

\(^2\) In nonsense debates, students debate inconsequential topics that are easily understood (for example, being for or against white socks) in order to develop argumentative strategies.
Researchers identified 19 evaluation criteria relevant to informational types chosen by the CGs in Year 1: “advertizing” (CG5) and “information bulletins” (CG6). For the EGs, 14 criteria applicable to the “nonsense debates” used in both groups were identified. These criteria, presented in Table 1, were chosen because they were observed in a majority of students and sufficient sound and image quality made evaluating them possible from a technical standpoint.

Table 1: Evaluation Criteria by Type

<table>
<thead>
<tr>
<th>CG: Advertizing and Information Bulletins</th>
<th>EG: Nonsense Debates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presenting or receiving information on a given subject</td>
<td>Proposing or considering arguments</td>
</tr>
<tr>
<td>Respecting intention [respecting type]</td>
<td>Respecting intention [respecting type]</td>
</tr>
<tr>
<td>Intervening at the appropriate moment</td>
<td>Intervening at the appropriate moment</td>
</tr>
<tr>
<td>Engaging in the exchange according to the chosen context</td>
<td>Engaging in the exchange according to the chosen context</td>
</tr>
<tr>
<td>Choice of ideas – relevance</td>
<td>Choice of ideas – relevance</td>
</tr>
<tr>
<td>Choice of ideas – sufficiency (number of ideas)</td>
<td>Choice of ideas – sufficiency (number of ideas)</td>
</tr>
<tr>
<td>Appropriate social behaviour</td>
<td>Organizing ideas: linking comments to what has already been said, adding new ideas to move the discussion forward, etc.</td>
</tr>
<tr>
<td>Language register</td>
<td>Appropriate social behaviour</td>
</tr>
<tr>
<td>Pronunciation</td>
<td>Attentive listening according to established formulas</td>
</tr>
<tr>
<td>Volume</td>
<td>Idea integration</td>
</tr>
<tr>
<td>Rhythm and flow</td>
<td>Language register</td>
</tr>
<tr>
<td>Intonation</td>
<td>Pronunciation</td>
</tr>
<tr>
<td>Articulation</td>
<td>Volume</td>
</tr>
<tr>
<td>Eye contact</td>
<td>Vocabulary richness</td>
</tr>
</tbody>
</table>
4.6 Learning and assessment situations (LAS)

The desired instructional approach was formalized in an LAS template (Y, 2012) with three phases: preparation (context, calling on students’ previous knowledge, project objectives, expected production), execution (learning activities to be accomplished according to LAS objectives with teacher guidance and assessments during and at the end of the project), and integration (summary of student learning and transfer of student knowledge and acquired skills).

In Year 1, EG teachers developed an LAS on nonsense debates and, in Year 2, researchers and CG teachers collaborated to develop an LAS on film criticism. During the preparation phase, EG and CG teachers asked students to watch to their initial productions to identify their strengths and weaknesses. During the execution phase, teachers gave formative workshops on oral skills based on the weaknesses identified, then teams of four to six students created their final productions. Students used computers to film themselves during these workshops and watched the videos to observe the development of their oral skills, all of which was documented in a portfolio. During the integration phase, students watched the videos again, performed self-assessments, and noted their orality-related challenges.

5- Research Results

Based on results from Year 1 of this research project, we were able to determine whether oral skills instruction given by the four participating teachers improved students’ oral
competence. The study also provided insight into changes in these elementary teachers’ oral skills instruction and assessment practices in the classroom after one year.

5.1 Student results

To determine whether students’ oral competence had improved, all four groups’ Year 1 pre-test and post-test results were compared and students were interviewed to better understand these results.

5.1.1 Evaluating spoken interventions

A professional researcher evaluated students’ spoken interventions in the experimental and control groups before and after oral skills instruction from their teachers. Twenty percent of spoken interventions were counter-coded by a research team member to ensure the validity of the research professional’s evaluation. Spoken interventions were coded 0, 1, or 2.

Overall results

Following the evaluation of all spoken interventions in Year 1 before and after oral skills instruction, the average result of all evaluation criteria for each group was calculated. Figure 2 presents the average of each group before and after oral skills instruction.
This figure indicates a small decrease in the grade 5 control group (CG5). The grade 6 control group (CG6) showed no significant difference. However, an increase in oral competence can be observed in both experimental groups.

Statistical tests show that not all of the differences between pre-test and post-test scores are significant for all groups. In fact, it appears that the differences between pre-test and post-test scores for CG5, CG6, and EG5 are not significant. However, performing a t test\(^3\) revealed that the difference between students’ pre-test and post-test scores in EG6 are significant\(^4\) (p = 0.000031211). The difference between the results of the pre-test and post-test is 0.516, and therefore statistically significant.

Control groups

\(^3\) According to Gaudreau (2011), the t test is a form of parametric statistical analysis used to verify whether there is a difference between the averages of two groups. In this case, the pre- and post-instruction averages of each group were tested.

\(^4\) In quantitative research, a significance threshold of 5% (p = 0.05) is generally accepted (Nolin, 2013). These arbitrary conventions have been established by statisticians over time (Howell, 1998).
In Year 1, CG teachers taught orality in what they believed was the most effective way to encourage students’ oral skills development. Results seem to indicate that these oral skills instruction strategies, i.e. without explicitly teaching oral skills, implementing an instructional model (Y, 2001 and X, 2011a), or performing peer evaluations (X, 2008, 2010 and 2011b), are not conducive to developing students’ oral competence. CG5’s average fell slightly (from 1.556 to 1.512) and CG6’s average remained almost the same (from 1.546 to 1.553).

Experimental groups

Comparison of pre-test (1.406) and post-test (1.621) results from EG5 suggests an improvement of these students’ oral competence. For this group, however, the difference does not appear to be significant. Furthermore, increased scores between the pre-test and post-test were not observed for each of the evaluation criteria, i.e. each of the oral objects of instruction taught and evaluated. In fact, of 14 evaluation criteria, 10 increased and 4 decreased. Of the 10 criteria whose results improved, 8 were oral elements taught during formative workshops (X, 2011a) and 2 concerned elements not explicitly taught (language registers and pronunciation). Criteria whose results fell include volume – which had been explicitly taught – and three criteria (choice of ideas – relevance; choice of ideas – sufficiency [number of ideas]; vocabulary richness) for which no direct instruction was given. In CG6, results for all 14 criteria improved.

Based on these results, we argue that students in both experimental groups demonstrated improvement in oral competence after oral skills instruction. However, improvement goes beyond the elements for which they received instruction, with the exception of volume, which decreased in EG5. It is therefore possible to conclude that teaching oral skills can bring about improvements that go well beyond the specific elements taught. This may be explained by peer evaluations performed throughout the LASs in each of the EGs. Indeed, research has demonstrated that peer evaluation has a positive impact on student learning (Topping, 2005; X, 2008 and 2010; Li, Liu and Steckelberg, 2010). Because peer evaluation requires students to assess their own oral skills and peers to
articulate observations and recommendations concerning their classmates’ competence, it can be beneficial for learning overall. In both EGs, peer and teacher feedback was not limited to the specific oral elements taught. Furthermore, because watching their spoken interventions provided students with multiple opportunities for self-assessment, it is possible that they were able to identify strengths and opportunities for improvement far beyond the elements taught in class. Student reflection on their own spoken interventions (self-assessment) and cooperation among students could therefore explain the improvement of all of the criteria in EG6 and a majority of criteria in EG5.

5.1.2 Student interviews

In order to better understand Year 1 results, interviews were conducted with students in both EGs. Three students were selected from each experimental group: one whose results were generally weak, another with satisfactory results, and a third with results exceeding expectations.

These interviews provided insight into why results for volume decreased between the pre-test and post-test for students in EG5. Students in this group mentioned having had less time to practice this oral element than others and not having made the necessary links to its use in the debate: “Well I never talked loud because our teacher told us that we’d practice but we didn’t practice much. But I didn’t really do it in the activities either, well, in the debates.” and “Well I think it would have been better to practice because we learned it fast and after that didn’t have the chance [to practice]”. The three EG5 students interviewed indicated that they wanted to work on this element again because they felt that it had not been sufficiently taught and practiced. The teacher confirmed the students’ observation that insufficient time was spent on practicing volume and necessary links were not made to the type of orality in question. EG5 students also mentioned experiencing difficulty in finding arguments to present in the debate: “We have trouble finding our arguments”. This corresponds to two evaluation criteria whose results were

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5 Students’ comments were transcribed as spoken. All quotations presented here are original translations from the French.
lower in the post-test (choice of ideas – relevance; choice of ideas – sufficiency [number of ideas]). Students claim that they did not have sufficient time to prepare and practice. One student expressed a desire to spend more time practicing these elements: “We need more practice”.

More generally, students in both EGs mentioned gaining new knowledge between the first (pre-test) and second (post-test) debates. An EG6 student stated that “[t]he first nonsense debate, it was, it didn’t work. It wasn’t a real debate, not clear like the new debate.” Realizations about several elements were also mentioned during these interviews. For example, an EG5 student brought up the importance of listening in being able to reformulate: “You really have to listen well to be able to reformulate what the person said in your own words”. Students’ perception of orality changed after the LAS was implemented: “I learned oral skills because, at first, I thought they were just, for example, you pick up your paper […] and talk to your teacher, but I didn’t know that there was another kind of oral skill, for me, it’s another kind of oral skill. We present to the teacher and all the students”.

Students also mentioned the importance of cooperation in learning oral skills: “You’re in teams, and you can help each other but individually, if I had filmed myself individually, it would have stressed me a bit more, but I know I have someone to help me”.

5.2 Teacher results: interviews

To better understand the results presented above and, more specifically, account for the fact that teachers renewed their practices, each of the four teachers participated in an individual, semi-directed interview. These interviews were all conducted after they had experimented with oral skills activities in their classrooms in Year 1. These interviews contained three sections: 1) understanding oral skills instruction; 2) understanding the LAS; 3) renewing teaching practice related to orality. Given that teachers in the control group did not receive training from the research team to develop LASs in Year 1,
questions in section 2 and parts of sections 1 and 3 were not included in the interview. Responses were first separated into CGs and EGs, then all four teachers’ comments were summarized.

5.2.1 Control group (CG) teachers

Below are responses to semi-directed interview questions about understanding oral skills instruction and renewing teaching practice during Year 1. These two teachers received no training on oral skills instruction and taught orality as they wished.

Understanding oral skills instruction

Although these teachers’ conception of orality goes somewhat beyond a traditional definition of public speaking, i.e. an individual presentation on a particular topic in front of the class, they stated that involvement in this research project piqued their interest in orality. More care was taken in planning the different steps students would follow in preparing to present their projects to the class. Oral skills were more systematically organized: for one teacher, this meant presenting an advertisement that explains the benefits of country living to urban dwellers; for the other, it meant circus-themed activities to prepare a year-end show for parents and create videos to be posted on the school’s website.

After the first year of the study, one of the teachers still demonstrated discomfort: “I feel like I’m still building on my previous knowledge” (CG5). Although she recognized having presented a more complete orality project, she continued to wonder if she had chosen the right approach. The other teacher stated that she felt more comfortable because she took the time to find the tools she needed and conduct short workshops with her students, reminding them that improvement is always possible.

Both teachers reported a continued sense of discomfort regarding oral skills evaluation. One (CG5) asked whether she was evaluating oral skills or the content of the project
presented to the group: “Can my observations lead to a mark, even though we are not really taught how to look at orality?” For the other teacher (CG6), “evaluation remains subjective”.

Teaching practice renewal

Involvement in this research project led teachers to make modest changes to how they taught oral production, whether in terms of preparing information or clarifying the work to be done during each French class dedicated to oral skills. With regard to oral comprehension, teachers stated that they had not worked on this specific element with students, although watching the videos prompted them to comment on it: “It’s something I’d like to work on more” (CG6). They look forward to being better equipped in this regard. These teachers have expectations for future training sessions with the research team. Their first impression is a feeling of increased confidence in oral skills instruction, as well as in evaluating these skills.

5.2.2 Experimental group (EG) teachers

As stated previously, both teachers in this group received training from the research team and collaboratively developed an LAS for nonsense debates that was tested in the classroom. They taught four specific objects of instruction/learning related to debates: debate structure, rebuttal, reformulation, and voice volume.

Understanding oral skills instruction

This study and the team’s involvement have changed these teachers’ conception of orality. For the EG5 teacher, it is “the act of producing a message and listening to what the other person has to say at the same time”, as well as adapting the communication to the activity in question. For the other teacher (EG6), orality is an “act of communication between two or more people in which the individual must combine verbal communication and understanding others”. These teachers demonstrate an understanding of both the
production and comprehension elements of orality. Although they do not consider themselves experts, they claim to be more comfortable with orality after a year’s participation in this study. This limited degree of comfort may be explained by the fact that they are still in the understanding phase: “I would say that, before, I didn't know where to start… Now, orality is more present in my teaching” (EG5).

Understanding the LAS

These two teachers used Y’s (2001) activity planning template; although they sometimes found the process arduous, this model allows students to work on several types of orality and prepare an improved final production. Students were motivated by a new way of teaching orality. However, the EG6 teacher reported that she and her students were overwhelmed by the number of workshops required. However, none of the students refused to present their final project and all were eager to practice what they had learned. This teacher stated: “I realized that I was teaching oral skills poorly, and rarely, and that it was difficult for them to improve.” The teachers observed that, now, students are gaining confidence and have even exceeded their expectations.

Following their first experience with the LAS, teachers were still uncomfortable because the template was unfamiliar and pushed them outside their comfort zone. Nonetheless, the LAS process created enough interest in both teachers and students that the template was retained. Training in oral skills instruction provided by the research team was helpful in planning the LAS and using it in the classroom. Furthermore, according to the EG5 teacher, because they were in the classroom during each of the filmed activities, “interaction and discussion with the researchers provided immediate answers to our questions”.

Teachers stated that they were surprised by what the students learned. Filming the final debates made it possible to watch them more than once and evaluate them more accurately because the criteria corresponded to specific objects of instruction. The EG6 teacher mentioned the need to film students in order to better evaluate them.
Teaching practice renewal

After the first year of the study, teachers recognize that it is possible to include objects of instruction/learning (such as volume) in all subjects as well as outside of class time. They stated that some students have applied these skills outside the classroom, for example, to clearly argue their point with the lunchtime supervisor, their parents, or even in other subjects (ethics and religion).

These teachers’ practices have evolved: they now teach orality differently. Although things initially moved slowly, all of these changes are considered positive. There were challenges, but the project has been a success. The LAS was an exciting project for both teachers and students, using technology particularly appealed to students, and filming the activities was very effective. Filming the final debates allowed teachers to watch them more than once and use tangible evidence of learning to more appropriately evaluate their students’ oral skills.

The teacher training sessions were a rich source of information: “I went home mentally drained because I had questioned myself” (EG6). On the one hand, teachers appreciated the research groups’ presence in the classroom; they felt reassured and supported. They also found the different elements of orality presented during the researchers’ training sessions useful: initial production, student knowledge, formative workshops, expectations, soundscape, pre-listening, general listening, analytical listening, and listening checklists. On the other hand, it was more difficult to implement elements related to comprehension because the teachers were unused to working on oral comprehension with their students.

5.2.3 Comments summary

After Year 1, teachers in the experimental group have a better understanding of the oral skills LAS and the educational device used (Y’s model, 2001). According to them,
students were motivated and probably learned more with this model (educational device) than with those used previously. The teachers stated that they could reuse what they had learned and considered these to be positive changes.

Teachers in the experimental group feel more comfortable evaluating oral skills because they now teach specific elements of orality and their assessments focus on what has been taught. Control group teachers are somewhat uncomfortable evaluating oral skills, which they believe remains a subjective exercise.

According to teachers in the control group, students are now more comfortable speaking in public and being filmed after having practiced these things in class. They confirm that they have modified their practice, but believe that the way they teach oral comprehension has not changed. They see Year 2 of the study as an opportunity to improve how they teach and evaluate orality and to modify their oral skills teaching plans.

For all four teachers, having to work on oral skills activities led to a concern for more structured preparation. They mentioned that taking the time to reflect on oral skills instruction necessarily brings about change.

6- Conclusion

Given the limited number of teachers and students involved in this research project, generalizations are impossible. However, preliminary results from the first year of the study suggest that coaching teachers, researcher-teacher collaboration, LASs, student instruction, and significant time spent on peer evaluation (which encourages cooperation) can promote the development of students’ oral skills and the renewal of teaching practices. These initial research results will be further clarified as the study continues.
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Title:
The development of Chinese name writing skills among preschool children in Hong Kong

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Abstract:
Name writing skill has been proved to be the developmental indicator of early literacy skills across alphabetic writing system. This study aimed to develop a Chinese name writing scale (CNWS) for evaluating the developmental characteristics of Chinese name writing skills across preschool stage. 316 children (aged 3-6) were recruited from local kindergartens. Children who could recognize their name were asked to attempt writing their own name in a designed space. Their name writing skills were then evaluated through the scale pre-designed. It showed that Chinese name writing skill was developing in a transitional process from scribbling and conventional writing that depended on both ages and grades. As formal schooling and instruction on writing are given in the early 1st term of K.2, they play a critical role in the development of Chinese name writing skills even it is not to be taught directly. Although there is limited relationship in learning to write one’s own name and other characters in Chinese, it helps children to transfer and generalize the writing rules as well as the intercorrelation between structure, sound and meaning. It indicated that CNWS could be used to assess how well the children apply literacy-related skills in Chinese handwriting.

Introduction
Name writing skill is recognized as a developmental indicator of early writing competence across different language (Drouin & Harmon, 2009; Haney, 2002). Ability to write one’s own name has its both personal and social significance (Bloodgood, 1999). From very young of
age, children are exposed to their written name on their personal belongings, and encouraged by adults to read and write. According to Hancy (2002), children are motivated to learn to write their names with intense meaning and socio-psychological impact. Their experiences with names provided strategies to understand how literacy works. It is supported by previous studies on the relationships between the development of name writing skills and other literacy skills such as letter naming (Diamond, Gerde & Powell, 2008; Welsch et.al., 2003), letter writing (Puranik, Lonigan & Kim, 2011) and spelling (Levin & Aram, 2004). Nowadays, name writing task is widely used to assess the outcomes of handwriting intervention (Lust & Donica, 2011; Zhang et al., 2014).

Despite of the importance of name writing skills, there is limited number of studies in Chinese name writing. Differed from basic interaction between vowels, consonants and syllables in different alphabetic writing systems, Chinese writing system is dominated by logographic features that are visually complex. Normally, each character composes of both semantic and phonetic radicals (also called stroke patterns) within a square configuration that provide necessary information about the characters. There are a thousand of radicals, at which children have to understand its positional regularity with a great demand of spatial relationship in order to maintain good alignment and spacing in each of the combination.

In addition, Chinese names usually have three characters (one surname and two given names). Instead of starting from first letter, Yin & Treiman (2013) stated that learning to write children’s own Chinese name is related to its visual properties and start with the one with fewer strokes. Study from Chan and Nunes (2001) showed that after children beyond scribbles, writing becomes distinctly Chinese, such as more strokes and radicals with squariness structure. Their development is usually classified by the proportion of correctness and recognisability. However, it is believed that some similar categories from alphabetic writing systems could be applied to classify the level of Chinese name writing from scribbles, presence of strokes and stroke-patterns and correct writing (Chan & Nunes, 2001; Chan, Cheng & Chan, 2008). Therefore, this study aimed at address their issue by examining the developmental progression of Chinese name writing skills among preschool children in Hong Kong.

Methodology
Chinese name writing scale (CNWS) is firstly established by summarizing the name writing scales from the studies published in recent 10 years. The scales selected should be based on the concept of name writing development from scribbling to conventional writing. A 9-point scale was formed, which was further equally subdivided into three categories: (1) Graphic, (2) Writing-like writing and (3) Symbolic (Gerde, et al., 2012; Levin et al., 2005). Then, a
forward translation from English and Chinese, and some modification has been made to suit the need of Chinese name writing.

316 Chinese children from aged 3-6 were recruited by convenience sampling from six kindergartens in Hong Kong. After obtaining informed consent from guidance, two prerequisite tasks were performed. They were asked to speak out and recognize their name from their class list to ensure they know the representation and function of their name. 308 children passed two tasks and were requested to write their Chinese name onto a white paper as much as possible.

**Results**

Except 21 children who were refused to write, name writing products of 295 children were analyzed. The means and standard deviations are presented in Table 1.

Table 1. Descriptive statistics on the Chinese name writing across age range and grade

<table>
<thead>
<tr>
<th>Grade</th>
<th>Age range</th>
<th>Number of children</th>
<th>Mean (SD)</th>
<th>Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>K.1</td>
<td>3;3-3;5</td>
<td>11</td>
<td>0.15 (0.21)</td>
<td>![Sample Image]</td>
</tr>
<tr>
<td></td>
<td>3;6-3;8</td>
<td>20</td>
<td>0.18 (0.32)</td>
<td>![Sample Image]</td>
</tr>
<tr>
<td></td>
<td>3;9-3;11</td>
<td>27</td>
<td>0.65 (0.15)</td>
<td>![Sample Image]</td>
</tr>
<tr>
<td></td>
<td>4;0-4;2</td>
<td>27</td>
<td>1.29 (2.10)</td>
<td>![Sample Image]</td>
</tr>
<tr>
<td>K.2</td>
<td>4;3-4;5</td>
<td>19</td>
<td>2.32 (1.55)</td>
<td>![Sample Image]</td>
</tr>
<tr>
<td></td>
<td>4;6-4;8</td>
<td>30</td>
<td>4.30 (2.58)</td>
<td>![Sample Image]</td>
</tr>
<tr>
<td></td>
<td>4;9-4;11</td>
<td>24</td>
<td>4.81 (2.63)</td>
<td>![Sample Image]</td>
</tr>
<tr>
<td></td>
<td>5;0-5;2</td>
<td>25</td>
<td>5.38 (2.56)</td>
<td>![Sample Image]</td>
</tr>
<tr>
<td>K.3</td>
<td>5;3-5;5</td>
<td>33</td>
<td>7.08 (1.42)</td>
<td>![Sample Image]</td>
</tr>
<tr>
<td></td>
<td>5;6-5;8</td>
<td>23</td>
<td>7.59 (0.47)</td>
<td>![Sample Image]</td>
</tr>
<tr>
<td></td>
<td>5;9-5;11</td>
<td>17</td>
<td>7.62 (0.28)</td>
<td>![Sample Image]</td>
</tr>
<tr>
<td></td>
<td>&gt;6;0</td>
<td>39</td>
<td>7.71 (0.33)</td>
<td>![Sample Image]</td>
</tr>
</tbody>
</table>

The results showed a gradual increase of universal language feature such as directionality at 3- to 4-years-old, followed by the language specific features such as the combination of complex strokes and radicals until all children were able to write correctly between 5.5- and 6-years-old.

**Discussion**
The focus of this study was on the developmental characteristics of Chinese name writing skills across age and grade. Although there were a number of differences between alphabetic and Chinese name writing, they showed similar pattern of development from scribbling to conventional writing. They were started to use language-related features such as turning angles and shapes, or separate units. Instead of writing the first letter of their name, they were started to write the easiest character of their name or part of each character with the radicals/ stroke-pattern they knew.

From the past studies, the performance of name writing skills is accounted by age range but not with grade. It was believed that children were self-initiated to observe their name and other words from the surrounding and practice. They were tried to correlate with the letter and sounds and combine them as much as possible. However, most children in Hong Kong started formal instruction of handwriting no later the first term of second year of preschool education (i.e. Lower Kindergarten, or K.2). The formal instruction on the orthographic rules of Chinese handwriting prepared them to write from simple to complex characters in terms of visual complexity and popularity.

A greater range of improvement was shown in their second year of schooling, at which character-like feature was shown but in pieces or random. However, when writing of their own name was specifically taught at the end of the second term of K.2, they were able to acquire the skills effectively and booster the development. It proved that even though Chinese characters were distinct with each other, the writing rules and regulation are inter-transfer between name writing and the formation of other Chinese characters.

**Conclusion**

Although the formation of Chinese name and other characters is differed from those in alphabetic writing system, similar trend of development has been observed. It is proposed that name writing tasks is useful to assess the development of early writing skills in Chinese, and help to identify children who have handwriting difficulties. A study on the relationship between the development of name writing and other literacy skills in Chinese is recommended.

**References**


The evolution of an online English language class site

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Abstract

Founded in 2008, Edmodo is a popular online social learning platform originally aimed at K-12 education that is frequently used by educators to disperse information and to establish direct lines of communication with young learners and their parents. While utilizing Edmodo to support classes has been shown to generate higher student initiative (Holland & Muilenburg, 2011), and can encourage student engagement and responsible learning (Sanders, 2012), it still tends to be largely teacher-centered, in terms of the content, set up, and regulations. This paper will explore findings from a case study in a very different context and for a very different purpose from which Edmodo is frequently utilized. The semester long action research study was conducted in a Japanese university English language class, in which the online community was treated as a supplementary activity. Differentiating this study from previous research was the fact that the learners were primarily responsible for the content and development of the online community. The educational objective behind this project was for learners to create an online community, which best served their specific interests and needs. The research objectives of this study included analyzing how this online community evolved, documenting how or if students participated and assumed ownership of the community, and identifying the specific issues and problems that could affect the implementation of a similar program in the future. A qualitative approach was adopted for this case study, to analyze and assess the data. All the entries made on the class page were thematically coded, and then sub-coded. Grounded-theorization
then revealed several salient themes, which form the basis of the findings to be discussed. These include noting how the class instructor was initially required to foster the shift from a teacher-centered to a more learner-centered community, and that this shift was a relatively gradual process. The analysis of the posts revealed distinct patterns, with learners preferring to make more humorous and visually oriented posts, often supplemented with advice and suggestions for how fellow learners could be more successful on demanding tasks such as delivering oral presentations and improving English language proficiency test scores. In contrast, the instructor’s posts were initially almost exclusively informative and dealt primarily with class administrative matters. As the semester progressed, the instructor began to adapt and to follow the style and content of the posts the learners were making. Problematic issues regarding the use of Edmodo were a lack of participation by some learners and a tendency for other learners to dominate proceedings. It is also still unclear whether or not Edmodo was actually beneficial for enhancing the English ability of the participants. In conclusion, this pilot project to develop a learner-centered community was partially successful. It revealed that through the evolution of such a community, a wider range of activities, learning experiences, and discussions developed, in a more natural and potentially beneficial way. Future goals include utilizing Edmodo in a more effective way and instituting an online community that can be enhanced through collaboration and intercultural interactions (as defined by O’Dowd, 2011) with other online communities. This would enable further learning opportunities for students and would serve to make the online community a more integral part of the course and less of a periphery project.

1. Background
The “rapid evolution of communication technologies has changed language pedagogy and language use, enabling new forms of discourse, new forms of authorship, and new ways to create and participate in communities” (Kern, 2006, p.183). These changes have led directly to an increase in research attempting to measure and analyze the effects of this technology on all forms of education. As Kern
(2006, p.200) noted, “most research to date has focused on communicative task-based, project-based, and focus-on-form approaches...but the literature has begun to address uses of corpora in data-driven learning.” Research has also begun to focus on the use of online communities. As Miller (2011) explained, the benefit of online communities is that they compensate for the lack of community in the real world. Amongst these online communities, the most widely used learning platform in the K-12 context is Edmodo, which has been found to encourage both student engagement and responsible learning in high school students in the US (Sanders, 2012), as well as in university settings where English is not the first language (Balasubramanian et al., 2014).

When assessing the use of technology or online sites such as Edmodo for language learning, Kern (2006) posed a series of important questions to consider. Firstly, do computers assist language learning? In addition, he also asked if multimedia authoring improves learner’s language use in terms of accuracy, fluency, and appropriateness in offline contexts? Definitive answers to these questions are obviously difficult to obtain, and are very much context dependent. Kern then put it rather succinctly when he said that technology-based language teaching is not a method, but an integrated and varied pedagogical approach. It is important to note here that assisting language learning was not the main purpose behind incorporating Edmodo into the course, but rather a potential secondary benefit.

Despite the difficulties in addressing the questions posed by Kern, research on the use of technology and online sites to support language learning and to foster telecollaboration (online intercultural exchange) has been a popular venture in recent years (O’Dowd, 2011). However, most of the research to date has been restricted to documenting learner perceptions of the sites utilized, or to analyze how the sites are used, without attempting to measure language improvements. Dizon (2015) found that Japanese university students had moderately positive views of using Facebook to support classroom learning, based on the ease of use, convenience and the relatively low-stress environment it provided. Kongchan
(2012) investigated the use of Edmodo for her English language classes in Thailand and found students had a favorable view of it. She also noted that Edmodo enabled what she referred to as a non-digital-native teacher to take charge of and explore her own online classes in a better way. She then added that the website resembles Facebook but is a safer and more private learning environment. Kongchan primarily used Edmodo in a teacher-centered manner, to post information/give feedback/disperse assignments/solicit peer reviews and even for collecting assignments. Afterwards, she took her findings and taught a workshop for other teachers at the same institution, who also responded positively to Edmodo because of its user-friendly nature. Balasubramanian et al. (2014) found learners had a favorable view of Edmodo as well, and that they saw it primarily as a resource where they could obtain the information they were seeking, where they could get support, and where they could have online discussions. These favorable findings are in contrast to a study by Ali (2015) who concluded that participants were undecided about whether Edmodo was advantageous or not for learning English. This study found some learners viewed Edmodo's main function as being to disperse instructions and announcements from the teacher, and that it could not assist them in learning English skills, particularly the presentation skills they wanted to learn. The students also overwhelmingly rejected the idea of using Edmodo to supplement face-to-face discussions in English class.

Another area of related research has been to explore the benefits and difficulties of incorporating telecollaboration (intercultural interactions through the use of technology) into curriculum and courses (O'Dowd, 2011). There are numerous pedagogical and institutional impediments to implementing and using technological activities and O'Dowd (2011) provides a good overview of intercultural exchanges and the research conducted so far (p.369-375). Essentially, authenticity is a key feature of this and a positive point in favor of its implementation. Despite this, telecollaboration is still usually seen as an add-on to most curriculums and courses, and success depends largely on motivated students and teachers. O'Dowd (2011) then stressed that telecollaboration needs to be ‘normalized’ and to be made more
integral. Various reasons found that frequently prevent this include a lack of digital expertise, a lack of time, concerns over control of the technology or site, a lack of overseas connections, and various other context-specific issues. Incorporating intercultural exchanges into the use of Edmodo was an initial goal of this project, but proved logistically impossible to achieve in this pilot study. It will however, be implemented in the future, through Edmodo.

Before discussing the research design and findings from the current study, it is first necessary to provide some background on Edmodo. Edmodo is a free social learning platform designed specifically for K-12 contexts that was founded in Chicago in 2008, but is now based out of California. By 2012 it had over 12.5 million users worldwide in an estimated 210 countries and was growing rapidly (Edmodo.com, 2015). “Edmodo was custom-built for the classroom and designed to provide a single access point for teachers to safely and securely discover and share content that could be used to deliver personalized instruction at scale” (Edmodo.com, 2015). In addition, “Edmodo is used to share educational content, manage projects and assignments, conduct quizzes and facilitate highly engaging learning experiences among students and teachers” (Edmodo.com, 2015). One of the strengths of Edmodo is that all the stakeholders (teachers, and parents) in the learner’s life can be a part of the learning process. Furthermore, Edmodo can facilitate individualized classroom instruction, professional development, parental involvement, and it is easy to use for administrative metrics and planning. While Edmodo is largely utilized in K-12 teaching contexts, it is not necessarily limited to this. As we have already seen, instructors in other countries are now making use of it for a wider range of purposes.

2. Methodology
This study was conducted at a Japanese private university, with English majors. The course for which Edmodo was utilized was a compulsory Oral Communication course for sophomore students, in which there were two groups of students, with 25 in one class and 24 in the other (N=49, although three participants dropped out of
the course during the semester). The class met three times a week for 45 minutes. The participants were all Japanese, approximately 80% of them were female, and the participants’ average TOEIC score is estimated at 750.

The use of Edmodo for the course was experimental, as the instructor (researcher) was interested in learning how to use the site, and exploring possible uses for the future. Reasons for choosing the site included the reputation it had garnered and the similarity in design and layout to Facebook – a site almost all the participants were familiar with. Using Edmodo was not part of the assessment for course work, but all the students were encouraged to register for the class site. Several students did not do so, and later in the year two students who had forgotten their passwords asked to be able to re-register. Instructions given regarding use of the site were based on two core principles. Firstly, any posts or comments by the students had to be done in English. Secondly, posts must not be offensive to other students (or the teacher). Apart from these regulations, students were free to post, comment or ‘like’ anything on the site. They were also free not to post (or even not to log in) if they did not wish to do so. The purpose for using this site – as it was explained to the students – was to create an online community, where students could enjoy reading and writing, discussing issues or topics that interested them, and where they could also communicate and interact more freely with each other.

A qualitative approach was adopted for this study as this provided the best opportunity to compile a description of the posts students were making, and to analyze the evolution of the online class site. The data collection period spanned the duration of a semester (15 weeks). All the posts, comments, ‘likes’ and shared links on the class site represented the raw data collected. Firstly, all the data was coded thematically – as defined by Saldana (2013) and then organized into sub-categories, based on similar properties and usages. Grounded theorization was then utilized to provide a description of how the site evolved throughout the year. In addition to this, the participants were canvassed at the end of the semester regarding their views of Edmodo.
3. Findings

Overall, the findings reflect a positive view of Edmodo by a majority of the students, and also demonstrate interesting trends in the evolution of how the site was utilized. The first important finding was drawn from informal discussions with the participants at the end of the semester. Almost all of them were of the opinion that the use of Edmodo as an extra source of learning was beneficial and interesting. Further support for this opinion can be seen in the fact that a large majority of the students posted, commented or replied to other’s posts throughout the year. When questioned further by the instructor, the students also indicated that they wanted to keep utilizing it in the second semester. The primary reason given by many students when queried about why it was useful was that it helped generate a more cohesive atmosphere between learners. During class activities learners are typically limited to either one or two partners for conversation tasks (the students they are sitting next to). While these partners change every class, learners have no freedom in deciding with whom they can communicate each time – something they could control with Edmodo.

After thematically coding the posts made on the site, an interesting – if not unexpected - distinction was noted regarding the type of posts the instructor made, compared with those made by learners. Almost exclusively, posts made by the instructor were administrative. These included posts dispersing course information, uploading documents and handouts, providing links to videos and test preparation sites that supplemented course content. In contrast to this, learners frequently posted on matters completely unrelated to the course. This included posting pictures of various activities they had recently done or links to videos they had found online that were particularly interesting. Some learners posted information about upcoming local events, or even limited-time sales in nearby shops. From this it could be surmised that learners viewed the online community as extraneous to course content, while the instructor tended to use the site as a means of supplementing and supporting coursework.
A further distinction in the types of posts learners and the instructor made was that many of the posts made by learners were of a multisensory nature. Learner posts tended to be predominantly visual or audio oriented. This included uploading pictures, or links to videos and songs (often to sites such as YouTube.com or ted.com). Typically these were indicative of something the learner liked or a message that was being presented, that expressed the learner’s viewpoint in a more eloquent manner than they could. In contrast, the instructor’s posts were more oriented towards written text. Learning through multisensory experiences has been shown to further stimulate the learning experience (Gallo, 2014) but these kinds of posts were probably more indicative of the learners’ age, than of an in-depth understanding of learning conditions.

Perhaps the most significant finding – and one that was especially pleasing for the instructor – was the apparent gradual shift from a teacher-centered and dominated online community, to one that was more learner-centered, in terms of the content and frequency of posts. This evolution had been hoped for at the outset by the instructor, but in reality, took time to eventuate. In the first month of the course, only one learner started a post, while the instructor started 13. On many such posts by the instructor, typically only one or two learners replied or commented. Contrast this with the last month of the semester when the instructor started five posts (all of which received at least four responses), and the learners started eight posts, generating at least five responses for each one. It was gratifying to see learners showing more initiative and taking more ownership of the online community.

One problematic finding – and also not entirely unexpected – was that there was a lack of participation on the part of some students. 12 students never posted or commented on anything during the semester. Edmodo does not provide statistics that keep track of who logged in and for how long, but it is likely that these students rarely if ever logged in to the site after initially registering. Perhaps this was due to a lack of interest, or perhaps it was awareness by the students that their grade would
not be affected by their lack of participation. It could also have been that they simply forgot about the site or forgot their password and were not interested enough or too embarrassed to ask the instructor for help logging back in.

As an indirect result of some learners not participating, there was also a tendency for several others to dominate proceedings. Five students made 85% of the posts started by learners. This was not necessarily problematic, but their frequent posting and commenting might have indirectly discouraged others from posting or replying. From the instructor’s point of view, these students were simply keen to build up the community and were generally constructive in all their posts.

Problems between inter-classmates (two groups of students took part in this study and some did not necessarily know each other) were a source of concern. Although no such issues were raised with the instructor, it is considered highly likely that there were such issues at play. These were most likely issues such as shyness, and reluctance to post or comment on another learner’s post, when not familiar with that person.

4. Implications
The biggest implication drawn from this small case study is that Edmodo is suitable for second language university courses outside the K-12 context in the United States. The other significant finding was that online communities could be shaped and led by the learners themselves. How beneficial this online community is for the learners, is a question that needs to be examined further though. Significantly for the researcher, was that a majority of the students responded positively to the opportunity to make use of this online community, and also expressed their support for using Edmodo in future courses. This favorable feedback – combined with the positive findings and implications discussed previously – means the researcher will utilize Edmodo again in the future.
An obvious strength of Edmodo (in all educational contexts) is the relative ease with which information can be dispersed digitally, in a more environmentally friendly and convenient way. Through Edmodo both learners and instructors are exposed to and can access a wider range of mediums and digital materials. Another advantage that Edmodo has over similar sites such as Facebook (which has been used for educational purposes) is that Edmodo is private and learners and instructors do not need to worry about breaches of privacy or that their private use of social networking sites will be exposed or connected to the class site. Edmodo does not require interaction with other forms of SNS, meaning there are far fewer ethical issues (particularly if students are minors) for instructors to worry about.

In addition to this more encompassing learning experience, the autonomous approach that learners took toward building the community meant that the language used in posts and comments was authentic and used in a natural environment. In the end of semester informal discussion, participants frequently indicated that they enjoyed the chance to write freely, without the constraints of having to follow academic formatting and genre styles. What would have increased this authentic use of English for ‘real world’ communication would have been if an intercultural exchange had been incorporated into the community. As this study was essentially a pilot study, logistics prohibited this intercultural exchange, but it will be strongly considered for future projects involving Edmodo, and was something the participants also expressed an interest in setting up.

One issue that does need to be examined further is the future of the class online community after the course has finished. Typically the duration of a course in K-12 contexts is for one academic year, and this was the same for the university course in this study (the second semester was not included in the study due to time constraints). If learners are to be encouraged to invest time and effort into constructing an online community and to participate actively in it for almost a full calendar year, then the issue of whether or not to delete the community after the course has finished needs to be addressed. Continuing the community in an
unsupervised manner for an indefinite period of time is a contentious issue, fraught with potential problems, but also with potential benefits. While the general consensus was that many students would have liked to continue the page, many also admitted that they would likely gradually forget about it and stop using it. With this in mind, and considering privacy and ethical issues related to this research, it was decided to terminate the site after the academic year had been completed, and use of the site had declined to a certain level.

5. Future goals
This study was essentially a pilot study and a form of action research. One of the main purposes was to assess how students and the instructor utilized Edmodo, so that better use could be made of any future implementations of the learning platform. For the past year only limited use was made of Edmodo, but due to the relatively successful nature of the project, a broader implementation of it will likely be adopted in the coming years. Ideally this would include collaboration at the institutional level where this project was carried out. As there are three other streams of students at a similar level, attending coordinated classes, largely using the same materials already, this would be a potential starting point to implement online community building as part of course requirements. A potential stumbling block would be obtaining consent from the three fellow instructors teaching the same courses. Differing ages (and technological abilities) and differing perspectives on the use of technology in the classroom, means that it might not be possible to develop a course wide program.

A further goal – that may be harder to reach – is to develop and incorporate some form of cultural exchange into the online community. Ideally this would mean sharing the community with a class from another country (with either native English speakers or non-native English speakers), whereby a cultural and language exchange would could be fostered. Precedents for this exist (see Bonn, 2015) so it is not beyond the realm of possibility. Potential problems to be aware of would include monitoring the page, establishing guidelines for both classes that were acceptable,
and – most importantly – establishing whether the medium of exchange would be English only or perhaps a form of language exchange (Japanese and English) whereby guidelines would have to be set up and adhered to.

A more realistic and easily obtainable goal is to implement a similar program in the same instructor’s course next year, but with suitable adjustments, based on the findings from this study. Firstly, there is a need for more specific tasks in the beginning of the academic year, so that all students are initially active and participating. Once they have all had a chance to be a part of the community it is more likely that more of them will continue to participate throughout the year. By being absent from the early proceedings, some participants this year felt hesitant to get involved later on. By being involved in the early stages, learners would also experience the ‘workings’ of the site and would be able to get assistance with technical difficulties. To assist with this more structured approach to using Edmodo, more concrete guidelines could also be provided at the outset.

The purpose for this study was to examine if an online community would develop with minimal guidance from the instructor. While this was largely successful, it might be more useful to provide more structure at the beginning of the semester, so that learners can make better use of the site, even at the possible expense of a degree of learner autonomy. As the course in question is primarily an English language class, it will also be beneficial if the online community can assist in developing language skills in the future.

6. Concluding comments

In conclusion, this pilot project can be considered a moderate success in that the learners involved reacted favorably to the opportunity to build an online community through Edmodo, and were able to develop this community in a semi-autonomous manner. With further work and fine-tuning the use of an online community could be developed in the future and utilized to provide learners with greater opportunities, including the opportunity to develop their language skills. This study also revealed
that Edmodo is not limited to use in the K-12 context, but that it can be used for second language university courses as well. The study also demonstrated distinctions between what the instructor and the learners focused on. Future research in the area of online community building will benefit by expanding the scope or field of investigation and by collaborating further with other researchers and instructors.

References


Does teacher recognition necessarily lead to teacher empowerment?

Submission ID # 404

1. Title of the Submission: Does teacher recognition necessarily lead to teacher empowerment?

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Teacher Empowerment

Abstract

The extent to which Master Teacher designation empowered teachers who attained the recognition was investigated. The study also investigated how the sense of empowerment, where it existed, was manifested in Master Teachers’ practice. Teacher empowerment is assumed to be embedded in various efforts to retain effective teachers in the classroom such as teacher recognition, tiered certification and innovative compensation systems. Two hundred and forty seven Georgia Master Teachers participated in the study by completing an electronic survey. It was found that most Master Teachers did not consider themselves empowered by the recognition (only 2% did), rather they reported a sense of accomplishment (39.4%), and affirmation (24.4%). Master Teachers on their own assumed teacher leadership roles such as mentoring (60.6%), coaching (42.4%), data analysis and interpretation (43.4%), participation in school improvement committees (37.9%) and organizing professional development workshops (31.3%). It was concluded that, as Terry (n.d.) contends, empowerment entails some shared decision-making which is only possible if the administration is willing to share or delegate authority and responsibility to Master Teachers.
Does teacher recognition necessarily lead to teacher empowerment?

Purpose

The purpose of this study is to investigate first, to what extent Georgia Master Teachers feel empowered by the recognition and designation; secondly what impact they report that they have on other teachers and in school improvement efforts.

Perspective/Theoretical framework

In recent years, concerted efforts are being made to keep effective teachers in the classroom by providing alternatives to promotion into administration as a means of advancement. The Teacher Advancement Program (TAP) funded by the Milken Foundation (National Institute for Excellence in Teaching (NIET), 2015) was designed to foster multiple career path and innovative compensation systems, not based on mere experience all in the attempt to keep effective teachers in the classroom. The TAP program integrates value-added model of assessment into teacher evaluation. Margolis (2008) found that teachers with 4-6 years of experience “are searching for roles/activities that are regenerative (keeping them learning and excited about their teaching); and also generative (widening their sphere of influence, sharing their gifts with others in the profession).” He contended that mentoring other teachers may be best suited to provide those regenerative and generative experiences.

Other efforts and alternative routes for teacher advancement have included career ladder, tiered certification, teacher leader endorsements/certificates, state and national certifications and recognitions, etc. (Riggs, 2013). Embedded in these options
is teacher empowerment. According to Terry (n.d.), empowerment entails some shared decision-making, is essential to school improvement and often facilitated by the principal. Researchers agree that teacher empowerment results in informal teacher leadership (Terry, n.d.; Berry, Daughtrey & Wieder, 2010; Behera, n.d.). These authors presume that the empowerment is generated from within the school and essentially originates from, or with the blessing of, the principal. When teachers are empowered this way, they function more autonomously, exhibit professional confidence and personal efficacy. Berry, Daughtrey and Montgomery (2009) reported that “teacher empowerment was the most important school-level factor to student learning.” Teachers selected and recognized using various criteria are supposedly empowered to build a critical mass of effective teachers in their schools and help administrators to plan and implement school improvement initiatives aimed at improving student learning. Unfortunately, often teachers are not consulted to find out if they truly feel empowered or to engage them in the discussion on how they can participate in or facilitate school improvement initiatives. Thus, the questions explored in this study are: Can teachers feel empowered if that sense of empowerment emanates from outside of the school, for example from becoming a Master Teacher, an honor bestowed by the state? A subsidiary question is: If Master Teachers feel empowered by the recognition, how have they demonstrated this empowerment in their practice or in the workplace?

The Georgia Master Teacher program was established by Georgia Legislature (GA Code 20-2-205) in 2005 to recognize teachers who positively impacted their students' achievement and progress. It was proposed that teachers who achieve Master Teacher status and serve as coaches or mentors for other teachers would be
remunerated. Because of economic downturn, that promise of financial remuneration was eliminated but the recognition remained. At the state level, Master Teachers received non-monetary privileges such as free conferences, teacher leadership institutes, membership in state taskforces and committees. The certificate is valid for seven years and could be used to renew a Georgia Teaching certificate. Various school districts provided some benefits and recognized their Master Teachers in local newspapers, and by providing them with special parking space, monetary gifts, etc. Though not initiated from inside the school, principals were involved in the application and selection process. They were required to show their approval and support by signing off on a teacher’s application. Nevertheless, Nweke & Elliott (2011) found that Master Teachers were not always able to implement new strategies and principles in their classrooms due to impediments in the workplace. Given that there were no monetary incentives, the researchers sought to find out to what extent Master Teachers felt empowered by this recognition and how the empowerment was manifested in their practice and workplace. Though the Master Teacher program ended with the 2013-2014 awards, bringing the total to close to 800, the last of the Master Teacher Certificates will expire in 2021, as they are valid for seven years.

Also, Georgia has since instituted a tiered certification system comprising four tiers: Pre-Service certificate, Induction certificate, Professional Certificate and Advanced Professional and Lead Professional certificates (Georgia PSC, 2014). The advanced and lead professional are two paths at the same tier for teachers interested in leadership (lead professional) and those interested in teaching (advanced professional). Like the Master Teacher certificate, the tiered system is not aligned to any pay scale
and teachers holding the professional certificate who aspire to reach the highest tier
either teaching or assuming leadership roles, must be motivated by a sense of
accomplishment, empowerment, or anything other than monetary remuneration. Thus,
this study is relevant and may inform the implementation and an understanding of
teacher motivations and practice as they make career choices.

Method

Participants

Participants comprised the 247 Master Teachers who were still employed in
Georgia public school systems as of the 2013-2014 school year who responded to the
online survey. See Table 1 for a distribution of respondents according to the year of
award. The highest number of responses were from 2010 cohort (20.7%) and 2006
(19.4%).

Table 1.

Master Teachers Distributed By Year of Application

<table>
<thead>
<tr>
<th>Year*</th>
<th>Number of Respondents</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>47</td>
<td>19.4</td>
</tr>
<tr>
<td>2007</td>
<td>27</td>
<td>11.2</td>
</tr>
<tr>
<td>2008</td>
<td>26</td>
<td>10.7</td>
</tr>
<tr>
<td>2009</td>
<td>36</td>
<td>14.9</td>
</tr>
</tbody>
</table>
Most respondents held master’s degree (39%) or specialist degree (45.9%). The number of years of teaching in Georgia ranged from 6 to 39 years, with an average of 16.8 years. The participants comprised of 11% males, 89% females, 80.3% Whites, 15.2% Blacks, 2% Asian, etc.

**Data Collection and Procedure**

A 26-item online survey was administered through Survey Monkey. The questionnaire was emailed to 696 MTs, 122 bounced back, leaving a total of 584 that were presumably delivered. Two hundred and forty-seven (247) MTs responded, for a response rate of 42%. The survey was designed to elicit whether or not Master Teachers felt empowered by the recognition. The survey was also to elicit the formal and informal roles they had played in their schools, district or state, to enhance student
learning, and other teacher professional development or school improvement activities they had engaged in.

**Result**

Descriptive statistics were used to analyze the quantitative data collected. The results are presented according to the research questions. The first research question was whether Master Teachers felt empowered by receiving the Master Teacher designation/recognition from the state. Though 188 or 76.1% of the respondents report that their school or school district recognized them, Table 2 shows that very few Master Teachers (2%) felt empowered by attaining the certificate and being recognized by their principals, school systems and the governor. However, the same table shows that 97 or 39.4% of respondents felt a sense of accomplishment and affirmation (24.4%) similar to a sense of validation reported by Brantley (2014) for National Board certification experience.

Table 2.

Feelings that the Designation of Master Teacher Instills in the Recipient

<table>
<thead>
<tr>
<th>Options</th>
<th>Response Count</th>
<th>Response %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accomplishment</td>
<td>97</td>
<td>39.4</td>
</tr>
<tr>
<td>Affirmation</td>
<td>60</td>
<td>24.4</td>
</tr>
</tbody>
</table>
Teacher Empowerment

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<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Credibility</td>
<td>31</td>
<td>12.6</td>
</tr>
<tr>
<td>Competency</td>
<td>15</td>
<td>6.1</td>
</tr>
<tr>
<td>Confidence</td>
<td>14</td>
<td>5.7</td>
</tr>
<tr>
<td>Expertise</td>
<td>12</td>
<td>4.9</td>
</tr>
<tr>
<td>Empowerment</td>
<td>5</td>
<td>2.0</td>
</tr>
<tr>
<td>Other</td>
<td>12</td>
<td>4.9</td>
</tr>
</tbody>
</table>

Note. Percentages are based on total N=247 responses

One hundred and sixty-three (66%) of the respondents indicated that they had been assigned additional responsibilities in their school, county or the state. The most frequently assigned roles in descending order of frequency were: mentoring of other teachers, coaching, participation in school improvement committees, conducting professional development workshops, and analyzing and interpreting data for grade level or subject teams, organizing professional learning communities, participating in county or state-level tasks forces, and conducting action research on issues of interest to the school or grade level teams.

Another important finding was that even though most Master Teachers (98%) would not describe themselves as empowered, motivated by their sense of accomplishment, affirmation, credibility and competence, they took the initiative to engage in the types of leadership activities that, it was hoped, the principals and schools would use them for. Specifically, while only 89 of the respondents listed roles
assigned to them, as many as 198 (%) personally assumed, without being asked, mentoring roles (60.6%), coaching (42.4%), analyzing and interpreting data (43.4%), participating in school improvement committees (37.9%) and organizing professional development workshops (31.3%).

**Discussion and Conclusion**

The results support Wall’s finding on teacher empowerment (2012) that “most teachers perceive themselves as operating from self-efficacy empowerment subscale, while their principals were using the legitimate power base. In addition, teachers determined that the power base of referent was related to the empowerment subscale of professional growth.” This might explain why teachers sought the Master Teacher designation that gave them a sense of accomplishment and affirmation and opportunities for professional development.

Though many Master Teachers (76.1%) reported that school districts and principals recognized them at board meetings, special name tags, in local newspapers, on district websites, at faculty meetings, with plaques, flowers, letters from politicians and superintendents, checks from school foundations, etc., they did not feel empowered. A critical element of empowerment is sharing decision making authority. Apparently, the administrators were not willing to relinquish or share any power or authority with Master Teachers.

Teacher recognition programs are often surprised that many teachers they have carefully selected and recognized do not seem to have the impact they expect on their colleagues and in their schools (Governor’s Office of Student Achievement, 2009). Given that the recognition is coming from outside of the school, some principals may
feel threatened and seek to entrench their power and authority, rather than share them with and, thus, empower teachers, to facilitate the principals’ task of running their schools more effectively. The recognized teachers need to understand that while they may be recognized by the state or national organizations, it is up to their principals to willingly share power, authority and responsibility. The principals need to understand that empowering teachers and sharing their authority would lighten their administrative load and make teachers more invested in the school reform goals. Finally, the researcher needs to understand that it is not enough to publish findings that they think would impact teaching and learning positively. They also have to help sell the findings to the policy makers and administrators who control the work conditions in which the findings can be implemented.

This study makes teacher recognition programs, teachers who are recognized, educational researchers and the administrators aware that teacher empowerment may not be automatic or welcomed by some administrators, even though the administrators could use it to facilitate the achievement of their goals. The study, it is hoped, makes all the stakeholders more aware of their responsibilities in encouraging and harnessing teacher empowerment. Luckily, teacher recognition engenders the sense of accomplishment, competence, affirmation and credibility that liberates teachers to take leadership initiatives to facilitate student learning by creating and nurturing a critical mass of knowledgeable and collaborative colleagues that enhance effective professional practice.
References


As the usage of online services such as Internet shopping and online banking have grown over time, there has been an increase in cybercrime. This is not only a problem for consumers and enterprises, but can also impact the world economy negatively because we all rely on web services on the Internet. McAfee & CSIS (2014) reported that the global financial loss by cybercrime amounts to 445 billion dollars per year. In order to reduce the damage caused by cybercrime, it is necessary to better educate consumers and to build security systems to protect our society.

There are many researches on the topic of cybercrime prevention and building security system that target enterprises and government organization, but there is a lack of research targeting consumers. Cybercrime uses very clever social engineering techniques to fool individual consumers (Akiyama 2013, Shibata et al. 2007). However, there is very little research about cyber security education for consumers based on a psychological point of view. In order to reduce cybercrime, we must also better educate and raise awareness about cyber security to consumers.

In this research, we started by exploring the mindset of Japanese consumers on cyber security. We learned that the majority of individual consumers had concerns about cyber security because they do not know how to deal with the problem and are interested in obtaining correct knowledge about it.

Secondly, we performed experiments based on the psychological theory of fear arousing communication to determine effectiveness of different types of cybercrime warning messages on web sites. We created cybercrime warning messages based on various topics, such as data on financial loss caused by cybercrime incidents, frequency of such incidents and different fraud techniques employed by attackers. We also tried mimicking human faces, which is the method we think is most effective. Then we examined how well these different messages draw the consumers' attention, their willingness to input their private information such as usernames and passwords, and their measured levels of perceived risk.

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The National Lifestyle, pp.1-4 (in Japanese)


Classroom Practices of Technology Education using 3D-CAD and 3D-Printer in Japanese Junior High Schools

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1. Introduction

The past few years, 3D-Printers are expected to be utilized as teaching materials because the price became down. Therefore in this report, at first some examples using the 3D-printers for technology education in progressive junior high schools in Japan will be introduced. Then, as a case study of the classroom practice at Kamiyama-Higashi Junior High School, contents of teaching, understanding of the students and 3D-Printed products of the students will be reported in detail. In case of Kamiyama-Higashi Junior High School, the students had interest in 3D-CAD very much and almost understood a basic operation method by only two times of classes. As a homework for summer vacation, they try to design flowerpot covers. At last, the covers will be printed using 3D-printer.

2. Consideration of 3D-CAD software

In order to design the original products, use of 3D-CAD is necessary. The following conditions are required in 3D-CAD to introduce into a junior high school.

(1) Easy to use for teachers and students
   - A manual and a help of how to use are substantial.
   - Japanese notation is accomplished.

(2) An introduction cost is cheap or free.

(3) Output in stl format is provided.

(4) Light operational characteristics on PC

On April 2015, candidate 3D-CAD was 6 models. Of these, it is thought that “Design Spark Mechanical” and “123D Design” are most suitable.

3. Classroom practice

The experimental class using 3D-CAD and 3D printer were carried out at Kamiyama-Higashi Junior High School. The class is consisted by third year 14 students (5 boys and 9 girls). In order to support the class, Naruto University of Education performed an induction course about 3D-CAD of three hours for the teacher, sent a graduate student who have mastered operation of 3D-CAD and provided 3D printer (3D Systems, cube3). The class plans are as follows.

- Let's know the technique of the 3D printer (one hour)
- Let's learn basic operation of 3D-CAD (two hours)
- Thinking about the design of an original flowerpot cover (Homework of the summer vacation)
- Let's design the original flowerpot cover (two hours)
- Let's print out a flowerpot cover (one hour)
- Let's evaluate techniques of various manufacturing methods (two hours)

4. Conclusion

As a result of having taught using 3D-CAD, the students understood an operation of 3D-CAD at short time. With the computer system of the school, there is a problem about installation of the free software. The shapes that the output with the 3D printer had difficult were included in the designs of the students.
Title: Academic Advising in an Online Degree Program

Topic Area: Academic Advising and Counseling

Presentation Format: Paper Session

Description: “Students in a school leadership online graduate degree program were surveyed and asked to assess an online resource created by their faculty academic adviser. This advising resource was made with online adult learners in mind and with the goal of keeping students informed and on track for program completion. The findings are presented in context as part of a quality online program and also pay heed to the goals and parameters of academic advising.”

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Quality academic advising is critical in university graduate programs. Students who receive what they perceive as good advising are more likely to be satisfied with their program (Chun-Mei, Golde, & McCormick, A. 2007; Pargett, 2011; Schlosser, Knox, Moskovitz, & Hill, 2003; Soria, 2012; van Emmerick, 2004) and graduate on time (Henderson & Stassen, 2007; Lovitts & Nelson, 2000; Metzner, 1989; Nutt, 2003; Tinto, 1987; Tinto, 1993; Tinto, 2002). Advisers are sometimes specialists employed by a university to cover a range of programs or may be faculty members in an academic department who advise students in the faculty member’s discipline or specialty.

As more students take classes and programs online (Allen & Seaman, 2010; Bates, 2011; Green & Wagner, 2011; U.S. News & World Report, 2015) the challenges for advisers to keep timely and open communication with students becomes more problematic. Students are no longer tied to a physical campus and may be scattered across time zones around the world. The traditional “office hours” for academic advisers no longer make sense.

This project queried students in an online master's degree program in school leadership about what constitutes effective advising. The adviser's general duties can be described as getting students into the program (admission), getting them through the program (coursework), and getting them out (graduated). The author quickly learned that the best way to perform these advising duties was a web-based shell using the university’s course management system, Blackboard. Therefore, the adviser (who is also a faculty member in the department) cobbled together a shell that consolidated the various resources, forms, and other relevant materials that students would need throughout the program.

The shell was successful and well received from the beginning. The department noticed fewer students “falling through the cracks” and important deadlines in admissions, course registration, capstones and internships, and graduation were more closely adhered to. Not only were students receptive but also faculty appreciated this as it gave a bit more certainty and confidence to students.
that they were on the right track and thus they (the students) were able to devote more attention and effort to the classes at hand.

This effort is now in its third year and it seemed appropriate to try and get some feedback beyond anecdotal from students. Were there gaps in the shell, topics that were missing? What existing information could be improved, updated, or otherwise altered? Are there students who do not find the shell helpful but simply have not spoken up about it? A review of extant literature on this subject of direct student feedback on online academic advising systems turned up barren. Therefore, using Qualtrics, a detailed survey was sent to 150 students in the program.

One of the primary jobs of the academic adviser is to increase the level of student engagement. Summarizing the current literature on the subject, Trowler (2010) offered the following definition:

Student engagement is concerned with the interaction between the time, effort and other relevant resources invested by both students and their institutions intended to optimise [sic] the student experience and enhance the learning outcomes and development of students and the performance, and reputation of the institution. (p. 3)

This definition encompasses the idea of the student and adviser enjoining in collaborative learning, co-participating in academic events, engaging in ongoing communication with staff, immersing themselves in educational experiences, and benefiting from the support of the learning community (Coates, 2007). But as worthy and common sense as these endeavors may appear, achieving them is a complicated proposition given the rise of global education, the diffuse nature of higher education institutions, and the proliferation of distance education. In order to satisfy the current needs of the students engaged in online learning, advisers must understand the underlying theory of student involvement, the characteristics of graduate program adult learners, the challenges that these learners face, and the tools that online programs offer.

A framework of practices based on data gathered by The National Survey of Student Engagement (NSSE) have led to increased student engagement (Kahn,
Nonetheless, the concept of student engagement remains undertheorized. For example, while collaboration, student participation, and communication are accepted as important factors, how these factors work together is not fully described. The same is the case with regard to an explanation of the role that students play in influencing their engagement, especially as it relates to diverse student populations (Harper & Quaye, 2009). This study is informed by Astin’s (1984) Student Involvement Theory and by the work of Archer (2008) in explaining student agency.

Astin (1984) defined student involvement as “the investment of physical and psychological energy in various objects” (p. 519); these objects may be specific or general. Astin (1984) further proposed that: this involvement takes place in a continuum in which different students are involved to different degrees with one object at a time, or many objects over the course of time; involvement is quantitatively and qualitatively measurable; student learning and progress is proportionate to the quality and duration of the educational program; and, the success of the educational policy or practice is directly associated with the quality of the educational policy or practice. It is the job of the academic adviser to work with students to maintain a high level of involvement. This involves the recognition that “the psychic and physical time and energy of students are finite” (Astin, 1984, p. 523), with many forces competing for the students’ attention. It also involves working directly with students to monitor and increase student involvement and, in the case of online instruction, ensure that adequate resources exist.

Archer (2008) contributed to the understanding of student engagement by underscoring the role that reflexive thinking, defined as a process of mental deliberation, and co-reflexivity, defined as deliberation with others, play in influencing the structure on agency. The process of deliberation involves “planning, prioritising [sic], imagining, rehearsing, [and] monitoring” (Kahn, 2014, p. 1007). Reflexivity manifests itself in several ways. For example, students working in online programs may deliberate in private, communicate with others with whom they have established trust, prioritize or self-sensor their value-based ideas when
these ideas confront with those of others, and manifest stress rather than action (Archer, 2008). The role of the academic adviser is to monitor and communicate with students, and to assist students in developing strategies to remain positively reflective and reflexive.

Academic advisors that work with students enrolled in online graduate programs also benefit from research-based frameworks that serve as a lens to help them thinking about graduate online learners. One such framework is Knowles’ Andragogy Framework (1973). Knowles made four assertions about adults’ ability to learn:

1. Adults have a psychological need to be self-directing. 2. Adults bring an expansive reservoir of experience that can and should be tapped in the learning situation. 3. Adults’ readiness to learn is influenced by a need to solve real-life problems often related to adult development tasks. 4. Adults are performance centered in their orientation to learning – wanting to make immediate application of knowledge. (Cited in Glickman, Gordon, & Ross-Gordon, 2007, p. 53)

Another framework that is helpful in understanding graduate learners is Mezirow’s Transformative Learning framework (1990). According to Mezirow (1990), transformative learning is a process in which adults’ core frames of reference, or world views, are challenged by new and often disorienting dilemmas. Adults learn by critically reflecting on previously held assumptions. Academic advisors assist graduate students in achieving transformative learning by assisting in providing a supportive online environment and by fostering critical thinking.

Adult students enrolled in both undergraduate and graduate online programs share many common characteristics, and academic advisers must demonstrate an awareness of these. These students are often employed full-time, support families or dependents, are active members of their communities, and the majority enrolled in graduate programs following a period of being in the workforce (Choy, 2002; Rinck, 2006). The majority of these students decide to pursue a graduate degree in order to advance their careers, while others are influenced by economic conditions. According to Kuh (2003), several groups of students historically tend to be more
engaged in learning, including: “full-time students who live on campus; female students; native students (those who start at and graduate from the same school); learning community students; international students, and student with diversity experience” (p. 27). And while all students clearly deserve attention, the aforementioned list underscores the need for advisors to devote more attention to those students who are not listed in the groups, especially in the case of students enrolled in graduate programs where instructors have been found to offer less feedback. (NSSE, 2014).

Academic advisers play a vital role in keeping students informed and on track for program completion. DeSousa (2005) described six guiding principles that inform academic advisors in their work. These principals for advising have been adopted by the National Survey of Student Engagement (NSSE) and The American Association for Higher Education (AAHE). The first of these is that advisers should seek to develop the unique talents of each student. The second is that advisers should include a wide range of people, resources, and services in the academic process. The third principle is that of helping students to develop a plan to achieve their goals. The fourth is that advisers should maintain frequent and purposeful interactions with students. The fifth principle is that of helping students connect to co-curricular learning opportunities both inside and outside the boundaries of the online course. And sixth, advisers should encourage students to seek out learning opportunities that invite diverse perspectives.

In addition to subscribing to the aforementioned principles, academic advisors must be familiar with online tools, how they are used, and how students access and relate to these tools. They also be familiar with the students themselves, understand the students’ career goals, and appreciate the challenges that they face. In addition, advisors should adopt a global institution approach in dealing with students as a way of avoiding program fragmentation (Kuh, 2003; Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008). They also adopt an approach to student engagement that takes into account issues of learning diversity (Harper & Quaye,
By effectively performing their jobs, academic advisors benefit both the graduate students and the online programs.

At this time the results are still coming in and will be analyzed over the next several months. This proposed presentation will have the findings completed by conference time and also will put the issue of academic advising into the context of: What constitutes a quality online graduate degree program? and, how do the professional ethics (including security and confidentiality, which present their own challenges online) of advising fit into the picture?

*If any of the reviewers of this proposal would like to see the online academic advising Blackboard shell as it now stands, the authors would be happy to provide a guest link.*

**References**


A Grade-4 Teacher’s Mathematics: The Case of Annie’s Understanding of Decimal Fractions

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Abstract

The purpose of this case study, conducted within a constructivist framework, was to examine and promote a teacher’s (Annie, pseudonym) own understanding of the mathematics she was teaching to her 4th graders. Annie expressed dissatisfaction with her ability to teach decimals—largely due to considering her understanding of these numbers as inadequate. This paper focuses on data collected from one lesson Annie had taught and a reflective, post-lesson, video-recorded coaching session with her. Our qualitative analysis of Annie’s mathematics indicated initial, procedural understanding that would constrain her ability to promote students’ conceptual understanding of decimal fractions. Our analysis is compatible with Annie’s own sense of low self-efficacy in teaching this topic. Further work to promote Annie’s conceptualization of decimal fractions, fully supported by the school’s principal (the third co-author) and done by the first author during the post-lesson coaching session, seemed to promote Annie’s construction of a different meaning needed for effectively teaching this topic.

Introduction

In this case study of a fourth-grade teacher we addressed a twofold problem: What understanding of fractions and decimals may upper-elementary teachers have, and how may mathematics teacher educators use knowledge from research on children’s understanding to inform coaching of these teachers. Addressing this problem can contribute to the growing body of knowledge about teachers’ mathematical knowledge for teaching (MKT), which Hill, Rowan, & Ball (2005) found to be a critical factor in promoting students’ mathematics achievement. MKT involves not only the teacher’s understanding of the mathematical concepts at hand but also being able to analyze students’ reasoning to inform instruction (e.g., providing examples and explanations) can support making sense of and reviewing multiple ways to solve different problems. Simply put, enhanced MKT is critical for fostering changes in teachers’ instructional practices (Ball, 2000; Hill, Ball, & Schilling, 2008).

Our case study with Annie (pseudonym), a fourth grade teacher who asked for help in enhancing her MKT, focused on the hard-to-grasp (and teach) mathematical understanding of fractions (Carpenter, Fennema, & Romberg, 1993; Davis, Hunting, & Pearn, 1993). Specifically, in this paper we focus on the meaning she seemed to have for fractional symbols, both common and decimal fractions. This focus was guided by our conceptual framework (see next section), which highlights the importance of learning (and teaching) to reason about/with fractional quantities as multiplicative relations (Norton & Wilkins, 2009; Tzur, 1999; Ulrich, 2014). Annie’s work in class indicated a rather typical focus of elementary teachers on procedural aspects of equivalence between different fractions, while lacking a deeper understanding of
fractions as quantities (Tirosh, 1989, 2000). For example, to show the equivalence between 9/10 and 90/100 during the lesson she literally covered a zero in the numerator and a 0 in the denominator. Later, during the coaching session, Annie was unable to provide a mathematical justification for that procedural ‘cancelation’.

From a constructivist perspective, teaching is seen as a continual effort to build on what learners already know (Hodkowski, Tzur, Johnson, & McClintock, 2014; Steffe, 1990; Tzur et al., 2013). Accordingly, in this study we aimed at gaining further insights about a teacher’s knowledge about unit fractions, non-unit fractions, and equivalence among them—in both common and decimal forms, as well as to how professional development may advance this knowledge. In particular, this paper addresses three questions:

(a) How might elementary teachers go about teaching ordering and equivalence of decimal fractions?

(b) What knowledge of common and decimal fractions might underlie this way of teaching, and to what extent it relies on understanding of partitioning a unit fraction (e.g., 1/10 of 1/10)?

(c) How might coaching sessions with a teacher who is interested in improving her mathematics be guided by knowledge from research on children’s learning?

A Constructivist Conceptual Framework

This study is rooted in a constructivist perspective on knowing and learning (Dewey, 1933; Piaget, 1985). In this framework, one’s transition from not knowing to knowing a particular mathematical idea is considered as a mental transformation of available into new knowledge through the dual process of assimilation and accommodation. Accordingly, a learner’s observable behaviors (actions, language) can, at best, provide indications for inferring the learner’s mathematics by an observer. Specifically, we drew on von Glasersfeld’s (1995) three-part construct of a scheme, which he postulated to be the essential unit of analysis for the mental realm. The first part of a scheme is the recognition template of a certain situation. Here, a learner uses assimilation (Piaget, 1971) to “recognize” the situation based on previously recorded (like) experiences. This recognition triggers a goal that brings forth the second part of the scheme, namely the mental activity for accomplishing the goal. The third part of a scheme is the result the learner expects, possibly predicts, to ensue from the scheme’s activity.

Using this notion of scheme, Simon et al. (2004) explained the transformation, mental process of available into new schemes through reflection on the relationship between the scheme’s second (activity) and third (effect) parts. This explanation, termed Reflection on
Activity-Effect Relationship (Ref*AER), elaborated on Piaget’s (1985) core construct of reflective abstraction. They postulated that this process of transformation commences when a learner experiences a perturbation, for example when unable to arrive at his/her predicted outcome or when a constraint is placed on the learner’s activity. Another kind of perturbation may occur when the effect of the learner’s activity is different (in her view) than the result predicted by her recognition template. Such a perturbation opens the possibility for the learner to identify, and construct, a novel relationship between the activity and its effects (Simon et al., 2004)—a process they emphasized may not be conscious to the learner. This reflective process, which yields a new linkage between the activity and its effect, underlies the reorganization of existing assimilatory schemes into a new scheme.

Tzur & Simon (2004) further postulated that the transforming available into novel schemes via this mechanism of reflection on activity-effect relationship typically occurs in two stages. They stressed that, whereas in both stages the learner’s anticipation of activity-effect relationship is essentially the same, the stages differ markedly in the accessibility of the novel relationship to the learner. In the **first stage**, called *participatory*, a learner can only access a novel activity-effect relationship she began constructing if somehow being prompted for the activity and its newly noticed effects. That is, the notion of a participatory stage pertains to a conceptualization in which a learner may only be able to solve a task after s/he has been given a prompt that proves helpful in one’s solution. Tzur and Lambert (2011), pointed to this prompt-dependent stage as a cognitive correlate of Vygotsky’s (1978) core notion of Zone of Proximal Development (ZPD). The prompt can be provided either from another individual or from within the learner’s own mental system (the latter indicated by, say, the learner’s “oops” experience). Eventually, at the **second, anticipatory stage**, a learner cements the anticipation of the link between the novel goal-directed activity and its effects. Thus, she can independently and spontaneously solve a task without any prompting and transfer the newly conceptualized idea to novel situations.

Because no research could be found that analyzes teachers’ schemes of decimals and/or fractions, for the content-specific part of our framework we drew on research of how children construct fractional schemes, specifically schemes containing the foundational activity of partitioning unit fractions further, termed recursive partitioning (Steffe, 2010; Steffe, Liss, & Lee, 2014). In these research studies, a fraction is conceived of as a multiplicative relation between two units—a fractional unit and the whole to which it is being related. Specifically, a unit fraction \((1/n)\) gains its meaning from the learner’s anticipation that it fits precisely \(n\) times into
the whole—and hence the whole is exactly \( n \) times as much of that unit fraction. For example, 
1/10 is a unit that the whole is ten times as much of it, and 1/100 is a unit that the whole is 100 times as much of it. Consequently, a recursive partitioning operation can be carried out, actually and/or mentally, to make parts of parts of the whole. To further illustrate this, a learner may form an anticipation of the relationship between partitioning 1/10 into 10 equal parts and the effect of a new unit fraction that the whole is precisely 100 times as much of it (while the 1/10 is also conceived of as 10 times as much as 1/100). Critically, the learner should also be able to anticipate, and explain, why each such unit is 1/10 of 1/10 (or 1/10 times 1/10), by abstracting the two-step partitioning ‘history’ that occurred to arrive at 1/100. Steffe (2004) refers to this as a scheme involving units-of-units-of-units, as 1/100 is 1/10-of-1/10-of-One (whole).

Method

This study used a qualitative case-study methodology (Merriam, 1988; Stake, 1995) to figure out how an upper-elementary teacher may reason about and make conceptual advances in the domain of decimal fractions. Annie (pseudonym) served as a case within a larger teacher development experiment (Simon, 2000) conducted by the first author of this paper. The goal of this methodology was to promote teacher development as a cyclical process - similar to constructivist teaching experiments (Cobb & Steffe, 1983; Steffe, Thompson, & von Glasersfeld, 2000) conducted with children. Annie serves as a case in a threefold sense. First, she represents teachers interested in their own development while recognizing it must include improvement in one’s own mathematics. Indeed, Annie approached her principal, and the researcher, to ask for help in improving her own mathematics. Second, our preliminary analysis of data indicated, prior to the intervention, that Annie’s available knowledge was typical of many elementary teachers (Simon & Blume, 1994; Tirosh, 2000). Third, Annie’s participation in the school’s Professional Development (PD) intervention, instigated by the third author (principal at the time), included a focus on understanding children’s thinking and learning of fractional schemes through activities and tasks (including a computer software) that could also be used to promote Annie’s understanding. We note that, within this PD context, Annie participated as a teacher assigned to teach a grade-4 class in which a large proportion of students were identified as English Language Learners, because Spanish was a language in which she could communicate.

Data collected for the study reported in this paper include video recording of one observed lesson and the post-lesson coaching session conducted by the first author, and
transcribed and annotated by the second author. Our data analysis consisted of three iterations. First, we focused on identifying sections in the data that pertained to the meaning Annie seemed to have for common fractions, for decimals, and for the relationships between those numbers. Second, we focused on making inferences into cognitive structures and operations that could explain what made sense for her by linking the actions and language she used in both the lesson and the coaching session. Third, we interweaved main themes we identified in her reasoning and learning into what, to us, seemed a coherent ‘story’ that unfolded through the teaching-learning interactions. This story is told in the next section.

Analysis

In this section, we analyze data from (a) the first lesson on comparing and ordering decimals that Annie taught to her 4th graders and (b) a post-lesson coaching session conducted by the researcher at the end of the same school day. We first describe the 3-part, observed lesson, which we consider data for addressing the first research question because it provides a ‘window’ onto Annie’s mathematical understanding. We then proceed to presenting and analyzing data from the coaching session, which focuses on the third and most telling part of Annie’s lesson, to address the second research question while substantiating claims about what she did seem to know (or not) about decimal fractions. This leads to addressing the third research question by examining the researcher’s use of knowledge on children’s fractional reasoning to foster Annie’s construction of a recursive partitioning operation with tenths (e.g., why 1/10 of 1/10 of a given whole is equivalent to 1/100 of that whole). We provide evidence for how this research-based knowledge about children enabled diagnosing conceptual understandings Annie needed to construct, so that comparing and ordering decimal fractions would make sense to her.

Annie’s Three-Part Lesson on Comparing Decimals. Annie’s main goal for her students’ learning during the three-part lesson she had requested the researcher to observe seemed to be that her students would be able to use the tenth-digit as ‘first-in-line’ for comparing decimals. Besides being rooted in the curriculum, this goal seemed to reflect her perturbation about student incorrect answers on the previous day’s test, such as comparing 0.45 and 0.9. Toward the end of the lesson we observed (about 40 minutes into it), she returned to that problem (see Figure 1), talking about and underlying the tenth digit in each decimal fraction, then asking students to say out loud (in unison), “nine tenths is greater than four tenths.” Earlier during the lesson, she used a pair of numbers (8.9 and 8.87), under which she drew arrows to underscore the tenth digit, and engaged students in saying out loud in unison, “nine tenths is greater than eight tenths.”
To accomplish her goal, in the first part of her lesson (~14 minutes) Annie introduced a handout titled “My Place Value Tool.” It included 9 empty-spaces for considering (inserting) numbers that have a decimal point with tenths and hundredths places (see Figure 2-a). She reminded the students how, in 2nd grade, they used base ten blocks for whole numbers. Then, while drawing diagrams on the board, she said that, for decimals, they would use a ‘column’ of squares for each tenth and a square (‘small cube’) for each hundredth. She also linked a tenth and a hundredth in the place value expression to the proper fractions of 1/10 and 1/100 – and to their monetary values of a dime and a penny, respectively (all written on the board, see Figure 2-b).

The second part of this lesson consisted of students working in pairs, and then of a whole class discussion, on solutions to a few problems of Comparing and Ordering Decimals. These problems were cast in the realistic context of music types found in the market. Five music types with the following percentages were included: Pop – 8.9, Country – 10.4, Rock – 25.3, Rap/Hip Hop – 13.3, and R&B – 10.6. Annie moved about the pairs, making sure each had documented the comparisons in correct mathematical ‘sentences’ (e.g., 13.3 > 8.9). In the whole class then, Annie and the students read these comparisons out loud in unison (e.g., “Thirteen and three-tenths is greater than eight and nine-tenths”).

Finally, in the third part of the lesson (~15 minutes), Annie addressed the comparison between 8.9 and 8.87 – the latter being the percentages she supplied to a different type of music contributed by a student (Orquesta – the Spanish word for Orchestra). To address this
comparison, Annie delved into the equivalence between .9, 9/10, and 90/100, by first adding a dotted ‘0’ to the right of 8.9 (so it then could be read as 8.90). Students seemed unclear about the equivalence of 9/10 and 90/100. Thus, she attempted to show it by covering the right-most zeros in the numerator and denominator of 90/100 (see Figure 3). She followed this by telling them that .9 is the way to write 9/10 in a place value system. Finally, she returned to the comparison of ‘9’ and ‘8’ in 8.9 and 8.87 (respectively), and to ‘4’ and ‘9’ in .45 and .9 from the previous day’s test. In that last comparison, she explicitly told the students that their reasoning (“.45 has more digits”) was incorrect, and they should focus on the digit in the tenths place.

Figure 3. Annie’s explanation of equivalence between 9/10 and 90/100

Throughout Annie’s lesson, and particularly during the third part, she seemed to us to lack a scheme for reasoning about recursive partitioning of unit fractions—a scheme found in research about children (Hackenberg, 2007; Steffe et al., 2014). Specifically, she did not seem to consider 1/100 as the potential, mentally anticipated outcome of partitioning 1/10 of the whole into its tenths. The researcher thus decided to focus much of the post-lesson debrief on (a) figuring out how Annie thought about the equivalence of, say, 1/10 and 10/100, and (b) fostering her construction of a recursive partitioning scheme. The next section elaborates on both issues.

Annie’s Thinking about Decimal Fractions. Before delving into what Annie needed to construct to make sense of equivalence among 9/10 and 90/100, we propose what we infer she did know about decimal fractions. Our inferences are gleaned from data collected during the first 9 minutes of the post-lesson coaching session, which began with asking Annie to explain why she thought 0.1 is larger than 0.09. Her response focused on the location of the digits in the place value system:

Excerpt 1: Annie’s Initial Explanation of Her Comparison of Decimals

Annie: I think it matters totally on the place value where the digit is. So it's, I mean, I...I, my knowledge is (places hand on heart) that wherever the digit is (holds up right hand, forefinger and thumb extended as if pinching a number and moves hand in hopping movement in air from left to right) in the place val.., in the correct place value then you have to first realize what the place value is and then you see the digit to know if it's bigger or smaller than a different digit.
Annie (a little later): Umm, yeah, it’s the, it’s the (puts both hands together and then opens them into a V shape with arms) opposite way of the spectrum of place value so, or the base ten system I mean. So, going to the left (holds left hand in air and moves it in hopping movement towards left), the place value is always multiplied, exponentially gets bigger by ten; going to the right of the decimal (moves left hand back to middle and then towards right in smooth movement, two times) it's doing that, but it's going smaller so it's being divided.

Annie’s initial, independent responses in Excerpt 1 indicate her rather procedural focus on the way a decimal fraction is written in the place value system. On one hand, she seemed to recognize the linkage between a position of a digit in a number and the value of that position. On the other hand, we use ‘procedural’ to emphasize the fractional quantity symbolized by each digit in the system did not seem to be prominent in Annie’s reasoning. The researcher thus pursued further by asking Annie if she could explain this in a different way that does not use the place value aspect. She responded: “Ummm, well, like what we were talking about [points to the white board] about equivalent, umm … fractions, so a hundredth is, is a, well a hundredth is divided … a tenth divided again by ten.” Following her response, the researcher went to the white board Annie herself used in the lesson, pointed to the fractions written on it (.9, 9/10, and 90/100), and again asked her to explain—not in place value terms—in what way these three numbers are related. Annie responded: “They’re all, umm, ‘cause if you were looking at some, … at a, at a model, if you were to color in, … shade in, … they would all have the same portions.”

Annie’s responses (e.g., notion of shading, or coloring) indicated she has been operating from the prevalent conceptualization of fractions as parts of wholes. Most importantly, in both explanations she gave (place value for decimals, proper fractions as shading the same portion) there seemed to be a lack of explicit meaning for the quantities for which each symbol stands. To us, and to the researcher at the time, a hundredth (1/100) did not appear to serve a ‘connecting role’ in her thinking, not even in the sense of ‘common denominator’. The researcher thus conjectured this could indicate the absence of understanding of 1/100 as a quantity resulting from a recursive partitioning operation (i.e., 1/10 of 1/10).

To further pursue this conjecture, the researcher turned to the computer and used the JavaBars software (Biddlecomb, 1994) to draw a long bar (red), partition it into 10 equal parts, and color (“shade”) every other tenth in another color (yellow, see Figure 4). He then asked Annie to point on the screen where she saw the 9/10. She responded by pointing to and simultaneously counting each of the colored tenths (red and yellow) from 1/10 through 9/10, accordingly. Sensing this knowledge of hers is also what she tried to teach he asked: “So [the idea that] each one is 1/10 and you have nine of them is [also] what you tried to show on the board?” – to which Annie nodded, “Yes.” Accepting this, he then pursued further: “How is this [pointing to the 9th tenth on the computer screen] related to .9? Why is this .9?” Simply re-stating
her previous assertion, Annie responded: “.9, when you say it, is also 9/10.” To the follow-up question, “So they are just the same quantity?” she replied, “Yeah.”

Figure 4. A JavaBars screen showing a whole partitioned into 10 equal parts

The above exchanges indicated to us that, within an equally partitioned whole, Annie could identify 9/10 as the equivalence of 9 pieces, each of size 1/10 of the whole. Her understanding of each unit fraction seemed to be rooted in it being one of 10 equal parts (to which she pointed on the screen), nine of which she counted one-by-one. This was supported by her initial response to the researcher’s request in the following task, namely, in what way the 9/10 on the screen is equivalent to 90/100 (see next section). We note that these exchanges did not pursue the extent to which Annie considered any single 1/10 as a multiplicative relation to the whole in and of itself. However, suspecting that such a multiplicative notion might not be part of her reasoning led the researcher to proceed to what he considered as a core of the teaching-learning process for Annie, namely, the multiplicative, recursive operation involved in creating 1/100 as a unit fraction of a unit fraction (1/10 of 1/10).

Annie’s Initial Construction of Recursive Partitioning. The researcher set out to further diagnose Annie’s thinking about equivalent fractions (9/10 and 90/100) as a basis for promoting her thinking of this equivalence. Excerpt 2 presents data pertaining to these exchanges.

Excerpt 2: Annie’s Thinking of the Equivalence 9/10 = 90/100

R: I am a child; I am looking at this, first you wrote the ‘point nine’ [.9]; it was related to eight; so I would probably need to understand that you dropped it and then you wrote nine tenths; and I only had nine. [Then] suddenly it's nine over ten, and it’s the same. Do you see, from a child’s point of view …

Annie: (Smiles, nods her head up and down for yes) A lot, uhhh-huh.”

R: (After a few seconds wait time, relating to her action in class of hiding the zeros) As a child in your class, not understanding why you can hide this [the zeros], or take it away [the zeros]; umm … I don’t get it. So, where in the quantities this must be the same?

Annie: (seems to be thinking, silently, how to respond to this question for about 20 more seconds.)

R: (Rephrases the question) So what I am trying to push at, is how do you understand ninety hundredths in this picture (pointing to the ninth-tenth on the screen)? What would you do to get ninety hundredths?

Annie: I would count these and make sure there was ten, (points with the mouse to the shaded parts on the screen), five; ten.
Excerpt 2 indicates Annie’s thinking about fractions as equal parts of a given whole through her attempt to show, to a ‘mock child’ played by the researcher, that each part is 1/10 of the whole. The key point we emphasize in this excerpt of data is that, on one hand, she recognized the question and possible difficulties students in her classroom might have experienced when she tried to convey the equivalence at issue. On the other hand, she reverted to explaining why each colored piece was 1/10 of the whole – not why the 9/10 she had just counted was equivalent to 90/100. Her responses did not include any indication of the potential to recursively partition one or all nine of the tenths shown on the 10-part whole.

Considering difficulties found in research on children’s construction of recursive partitioning schemes, the researcher then turned to providing Annie with a prompt for such a possibility as a means to explain the equivalence between 9/10 and 90/100. He pulled another 1/10 from the 10-part whole, demonstrated for Annie how it could (recursively) partitioned into 10 equal parts, and asked:

**Excerpt 3: Annie’s Initial Explanation of why 9/10-90/100**

R: How would you tell me that this [points to 9/10] is just like 90/100? Why would I believe you? Ninety [90] and hundred [100] are so much larger [then than nine and ten]; as a child, they are like “whooooaa …” You see the point but I am trying understand how you think, you know that it is the same and I am trying to understand why, for you?

A: Umm (short pause); I think the, I think what I was saying [in class], with the zeros, so in my mind (puts hand up and touches her head); if I can do the same thing to [the] top, and cover up one of the zeros (puts hand in the air as if covering the numerator), and to the bottom cover up (moves hand lower as if covering the denominator), [then] it is visually the same, (holds both hands in air on top of one another as if to cover numerator and denominator together). I think that is how I best understand it, but I think when I look at a model I …

The data in Excerpt 3 indicate that, at this point, the researcher’s prompt did not impact Annie’s reasoning. She seemed engaged in trying to figure out how 1/10 of 1/10 may be related to explaining the equivalence at hand. After being asked the question in two, slightly different ways, however, she returned to her available way of reasoning of covering the zeros, as she demonstrated in class (see Figure 3). We infer from Annie’s response that her understanding of 9/10, and hence 1/10, was not as quantities on which she could operate with further partitioning. Rather, her mathematics at the time reflected a ‘canceling-out’ procedure she likely learned previously, during her schooling and/or teacher preparation. We refer to her understanding of the equivalence as working with/from empty symbols, that is, she had a way of using the symbols to appear like the equivalent fraction, but seemed to lack a meaningful quantity these symbols would signify (e.g., 1/10 of 1/10 as a multiplicative relation between the resulting unit fraction and the whole).
With this inference, and having realized his rather explicit prompt of partitioning the 1/10 further did not ‘ring a bell’ for Annie, the researcher turned to first fostering a perturbation in her own (procedural) thinking about the equivalence by alluding to the actions she had used. Using the mock child context again, he went to the whiteboard, wrote on it 91/101, and said: “I am a child; I just saw what you did; so [similarly] 91/101 (covers the ‘1s’ in the numerator and denominator) is like 9/10?” Excerpt 4 below provides data of exchanges that this perturbation-seeking question transpired.

**Excerpt 4: Fostering Recursive Partitioning through A Perturbation**

A: Ohhhhh; No.
R: Is it [9/10]? Is it not [9/10]?
A: Ummm, ohhh … (A little later) No.
R: Why not? Can you use any of the quantities here (looking at the computer screen) to explain to me why ninety-hundredth is like these … and why ninety-one over one-o-one [91/101] is not?
A: (Takes the mouse, points to each tenth on the 10-part whole while saying accordingly) So this, so if this, so this is ten here, so if I had to say how is this like ninety-hundredths, I would say well if it is already in tenths then this represents ten-hundredths, this is twenty-hundredths, thirty-hundredths, forty-hundredths, fifty-hundredths, so I …
R: (Points to the first tenth, which is NOT partitioned into 10/100) How would you tell me, how would I know these are ten hundredths? What would you do to, … [you can] ask me to do something on the computer to show that this one-tenth is also ten-hundredth.
A: Ummm, could you make this one-tenth into tenths?
R: (Shows Annie how to re-partition 1/10 into 10 equal parts, then teaches her how to pull out one of these little parts, each 1/100 of the whole.) So help me understand, we put ten of these, one thing that as a child, or as an adult, I now know this thing still stayed the same quantity, and it is one-tenth of that whole. I understand that. Help me understand why it is ten-hundredth? Why not ten-tenth, or ten-millionth? How do I know that this is ten-hundredth?
A: Umm, because, … So if this is already separated into ten then all of these (points to the 10-part whole) could be separated into ten as well. So then ten, ten times ten is a hundred; so then if one of those sections is there it would be ten-hundredths.
R: So, let’s first make sure that we see what you are saying. This is one one-hundredth (points to the small piece on the 10/100 bar)?
A: Mmm-hmm (nods yes).
R: That is what you are saying, that this one … and the reason; now you gave me a reason; I will just try to extend it a little bit. You gave me a reason … so you just said to me this little piece, that [was] pulled out, this is one-tenth of one-tenth?
A: Yeah.
R: And it is also one-hundredth?
A: Yeah. (Then, a bit later and after they used JavaBars to show and measure that the 1/100 is 1/10 of the 1/10 piece) But even that, but even that much word, like even that much language for me is hard. So I think that’s why, ‘cause you bring up a good point …

Excerpt 4 provides evidence of Annie’s initial construction of recursive partitioning for unit fractions (tenths). We claim that, at best, she has constructed a participatory stage of a scheme by which she could think of (anticipate) 1/100 as the effect of the activity of re-partitioning 1/10 of the whole into 10 equal parts. Let us first address the nature of her new construction, which was brought forth by first fostering her own questioning of the procedural method she had used (covering the same digit in the numerator and denominator). This perturbation, created as a counter example in which a pseudo-similar operation on different
numbers (91/101) leads to the same effect (9/10 like in her covering of 90/100), seemed to help Annie realize her own reasoning was fault (“Ohhhhh; No”). With her “No” as the starting point, she then responded to the researcher’s question to explain the equivalence, with what, for the first time in our work with Annie, indicated an anticipation of the potential (not executed) action of partitioning each 1/10 into 10 parts, which would result in a 100-part whole. Accordingly, it seemed also the first time for her to realize that each 1/10 could be ‘skip-counted’ in 10s of hundredths (“This is 10/100, 20/100, 30/100, 40/100, … [etc.]”). We do not claim here that Annie’s understanding has been anchored in an explicit multiplicative operation; only that she realized the equivalence involved in the number of parts by which such an equivalence could be explained. This is consistent with her seeming consideration of the number of parts in the whole and in each tenth (“So, then all of these (points to the 10-part whole) could also be separated into 10, too … Ten times ten is a hundred and then one of those sections would be 10/100”).

Having articulated the nature of Annie’s newly found conceptualization, we now return to the claim it was constructed at the participatory stage. Such a claim is key to understanding that Annie’s new way of reasoning, while an important advancement in a teacher’s thinking about fractions and decimals, is not yet expected to change her practice so it promotes students’ conceptual powers in this domain. Our claim for a participatory stage rests on three main aspects of the history of exchanges leading to Annie’s new realization. First, as seen in Excerpt 1, Annie did not initially “act upon” the prompt given by the researcher, in which he literally (in action on the screen) partitioned the 1/10 into 10 equal parts. Rather, she reverted to her digit-covering method. Second, a noticeable time gap took place between her experience of the intended perturbation (i.e., 91/101 for her was not equivalent to 9/10) and the point of starting to explain how each 1/10 in the 10-part whole could be considered as if it was partitioned, too. We postulate that during that time gap Annie’s mind was searching for a way to show the researcher why the equivalence worked, a goal toward which she could have brought forth and use her activity of multiplying whole numbers (“Ten times ten”). In turn, this whole-number scheme triggered activation of her partitioning activity, at which point she could finally apply such partitioning to a unit fraction (1/10). In turn, she could also mentally apply the same activity to all unit fractions in the whole (10/10=100/100) and in the non-unit fractions (9 of those tenths = 90/100 of the whole). Third, we point out to Annie’s genuine statement that the language about 1/10 of 1/10 is hard for her. We contend that this language was hard because she has just began constructing a recursive partitioning operation, in which one symbol (1/10), used recursively, would present a hurdle until such a multi-step activity is both cemented into a single activity and
linked back to the whole as a multiplicative operation on units of units (Hackenberg & Tillema, 2009).

Discussion

In this paper, we presented a case study of a 4th-grade teacher (Annie), which focused on her mathematical understanding in the domain of decimal fractions. Our analysis indicates that, at the study’s outset, her understanding was rather procedural. During the post-lesson coaching session, however, she began constructing a more robust way of reasoning—a scheme marked by anticipating the effect of recursively partitioning a unit fraction, such as 1/10. In this final section of the paper, we propose three key contributions of this study: (a) explicating an elementary teacher’s mathematical knowledge of decimal fractions, (b) applying knowledge from research with children to the coaching of teachers, and (c) pointing out the potential such teacher learning may hold for informing her practice. Below, we expound on each of these.

An Elementary Teacher’s Knowledge of Decimal Fractions (Research Question 1). Our study contributes to the articulation of ways of reasoning about decimal fractions that elementary teachers may typically have and use. Specifically, Annie presents a common case of a threefold way of thinking. First, her thinking about unit fractions seemed driven by a limiting, one-of-n-equal-parts-of-a-whole model (Van De Walle, Karp, & Bay-Williams, 2010). Such a model is limiting, for example, when one is trying to determine the fractional size of a part within an unequally partitioned whole, or when shifting from proper to improper fractions, because a part cannot be larger than the whole of which it is a part whereas a fraction can be larger than that whole (Figure 5).

![Figure 5](image-url)

Figure 5. One-fourth of an unequally partitioned whole (two $\frac{1}{4}$ths, one $\frac{1}{2}$) and $\frac{5}{4}$ of it (bottom)
Second, Annie’s notion of ordering decimals seemed superficial in the sense of left-right, (place value) position determination. During class (see students’ unison statements), she seemed focused on starting a comparison of the digits from the 10ths; if those digits are equal - move one position to the right (100ths) and compare those, etc. As our data showed, Annie followed a method for which she did not seem to have a sound explanation of the magnitude of each unit in the place value system—let alone of the relationships among those units.

Third, Annie seemed to also operate procedurally on the numerator and denominator of fractions in the sense of lacking a meaning for the unit fraction of 1/100, apparently reflecting no multiplicative coordination of its origin (1/10 of 1/10, or 1/10 times 1/10). Both during the observed lesson and the coaching session, she explained the equivalence between 9/10 and 90/100 via a bodily gesture of ‘cancelling out’ a zero in the numerator and the denominator. While mathematically correct for that particular fraction, Annie’s method cannot be generalized, and she seemed to have no way of explaining why it would be justified in this case.

Coaching Teachers Based on Research with Children (Research Question 3). Annie’s case study demonstrates how a teacher’s understanding could be advanced while using knowledge from research on children’s learning of fractions. A key scheme she needed to construct, in which units produced through a previous partitioning are partitioned further, was investigated in several constructivist teaching experiments (Confrey, 1994; Norton & Wilkins, 2009; Olive & Steffe, 2010b; Steffe, 2010). Our scrutiny of the literature indicates that the construction of such a recursive partitioning scheme (a) has never been studied in teachers and (b) seems crucial for their ability to operate on/with fractions as multiplicative quantities. Specifically, our study showed how such a scheme may underlie a teacher’s conceptualization of 1/100 as the effect of (recursively) partitioning 1/10 of a whole into 10 equal parts. Moreover, rooted in our conceptual framework, we demonstrated that such a scheme could be constructed as reorganization in the schemes available to the teacher.

To initiate our case study’s construction of this scheme, the researcher commenced the teaching-learning process by cultivating a perturbation in Annie based on her way of explaining the equivalence between 9/10 and 90/100 (covering to ‘cancel out’ the zeros). Capitalizing on what she actually did in class, the researcher used the same bodily gesture for a counter-example she would possibly dismiss (91/101 ≠ 9/10, although it is possible to cover the ‘1s’ like she did with the ‘0s’). Determining that Annie experienced the intended perturbation, he then turned to promoting reorganization in her scheme of the link between 1/10 and 10/100. To this end, he re-oriented her attention to a recursive partitioning action being presented on a computer screen.
He anticipated that she could anticipate the effects of recursive partitioning (1/100, 10/100, and other multiples of 10/100) by bringing forth her scheme for multiplying whole numbers (Steffe & Cobb, 1998). Thus, this teaching-learning process provides an example of how teacher educators can inform coaching sessions geared to advance willing teachers’ mathematical understandings by using analytical lenses gained through research on children’s construction of compatible schemes.

Potential for A Teacher’s Newly Constructed Math to Inform Her Practice (Research Question 2). In the past two decades, research has repeatedly demonstrated the key role that teachers’ mathematical content knowledge (MKT) serves in affording, or constraining, their practice (Hill et al., 2008; Hill et al., 2005). Our study lends rather unique support to this commonsense standpoint, by highlighting how absence of a recursive-partitioning scheme may hamper a teacher’s capacity to promote her students’ meaningful operations when ordering decimals. Indeed, Annie’s choice to work with the researcher on decimal fractions was due to her self-perceived weakness in this area. Going into the lesson presented in this paper, she explicitly conveyed how her students did not understand what she tried to teach largely because of her own insufficient understanding (e.g., many of them failed to ‘see’ what, for her, was painfully obvious—0.45 must be smaller than 0.9). We were thus in a unique position to not only witness how a teacher’s own mathematics serves as an “upper-limit” to what her students can learn but also to examine this stance with a teacher who volunteered to do so in a difficult-to-grasp (and teach) domain. In this sense, Annie is a twofold case of a teacher who self-recognizes her own lack of understanding decimal fractions and the limitation it places on the teacher’s ability to foster students’ learning with understanding.

It should be noted that, while clearly seeing Annie’s progression during the post-lesson coaching session as necessary for a change in her teaching practice, we do not consider it as nearly sufficient for being fully, meaningfully, and independently implemented. We do contend, however, that her early construction of a recursive partitioning scheme has a twofold, vital potential. First, this new scheme can ‘open the door’ to further development along a continuum of schemes that constitute fractional reasoning (Steffe et al., 2014; Tzur, 2014). Such schemes are needed, for example, to meaningfully solve problems involving equivalent fractions, addition/subtraction of unlike denominator fractions, and of course multiplication/division of fractions. Second, once her recursive partitioning scheme would be constructed at a solid, anticipatory stage (which our data are inadequate to determine), it will serve as a basis for both setting similar understandings as goals for her students’ learning and for selecting and/or creating
tasks to promote such learning (Simon & Tzur, 2004; Tzur et al., 2013). We anchor this claim in the example that perturbed Annie to recognize the inadequacy of her own mathematics. As seen in Figure 6, to compare .45 and .9 she would anticipate and justify the quantities each symbol stands for, and thus why .45 is smaller than .9 even though it has more digits.

![Figure 6. Recursive partitioning of tenths into hundredths to compare .45 and .9](image)

The reasoning to make sense of this comparison will include seeing .9 as equivalent to .90 (and 9/10 to 90/100) in spite of the fact that the wholes are partitioned into 64 and 55 unequal parts, respectively. Note that on each whole bar one would have to anticipate, without actually executing, the partitioning of each 1/10 into 10 equal parts that, together, amount to 100 parts (not all are visible!). To Annie, and her students, 100 can thus become a common measure (Olive, 2003; Olive & Steffe, 2010a) of both .45 and .9, because the whole is 10 times 10 as much of each small piece, and hence 100 times as much of it. Similarly, they will also anticipate and explain why, after the recursive partitioning, each 1/10 must necessarily also be 10/100 of the whole (10 times 1/100). Coordinating these two anticipations could then underlie a meaningful ordering of any two decimal fractions (e.g., .45 < .9) because, when considered for the equivalent quantity, it entails to compare the number of same-size units (e.g., 45 units of 1/100 each against 90 units of 100 each). We see this potential for changing upper-elementary teachers’ practice through changing their knowledge of decimal fractions on the basis of research on children’s fractional schemes as a strategic site for future research.

References


Applying Traditional Art Techniques to Teach High-Fidelity Digital Media Asset Creation: An In-Depth Look at Two Digital Media Projects Using Traditional Art Techniques to Teach Modern Digital Media Practices

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Abstract

The process for digital figure modeling has dramatically shifted from a low to high polygon workflow to its current incarnation of high to low polygon workflow. Developments in 3D animation have also allowed animators to refine their work to a much higher level. In this paper, we break down the classroom process being used to create high-fidelity digital figure sculpture and high-fidelity animations using traditional art based teaching techniques. Class and lecture time is primarily dedicated to teaching concepts that lay outside of the software and are key to understanding how and why things look and move the way they do in the real world. The modeling section focuses on human anatomy and traditional drawing techniques being applied to a digital media class while the animation section focuses on the physics of the motion and the importance of clear timing and posing.
**Introduction:**

Breaking down the process being used to create high-fidelity digital figure sculpture and high-fidelity animations using traditional art based teaching techniques. Evolving software for the movie and video game industries has changed the character production pipeline over the last few years. The process for modeling has dramatically shifted from a low to high polygon workflow to its current incarnation of high to low polygon workflow. Developments in 3D animation have also allowed animators to refine their work to a much higher level. A more traditional art style approach to teaching for the current development pipeline appears to be needed. This is how a modeling class and an animation class at East Tennessee State University are adapting to meet these demands.

Teaching someone which end of a paintbrush or chisel to use in at a university level class would be simplistic if not insulting. However, digital artists have been introduced to the computer as a creative tool in this same overly simplistic manner. As more and more students are born into a world with high-speed internet and constant exposure to the digital world, the need for remedial computer training at the university level is outdated and possibly insulting to the students. In conjunction with this new generation of learners comes many advances in the software that is used to create the digital images we see every day.

In the first section, we will discuss the idea of digital sculpture. What is its current form as well as the technology that makes learning how to do it less about button pushing and geometry and
more about form and aesthetic? In the second section, we will explore teaching 3d character animation. We will discuss how it can be broken down into the most fundamental elements in order to build critical thinking skills to solve future animation challenges.

The idea that the learner needs to be a technology wizard to create beautiful 3d models and animations is coming to an end. Now, more often than not, the youngest of the people we encounter are often the most technologically sophisticated in the room. They are not bothered by operating systems, graphical interfaces, or high-tech peripherals. These learners are able to jump into digital media at a high level. Over time, the technology we have taught at our highest level class has trickled down to our freshman classes. This has met with resistance, but the free flow of technology has pushed forward. Now students are able to look past the complicated interfaces and more quickly start using the software as a tool for artistic creation.

Embracing this trend, many of ETSU’s Digital Media faculty have moved from the idea of focusing on hard skills, like where button A is or how to create object C using method Y, to a more lifelong learning approach. Emphasizing research, self-guided learning, and understanding rather than regurgitation, ETSU’s Digital Media program is establishing itself as a leading program in the Southeastern United States.

**Class 1 – Digital Figure Sculpture:**

What does all this mean and how is it being applied in the classroom? Here we will look at the Digital Figure Sculpture class and how it used these ideas to improve student success. Digital Figure Sculpture used the latest in high polygon modeling software while emphasizing
anatomical drawing and traditional sculpting techniques. This class implemented Zbrush, the latest high-end software being used by industry professionals in movies and video games. However, emphasis was placed on the aesthetic result rather than the tool. In past iterations of digital media classes, knowledge of the software was often enough to pass a class. The emphasis on the aesthetic result changed that fundamentally.

The Class:
The class was designed around a shortened summer schedule as a rigorous three-week workshop. The class implemented traditional drawing and sculpting techniques inside Photoshop and Zbrush to create digital figure studies and sculptures. Learners created high-fidelity anatomically correct figure models using digital sculpting software while learning and applying traditional painting, sculpting, and drawing techniques.

Prerequisite for the Class:
Designing this class with the intention of limiting the technology while teaching cutting edge software, the prerequisites were kept extremely light. The prerequisite included knowledge of Photoshop and basic computer skills. The class focused on new modeling techniques, artistic ability, and anatomical understanding.

Drawing and Anatomy, “I thought this was digital media”:
Understanding anatomy is a critical part of figure modeling. The technical aspects of figure anatomy from works including An Atlas of Anatomy for Artists by Fritz Schider as well as other sources were the cornerstone of the class. Application of drawing technique and line diversity are
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essential for describing what the learner is portraying. Both of these ideas come into play as learners began sculpting.

The class began by scanning thirty anatomy drawings, ten drawings of the bones, ten drawings of the muscles, five drawings of the skin, and five drawings of the veins and arteries. These scans were then brought into Photoshop and the students were required to create three new layers for each of the drawings, one for line art, one for shading and one for naming the structures. During this part of the class, line quality, style, and technical accuracy for the shapes and name of the anatomical structures of the human body were the focus. This taught the students to “draw what is really there” and not what their preconceptions were.

The software:

For this project, the faculty focused on “limiting technology.” What does limiting the tool set mean? Here it is defined as picking the smallest amount of tools the learners can use to achieve the desired result. There were many different or even slightly duplicated tools that could be used to achieve most of the results the class was working toward. The faculty leading the class optimized a minimized toolset allowing the learners to focus on the aesthetic rather than the technology. Knowing the end project, the faculty carefully selected a set of tools that minimizes duplication while giving the learners all the tools needed to complete the project.

Traditional techniques appear through the learning process:

The heads system of measuring is a traditional art method for judging the scale and size of a character. The heads method says that every feature of the body is X “heads” tall or long. To use
this method, the learners created a sphere equal to the size of a head. The sphere was placed on a separate layer and duplicated to measure. This required some software knowledge of layers and duplication in Photoshop. Also, a system of efficiently using reference was incredibly important. The reference that was created by the students and how to effectively use it was emphasized as a tool. Traditional drawing techniques emphasize drawing from life. Here that tradition is repeated using a combination of techniques to implement the reference images.

**Breaking down the human figure, torso, arms, legs and hands:**

As with limiting the tool set, limiting the scale of the project leading to the final allowed the students to focus with a laser-tight precision on very specific aspects of the figure. Breaking the sculpts into five parts, the muscles of the torso, arms, legs, hand, and feet, the class painstakingly developed the shapes under the skin that make up what we see when we view a figure.

For learning purposes, the artists broke anatomy into smaller parts to limit visual errors. If you can break an item down into its base shapes, it allows the artist to focus on the scale rather than complex lines. The arm is two cylinders of roughly the same length with a gradual taper. Breaking that down further, above the elbow and after the shoulder, the upper arm is little more than a tube. By breaking the arm into two separate components visually, learners were able to focus on the scale first and then go back and apply the underlying anatomy in a measured process. The learners repeated this type of breakdown for each of the five parts of the body the faculty isolated.

**A self-portrait, “can I wear clothes”:**
The final project was an anatomically correct self-portrait model. Why a self-portrait? It is the quintessential traditional figure project, and it allowed for unlimited access to reference. The project: Wearing a bathing suit or similar form-fitting outfit, take sixty to ninety photographs focusing on three hundred and sixty degrees of all parts of the learner's body.

The learners were then guided through the project the same way the class is structured, gather reference, set scale, and build up landmarks. Then they went back over and built the underlying anatomical structure.

Presentation of the final project was a T-posed model in a three sixty round table. Formal critique for a self-portrait can be extremely difficult for students. Going back to the basics for the critique was important to communicate feedback. Correct scale, landmark locations, and overall accuracy was a key focus of comments. Identifying landmarks early and ending the critique with a positive note was also important.

**Improvements for next time:**

With the limited time constraints, the class was not able to delve into head and bust sculpting. The head and face being an important aspect of the character with so many small details, it was impossible to cover all of the elements in depth in a single class. Moving forward, pushing through the drawing sections of the class a little faster and freeing up time in the middle for more work on the face would improve the overall aesthetic of the project.

Looking to the past masters of sculpture, the pose of the character is essential. Current industry concept artists and modelers are asked to create assets in T-pose, and animators are tasked with
bringing the model to life. Balancing time, aesthetic, and portfolio needs of the learners, adding a more natural pose to the final would increase the aesthetic of the work but is not an essential modeling skill.

**Class 2 - Fundamentals of Character Animation:**

In the Fundamentals of Character Animation class, the instructor worked with the students to help them develop a full range of character animations for both games and film. No two animations are ever the same. And even with a repeating animation such as a walk or run cycle, the character’s physical and emotional attributes have a way of showing in the physical motion. Because of this, teaching animation as a process that the students can repeat through rote memorization does them a significant disservice. Each animation is a unique challenge, a complicated problem to be solved. To solve those problems, the students needed a strong understanding of physics, timing, and staging.

Technical complications such as constraints, FK/IK switching, and gimbal lock are difficult challenges that the student will face. But dedicating large portions of class time on methods to solve every technical issue that might arise would result in a student that is good at using the program, not a student that is good at making strong animations. These technical issues were addressed on a case by case basis and supplemental material was provided to help the students work through the issues if they arose. But class and lecture time was primarily dedicated to teaching concepts that lay outside of the program and were key to understanding how and why things move the way they do in the real world and how to replicate that motion.
Physics for Artists:

The students in the Digital Media department at ETSU often complain about having to take a physics class as their core science. So they groan when they see the words “Physics” in their Fundamentals of Character Animation syllabus as well. To soften the blow, the lectures and principles are reiterated as “Physics for Artists,” promising absolutely no math, formulas, or calculations, only concepts.

Human beings see motion happening every day of their lives. A person walking, tree leaves blowing in the wind, cars driving on coarse pavement, all of these motions and actions are intrinsically linked to the laws of physics that affect the natural world. The patterns and subtle elements of the motions become ingrained in our mind. So when a person views a poorly created animation that does not accurately adhere to the laws of physics, even if it is off by a tiny margin, it seems unbelievable. This is true for all animations, particularly of humans since we see other people moving every day.

For a character walk animation, students often fall into the trap of thinking that they can simply make the feet slide back and forward under the character and pendulum the arms front to back and that is all that is necessary to make a character look like it is walking. In fact, that is often what many of their early animations resemble. Some teaching methods rely on detailed memorization of the key poses that make up a walk cycle, and although the key poses were still covered in the Fundamentals of Character Animation class, the instructor focused primarily on the physics behind the motions instead.
A lecture on a walk cycle animation would explain that the feet are applying force to the ground which applies an equal and opposite force back preventing the body from collapsing to the floor. The force is being applied at an angle and encountering the force of friction. Without friction, the person’s feet would slide out from under them. The raising of the foot requires the core weight of the person to shift over the opposing planted foot in order to stay in balance and not tip over. All of these elements of a simple walk are driven by the laws of physics. The Law of Conservation of Energy, kinetic and potential energy, the many different kinds of forces, and Newton’s Three Laws of Motion were covered extensively, focusing on what the concepts meant in a practical sense and not the detailed calculations behind them.

The language of these physics concepts was used as often as possible when critiquing the students’ work. If a student were doing an animation of a character pushing a box, the instructor would say something like, “Notice how it doesn’t feel like the character is applying force to the ground. If they were, the hips would be pushed upward as a reaction to that force.” As time progressed, the students also started using similar language to describe what they saw in their own work and during peer critique.

The understanding of the core physics involved in the motion meant the student always had a place to start when trying to create a new animation or troubleshoot a problematic animation. If a jump animation felt incorrect, then they always knew that the problem had to be one of physics. No matter what the animation problem the student faced, they had a foundational physics based tool that could be used to address it.
This method differs from many traditional technique based systems because it focuses on problem-solving and critical thinking that is required to solve any animation problem rather than only giving the students a set of do/do-not rules to follow when creating an animation. The particularly helped the students later in class when they were asked to solve more complicated physical acting animations that were more nuanced and detailed.

**Breaking up the 12 Principles:**

One would be hard pressed to find an animation program or class that did not rely heavily on the 12 Principles of Animation. The 12 Principles were first published in *Disney Animation: The Illusion of Life* by Frank Thomas and Ollie Johnston in 1981. The book summarized all the techniques, tips, and tricks that the early animators at Disney Animation Studio learned in order to create believable motion. The book is seen by many as the Bible of animation. Thomas and Johnston summarized all they had learned in a handful of short concepts they called the 12 Principles of Animation (Thomas and Johnston, 1981, p. 47).

As listed by Thomas and Johnston (1981), the 12 principles are:

1. Squash and stretch
2. Anticipation
3. Staging
4. Straight Ahead Action and Pose to Pose
5. Follow Through and Overlapping Action
6. Slow In and Slow Out
7. Arcs

8. Secondary Action

9. Timing

10. Exaggeration

11. Solid drawing

12. Appeal


These principles are undeniably crucial to any animation education, but rather than build each exercise and project around the 12 principles, the instructor decided to use the 12 principles as a layer on top of the physics and body mechanics concepts. In short, no matter how perfect the arcs are in a character’s arm motion, the animation will still look bad if the character is defying the laws of gravity.

Some principles refer to elements of polish in the final animation that are necessary to the fidelity and aesthetic, such as Follow Through and Overlapping Action, Secondary Action, and Arcs. Others are simply descriptions of different workflows like Straight Ahead Action and Pose to Pose. But some of the 12 Principles are crucial core concepts to the way animation communicates as motion or action. For that reason, the instructor focused a very heavy amount of the lecture and critique time to two specific principles: Timing and Staging. All of the other principles were addressed and covered thoroughly as well. But timing and staging were seen as core elements that were required for the media to communicate as the artist intended.
**Timing:**

Timing is simply how much time it takes for an action to happen. A character may sprint across the room, implying they are in a hurry, or they may slowly drag themselves across the room implying they are depressed or sad. But since animation deals in the media of moving images, this is intrinsically linked to another concept called spacing.

Spacing is the distance that an object appears to travel over a single frame of animation. It is the changing of this spacing over time that makes an object seem to accelerate or decelerate. It is the inherent link between timing and spacing that allows an animator to emphasize weight, impact, level of urgency, trepidation, fear, and even thought.

The students were encouraged to consider spacing when creating key poses in their animation, building a foundation for strong spacing. If the animation was of a character raising their arm nervously, the spacing of the hand may accelerate more slowly. The student could build that spacing into key poses and breakdowns of the animation.

Spacing became even more evident in the final phase of the animation process as the student polished the animation of each limb using a graph editor. A very subtle change in the graph could make a large impact on the final spacing of the movement, so the students were given as much time as possible in this phase and encouraged to seek feedback more frequently in this phase. It was also emphasized by the instructor that this level of detail in the spacing was one of the primary things that separated professional quality work from mediocre work which could often cost a prospective employee a job.
Timing is one of the principles that often falls through the cracks for early animators. They are impressed that the character is moving at all, and so it is difficult to see the subtle issues with timing. To combat this, an extra step was inserted into the animation process in which the students were forced to stop and evaluate the timing of the shot and nothing else. This may sound obvious, but after working on an animation for a long time, the timing issues start to seem correct; you can’t see the forest for the trees. Working in a manner that forces the students to focus only on timing periodically throughout the process means that timing alone is given the attention it deserves.

**Staging:**

Staging is simply how the shot is presented to the audience. It comprises camera angle, composition, and pose. In the Fundamentals of Character Animation class, animation was compared to other types of communication, such as writing. Every frame of the animation has to communicate the artist’s intention to the audience, similarly to how every sentence must communicate in a paragraph. A single poorly composed sentence can cause an entire paragraph to become confusing and unclear. Staging is just as important to the way animation communicates to the audience.

One method of working with this was to have the students create all their keyframe poses on consecutive frame with no frames in between. This helped them to focus on the poses and staging without being distracted by the transition between those poses. This also forced them to go back later and focus on the timing.
For each pose in the animation, the student focused on the silhouette, line of action, contrapposto, and contributing anatomical factors. This allowed them to craft a single image that communicated the essence of what they wanted to communicate at that point in the animation. If their character was surprised, the viewer should be able to tell that from a single image of that pose. The first pass of feedback for each animation focused on improving the poses as single images before moving on to the transitions from pose to pose.

Once the poses were solid, the student could focus on timing. By solidifying these two elements of the animation, it made the splining and polishing process significantly easier and faster.

**Improvements for next time:**

Timing for animation is difficult, and students often assume the timing of their shot is fine. It is hard to make them address something they see as “good enough” when they are on a time constraint and facing assignments from other classes. The faculty of the Fundamentals of Character Animation class is currently testing new exercises that would help the student focus on timing in their animations and develop good timing workflow habits in future versions of the class.

Many students address an interest in working with motion capture data. Seeing that motion capture cleanup often deals with the adjustment of pose, weight, and timing, a motion capture exercise is being strongly considered, though it may require other exercises to be cut.
Conclusion:

While knowledge of the software is essential to the creation process, it should not be the acceptable outcome of the class. By changing the class focus from the technology to the aesthetic outcome, we are no longer accepting that the knowledge of the tool is enough. We are challenging our students to become strong digital artists and animators by creating aesthetically appropriate work instead of simply memorizing all of the buttons and shortcuts of the tools. This is only becoming possible now thanks to a generation of learners who have never lived without computers and software that is able to handle complex high polygon characters. This presents challenges to the teachers of these mediums, forcing them to use tradition art teaching methodologies rather than computer literacy teaching methodologies. But facing these challenges will increase the competency level of students and help empower them to enter an increasingly competitive workforce.
References


Applying project-based learning techniques to digital media: A look at two projects, what worked and where to improve.

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Abstract:
Project-based learning improves students understanding of the digital media pipeline and how learners fit into that process. The authors discuss in detail how they have applied PBL, project-based learning styled projects into the two classes one a sophomore-based class creates a mobile game for the Android platform integrating lectures and smaller projects; while, the other is a senior-based class, consisting of only a single assignment, building and publishing a digital magazine for use by the University. Both projects employ PBL but do it in two different styles and both styles of have proven to be effective. Here the authors discuss the class and the projects.

What is project-based learning or PBL?
We will be discussing two project-based learning projects in this paper. The first is “creating a game for mobile deployment”; the second is “creating a cross-platform digital magazine“. These are taught by two separate professors and in different classes but they exemplify a real-world problem solving style of teaching that is being offered to our learners.

An interpretation of project-based learning can be seen as a project that includes at least the following six areas of study, “1) the project presents an authentic, real-world challenge; 2) the project is academically rigorous, demanding breadth and depth; 3) learners apply learning by using high performance skills such as working in teams, communicating ideas, and organizing and analyzing information; 4) learners engage in active exploration by gathering information from various resources; 5) learners interact and make adult connections; and 6) various formal and informal assessment practices are embedded within the unit.” (Lee, Jean et al. "Taking A Leap Of Faith: Redefining Teaching And Learning In Higher Education Through Project-Based Learning").
Traditional projects are often given to teach a specific skill set. An example of a traditional project for a digital media student might be to create a raster image using layers or to create a 3d model using a polygon modeling technique. This type of skill-based project is excellent for introducing students to new ideas, however; problem solving projects can incorporate this type of learning while including many other soft skills as well as core techniques. Therefore we sought to employ project-based learning as defined by researchers as a “student-driven, teacher-facilitated approach to learning. Learners pursue knowledge by asking questions that have piqued their natural curiosity” (Bell, Stephanie “Project Based Learning for the 21 Century: Skills for the Future).

What is an example of a project-based learning assignment in digital media? We’re focusing on solving a real-world problem while applying lessons learned in the classroom— creating a game or creating a magazine, our processes reflect authentic, real-world pipelines. We will demonstrate how our classroom approach aligns with the concept that project-based learning “reflects a learner-centered environment that concentrates on students’ use of disciplinary concepts, tools, experiences, and technologies to answer questions and solve real-world problems” (Lee, et al. 2014).

A way faculty members do this is to begin the semester by assigning the final project, and then give lectures and critiques that help the students reach their goal. Every meeting with the students for that block focuses on something that will help the learner answer the initial question. By working the lectures and/or critiques around a central question the class can see how the smaller pieces fit together to solve a larger problem.

Project 1

The first project we will be discussing is the creation of a game for mobile deployment. This is an eight-week project that works the learner from what a game engine is through using an XDK for mobile optimization and uploading html5 files. How does this fit in with PBL? Looking at the six ideas defined previously we will discuss how this project meets each of the criteria.

PBL Area 1: Real world problem: create a game for mobile publication.

First what is the real-world problem the learner will be solving? The learner will create a game that is playable, aesthetically appropriate for the genre and optimized for mobile play.

PBL Area2: Academically challenging: demands basic knowledge of coding and strong understanding of design.

Is this project academically challenging? What types of learning will occur while solving the problem? The learner will need to be able to learn and demonstrate; a basic knowledge of scripting, a strong understanding of design and a strong understanding of optimizing assets for mobile.

PBL Area 3: Team-based challenge: the project is too big for one person to complete and requires a team to for success.

The final project is team-based and is too large for one person to complete. Learning the individual parts that can be used to make up the final game can be accomplished by individuals allowing for learners to
focus in areas of the project they are interested in. While the final project will require several different skill sets.

PBL Area 4: **Active exploration: active exploration is achieved by answering specific problems based on the basic information given in class.**

Active exploration is worked into the project from the beginning in that the students are tasked with creating a playable game. We do this by not defining what type of game or setting bounds on the game the students are expected to create—just something they are “interested” in. The topics covered in class lectures are a sufficient overview of creating a basic game but not enough to create “every game”. The students are expected to use active exploration “research” to understand how to modify the basic ideas presented in class to solve the problem.

PBL Area 5: **Learners must interact with each other and the outside world: Comments from the in-class critiques and live feedback from online users.**

The process of iterative design builds in the idea of feedback from the class. However, often in education there is very little input from “the real world.” Online and mobile developments change that in real time. Posting a game to Google or any of the other game hosting sites allows the world to have access to what the students are creating and give feedback. User comments, while not always positive in nature, often create a reality check on the student’s work that would not be there if the work was only seen in the classroom.

PBL Area 6: **Formal assessment class critique: informal assessment feedback on the site the game is published to and formal assessment through classroom critique and grading.**

The idea of formal assessment or in our case, final critique and grading happens inside the classroom while looking at the entire process from the initial steps of learning the mechanics, to group participation and finally feedback from the users online. This holistic approach to critique encourages the students to be active in the entire process while creating a breadcrumb trail for official assessment.

**Breaking down Project 1**

**Assigning the project**

The first day of the semester the class is given the problem, teams consisting of three members will create a game for mobile deployment. The project is due in eight weeks. There will be three weeks of lessons which will be done individually, two weeks of building a web version of a game individually and then three weeks to build the team based game.

During the first three weeks of the class the learners are guided through small assignments that develop the individual pieces for the games. An example of this is to design a heads up display “hud” for the game.

The learners are given a list of topics they would be interested in learning after the first three introductory lessons are presented and asked to pick which ones they would like to work on. These lessons do two things. Firstly, student buy-in is created when they select the areas they are interested in
learning. Therefore, they are more motivated in the class. Secondly, they can demonstrate to the class their areas of expertise during the small critiques, thus building towards the final project.

The first complete small game that is due allows the student to experience the entire building process. The first game is designed to be small and simple. By allowing the students one small complete game they can show off their area of expertise while applying the KIS (keep is simple) principle.

Choosing partners – past performance matters

Why all the small projects if this is a project-based learning model? This is a late freshman and early sophomore class. These learners are still learning the fundamental building blocks they will need to solve the problem.

That being said, this is an important part of the problem. Past performance matters. By explaining the final project at the beginning of the semester the class is very aware of what is going on with other people’s work. Each of the final groups will have a total of three artists; a designer, an animator and a scripter. Knowing this at the beginning of the class the students are presented with the opportunity to “impress” other potential group members with the small critiques along the way.

One real-world problem faced by entry-level artists is how to manage the distribution of work in a team setting. Students realize that the project is too large to be completed by a single person. However, they still may face the problem of selecting appropriate team members. Students learn how to overcome this challenge through observations along the way of how their class mates have been performing on the small projects that lead up to the bigger team project.

Creating a timeline – learn to identify and define time

With the ramp up of the product cycle, the final three weeks of the team project asks students to create a timeline and information management system. “Google Calendar”, “Google Dropbox” and “Facebook” have emerged over time to be the students preferred method of producing these. The students are asked to elect a “project lead” from their team. This person is tasked with creating the deadlines, assembling the work from all the artists and presenting the work at “checkpoints”. Often students work alone and “cram” at the last second not allowing for “iteration” or feedback. This model does not work for this project. The animator cannot animate until the designer builds an asset to animate, the coder cannot build functions without a design document telling them what to build. With each member of the team working at the same time meeting the deadlines created by the team the students become very involved in the process. The timeline with the breadcrumb trail of notes left on face book also plays into the formal assessment of the project later.

Creating the concept – planning code and graphics and how they work together

Creating the idea for a game becomes more challenging as the class is asked to create a proof of practice and game design concept that work together. How to design the game, while working with coder to create fun and interesting gameplay in a realistic time frame is a real world challenge. The idea here is to present the class with the challenge of creating a game that they can produce. The teams initially start out with complex and deep games which are whittled down to a more realistic concept through the idea of proof of practice. In other words they are allowed to design anything, then asked to produce a block out of the game with the base code in place. If they are unable to achieve this, the second iteration of
design is started. This process continues until the group has achieved something that they feel is producible and interesting.

**Optimizing the game – game works, but test and optimize**

Once the teams have created a game that works on the local PC and looks aesthetically complete, they can begin testing locally and optimizing for deployment. Here the designers learn what people around them see. Each of the groups is asked to have at least ten people test their games and the designers make iterative changes along the way to improve understandability and playability.

**Deploying the game – deploy to Google Play**

It’s now time to get the game out to the players. It’s not a game until people are playing it. The designers are asked to upload and test their games on Google Play. If any technical issues arise with the building of the art assets, this is where they will come out. A real world problem faced by all game designers is the size of their art assets. Some common problems are “Have the sprite sheets been converted to the correct color system? Have the sounds been compressed properly?” These real problems get ironed out while the deployment of the game is being set up. Learning the ever-changing rules of the host, in this case Google Play is a challenge in itself. Reading the directions becomes essential and can save huge amounts of wasted time. This external challenge is often glazed over by the groups and comes back to haunt them later in the form of rejected games or missing assets.

**Feedback from the world – take both feedback from world and class – make iterations?**

The students get a cold dose of reality when they take their game from the classroom to the public. Real world feedback can be difficult for students, taking it in stride and improving the game is essential. If you have ever read a forum or looked at comments from real people you know this is true. The students are forced to take critique through a non-emotional lens. This learning opportunity is very important in their development as designers. Real-world feedback can help to spot real problems and give them a chance to see their designs as others do. However, this does get balanced with academic review. The academic review helps the students to make improvements to the game and allows for a wider interpretation of success.

**Project 2**

EVOXE Magazine is an image-rich, interactive publication designed, developed, photographed and written by students as a major group project in a senior-level class called “Digital Media Production” taught each year in the spring semester. This project was a partnership between two departments. Digital Media students designed and developed the magazine and Mass Communication students functioned as the magazine writers, providing the articles for the publication’s premiere issue in the spring of 2014 and the second issue in the spring of 2015.

The production of each issue took 8 weeks of their respective semesters. Each issue involved student teams working on: articles; photography; page layout; and publication structure. For the premier issue, the heavy lifting of the project involved the establishing of the publication’s brand from the ground up: magazine title; masthead design; and style sheets for typography and graphic ornaments. A school year later, the second issue was developed by a team whose major contribution incorporated: new
interactive methods and styles; and a new format suitable for delivery to mobile phones while keeping true to the style guide of the tablet version. As each of these two different teams solved these two unique problems, the core pipeline of the magazine remained very similar: gathering content, developing layouts and creating imagery.

PBL Area 1: An authentic, real world challenge: a published university magazine available to a wide audience on the mobile marketplace.

The EVOXE magazine is published to the Apple App Store and to the Google Play Store. Electronic publication to the mobile marketplace makes the distribution of the magazine available to a wide audience. As a university publication, the students have a client’s oversight above the scrutiny of the professor.

In their phenomenological inquiry approach, Lee and her fellow researchers studied eight faculty members who use PBL and how they dealt with the definitions, successes and challenges in doing so. Several faculty members in the study discovered the same result we found in the EVOXE project. Using client-based projects “helped motivate students to perform in ways that traditional assignments could not, because students were required to be open their work to public scrutiny.” They attested that students were engaged because project based learning mimics the work environment and prepare them for career. Real clients elicit more effort and commitment from students than a standard college paper or project might require. Projects without an authentic audience can also feel contrived (2014)

The influential student motivator on each issue of EVOXE is the reality that their work will be available to the public while the university uses the publication to promote the arts at ETSU. Our goal was to teach the students professional practices in an authentic environment while providing a quality service to the university.

PBL Area 2: Academically rigorous: senior-level class producing content for an emerging standard in media consumption.

Students on the production team for each issue of EVOXE are required to participate at the professional edge where client expectations, public scrutiny and industry recognition meet together. Students are often surprised how much work goes into the whole publication in order to have it ready for output.

An industry pioneer in the digital magazine medium, Adobe developed the Digital Publishing Suite (DPS)—tools for design, development and publication of digital magazines inside of Adobe InDesign. In 2010, GQ and Wired magazines were among the first magazines available as a digital edition. Through adoption by major publishers like Condé Nast, this new form of editorial content has taken root as a standard platform.

In response to the emergence of this platform, the Digital Media program at ETSU began teaching the Adobe DPS tools in the fall of 2011 at the sophomore level. The premier issue of EVOXE, first published in 2014, is the result of the senior level class mentioned earlier.

Indeed, ETSU is not the only higher learning institution using the DPS for university publications. Quite a number of schools use it promote their academic and athletic programs (digital viewbooks, catalogs, apps, alumni magazines, gameday magazines). However, according to Sue Leff, a member of Adobe’s EDU Apps marketing team, ETSU is just one of a relatively small group of universities teaching the DPS
platform in the classroom and not all of these schools teach it by actually publishing the student work like ETSU. The result is a class that asks students to meet deadlines with rich content in a non-traditional classroom environment that challenges students to use high level thinking skills to navigate the pipeline.

To create a DPS publication worthy to publish, a great deal of development and testing is required to meet the potential of the interactive features on top of the rigor of creating attractive and organized editorial content across many pages. Digital magazines are not limited in the number of pages and spreads like print publications. The scope of the project is broad when you take into account that any one of the many pages can have several layers of interactive structure. The depth of the writing and the production of photography and of video need to support such interactive potential.

**PBL Area 3: Applying learning: working in teams and communicating in an agency atmosphere with self-directed analysis of project development.**

In keeping with the approach of an authentic, real-world experience in the EVOXE project, the professor sought to establish a “mini agency atmosphere.” This agency was “staffed” by a creative director, art directors, copywriters, photographers and layout designers. Based upon their expertise and intended career paths, the students fulfilled these roles. These job descriptions are indicative of the industry we were trying to reflect. The pipeline from start to finish also reflected industry practices: brainstorming sessions; sketches on the masthead; group discussions; and managing project flow.

Among the Digital Media students, three distinct team units were formed: layout designers, interactive developers and photographers. Student leads in these teams were referred to as art-directors. This structure was to give a real-life relevance to the work at hand and to enable all of the students to have ownership of the magazine in parts and as a whole.

To solidify this atmosphere, the students as a whole were referred to as the “creative team.” The contact hours for the class were referred to as “creative team meetings.” Each of these meetings transpires more like an office workflow as opposed to a class that might incorporate traditional lecture and note taking. Each “creative team meeting” for the EVOXE project reviews student progress and establishes a production direction for the next phase. This is generally followed by a class breakout session where relevant production work ensues. As the “creative team” solves problems at their own workstations, they communicate and exchange ideas and help each other through technical, conceptual and aesthetic decisions. The professor helps facilitate these things and governs the direction to maintain quality, but ultimately it is the students who are creating the work through self-directed and collaborative learning as they prepare in and outside of class for the next “creative team meeting.”

**EVOXE Student Team Subdivisions**

Layout Team—each member of the team is responsible for using the established style guide to design their article’s screens. The goal for the individual students was to learn how a cohesive design is implemented, how to work as a team, and how to exercise their own creative layout decisions while adhering to the brand style of EVOXE magazine. Each layout student was challenged to get the appropriate photography from the photography team or request new photography etc.

New revelations emerged and design decisions were made during the creative process. These revelations were shared with the group and other layout artists picked up these new
elements. Therefore each “creative team” meeting’s collaborative communication was crucial. It allowed for the magazine to evolve while still maintaining a coherent graphic style from page to page.

Interactive Development Team—Professional examples were shown by the professor such as those from publishers like Condé Nast as well as other university view books, catalogues and athletic magazines who have been using the Adobe DPS technology. By examining these examples the EVOXE interactive developers worked to create touch button galleries, sequence animations, and other hidden content revealed with a tap or a slide on the tablet screen. Adobe DPS technology and its InDesign software made this design process fluid and manageable as our students worked to create an interactive product with the nuances of print publication design.

Photography Team—The photography team managed location scouting, hiring of talent, and execution of the shots. The team was charged with the task to bring in a curated collection of final shots for us to review at the creative team meetings.

Some students actively participated in more than one of these categories. Some multi-talented students also fulfilled extra supporting roles. One student doubled as a stylist for the photography team. She organized talent, determined locations, and established a wardrobe for the photography shoots. Other students were identified to create custom spot illustrations for the feature articles. All of these teams were governing themselves and outside of class, students were expected to govern the flow of the work that they would bring to the “creative team meetings.”

PBL Area 4: Engaging in active exploration: gathering all the pieces

Each of the student teams was required to understand their article subject matter. This took investigation and exploration. Student writers sought out stories and interviewed artists for our spotlight features. EVOXE photographers had to be intuitive as they sought to make meaningful portraits of the artists in their creative environments. EVOXE has a particular photography style that they had to follow. Layout designers and interactive developers were busy with problem solving and exploration into how to bring all the sources together and create engaging interactive features.

Indeed, with each issue the individual subdivisions and the team as a whole were seeking out content and weaving it together from pieces. But, there were some differences between the first and second issue of EVOXE with explorations and innovations unique to that stage in the evolution of the magazine.

EVOXE Premiere Issue: Explorations and Innovations

Magazine Title—In the case of the premier, the student team in the spring of 2014 had a clean slate. There wasn’t even a name for the magazine. On day one, students were challenged to create a memorable title that competes with other arts publications at other universities that were similar to what we wanted to pioneer. The creative team worked collectively on various ideas before arriving at the title, EVOXE which incorporates the Latin root word *vox*—linking the concept of voice as defined by the essence of the arts.

Masthead—With the title established, subsequent class periods were devoted to breakout sessions and individual work time was used for the design of the magazine’s masthead. The team members who had the most viable solution were challenged to perfect sketches and vector files. Ultimately one design was chosen based upon its simple and modern look.
Magazine Style Guide—Next, the creative team was to establish a consistent style across the publication for: typefaces, photographic aesthetic, graphic ornaments, interactive prompts and functionality, and for a recurring grid structure. Professional examples were examined and students were challenged to work individually to bring ideas back to the next creative team meeting. Once contributions were presented and discussed as a group, the final style guide of EVOXE magazine became a hybrid of the best solutions.

EVOXE Second Issue: Explorations and Innovations

Smartphone Edition—The “creative team” for the second issue in the spring of 2015 was challenged to branch out the publication to the smartphone platform. As a learning objective to interaction design, the students were discouraged from merely formatting a tiny version of what appears on the tablet platform. Instead, the new smartphone edition would require: a new flow of interactivity; different density ratios of graphics versus text; format and composition changes with the screen ratio; and a reevaluation of size relationships. Research into different smartphone platforms and industry examples was crucial.

As in the premier issue, the class was subdivided into applicable teams. It was the layout team’s responsibility to design each article for the tablet and for the smartphone. As individual students managed their layouts, new interactive challenges were discovered and students worked together to ensure that any new interactive approaches fit into the overall essence of the EVOXE user experience. This involved trial and error and above all, communication between the team members.

All in all, exploration and the gathering of resources took up precious time during the semester weeks devoted to the project. In hindsight, the professor on the EVOXE project identifies room for improvement in securing a list of articles, spotlight and photo shoots much earlier to decrease stress on the digital production team.

PBL Area 5: Interacting and making adult connections: trusting the students with ownership of a university publication.

The goal of the EVOXE project class structure was to further engage the students and connect them to all aspects of the editorial design process as they merged into ownership of the magazine through a student-centered decision making process.

Students appreciated the real world atmosphere created in this class through the relevant team definitions. Students indicated that this “mini agency atmosphere” was at the top of the list when asked to rank their favorite part of the project.

PBL Area 6: Formal and informal assessment practices: challenges and successes

In their extensive meta-analysis of the research on project-based learning, Lee and her fellow researchers cite one study suggesting that “students can exhibit significant frustration if the teacher—now a facilitator—does not provide deliberate scaffolding of their learning” in this type of environment. Other studies the researchers analyzed indicate that students struggle to discern their roles and responsibilities in a project-based learning classroom, especially when it came to accepting responsibility for their learning (2014).
The EVOXE project didn’t necessarily suffer in regards to assessment practices, but from an academic perspective, more formal assessment and intermittent benchmarks may have given students a better structure that was more familiar to them. Students didn’t get a grade until the end of the semester. This may have resulted in some ambiguity to students who were not self-motivated or those who metered their effort based on whether or not they were meeting expectations. The final grade involved a direct peer evaluation through two blind survey on participation and commitment (halfway and final) and a final subjective grade from the professor on the quality of the work that students delivered.

However, to curb any floundering by the students, the professor was always on point, in a sense, acting more than just a facilitator, but as a creative director helping students whether individually or from a “bird’s eye view” of the project. Constructive criticism was often given that challenged them to use creative thinking, solid design principles, and interactivity excellence. This may take on the form of a group critique if the whole team was working together to develop one element, or individual critiques as students worked individually on their layouts. This served as a good structure for a group project and allowed for accountability.

This “indirect peer review” existed as students found their classmates looking over their shoulder or offering suggestions in open critiques. Sometimes a competitive moment sharpened their efforts such as in the early stages of the EVOXE branding when students competed to have the winning design for the masthead, or best solution to the style sheet, or even the final name of the publication. One student puts this into perspective:

The competitive assignments pushed me to go above and beyond the simple assignment and I found new creativity in myself as I strived to stand out from my classmates.
— “Tim,” student, EVOXE project

The majority of the students in the EVOXE project were seniors. The team members were already versed in various teaching styles at the university. Even though the class involved very little lecture, much of their design training and foundation came from lower-level classes. Therefore, for the students in the EVOXE project, this class was the testing ground where they applied their learning to a real-world challenge. They seemed to understand non-objective grading on performance surrounding work ethic, collaboration or creative excellence and the aesthetics of design.

Furthermore, the EVOXE project students seemed to be satisfied that the final litmus test for success would be the public opinion of the publication, the satisfaction of those featured in it and whether or not they met the expectations of the University as a client.

Conclusions

Project based learning improves students’ understanding of the digital media pipeline and how they fit into it. While working to improve students’ idea of how they can grow as artists and producers of content we came to a few conclusions.

Authentic, real-world experiences in class projects create a level of motivation and investment from the students that is not found in traditional digital media class projects at our university. Our project-based learning methods allowed the students to work in a technological and commercial space that is concurrent with today’s mobile marketplace. This allowed the students to make adult connections. For
example, in the EVOXE project, as the students fulfilled “agency” roles, they were able to manipulate the process as if they were a self-governing team of creative professionals. For a good portion of the participants, this increased the applicability of the class to relevant job experience. Students ranked the “real life” project as a close second in their list of favorite active learning techniques. “app technology” and “editorial design” were among their favorite aspects but not as high. This leads us to believe that the atmosphere and teaching methods of the class struck a chord with the students.

Here are a few student comments on each project’s real-world atmosphere:

I think that this is probably one of the only classes I was in during my time at ETSU that helped me get a ‘taste’ of real business.
— "Becca," student, EVOXE project

The student-centered decision-making is what set this class apart from the others I took in the Digital Media program. It absolutely empowered the learning experience and myself personally as a designer; it was the first time I felt like an adult trusted with my own skills and helped to bolster my confidence in following professional projects.
— "Kathryn," student, EVOXE project

The two most valuable aspects of this class have been the high frequencies of critiques/check ins, and building tutorials instead of doing them to no real end.
— "anonymous," student, The Mobile Game project

We found that our students tend to succeed in a project pipeline that reflects industry process where real-world accountability isn’t about grades, but about the success of the project deliverables under public scrutiny. Our assessment methods proposed a few challenges as far as academic definitions go. However, assessment and investment in each project involved professor, student and the target audience. In a group project, students are not motivated only by their specific grade in the class. We discovered that in the EVOXE student team, for example, expectation from peers had a big influence. This is nothing out of the ordinary. It has been noted that accountability to peers often has greater consequences and provides more motivation for students than if they were only responsible to the teacher (Bell, 2010).

I feel like I actually learned things in this class. This the only class I have actually pushed myself past what I thought I was capable of.
— "anonymous," student, The Mobile Game project

In a similar way to the cited research on faculty roles in PBL, the professors for these two projects acted more as facilitators but we employed discipline-specific instruction such as lectures and critiques. Indeed, faculty members at colleges and universities may not always adhere strictly to these six areas of PBL. Some faculty members in the studies we cite did not wholly adopt a universal PBL model nor implement any specific model with fidelity. Instead, they may embrace the PBL approach as a guiding framework and incorporated some PBL instructional techniques alongside traditional and discipline-specific methods. This results in a hybrid of PBL and traditional academic methods (Lee et al., 2014).
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A study of teachers’ application of Information and Communication Technology (ICT) in classrooms
Su Iong Kio, University of Saint Joseph

Abstract

This paper uses data from 176 teachers in a quantitative study to identify the important elements in teachers’ utilization of Information and Communication Technology (ICT) in their classroom teaching, such as videos, presentation software, Learning Management Systems and Social Networking. The regression analysis and factor analysis identify Proficiency, Expected Outcome, Support and Training as prominent elements in this study.

Introduction

Computer technologies and network technologies have been growing at an exponential rate since the early 80s in the last century. From the bulky microcomputers that almost span a whole room to the slim tablets that fit on the palm of a person, the size of the central processing unit (CPU), and generally any integrated computer chip, has been shrinking due to the advance of IC fabrication techniques. This allows the computing power of individual computers to expand ever more powerful. In addition, network technologies have been growing at the same speed as the computers themselves. The connections between computers and hubs and switches allow not only the addition of computing powers, but more importantly the sharing of data, and eventually, information. As a result, we are truly living in the Information Era where knowledge and facts are just within the click of a mouse button.

The use of Information and Communication Technology (ICT) in classrooms has been advocated and integrated in many modern teaching methodologies (Chun, Chin-Chung, and Di, 2015, Goodwin et al., 2015). Policies and strategies have been devised by government agencies and educational institutes to emphasize the impact of ICT in classrooms (Charbonneau-Gowdy, 2015) incorporating digital techniques and enhancing the efficiency of
teachers’ performance. However, the actual utilization of ICT by teachers still varies across schools and even across classes within the same school (Moore and Chae, 2007; McMartin et al., 2008). This study attempts to identify the important elements that drive teachers towards using ICT in classrooms and thus provides direction for schools and institutes to address these elements.

Review of current practices

Traditional teaching has relied on textbooks and classroom lecturing. Authors and publishers put together facts and data according to their disciplines and schools adopt whichever textbooks they deem suitable and necessary for their students. Even though during actual lecturing, some teachers may add in additional information on top of that in the textbooks, the main source of knowledge still comes from what is written in those textbooks. The emergence of the World Wide Web (WWW) has gradually, but certainly, changed this practice. To a greater or lesser degree, teachers search and research for additional and complementary material on the internet to enhance sections and chapters in the textbooks. No matter what is the subject, be it language, science or mathematics, there is abundant information available on the internet to help teachers make their lectures more lively and interesting. As a result, students are able to focus more on the lectures and absorb what is taught in class with more efficiency.

Day (2013) reports the findings of a survey regarding ICT use in Primary Math teaching in Western Australia. Although principals and school teachers have different views on the ICT utilization, both report more than 70% of teachers do at least occasionally use ICT resources to enhance Math teaching in the primary schools. Voogt (2010) conducts a secondary analysis with the data from the Second Information Technology in Education Study (SITES) 2006, which reports pedagogical practices of Science teachers across 22 countries. The analysis indicates that science teachers who extensively use ICT in classrooms are more confident about their ICT competencies and feel more professionally engaged than their counterparts who do not use ICT extensively. The confidence and engagement factors have been shown to lead to more lifelong learning orientation in teachers.
In terms of language teaching, the use of ICT tools and resources also had abundant examples. Union, Union and Green (2015) compare the performance results in public language exams from two groups of students, one using an innovative eReader tool and the other without the tool. The results suggest the use of the eReader tool contributes to improved student performance through strengthened student responsibility and technology durability. Gonzalez-Aller (2015) looks at the impact of ICT use in English language classes in Sweden and finds that students from digital classrooms have boosted performance and more positive attitudes than those from traditional classrooms. Researchers have even used mobile phones (Twiss, 2009) and video games (Mifsud, Vella and Camilleri, 2013) to enhance the teaching of languages.

However, although the benefits and rewards of ICT use is obvious, there are still challenges and obstacles in its utilization. Just because teachers know that using ICT helps their teaching does not mean they are naturally able to utilize it. The skill set to use ICT in classroom is not an easy one. It takes a deep understanding of the hardware and software tools that are available to teachers either in house or on the web. They have to know the efficiency and the limitation of these tools to maximize the advantage of using them. If not used properly, including ICT in their teaching may actually hurt themselves and the students.

Hu and McGrath (2011) discuss ICT-related teacher development amid the national reform in college English teaching in China. They report that English teachers still feel that there is a lack of ICT skills to effectively apply ICT pedagogy in classrooms. In addition, the lack of training also contributes to this insufficiency. Tallvid (2014) follows the “1 laptop per student” initiative and attempts to measure teachers’ ICT use with this initiative. Surprisingly, the reported use of ICT is actually quite low and the reasons include insufficient content and lack of time.

The current research takes both the advantages and obstacles of ICT use into consideration and attempts to generate a list of factors that contributes or hinders teachers’ ICT use, and subsequently attempts to find a relationship
between these factors and the actual ICT utilization by teachers.

**Methods and instruments**

A quantitative study was conducted for this research in which perceptions and opinions were collected from teachers in secondary schools in Macao, a Special Administrative Region (SAR) in China. The questionnaire used for the study combined items from several literature instruments that are related to ICT perceptions and utilizations. The final instrument covered items spanning attitude, expectation, professional training, confidence, efficacy and community, etc. A pilot study was conducted among 9 teachers who filled out the questionnaire and gave input on the relevancy of the question items. A reliability test was checked from the pilot data and the result gave consistency over the data.

Survey data were collected from 176 teachers across 18 schools. Consent was first obtained from the schools participating in the research. The teachers were also briefed before the survey about the purposes of the research and ensured about their anonymity. The questionnaire asks the teachers to assess the importance of items that are crucial towards their ICT usage. A Likert Scale of 1 to 5 was used with 1 being total disagreement and 5 being total agreement.

An Exploratory Factor Analysis (EFA) was first performed to identify hidden constructs behind these items. Four constructs were identified by the EFA. They are “Proficiency of ICT literacy”, “Expect Outcome of ICT usage”, “Institutional Support on ICT resources” and “Practical Training of ICT techniques”. A multiple regression analysis was subsequently conducted to establish relationships between the identified constructs and the actual usage of ICT in classrooms. The SPSS (Statistical Package for Social Science) software was used for the data analysis of this paper.

**Data Analysis**

*Demographic Data*
The demographic data of the participating teachers are summarized in Table 1. Out of the 176 teachers, 64 are male and 112 are female giving a gender ratio around 1:2. Most of the teachers are in their 20s, giving this segment of teachers a dominant percentage of 60.2%.

<table>
<thead>
<tr>
<th>Demographic information</th>
<th>Number of participants</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>64</td>
<td>36.4%</td>
</tr>
<tr>
<td>Female</td>
<td>112</td>
<td>63.6%</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 20</td>
<td>7</td>
<td>4.0%</td>
</tr>
<tr>
<td>20 - 29</td>
<td>106</td>
<td>60.2%</td>
</tr>
<tr>
<td>30 – 39</td>
<td>38</td>
<td>21.6%</td>
</tr>
<tr>
<td>&gt; 40</td>
<td>25</td>
<td>14.2%</td>
</tr>
</tbody>
</table>

The Exploratory Factor Analysis (EFA)

There are many question items in this survey that teachers give their rating to. In order to identify hidden constructs out of these items, exploratory factor analysis (EFA) is usually employed to consolidate close items into groups (Yang and Cheung, 2014). This consolidation technique have been utilize in many research methodologies (Fontenot, Mathisen, Carley and Stuart, 2015) to generate meaningful factors out of small question items so that generalization of phenomena can be explained in more expressive terms than sporadic pieces.

In addition, for the eventual task of finding relationships between behaviors and their underlying reasons, multiple regression technique is usually used. However, the regression process should not handle too many independent variables as there will be violations to the independence assumption in the regression analysis. As a result, this research used an EFA run to reduce the number of factors first.

The EFA process generated 4 constructs (or factors) out of the question items in the survey. They are “Proficiency of ICT literacy”, “Expected Outcome of
ICT usage”, “Institutional Support on ICT resources” and “Practical Training of ICT techniques”. The retention criteria for the factors is for their Eigenvalues to be greater than 1. All 4 factors achieve internal consistency by having their Cronbach values all greater than 0.7. The total variance explained by the EFA is 62%.

**Multiple Regression Analysis**

After the factors driving teachers' ICT usage have been identified, the ultimate goal is to quantify a relationship between these factors and the teachers' actual ICT utilization in class. A multiple regression analysis was performed between these factors and the utilization factor. The regression used least square method as the prediction model. Residue was first examined with a P-P plot and a near straight line in the plot confirmed the normality requirement. Scatter plot of the residues was also examined and the variance of the residues did not show pattern, indicating homoscedasticity of the residue variance.

Collinearity issues were evaluated with the correlation matrix, shown in Table 2.

<table>
<thead>
<tr>
<th></th>
<th>Utilization</th>
<th>Expectation</th>
<th>Support</th>
<th>Proficiency</th>
<th>Training</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utilization</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expectation</td>
<td>.451</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td>1.241</td>
</tr>
<tr>
<td>Support</td>
<td>.479</td>
<td>.214</td>
<td>1.000</td>
<td></td>
<td></td>
<td>1.693</td>
</tr>
<tr>
<td>Proficiency</td>
<td>.445</td>
<td>.253</td>
<td>.483</td>
<td>1.000</td>
<td></td>
<td>1.354</td>
</tr>
<tr>
<td>Training</td>
<td>.551</td>
<td>.423</td>
<td>.565</td>
<td>.373</td>
<td>1.000</td>
<td>1.721</td>
</tr>
</tbody>
</table>

The Utilization factor is the dependent variable in the regression analysis and refers to the level of utilization of ICT tools by teachers. The independent variables are the 4 identified factors from the EFA. As such, Expectation, Support, Proficiency and Training correspond to “Expected Outcome of ICT usage”, “Institutional Support on ICT resources”, “Proficiency of ICT literacy” and “Practical Training of ICT techniques”, respectively. From the correlation matrix, we observe that besides the self-correlation of 1.000, all cross correlations are less than 0.6, indicating that there is no strong correlations between the independent variables. In addition, the Variance Inflation Factor
(VIF) for each independent variable is less than 2, further reducing interdependency between the independent variables. The result of the regression analysis is summarized in Table 3.

**Table 3. Results of the regression analysis**

<table>
<thead>
<tr>
<th></th>
<th>Unstandardized Coefficients (B)</th>
<th>Standardized Coefficients (Beta)</th>
<th>t value</th>
<th>Significance (p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-.938</td>
<td>-1.859</td>
<td>.065</td>
<td></td>
</tr>
<tr>
<td>Expectation</td>
<td>.455</td>
<td>.248</td>
<td>3.871</td>
<td>.000</td>
</tr>
<tr>
<td>Support</td>
<td>.309</td>
<td>.178</td>
<td>2.377</td>
<td>.019</td>
</tr>
<tr>
<td>Proficiency</td>
<td>.287</td>
<td>.194</td>
<td>2.902</td>
<td>.004</td>
</tr>
<tr>
<td>Training</td>
<td>.480</td>
<td>.273</td>
<td>3.625</td>
<td>.000</td>
</tr>
</tbody>
</table>

Adjusted $r^2$ value: .421  
$F$-test significance .000

As shown in Table 3, besides the constant term in the regression analysis, all coefficients of the independent variables yield good significances as indicated by the last column. The $F$-test of the regression further confirms that coefficients of the variables are not all zero. The variance explained by the regression analysis is 42% of the total variance as indicated by the adjusted $r^2$ value. As a result, the analysis gives the following relationship between the dependent variable of ICT utilization by teachers, to the factors affecting this utilization.

$$ICT \ Usage \sim (.455) \times \text{Expectation} + (.309) \times \text{Support} + (.287) \times \text{Proficiency} + (.48) \times \text{Training}$$

**Discussion**

From the equation, the factor Training receives the largest coefficient, suggesting that this factor is the dominant factor driving teachers' utilization. Most teachers feel that the role of practical training of ICT techniques is critical, and sufficient training enables the teachers to utilize ICT more. As Raboca and Carbunarean (2014) point out, low level of ICT training is one of the main obstacles hindering teachers' use of ICT tools in their classes. There are so many ICT resources out there and each one may have different features and functionalities that it would be quite difficult for teachers new to the field to
handle these resources. It is then the institutions’ responsibility to invite experts in the field or experienced teachers to take the initiative of training programs so that their experience can be properly disseminated to others.

The Expectation factor follows Training as the second dominant factor. Teachers have to have a reasonable expected outcome of ICT usage in order for them to actually use it. Behavioral science dictates that people are more likely to adopt new behavior if they have high expectation of their action and believe that their action will likely lead to positive results. As such, examples of successful utilization of ICT in classroom have to be identified and encouraged. With the perception that ICT utilization being gradually adopted as a norm, the expected outcome will be more positive for teachers when they include ICT as part of their teaching approaches.

The next factor is Support, which says that institutions have to give sufficient support, either technical support in hardware or software enhancement, or administrative support in teachers’ workload reduction. The development of ICT technology is ever-evolving. New and powerful products emerge in the market with rapid pace. Schools and even government departments have to setup funds and resources to cope with the increasing cost and the learning curve associated with new products. In addition, time is also a precious element that teachers hardly afford. In order to synchronize with new technologies, schools should appropriately balance teachers’ workload so that they can effectively carry out their teaching duty and keep up with necessary ICT development at the same time. Smaller class size and less variation in workload subjects can also help in that regard.

Although the Proficiency factor receives the least coefficient, it is still a significant factor. Naturally, the more proficient a teacher is with ICT tools, the more likely he or she is going to utilize it in class. However, the Training factor actually will ensure that teachers will have the proficiency in ICT literacy to help their teaching. The proficiency includes the use of Office applications, communication software, specialized Learning Management Systems (LMS) such as Moodle and Blackboard. Skillsets also include experience in knowing where to find appropriate content in various subjects and where to get exercise
question sets and illustration images. A deeper knowledge of free online resources is also helpful, such as Google products, various calculators, function plotters and video depositories, etc.

Conclusion

In this paper, a relationship model is established between teachers’ ICT usage and its driving factors. Positive relationship has been identified for 4 factors, namely “Expected Outcome of ICT usage”, “Institutional Support on ICT resources”, “Proficiency of ICT literacy” and “Practical Training of ICT techniques”. The results of the analysis call for strengthening of ICT training among teaching professionals that should aim at practical proficiency in using ICT techniques. Institutional support such as network hardware and media software should be established within the capability of schools to create a favorable environment for teachers to utilize ICT products with relative ease. Demonstration of successful cases of ICT usage in classrooms should be promoted and advertised among teachers to raise awareness of the better learning outcomes among students with the assistance of ICT products.

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of ICT in the 1:1 classroom. *Education And Information Technologies*, doi:10.1007/s10639-014-9335-7


Research is nothing new in a variety of settings, be it graduate, undergraduate or even high school. However, the most common model for involving students is to recruit one student to assist the researcher, providing an invaluable experience for learning the critical thinking skills that comes with research. As a professor of an Exercise Science program with 1,000 undergraduate students, the single-student model just does not provide the number of opportunities for students interested. This year I intentionally chose a research question and study design that may provide opportunity for as many as 30-40 undergraduate students!

The study: I was contacted by an entrepreneur to study a water-filled strength training device. The device is designed to create an unstable load as the individual lifts, forcing core muscles to compensate. Most of us have used an unstable device we stand on (BoSu ball, wobble board), but this was a novel instability device that you actually lifted. In addition, the device could vary the amount of water “slosh” so the instability could be varied. I designed a study using surface electrodes to examine the degree of muscle activation of 4 muscles during exercise. Due to the number of muscles studied and the number of lift variations, I created three, separate studies that examined 1. The bicep curl and core muscles, 2. The leg extension and core, and the overhead squat.

Involvement: Before the study began (but after research approvals), I had interested students volunteer to be a part of two months of pilot testing, where they were introduced to the technologies of electromyography and the procedures of the study. When their proficiency was at the standards I needed, we began to recruit subjects. While the study is not complex, there was need for a variety of individuals to assist with a number of duties: 1. Spotting the lifts to ensure safety 2. Preparing the subjects’ skin and applying the electrodes 3. Performing initial screenings and health evaluation as well as strength testing, 4. Recording the EMG data and marking the movements (lift and lower transitions) 5. Data processing (signal filtering, rectification and integration). Since subjects are scheduled close together, student researchers need to be prepared for all of the tasks, so that work can be distributed. Currently I have 12-15 students assisting with the first study, as well as a research intern preparing for graduate school. This fall the second study starts, and another group of researchers will be recruited to assist. Most are doing this for no college credit, but rather their desire for involvement in research. To promote the team aspect
of the research group, I am purchasing shirts the students will wear on data collection days. The students design them.

Dissemination: Our initial group will not have anything beyond preliminary data to present, but they will present 3 posters at our University “Student Scholars Day”. One group will present the techniques for EMG sampling (skin prep, and data acquisition). Another will present on the data signal processing techniques used. The research intern will present any preliminary data available at the time of the research day. In subsequent semesters I will have an expanding group of students and data to present at a variety of local, regional and national meetings. I will pursue peer reviewed publication in major exercise science journals for my own dissemination work.

In summary, this is a research project that could be completed with a dedicated group of 4, but by using a large group, I was able to involve students in the same range of experiences, while creating a more empowered group of researchers that have worked very well together. I hope to continue the model as I gain approval of additional research projects.
MEASURING THIRD YEAR UNDERGRADUATE NURSING STUDENTS’ REFLECTIVE THINKING SKILLS AND CRITICAL REFLECTION SELF-EFFICACY FOLLOWING HIGH FIDELITY SIMULATION.

**Topic area:** Health Education

**Presentation format:** Paper sessions – work in progress report

**Description of presentation:** An innovative approach to the facilitation of debrief after a high fidelity nursing simulation and its impact on reflective thinking will be presented. Reflective thinking is a key metacognitive skill for an undergraduate nurse to develop, however it is difficult to measure and the role of students as peers facilitating debrief is relatively unknown. This research hopes to identify effective teaching and learning strategies to promote the development of reflective thinking after simulation.

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**WORK IN PROGRESS REPORT**

*Background:* Critical reflection is a key skill in the transference of knowledge and skill. It is essential that an undergraduate nurse develops this metacognitive skill to enable learning whilst studying and the eventual transition to the workplace. It is this high level reflective capability which assists in the process of critical thinking which allows for effective problem solving by the undergraduate nurse. Despite the importance of reflection and reflective practice as both a skill and approach to professional nursing education, it is rarely measured directly and appears not to be articulated as an outcome of experiential learning, even for example, in the setting of High Fidelity Simulation (HFS).

*Method:* The overall purpose of this randomised controlled trial is to explore the role of critical reflection and its development within the context of HFS and nursing curricula. A pilot study found that the Reflective Thinking and Simulation Survey was reliable. The main study used this survey in a non-equivalent control design to determine if students as facilitators, academics as facilitators or student and academics as joint facilitators of HFS debrief alter students level of reflective thinking within a HFS simulation debrief.

The study is guided by the Social Cognitive Theory – Self Efficacy conceptual framework which recognises the importance of self-belief in the execution of skill. For undergraduate nurses to improve both reflective competence and confidence it is necessary to consider this perspective when collecting data and during analyses.

*Results:* Data analysis will involve measuring internal consistency of scales used in the ‘Reflective Thinking and Simulation Survey’, confirmatory factor analysis for a modified scale incorporated into the survey and comparison of mean scores from the survey with the control and intervention groups.

*Discussion:* The research is significant on two levels. Firstly the individual student nurse will benefit directly from receiving objective information and feedback about their reflective capacity and secondly, it is anticipated that the results of this study will also further inform teaching and learning methods associated with HFS, to improve the students’ ability to reflect on action at a critical level.
1. **Title of the submission:** Home is Where You Speak Your Mother Tongue: Heritage Language Maintenance among Ukrainian Immigrant Families in Canada

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6. **Abstract:**

   The interplay of various political, economic, personal and societal factors causes more people to search for a better and safer place to raise their families. With the increasing deterritorialization of people all over the world (Appadurai, 1997), it becomes obvious that the established values and linguistic beliefs in host countries may undergo inevitable revisions and reconsiderations; the priority for newcomers should be their linguistic repertoire expansion by acquiring an additional language, but not replacement of their native language by the language of the mainstream society (Edwards, 2005). The specific objectives of this project are: to document, analyze and report participants’ narratives regarding their home language and parenting between two or more languages in Canada; to find out specific successful strategies in terms of positive encouragement and maintenance of a heritage language; to address the possible connections between ongoing events in Ukraine and immigrants’ perception of their cultural and linguistic heritage because our life biographies are inseparable from the socio-political circumstances in the countries we were born or reside (Andrews, 2007); to review research literature on heritage language maintenance; to expand scarce research data on
recent immigrants from Ukraine. The project is informed by the theoretical framework of postcolonialism; the data will be collected through narrative inquiry and interviews and analyzed by applying critical discourse analysis. Because the purpose of this project is to portrait personal life experiences of immigrant parents, critical discourse analysis may facilitate in exploring how dominant discourse may indirectly influence both individual and socially shared ideologies and beliefs (Fairclough, 2001; Van Dijk, 1993) regarding the status, dominance and legitimacy of speakers of different languages (Bourdieu, 1991).
Abstract:
Classroom research can improve reflectivity and subsequently improve various aspects of teaching and learning in the classroom (Falk & Blumenreich, 2005; Mills, 2003). However, research has revealed that inservice and preservice teachers are often reluctant to participate in action research due to fear, an inability to recognize the ways in which research can enhance their work, and a lack of knowledge and training related to the connections between research and classroom practice (Bondy, 2001; Glanz, 2003). Involving preservice teachers in classroom-based research provides early support, comfort, and opportunities for participation in evidence-based practices (Evans, Lomax & Morgan, 2000; O’Sullivan, 2002). This study examined elementary preservice teachers’ understanding of inquiry-based science pedagogy within the context of an international research experience. Eleven elementary preservice teachers provided information in the form of interviews and comparative essays during a twelve-week field experience that occurred in the United States and Australia. Analysis of the qualitative data revealed that the preservice teachers expressed enhanced understanding of (a) inquiry-based science, (b) distinctions between science instruction in the United States and Australia, (c) distinctions between pedagogical and classroom management approaches in the United States and Australia, and (d) the role of research in the classroom. Findings also indicated that participation in the research experience affected the university faculty members and classroom teachers involved in the study. Implications and suggestions allow teacher educators to utilize action research to support preservice teachers’ understanding and utilization of pedagogical approaches as well as their understanding and utilization of classroom-based research.


ABSTRACT

The Catholic Church has constantly shown her important concern for providing its children an education by virtue of which their whole lives may be inspired by the spirit of Christ. (Vatican Council II on Christian Education, 1965) It should be stated that education does not only inculcate theories of knowledge or concepts in the minds of people; neither does it merely teach or nurture their minds. Education is not limited to learning the basic academic skills to succeed in life, but also an avenue in which every student is given an equal opportunity to excel in life by receiving a well-rounded education. Education has always been considered as a process that begins in the family, where some values and theories are initially learned and understood. The learning process continues to involve the whole civil society in the form of the right and duty of the state to provide equal educational opportunities.

Nevertheless, Catholic education is distinguished by the integration of religious truths and values with life. Whatever theories or concepts taught in the school should be applied in the day to day situations. The researcher is firmly convinced that true education is directed towards the formation of the human person, and such an education not only develops the maturity of the human person. Hence, Catholic education continues its influence in forging leaders and in shaping cultures according to the highest values and ideals.

A significant number of faithful stakeholders are affiliated with and have chosen Catholic education for the youngsters. Much more, parents, who are devout Catholics, send their children
and family members to Catholic schools. These schools through its Catholic principles and educational system provide not only the secular training, but also the spiritual training which their religious lives necessitate.

In the manual of the Catholic schools, in its general objectives it is mentioned that these schools exist “to gradually help the students open their eyes to the realities and problems of life in the contemporary world, to look at the world with Christian eyes, to master and ready themselves for the challenging mission which they as Christian have to fulfil in society and in the service to the Kingdom of God.”

Moreover, the establishment of Catholic schools has produced a significant effect in the people, particularly the educators, those who have been educated or those who play a special role in the educational arena, the stakeholders. Schools are important in terms of the future of the Church.

This has been the advocacy of the Church; it is dedicated to the education of young people and on the holistic formation and promotion of values based on the principle of Catholic doctrine.

Finally, as objectives of this research, the study mainly focuses on how faithful stakeholders understand Catholic Education. In like manner, in this study the researcher would like to determine the nature and goals of Catholic education. From the experiences of the faithful stakeholders, the researcher would explore the reasons and factors why they choose and have affiliations with Catholic education.

**Methodology**

The justification for using the Classical Grounded Theory of Barney G. Glaser methodology in this research study is the substantive and empirical evidence found on the topic.
This method lends itself to the emergence and discovery of concepts that potentially lead to a theory.

There are a number of stages that the researcher would go through to complete the grounded theory process, namely, choosing initial participants, choosing data collection methods, enhancing theoretical sensitivity, conducting sampling, data collection, data analysis, writing up theory, and research evaluation. Each time a new participant is interviewed, the follow-up questions are changed by the researcher, as appropriate, in order to achieve saturation of a particular concept. Once saturation is achieved, the researcher will review the data to be collected to better understand the emergence of other concepts.

Role of the Researcher

The researcher is a Roman Catholic priest and presently the School Director of 2 Catholic schools. Through his own lens and interaction with others, he will interpret meaning based on participants’ understanding and experiences of the phenomenon. Likewise, he is also a reflective observer, allowing patterns to emerge as indicated by the data (Glaser, 1992). The researcher will intend to guard against personal bias through critically reflective self-examination and fidelity to the grounded theory methodology.

Participants

The participants for this study are the faithful stakeholders, by considering three generations: parents, grandparents, and grand grandparents of loyal students.

Discussion of expected outcomes

Through interviews and by following faithfully the Classical Grounded Theory of Barney G. Glaser would interpret and analyse based on the faithful stakeholders’ and experiences of Catholic Education.
Most of the faithful stakeholders would emphasize various factors in sending their children to Catholic Education.

These faithful stakeholders primarily send their children to Catholic Education because of its Catholic ideals. Students or learners are introduced to the Catholic faith. Knowledge about their faith leads students to appreciate and understand the core of their religion. This knowledge about the faith leads them to that knowledge about God.

As a result these faithful stakeholders would like their children and loved ones enrolled in Catholic Education to imbibe whatever values enshrined in the ideals and objectives of the schools. These values reflect what the school inculcates in their students or learners. In the process, students, starting from their grand grandparents they have observed how Catholic Education has influenced in their professional life, their personality and attitudes, particularly their dealings with people. In short, they try to put into practice whatever values learned in the schools.

Moreover, faithful stakeholders would underline the importance of discipline in the growth, formation, development and education of their children. With discipline, partnered between the school and the home, especially the parents, there is a sense of direction and purpose in their lives. Students become more focused on their studies and on their goals in life. Discipline is basically a foundation for a successful life.

Finally, faithful stakeholders have been convinced with the quality education which Catholic education continues to offer. Catholic education tries to update itself so as their products, meaning their students and learners, become globally competitive, critical thinkers, communicators and creative.
TITLE: The cultural, social and academic challenges affecting girls who leave the Torres Strait Islands for boarding schools in Queensland, Australia.

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Abstract: When indigenous girls from the Torres Strait Islands, Australia, leave the comfort and familiarity of their communities for the ‘unknown’ of boarding schools, there are many cultural, social and academic challenges that confront them.

Through the methodology of Ethnography this paper will give a first hand account of current challenges of the transition process through the stories and experiences expressed by a group of girls from the Torres Strait Islands. These girls come from a diverse range of Torres Strait Island communities and boarding school environments in regional Queensland.
Title: Strategies to engage students in social studies through visual and performing arts

Topic Area: Cross-disciplinary areas of education

Session Type: Workshop

Description: It’s a fact: too many students think social studies class is boring. Join our workshop and experience hands-on, arts-based strategies to transform the social studies curriculum. By the end of the workshop, all participants will have experienced a handful of visual and performing arts strategies that are adaptable to a wide range of topics and grade levels. Additionally, participants will have conceptualized and shared a lesson idea to implement in their own classrooms.

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Abstract:
Many students dread going to social studies class, perceiving it as an hour dedicated solely to the rote memorization of names, dates, and places that have nothing to do with their everyday lives. Sadly, these disaffected students are at times correct. Though educators who teach social studies may be passionate about their subject, they often experience difficulty translating this to the students, especially via long lectures, textbooks, and maps. Students naturally disengage from this kind of instruction, especially when learning about what they perceive to be the irrelevant past, and simply shut down. It’s time to switch things up! Arts-based teaching methods have the ability to spark curiosity, imagination, and creative problem solving. They allow for a deeper and more meaningful connection to the social studies curriculum. The facilitators of this workshop present a unique perspective as one is a social studies teacher who often utilizes the visual and performing arts as an entry point into the content, while the other is a performing arts teacher who chooses to infuse social studies content into her theatre courses. Since they both worked in a collaborative independent school, they decided to team up and see what strategies they used that were successful across a wide range of students. They found many similarities in the methods that seemed to engage students the most, especially when students connected on an emotional level to their learning experiences. This workshop outlines their pedagogical methodologies across disciplines and the learning transformations of their students.
Elementary School Students and their Knowledge about ‘Variable’

The term variable is quite elusive and often difficult to define, especially for elementary school students. A common exercise used to understand the complexity of the term involves trying to define variable with only one word (Schoenfeld & Arcavi, 1988). Because “the meaning of variable is variable,” the wide variety of different acceptable meanings can make the term difficult for students to understand (Schoenfeld & Arcavi, 1988, p. 425). Researchers have long agreed that understanding variables is an extremely important topic in middle and high schools, especially when making the leap to algebra, but the knowledge requirements are confusing and appear to change over time (Usiskin, 1988).

Kuchemann (1978; 1981) developed a framework of what he considered the six different student interpretations of variables:
1. Letter evaluated (i.e., the letter is a specific number, for example $a+3=5$),

2. Letter ignored (i.e., the letter itself is not given meaning, for example $a+b=43$ so $a+b+2=?$),

3. Letter as object (i.e., the letter stands for an object, for example $s$ stands for students),

4. Letter as a specific unknown (i.e., the letter is a specific yet unknown number, for example add 4 onto $n+5$),

5. Letter as generalized number (i.e., the letter can represent several numerical values), and

6. Letter as variable (i.e., the letter can represent a large range of unknown numerical values).

Although historically reserved for students in official algebra courses in middle and high schools, the importance of teaching these meanings of variable earlier is becoming more widespread. The new Common Core State Standards (CCSS; 2011), for example, recommends that “students in Grade 3 begin the step to formal algebraic language by using a letter for the unknown quantity in expressions or equations” (p. 27). When meeting this standard, students’ first introduction to variables would often therefore involve adding in literal symbols (i.e., $x$ or $y$) into simple open number sentences or equivalence problems instead of blanks or boxes (i.e., $x+8=23$ instead of __+8=23) (Fujii & Stephens, 2008). This Grade 3 CCSS definition of variable may be one of the more rudimentary definitions, because it does not represent varying quantities, (Fujii & Stephens, 2008) however it may be the appropriate starting point for elementary school students. Despite variable use being stressed in the CCSS starting in Grade 3, there is very little research surrounding the conceptions held by elementary school students in this area. The
purpose of this study is therefore to investigate this further – what knowledge do elementary school students possess about variable and what misconceptions are occurring?

**Common Variable Misconceptions**

A review of the research reveals that students often experience misconceptions surrounding variables that appear to persist with age. MacGregor and Stacey (1997) found that common misinterpretations of variables for students ages 11-15 included believing the letter to stand for 1, for an abbreviated word, for an alphabetical value, for a particular numerical value, or for a label for an object. Further, when presented with the task ‘2n+3, what does the symbol stand for?’, the percentage of 6th, 7th, and 8th grade students who understood was 46%, 63%, and 76%, respectively (Asquith et al., 2007; Knuth et al., 2005). The majority of students who answered incorrectly either did not know the answer, or believed it to stand for an object, word, or a specific digit. These results indicate that middle school students may still be interpreting letters as letters (or specific corresponding numbers) instead of understanding their purpose in representing numbers or a range of numbers.

One of the most popular misconceptions held by middle and high school students appears to be misunderstanding literal symbols as labels (i.e., $c$ stands for cat, so $4c$ might mean 4 cats) (Booth, 1984; MacGregor & Stacey, 1997). McNeil, Weinberg, and colleagues (2010) investigated how these misconceptions manifest when utilizing variables using mnemonic letters (i.e., $c$ for price of a cake), non-mnemonic letters (i.e., $x$ or $y$), or Greek letters (i.e., $\Phi$ or $\Psi$). They presented 322 middle school students with a commonly used problem adapted from Kuchemann (1978, 1981) using these three different types of variables as conditions: ‘Cakes cost $c$ dollars each and brownies cost $b$ dollars each. Suppose I buy 4 cakes and 3 brownies. What does $4c + 3b$ stand for?’ Students in the mnemonic letters condition misinterpreted the
expressions the most often, and often considered the labels as standing for objects.

Approximately 37% of students in the mnemonic (i.e., c and b) condition interpreted the variables correctly while approximately 56% of students in the non-mnemonic conditions interpreted the variables correctly. There was no difference between the non-mnemonic letters and the Greek letters groups (McNeil, Weinberg et al., 2010). It seems clear that students experience misconceptions around variables that could be remedied through additional experience with variables and through teacher preciseness in choosing which variables to use (i.e., choosing non-mnemonic letters as variables).

**Importance of Variable Knowledge**

Mastering an understanding of variables and work with variables is significant because, if not remedied early, misconceptions appear to persist into high school and even into adulthood. A seminal study utilizing the notoriously famous ‘Student-Professor Problem’ (Kaput & Clement, 1979) demonstrated that even mathematically-proficient adults (i.e., college students pursuing traditionally mathematically based majors) often seriously struggle with representing mathematical relationships with variables. The most common misconception exhibited by the adults involved committing ‘reversal errors,’ which occur when the variables are reversed in formulas and has been found to be highly prevalent in both high school and college students (MacGregor & Stacey, 1993; Fisher, Borchert, & Bassok, 2010). This reversal error was demonstrated when between 40% and 60% of adults solved the following problem incorrectly: “Write an equation using the variables $S$ and $P$ to represent the following statement: ‘There are six times as many students as professors at this university.’ Use $S$ for the number of students and $P$ for the number of professors” (p. 288). The most common error made involved reversing the solution: ‘$6S=P$’. A follow-up study revealed that a large proportion (i.e., 40-43%) of college
students could not identify the $P$ to mean number of professors or the $S$ to mean number of students, revealing the common misconception that occurs when students misunderstand the $S$ to mean students (instead of number of students) and therefore reading $S=6P$ as “one student for every six professors” (Rosnick, 1981, p. 419). Because of these misconceptions that even adults appear to possess, it is crucial that students gain experience working with variables at an early age.

**Purpose of this Study**

Because of the significance and the accompanied research gap, this research sought to investigate the knowledge elementary school students possess surrounding variables.

**Methods**

This investigation of student variable knowledge was pursued using a two-pronged, mixed-methods research design. The first, quantitative prong, investigated student knowledge through paper pencil assessments while the second, qualitative prong, investigated student knowledge through think-aloud student interviews.

**Student Assessments**

Student assessments were conducted to investigate student knowledge surrounding variable across a large number of students in each elementary grade, Grades 1-5. No research found in the area had used random samples of students; therefore a random sample was utilized to reduce bias and increase generalizability of the results.

**Student demographics.** A stratified cluster random sample was used in this study, with schools stratified by mathematics achievement (i.e., high achievement, medium, and low) and students clustered by school. Of the 397 elementary schools in two urban counties of Washington State, six elementary schools from six different school districts were randomly
selected to participate: two high achieving schools, two medium achieving schools, and two low achieving schools. Schools were stratified by 3rd grade mathematics achievement: percent passing the 3rd grade state standardized test by school ranged from 37% to 83% with a mean of 65% \((SD = 17\%\)). Percent free or reduced price meals also varied widely, ranging from 30% to 77% with a mean of 45% \((SD = 18\%\)).

A total of 1,745 students participated by completing the assessment. The students were relatively equally distributed across the grade levels: 351 (20\%) first grade students, 309 (18\%) second grade students, 336 (19\%) third grade students, 384 (22\%) fourth grade students, and 365 (21\%) fifth grade students. Approximately 51\% of students were male, the average age of students was 8.96 \((SD = 1.49)\), and approximately 22\% of students were English Language Learners (ELL).

**Assessment.** All participating students were administered a newly developed and validated diagnostic assessment of algebraic thinking skills. Reliability and validation efforts of the instrument are currently underway; however internal reliability coefficients (i.e., Cronbach’s Alpha) for all versions of the assessment are at or above 0.80 and evidence of validity has been collected. Each assessment included at least three items investigating variable knowledge, primarily in the rudimentary first level of ‘variable stands for a specific number.’ Eight different variable items were used across the different grade levels. The items varied on the letter used as the variable (i.e., g, b, a, etc.), whether one or two of the same variables appeared, whether one or two different variables appeared, whether there was an ‘equivalence context’ (i.e., \(7+4+5=7+e\)) or not (i.e., \(6+b=9\)), and the type of operation (i.e., addition, subtraction, multiplication, or division).
**Analysis.** Classical Test Theory statistics (i.e., descriptive statistics, frequency counts, difficulty or p-values, etc.) were used to analyze the student responses. Response process analysis using coding and frequency counts was further used to provide common answers to each of the items. Further, analysis of variance (ANOVA) was used to investigate the differences in knowledge levels across grade levels.

**Think-Aloud Interviews**

A think-aloud protocol study was conducted to further investigate student knowledge surrounding variable and better understand student thinking and any misconceptions students are experiencing.

**Student demographics.** Seventy-three students of varying abilities from two different elementary schools in King County of Washington State were selected to participate in the think-aloud interview protocol. Grade level participants included 18 1st grade students (25%), 12 2nd grade students (16%), 11 3rd grade students (15%), 10 4th grade students (14%), and 22 5th grade students (30%).

**Interviews.** In the think-aloud protocol interview, students were asked to verbalize their cognitive processes when answering each of the assessment questions (described above). Using a think-aloud protocol can provide an in-depth view of how students perceive the assessment items (Ericsson & Simon, 1984; Ginsburg, 1997). In this think-aloud protocol, interview students were asked to verbalize their cognitive processes when answering each of the questions. By asking the students what they were thinking when answering the assessment items or why they answered in the way they did, “the experimenter seeks to learn directly from them [the students] the underlying cognitive structure that produced the overt behavior” (Ericsson & Simon, 1984, p. 42).
**Analysis.** The think-aloud data was analyzed using a four-step process. First, all think-aloud interviews were audiotaped and transcribed. Second, several readings of the interview transcriptions were conducted to gather first pass “codes,” or common thought processes and conceptions. Third, qualitative codes or themes were finalized and all interview transcriptions were coded to discover a pattern of themes or codes (Miles & Huberman, 1994). Fourth and finally, these themes were analyzed in conjunction with the results of the response processes analysis discovered in the large assessment sample described above to look for themes across a larger range of data.

**Results and Discussion**

The difficulty (p-values) for all items are displayed in Table 1.

Table 1

<table>
<thead>
<tr>
<th></th>
<th>1&lt;sup&gt;st&lt;/sup&gt; Grade</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; Grade</th>
<th>3&lt;sup&gt;rd&lt;/sup&gt; Grade</th>
<th>4&lt;sup&gt;th&lt;/sup&gt; Grade</th>
<th>5&lt;sup&gt;th&lt;/sup&gt; Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>6+b=9</td>
<td>0.38</td>
<td>0.51</td>
<td>0.81</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>10-g=2</td>
<td>0.40</td>
<td>0.54</td>
<td>0.88</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4+a+a=10</td>
<td>0.20</td>
<td>0.34</td>
<td>0.73</td>
<td>0.86</td>
<td>0.91</td>
</tr>
<tr>
<td>c+c+3=15</td>
<td>0.14</td>
<td>0.32</td>
<td>0.68</td>
<td>0.69</td>
<td>0.80</td>
</tr>
<tr>
<td>7+4+5=7+e</td>
<td>0.12</td>
<td>0.25</td>
<td>0.54</td>
<td>0.62</td>
<td>0.82</td>
</tr>
<tr>
<td>n+n+n=n+12</td>
<td>-</td>
<td>-</td>
<td>0.20</td>
<td>0.26</td>
<td>0.28</td>
</tr>
<tr>
<td>4n+5=21</td>
<td>-</td>
<td>-</td>
<td>0.50</td>
<td>0.70</td>
<td>0.79</td>
</tr>
<tr>
<td>x+y+y=10; x+y=6</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.55</td>
<td>0.62</td>
</tr>
</tbody>
</table>

Although students often initially struggled to solve one variable items like 6+b=9 in 1<sup>st</sup> and 2<sup>nd</sup> grades (i.e., with p values of 0.38 and 0.51), they were fairly proficient by 3<sup>rd</sup> grade (i.e., with p values of 0.81). By 5<sup>th</sup> grade, students were also fairly proficient (i.e., with p values of 0.80 and above) with both two variable items (i.e., 4+a+a=10) and variables used in an
equivalence context (i.e., $7+4+5=7+e$). Older students were also asked to solve more complex items involving two different variables (i.e., if $x+y+y=10$ and $x+y=6$ what is $x$ and $y$?). Students surprisingly mastered these problems fairly well (i.e., with $p$ values of 0.55 to 0.62), but continued to struggle throughout the grade levels (i.e., with $p$ values of 0.20 to 0.28) when the variables occurred on both sides of the equal sign (i.e., $n+n+n=n+12$).

There was a statistically significant difference by grade for the three items measured across all five grade levels: for $4+a+a=10$ ($F(4, 872) = 116.821, p < .001$), for $c+c+3=15$ ($F(4, 847) = 72.880, p < .001$), and for $7+4+5=7+e$ ($F(4, 856) = 73.106, p < .001$). Post-hoc Tukey analyses for $4+a+a=10$ and $7+4+5=7+e$ revealed that 1st and 2nd grade students significantly underperformed all other grades, while 3rd grade students significantly underperformed 5th grade students. Similarly, analyses for $c+c+3=15$ revealed that 1st and 2nd grade students significantly underperformed all other grades; however there were no other differences.

**Conception Analysis**

It appears that students faced a variety of different misconceptions when solving problems involving variables, with younger students more likely to be confused. The conception analysis and interview results of three specific items are highlighted below.

**6+b=9.** For the item $6+b=9$, some students understood immediately: for example a 2nd grader said, “Oh, that’s kind of like algebra where there’s like an $x$ and you try and figure out what it is!” Others students were not familiar with the use of the variable and left it blank or just listed numbers in the problem such as 6 or 9: “9? Because it’s [written] right there.” However, certain students who were unfamiliar with problems such as these were able to work them out on their own. One 1st grade student, for example, said, “I’ll skip it. Wait, I think I know how to do
this one. 6 plus what number equals 9… b must be 3!” The most common conceptions for the item $6+b=9$ are displayed below in Table 2.

Table 2

Common Answers to $6+b=9$

<table>
<thead>
<tr>
<th></th>
<th>Blank</th>
<th>Number in problem</th>
<th>‘b’ is the 2nd letter</th>
<th>Correct</th>
<th>Number in problem</th>
<th>Add or subtract numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>$6+b=9$</td>
<td>-</td>
<td>6</td>
<td>2</td>
<td>3</td>
<td>9</td>
<td>15</td>
</tr>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; Grade</td>
<td>15%</td>
<td>3%</td>
<td>4%</td>
<td>38%</td>
<td>14%</td>
<td>4%</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt; Grade</td>
<td>16%</td>
<td>3%</td>
<td>8%</td>
<td>51%</td>
<td>14%</td>
<td>1%</td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt; Grade</td>
<td>3%</td>
<td>2%</td>
<td>3%</td>
<td>81%</td>
<td>5%</td>
<td>2%</td>
</tr>
<tr>
<td>All</td>
<td>11%</td>
<td>3%</td>
<td>5%</td>
<td>56%</td>
<td>11%</td>
<td>2%</td>
</tr>
</tbody>
</table>

10-g=2. Similar conceptions occurred in the item $10-g=2$ (see Table 3 below). Several students had not experienced these types of items. One 1<sup>st</sup> grade student said, “I can’t figure these out. The letter ones I can’t do.” Other students thought that the ‘g’ in $10-g=2$ was actually a 9: “9? Because they kind of look like 9s.” Another student thought ‘g’ was a 6 because “if you turn the g upside down it’s going to be a 6.” Others simply replaced the answer with numbers from the problem like 2 or 10. Others still thought that the letter stood for a specific word, like ‘b’ for box or ‘g’ for Grady (i.e., the student’s name). Like before, some students who were not sure about the problem were still able to talk themselves through it successfully. One 3<sup>rd</sup> grade student, for example, said: “What? Okay, that’s kind of weird. I’m going to skip it. Wait, I think I know. You have to find out what the g is. 10 minus what would equal 2… so it is 8.” It is clear that students held a wide variety of different conceptions about what the variable could stand for, especially in cases where they had not previously been exposed to such problems.

Table 3

Common Answers to $10-g=2$
**c+c+3=15.** Students appeared to continue to experience misconceptions as the variable items became more difficult. When students were asked to solve items with two identical variables such as c+c+3=15, many of the younger students skipped this item: one 1\textsuperscript{st} grader, for example, commented: “I don’t know. Can I just skip this one?” A 2\textsuperscript{nd} grader said, “But I don’t know what these [points to ‘c’s] stand for.” A 3\textsuperscript{rd} grader said, “This one’s a little too hard for me,” and a 4\textsuperscript{th} grader said, “I’m going to skip that.” Other students were a little confused about having two variables in one problem. Many students put 12, which is what c+c equals. One 3\textsuperscript{rd} grade student said, “Wait, for both ‘c’s or for only one c?” while a 5\textsuperscript{th} grade student said, “15 minus 3 is 12.”

Table 4

**Common Answers to c+c+3=15**

<table>
<thead>
<tr>
<th></th>
<th>Blank</th>
<th>Number in problem</th>
<th>Correct</th>
<th>Number looks like a letter</th>
<th>Number in problem</th>
<th>Add or subtract numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>c+c+3=15</td>
<td>-</td>
<td>3</td>
<td>6</td>
<td>15</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>1\textsuperscript{st} Grade</td>
<td>11%</td>
<td>12%</td>
<td>14%</td>
<td>9%</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>2\textsuperscript{nd} Grade</td>
<td>21%</td>
<td>14%</td>
<td>32%</td>
<td>8%</td>
<td>8%</td>
<td></td>
</tr>
<tr>
<td>3\textsuperscript{rd} Grade</td>
<td>4%</td>
<td>7%</td>
<td>68%</td>
<td>2%</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>4\textsuperscript{th} Grade</td>
<td>3%</td>
<td>8%</td>
<td>69%</td>
<td>2%</td>
<td>8%</td>
<td></td>
</tr>
<tr>
<td>5\textsuperscript{th} Grade</td>
<td>2%</td>
<td>4%</td>
<td>80%</td>
<td>1%</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>All</td>
<td>10%</td>
<td>9%</td>
<td>52%</td>
<td>4%</td>
<td>7%</td>
<td></td>
</tr>
</tbody>
</table>

**Conclusion**
These findings supported the findings of previous researchers (MacGregor & Stacey, 1997), in that it does appear that students might benefit from more opportunities to experience variables. Students exhibited misconceptions when solving items with variables and appeared to struggle more when a variable was used in an open number sentence instead of a box or blank. Figure 1 below compares their results with the open number sentence $8+\_\_ = 15$, a similar arithmetic problem that differs only in the use of the blank versus the use of a variable.

![Figure 1](image.png)

*Proportion of Students Solving Open Number Sentence and Variable Items Correctly*

When solving these variable items, many students simply reused numbers from the problem in the answer or even utilized the numeric / alphabetic code students sometimes learn (i.e., $a=1$, $b=2$, $c=3$, etc.). When problems became more complex and two identical variables were seen (i.e., $c+c+3=15$), students did not seem to understand that when the variable is the
same and used more than once the same number will replace both letters. Although this analysis measured one of the first, most rudimentary meanings of the word variable, it is important this meaning becomes familiar and is mastered before progressing to more complex meanings. It is imperative this knowledge is fostered early, as misconceptions surrounding variable can persist throughout middle and high schools and even college and beyond. This issue is best summed up by MacGregor and Stacey (1997): “Students frequently base their interpretations of letters and algebraic expressions on intuition and guessing, on analogies with other symbol systems they know, or on a false foundation created by misleading teaching materials… Their misinterpretations lead to difficulties in making sense of algebra and may persist for several years if not recognized and corrected” (p. 15).
References


The Internet as a Disruptive Technology

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Abstract Technology is always changing. A new idea is called an innovation. A subclass of this new idea is a disruption. Coined by Clayton Christensen and expanded by Caroline Howard, disruptive technology “displaces an existing market, industry, or technology and produces something new and more efficient and worthwhile. It is at once destructive and creative.” But what really is disruptive technology and how does it displace existing technology? Many feel that when customers’ needs change, new products may emerge that accommodate existing and updated attributes; thus, creating competition with the pre-existing technology and this new innovation. If the pre-existing product cannot keep up with the customers’ changing needs, the new technology takes over the industry and is classified as disruptive. With these definitions in mind, let us examine a specific technology – the Internet – and discuss how it fits the model.

I. What Is Disruptive Technology?

Technology is always changing. A new idea is called an innovation. A subclass of this new idea is a disruption. This concept is “literally uprooting and changing how we think, behave, do business, learn and go about our day-to-day.” [1] Coined by Clayton Christensen, disruptive technology “displaces an existing market, industry, or technology and produces something new and more efficient and worthwhile. It is at once destructive and creative.” [1]

This is a good definition, but what exactly does it mean? How does disruptive technology displace existing technology? What characteristics are necessary to fit this classification? Erwin Danneels provides a more specific description: It is a “technology that changes the bases of competition by changing the performance metrics along which firms compete.” [2] What this implies is that when customers’ needs change, new products may emerge that accommodate existing and updated attributes; thus, creating competition with the pre-existing technology and this new innovation. If the pre-existing product cannot keep up with the customers’ changing needs, this new technology takes over the industry and is classified as disruptive.

With these definitions in mind, this paper will examine a specific technology – the Internet – and discuss how it fits the model.

A. Internet Is Disruptive

Is the Internet a disruptive technology? Merriam-Webster defines the Internet as “an electronic communications network that connects computer networks and organizational computer facilities around the world.” [3] According to Christensen, “the Internet is disruptive to some but sustaining to other firms, depending on whether it is consistent with their business model.” [2] This idea can be confusing and requires an examination of the previously discussed definitions in relation to a specific industry.
When looking at the Internet in the realm of communication, the authors believe that it can be concluded that the Internet is, indeed, a disruptive technology. It is both destructive and creative. It displaces the older means of human interaction and creates possibilities of communicating with different people all over the world. Before the Internet, the only means of doing this was by traveling or writing via physical mail and waiting days, weeks, or even months for a response. Today, if communicators are online at the same moment, they may interact instantly; however long it takes for the Internet connection to send and receive data.

In the following pages, the authors will discuss how the Internet has disrupted the way people communicate, by focusing on the concept of social media and how it has impacted the way businesses interact with employees and customers and how language has evolved.

B. What Is Communication?

In order to say that the Internet disrupts communication, one must first define what communication is. According to Merriam-Webster, communication is “the act or process of using words, sounds, signs, or behaviors to express or exchange information or to express your ideas, thoughts, feelings, etc., to someone else.” [4] There are two subsets of communication: oral (e.g. spoken face-to-face or over the telephone) and written (e.g. letters, emails, text messages or online forums).

But the Internet helps communication! Doesn’t that make it an innovation? Yes, but a disruptive innovation. This technology has made it easier to communicate with people, but at what cost?

II. Social Media

A. What Is Social Media?

Social media is “electronic communication (as Web sites for social networking and microblogging) through which users create online communities to share information, ideas, personal messages, and other content (as videos).” [5] Another definition is, “a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content.” [6]

Breaking this down a little further, Web 2.0 is a term used to describe a new way of using the World Wide Web, “a platform whereby content and applications are no longer created and published by individuals, but instead are continuously modified by all users in a participatory and collaborative fashion.” [6] User Generated Content (UGC) is a term describing content that is created by end-users. It also needs to fit these three requirements:

First, it needs to be published either on a publicly accessible website or on a social networking site accessible to a selected group of people; second, it needs to show a certain amount of creative effort; and finally, it needs to have been created outside of professional routines and practices. [6]
So, is social media just interacting with other people online? There would not be in-depth definitions if it were that simple. Emails, instant message chats, and browsing the web do not fit the above requirements. Next, consider what types of software do fit the definition.

B. Types of Social Media

One of the earliest forms of social media is the blog. Its basic definition is a type of website that displays “date-stamped entries in reverse chronological order … [anything] from personal diaries describing the author’s life to summaries of all relevant information in one specific content area.” [6] Examples of this type of entity include WordPress, Blogger, LiveJournal, and Tumblr.

Other categories of social media are described as follows by Daniel Nations:

**Social Bookmarking.** (Delicio.us, Blinklist, Simpy) Interact by tagging websites and searching through websites bookmarked by other people.

**Social News.** (Digg, Propeller, Reddit) Interact by voting for articles and commenting on them.

**Social Networking.** (Facebook, Twitter, LinkedIn, MySpace, LiveJournal) Interact by adding friends, commenting on profiles, joining groups and having discussions.

**Social Photo and Video Sharing.** (YouTube, Flickr, Instagram, Snapchat) Interact by sharing photos or videos and commenting on user submissions.

**Wikis.** (Wikipedia, Wikia) Interact by adding articles and editing existing articles. [7]

That’s great, but how does social media support the hypothesis that Internet is disruptive to communication? As described above, the main purpose of social media is communication and interaction with other people.

Communication, check. Innovation, check. Disruption – “literally uprooting and changing how we think, behave, do business, learn and go about our day-to-day” [1] – check. With the current generation, there is nothing that “literally” changes our thinking, behavior, business, learning, and our life more than social media. Facebook, Twitter, Instagram, YouTube – people are constantly on their computers, smartphones, and tablets, checking up on their friends and their favorite celebrities, posting and sharing things others want to know and more things people do not want to know. Checking one’s social networks can be as addictive as taking a cigarette break.

We can take a look at another, smaller example of how social media is disruptive by looking at Wikipedia.

C. Wikipedia

Wikipedia is “the free, non-profit, community-edited online encyclopedia.” [8] This new innovation is disruptive because it has completely changed the encyclopedia industry. In 2012, Encyclopedia Britannica, the “oldest continuously published encyclopedia in the English language,” [9] ended print production after 244 years. In the 1950s, owning a Britannica was “a
possession coveted for its usefulness and as a goalpost for an aspirational middle class.” [9] The price tag of one of these encyclopedias was $1,395. But, with technology changes and the Internet providing instant updated material, and for free, the printed encyclopedia could not compete. Instead, Britannica now focuses on its online collection and educational curriculum for schools. [4] Another reason Wikipedia is at an advantage, besides instant updates and price, is the types of entries it contains versus Britannica. Pretty much anything a person can think of can be included on Wikipedia, especially since that person can create an entry, whereas Encyclopedia Britannica has higher standards on what gets included in its editions. [9]

D. Social Media and Business

Journalism is an example of business that has been impacted by social media. Communication between audience and journalist is rapidly becoming a more used and useful means to express ideas and gain feedback. Emails and story comments have been around for decades, helping to get an understanding of what the audience has to say. But these tools are not as powerful as social networking sites. Facebook and Twitter users share news faster than ever. The way people, especially adolescents and young adults, find out information is not through standard media outlets but through what their friends post and share. Especially with mobile devices, the way news spreads is instantaneous. One’s phone can provide an alert before one has a chance to read the morning paper or check a publication’s website.

There are two sides to this phenomenon: a) people no longer need to read news stories; thus, dropping the readership audience for journalism, and b) journalists can tease future stories and get breaking news information out rapidly as it happens instead of possibly hours later when they can type out an article. It is instantaneous and short, which fits well for the fast-paced audience of today. With Twitter, make your point in 140 characters or fewer.

Okay, so journalism is the quintessential example of communication being effected by the Internet. Let’s broaden the business sphere. Pick a business - any business. Seriously, any business. Social media has changed how businesses interact with their employees and customers. Businesses can communicate with their stakeholders (customers, employees, investors) immediately and in new ways to share information. [10] But, beware: social media can be a Pandora’s Box.

In opening the virtual box of social media, company or employee posts that seem beneficial, or at worst harmless, can unleash a firestorm of unforeseen consequences. As organizations use various forms of social media to improve their bottom line and maximize profits, individuals tend to share details of work and private life on social networks that broadcast information to thousands. [10] (Jennings, Blount, and Weatherly 96-113)

Most people don’t think what their posts about work means much, especially a low-level employee who rants about his boss to his Facebook friends. But, the simplicity and constant use of social media “creates the potential for purposeful or accidental release of information that could be damaging to other people or organizations.” [10] Because of this, more and more companies are developing social media policies for their employees, providing guidance on social media in the workplace and what can be said about work. A problem that has arisen is the limited formal training on how to use this new media, especially in relation to the workplace.
“This potential for widespread, untrained utilization brings new challenges for employers,” including in the financial, legal, and ethical settings. “It only takes one ill-worded or ill-timed post to create a company nightmare.” [10]

Usually, there is one person or a team that handles the social media accounts for an organization. But be aware: based on the principle of respondeat superior, “a company will generally be liable for any torts – civil wrongs for which there are legal remedies – committed by its employees in the course of managing these social efforts on behalf of the company.” [10] Make sure the social media team is aware of potential legal issues and is trained on how to run the company’s media to avoid any future problems.

Individual employees need to be careful, too. When endorsing or reviewing a product or service provided by an organization, one should always disclose one’s connection with the company. This allows potential customers to make an informed judgment since credibility of endorsement is affected. If connection is not disclosed but gets uncovered, customers may feel duped and betrayed, aside from any potential legal ramifications.

Legal liability should not be the only consideration; one should watch out for marketing and public relations nightmares. Bad press is still press, right? While it may get your organization more attention, just remember, once it’s on the Internet, it’s always on the Internet. And the rapid spread of information can also gain boycott momentum. For example, if the company says something offensive, all it takes is one person with thousands of followers or friends, and the damage is done.

Another aspect of business and employment that is disrupted is free speech. Legal action can be used against employers if they attempt to restrict employees from posting online. People tend to vent and complain to their friends, but what happens when the people you vent to are on a public forum? Employers get nervous and try to limit what you can say, but this can lead to legal liability for violations of federal labor laws. [10]

To avoid any of these legal and PR nightmares, it is best if companies have a social media policy in place, but it “must be specific enough that they advise employees of what conduct is restricted without restricting conduct that could reasonably be construed as protected concerted action between employees.” [10] And make sure employees are aware a policy exists and where to find it.

The authors have just finished discussing social media in business; now consider it via language – how the Internet, including social media, has changed the language use to communicate.

III. Language Evolution

When considering the definitions of disruptive technology, the “literal uprooting and changing how we think, behave … and go about our day-to-day,” [1] this concept gives rise to another point. The Internet has disrupted communication via language. As Christensen said, disruptiveness is destructive and creative. And in no other way is it both than by the concept of “chatspeak.” [11]

Urban Dictionary is a “crowdsourced online dictionary of slang words and phrases that was founded in 1999 as a parody of Dictionary.com.” [12] And as such, you can find an array of
new words and terms that are used in everyday English language. Urban Dictionary lets users edit and add entries, similar to Wikipedia. Consider how people define *chatspeak*: “A disgrace to grammar;” “Chatspeak is pretty much the Language of the Idiots. It is used by those too stupid/lazy to type properly;” “When people think it’s cool to shorten words when they type things on IM, message boards, etc;” and

Also known as webspeak, chatspeak, and weblish is basically an illiterate way of typing, and a way to massacre a language. Shortening words (such as you to u), insisting on ignoring captials[sic], making words numbers, (such as 2 or 4) and not using endmarks are all parts of chatspeak. [11]

This term is a destructive phenomenon because as people, especially adolescents, continue to speak like this (“lyke omgwtfbbq typing wit corect spelng is overrated LoL!!1” or “yo r u goin down 2 the club 2day” [11]), it can start seeping into offline life. You would fail an English exam if you wrote like these examples.

While it appears grammar and the grasp of the English language has declined with chatspeak, the grammar police are everywhere. Someone is bound to call you out on your Facebook post if you incorrectly use “there, their, they’re” or “your, you’re.” According to the Facebook news feeds and Internet memes (See Fig 1), people are more likely to reread their Facebook and Twitter posts, to not make a fool of themselves on the Internet, than they are to reread essays and papers for school.

Fig 1. Examples of chatspeak

Aside from chatspeak and grammar nazis, language is evolving with the addition of new words added to the dictionary. Merriam-Webster and Oxford Dictionaries have both added the word “selfie” to their official list of real words. A selfie is “an image of oneself taken by oneself using a digital camera especially for posting on social networks.” [13] According to M-W, words get added to the dictionary simply from the amount of times it is used. [14] and with the Internet, words are used more often than ever. With social media, new terms pop up left and right (YOLO,
anyone?), but the power of the Internet can impact language; it can help add words to
dictionaries. Some other examples of words added in 2014 are crowdfunding, big data, catfish,
gamification, poutine, and steampunk. [15]

While human interaction is disrupted by the Internet, the way we communicate with our
own technology – phones, cars, card chips, etc. – is also changing.

IV. Internet of Things (IoT)

Recently, there has been much interest in what is called The Internet of Things (IoT, sometimes Internet of Everything). The IoT may be defined as a network of physical objects or "things" embedded with electronics, software, sensors, and connectivity to enable these objects
to exchange data with the manufacturer, operator and/or other connected devices.

A number of recent white papers and independent research address the potential world-
wide linking of sensible objects that may be remotely controlled across existing network
infrastructure. [16] Such “connectivity and access” may create unheard of opportunities for much
more direct integration between objects in the real world and computing systems that may result
in vastly improved efficiency, accuracy and economic benefit. [17][18][19][20][21] It is asserted that
each thing is uniquely identifiable through its embedded computing system but is able to
interoperate within the existing Internet infrastructure. In his very recent paper, Philip Howard
estimates that the IoT will consist of almost 50 billion objects by 2020. [22]

J. Höller [23] et al offer that the IoT may offer advanced connectivity of devices, systems,
and services that goes beyond machine-to-machine communication and cover a variety of
protocols, domains, and applications. O. Monnier states that the interconnection of these
embedded devices (including smart objects) is expected to usher in automation in nearly all
fields, while also enabling advanced applications like a Smart Grid. [24] Others expand these
areas into even further domains.

In addition to the wide range of (in many cases) entirely new application areas involved
in Internet-connected application areas, Bob Violino and Mochael Hogan assert that the IoT will
generate huge amounts of data from many different locations that can be put together very
quickly. This will necessitate the need for improved indexing, storage, and improved processing
of data. [25][26]

The impact on our lives via Internet of Things is as yet uncertain, but for sure, it will be
“disruptive.”

V. Conclusion

The Internet is a disruptive innovation. It is both destructive and creative. And it has
forever changed how humans communicate and interact with one another. This incredible
technology is something we all take for granted nowadays. Most of us wouldn’t survive without
Internet access – at least, we say that, but we’re too addicted to try and stop and remember life
before our lives revolved the online sphere of emails, social networking, message boards, and
surfing the web.

But if we stop and think about the way the Internet has impacted communication, we can
see how much it has helped us connect with others throughout the world, people we would most
likely never meet otherwise. So what makes this disruptive?
Disruptive technology means “literally uprooting and changing how we think, behave, do business, learn and go about our day-to-day.” [1] In this paper, several subjects were discussed including social media, language, and the Internet of Things. The creation of social media has most definitely changed our behavior and day-to-day lives. Businesses are learning how to take advantage of reaching more and new customers, yet struggling with how to stop new legal issues that have evolved. Even the English language has been impacted. New words are added to the dictionary because of usage; words that would not exist without the Internet.

As wonderful and powerful as the Internet is, it is an innovation we’re still learning to cope with. In this process, communication is trying to catch up, but it’s been disrupted enough that it may never fully catch up in some areas.

References


<http://www.merriam-webster.com/dictionary/selfie>


Abstract

This report is a literature review on methods for measuring the efficacy of Professional Learning Communities (PLCs) used in schools as a form of teacher professional development. Research-based characteristics of successful PLCs are identified, and several studies are cited that indicated student achievement gains as a result of PLC implementation. This research contributes to the literature on evaluating effective PLC professional development.

Professional Development through PLCs: Methods for Measuring PLC Efficacy

Certain characteristics are often found in the most effective Professional Learning Communities (PLCs). First, a shared vision for a school and collective responsibility for results by a community are vital to success (Vescio, Ross, & Adams, 2008; DuFour, 2014). A second key component of PLC work is reflective dialogue and inquiry among members of a PLC, which allows for frequent examination and discussion of teacher practice (Darling-Hammond & Richardson, 2009). A third recurring theme in the literature is the importance of teachers using classroom data, both formatively and
summatively, to inform their collaborative work and professional discussions about classroom practice (Strahan, 2003; Vescio et al., 2008; Williams, 2012). Characteristics of successful PLCs include:

- Make connections between adults collaborating and students learning;
- Establish a clear purpose/shared focus that is compelling to the group members;
- Draw on exemplary outside resources relevant to the PLC focus;
- Use a cycle of planning, acting, and reviewing the results tied directly to the PLC focus;
- Provide adequate time to do the work;
- Provide support from building and district administration (Smith, Corbett, & Wilson, 2010, pp. 116-17).

Whitford and Wood (2010) found that PLCs allowed teachers to have collaborative conversations that “spawned possibility, inventiveness, and hope” in the way teachers think about student learning (p. 18). Additionally, PLCs reduced isolation, created better informed and more committed teachers, and increased academic gains for students (Hord, 2004).

One key component to successful PLC implementation that is often overlooked includes measuring both outcomes and fidelity of implementation. The purpose of this research is to investigate: How can a district or school measure the efficacy of PLCs? What tools are tried, tested, and garner information and results? What rubrics can be used to evaluate the efficacy of PLCs?

**Defining Professional Learning Communities**
Professional Learning Communities (PLCs) can be defined as “small groups of educators meeting regularly to engage in systematic peer critique and support by sharing their own professional practices as well as artifacts of student learning” (Whitford & Smith, 2010, p. 22). Furthermore, PLCs focus on educators’ shared commitment to student learning through collaborative practice and decision-making (Yendol-Hoppey, 2010). PLCs promote reflective practice and help to “cultivat[e] working relationships with other teachers, being responsive to student needs and interests, and investigating the strengths and weaknesses of one’s own practice” (Jones, 2010, p. 151). PLCs often exist within grade or content level teams, but they do not have to be limited to one school; Smith, Corbett, and Wilson (2010) researched a cross-district PLC that included superintendents, curriculum directors, and project coordinators who “shared ideas and strategies, and explored the implications of developing more collaborative cultures in organizations that have long been largely hierarchical” (Smith, Corbett, & Wilson, 2010, p. 111). PLCs may provide benefits at many levels, most notably to improve student achievement.

**PLCs Increase Student Achievement**

The goals of PLCs vary based on specific school and district needs but broadly focus on improving student learning by focusing on teaching. Dufour (2004) identifies the three main questions PLCs strive to answer:

1. What do we want each student to learn?
2. How will we know when each student has learned it?
3. How will we respond when a student experiences difficulty in learning?
PLCs provide teachers opportunities to collaborate, focus on teaching across the curriculum, plan balanced assessments, and use data to track progress and make adjustments.

Several studies have shown that PLCs can increase student achievement. Strahan (2003), for example, sought to examine how three schools with a large percentage of low income and minority students had made great gains on standardized test scores, and found the answer led back to PLCs. These three schools started with less than 50% student proficiency in reading and math, and grew to over 75% proficiency over the course of five years. To determine how these schools had reached this level of success, researchers collected qualitative data in the form of interviews, lesson observations, and school-wide meetings. The analysis of the results determined that “the central dynamic…was data-driven dialogue, purposeful conversations guided by formal assessment and informal observation” (Strahan, 2003, p. 143). These conversations were part of a supportive school culture that fostered PLCs with a focus on classroom changes to improve instruction.

Another study examined the impact of a five-year, district-wide implementation of PLCs at the elementary, middle, and high school levels (Williams, 2012). Teacher interviews revealed that teachers at all levels “…believed that PLCs provided avenues for them to learn and positively impacted their classroom practices” (p. 35). Analysis of district-wide data on student achievement in reading after the third year of implementation showed statistically significant ($p < .05$) improvements at all levels, with the largest gains at the middle and high school levels. Williams (2012) asserts that the
results of this study give solid evidence that implementation of the collaborative culture provided by PLCs plays an important role in student learning and achievement.

In 2014, DuFour published a study outlining the important elements of PLC implementation, then provided quantitative data from schools using on-going training on the use of the collaborative PLC process. DuFour described a school district with 27 schools with all schools at 75% or less of the students meeting proficiency standards in reading and math. At the end of the five-year initiative, 19 of the schools had reached the goal of 90% proficiency, with several schools at 95% or more. These studies illustrate the potential academic benefits of successful PLC implementation and practice.

Successful PLC implementation is challenging, however. Smith, Corbett, and Wilson (2010) studied PLCs within three large school districts. They found several barriers that inhibited the success of the communities, including: competing demands on time, administrative support, lack of clarity regarding goals, high turnover, extended time between meetings, and difficulty in maintaining a focus on student achievement.

**Measuring the Effectiveness of PLCs**

Measuring the efficacy of PLCs should occur at various leadership levels within a school district. PLCs can be a valuable practice for schools when there are clear PLC goals that align with school and district goals. A review of the literature indicates five main characteristics of effective PLCs that should be measured, including:

1. Shared values and vision: The PLC community has a continued focus on student learning as its main goal.

2. Collective responsibility: All members of the PLC community advocate for student learning.
3. Reflective professional inquiry: PLC members partake in reflective dialogue to discuss problems of educational practice.


5. Collective learning: teachers learn from each other and improve teaching practices, also increasing student learning (Stoll, Bolam, McMahon, Wallace, & Thomas, 2006).

There are various methods that can be utilized to measure PLC efficacy. Lujan and Day (2009) conducted a study on efficacy using surveys, interviews, and field-based observations. Their research focused on how PLCs impacted collaboration among teachers, and if the roadblocks to collaboration were addressed, was collaboration impacted as well. Their main findings were that time constraints, isolation, divergent views, and lack of conflict resolution were the main roadblocks to collaboration. Utilizing Lujan and Day’s interview questions to guide research can help clarify PLC strengths and weaknesses.

**Methods of Measuring PLC Efficacy**

The literature suggests five different options for measuring the efficacy of PLCs. The options are detailed below:

1. **Demographic Informational Survey**

   The schools’ administrative teams could complete a demographic informational survey about the school, including student attendance and discipline data, student achievement data, and student demographic information.
2. **PLC Participant Survey**

PLC effectiveness can also be measured by PLC participants’ surveys. All PLC participants could be surveyed via an online survey to discover such things as their views regarding PLC participation, familiarity with the district’s mission and vision statements, collaboration with colleagues, and the impact of PLCs on teaching and learning. This survey could be used as a pre-assessment of PLC members and used again at the end of the year to help measure effectiveness based on member perceptions and participation. Data could guide PLC leadership and planning to help garner collective responsibility needed for efficacy. Data could also guide future next steps for this work (i.e., whether the district should proceed with options 3-5 below).

3. **Interviews**

Outside researchers could conduct in-person interviews to measure the effectiveness of the PLCs. Interviews offer data that cannot be gathered in a written survey, such as insights into PLC participant perspectives through direct quotations from PLC members (Forman, Creswell, Damschroder, Kowalski, & Krein, 2008). For example, questions similar to the written survey could be asked, focusing on views about PLC collaboration, participation, and efficacy. Conversely, questions could focus on elaborating on answers in participant surveys. Suggestions for improvement could also be collected. Data gathered through interviews would remain confidential. Conducting interviews in addition to a written survey will help provide a well-rounded picture of PLC function and practice.
4. **Data Analysis**

Researchers and/or PLC members could analyze student test scores to compare data results from the year prior to PLC implementation to data results post PLC implementation. Data analysis could also be compared between other schools utilizing PLCs and/or schools not using PLCs. Data could be disaggregated by grade level and by school.

5. **Observations / Self-Assessment**

Researchers and school personnel could conduct observations of PLCs, using the targeted PLC goals identified by the school. Utilizing multiple forms of research can help triangulate the data to provide a broader picture of PLC efficacy.

**Summary**

A multiple measures approach that includes surveys, interviews, data analysis of existing data and of data produced by PLC protocols, observations, and self-assessments would give a well-rounded picture of PLC efficacy within a school or district. Completing the feedback loop by examining student achievement data can help clarify teacher success in relation to their collaborative work. Research indicates that PLCs that utilize best practices of implementation increase student achievement (e.g. Strahan, 2003; Williams, 2012; Dufour, 2014), so it is crucial that schools measure their own PLC efficacy to ensure success.
 References


Smith, D., Corbett, D., & Wilson, B. (2010). Context and collaboration: Growing the


Newspaper in Education, often called by its initials `NIE,’ in simple terms does exactly what its name says: It is newspapers taking an active role in the education of students. NIE’s main avenue to reach student has been the school classroom. The philosophy of NIE is based on the regular use of the newspaper in the classroom. NIE has various roles in advancing students’ thinking ability such as comprehensive thinking, analyzing, data interpreting, and critical thinking. In this research, I expected to understand how newspaper articles can contribute students’ subject matter knowledge. To draw educational implications of NIE, I collected 92 articles related to Korea in New York Times website from April to October, 2015.

Eighty articles out of 92 were written by one reporter with Korean name, and other 12 reporters wrote Korea-related articles. Twenty-nine articles were about domestic politics, 28 were about domestic social issues, 5 were about culture/technology, and 1 was about sports. It is noteworthy that 28 articles were about North Korean news: Politics of North Korea covered 22 articles and social issues of North Korea covered 6 articles. The keywords of total articles were not various, which means that a few news from Korea did attract international issue. Half of total articles did not exceed 10 paragraphs and 22 articled exceeded 20 paragraphs, which contained a profound content.

The most valuable articles for use of education in Korea were about North Korea. Compared with domestic newspaper articles, they had more neutral and international viewpoint. With this articles, students in South Korea are expected to understand North Korea more objectively and keep an open mind to North Korea, which would help two Korea’s reunification.
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6) **Abstract:** Promoting Student Success through Cohort-based Models

   The workshop on *Promoting Student Success through Cohort-based Models* will illustrate the importance of providing targeted and cohort-based academic, social, professional and cultural support services to pre and college students to ensure their academic success. The research objectives are to explore 1) how underprepared students navigate the educational system as compared to those students who do not participate in cohort programs; 2) how specific program initiatives are designed, reviewed and revised to meet the needs of specific program cohorts, and 3) to provide comparison data related to retention and degree completion between program participants and non-participants. The study will use a quasi-experimental design grounded in an action research framework. It is expected that students in cohort programs will have better retention and degree completion rates as compared to similar students who do not participate in cohort programs.

   The following programs at Medgar Evers College of The City University of New York will be highlighted to illustrate how student needs and program outcomes drive the
development of initiatives in cohort programs: The Percy E. Sutton SEEK Program – an opportunity program for pre-freshman through completion of a college degree, and the Upward Bound and Talent Search Programs for pre-college students. The workshop will provide strategies for improving students’ college readiness and address barriers that may prevent students from achieving their goals. The workshop will concentrate on how cohort programs prepare students for college through structured tutoring, counseling, and cultural enrichment opportunities as well as the provision of information about financial aid programs and benefits. The presentation will include a description of a longstanding peer mentor program that pairs new freshman with upper classmen to smooth the transition from high school to college and provides a means for students to identify and address barriers to their success, a description of a summer bridge program developed to meet the needs of underprepared college students, and the benefit of collaborative learning communities. Lastly, we will explore the positive impact academic support programs have on students’ ability to enroll in college, persist, and complete their degrees in a timely fashion. Workshop participants will have the opportunity to discuss issues on their campuses and to work in small groups to develop strategies that can be utilized to serve the needs of specific student cohorts. Some of the highlighted activities provided by these programs help to address and support life-long learning to enrich students’ personal, professional and academic growth. The emphasis on these challenges and addressing them with support services serves to enhance students’ ability to focus on their academic goals and performance and ultimately graduate from high school as well as college.

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Breaking Workplace Bullying Behaviors

by

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ABSTRACT

Bullying is not just for kids anymore and it is indeed the “elephant” in today’s adult workplace setting. While bullying is an individual’s repeated offensive behavior towards another through vindictive, cruel or malicious attempts to humiliate, disrespect, or undermine, mobbing is group bullying with similar goals in mind. There are many reasons that adults choose to bully or mob that include: 1) Having value differences; 2) lacking respect for diversity; 3) seeking attention; and 4) wanting power. It has been shown that targets are bullied or mobbed because they: 1) Refused to be controlled by someone else; 2) appeared to be an “easy” target; 3) exhibited some type of ethical, “whistle-blower” type of behavior; or 4) was envied by the bully for their superior competence or overachievement. Recent research has demonstrated that bullies (the perpetrators) may bully because they could be “wired” differently (Barnes, 2012), demonstrating psychopathic and/or narcissistic, and/or Machiavellian traits. Research has also shown that there are at least 45 different mobbing behaviors that can be grouped into five different categories, as well as three major degrees. While there are seven basic strategies that can be used to deal with any adult bully, there are five specific types of bullies. Thus, with each specific type of bully, there are distinct techniques that should be used. Bullying is expensive for both the target and the organization. It results in the loss of time, health, productivity, and money for both. Therefore, management must take all reports of bullying or mobbing quite seriously. There are many steps that an organization can take to prevent, deal with, and stop adult bullying or mobbing, with the first step being to assess their current workplace culture, then create a plan for improvement and follow that plan with fidelity.
Breaking Workplace Bullying Behaviors

Introduction to the Problem

Bullying is not just for kids anymore indeed being the “elephant” in today’s adult workplace setting, and it appears to make no difference as to the type of setting as illustrated by the data provided from the following studies. In 2012, Hollis surveyed faculty and administrators in 175 four-year American colleges and universities that included liberal arts colleges, Research I institutions, Ivy League universities, historically black colleges, state universities and large private universities, asking about adult bullying in their setting. Out of 3200 potential respondents, she had 401 that completed the survey and of that group 62% confirmed that they had been bullied or had witnessed bullying in their higher education positions. In a study done by the Workplace Bullying Institute, Namie (2014) found that 27% of its respondents had either seen or experienced adult bullying in their workplace setting that included various business locations. Rockwood (2015) then conducted a survey on workplace bullying in a non-profit organization. With a 41% return rate (61 out of 148 participants responded), she found that 47.5% of the respondents had either seen or experienced adult bullying in their workplace. With studies such as these providing evidence, it is safe to say that adult bullying can be found in all types of settings. Workplace bullying legal expert David Yamada (2010) maintains that it is the most neglected form of serious worker mistreatment in American employment law. It is not discriminatory as to where it occurs and by whom. Wherever it takes place and for whatever reason that it occurs, one thing is certain, it contributes to the creation or continuance of a toxic workplace culture, thus making any improvement within that organization next to nearly impossible.
With the pervasiveness of adult bullying being found in so many workplace settings and its potential costs (personal, financial, and organizational), it is imperative that organizations and those who are being bullied (the targets) be able to recognize what is happening, as well as have a repertoire of strategies, based on best practices, so as to be able to deal with it.

Purpose of the Review

The purpose of this review of the current literature is to aid organizations and bullied targets to be able to recognize and deal with adult bullying and mobbing in order to prevent or stop it. Its secondary purpose is to help them realize the potential costs (personal, financial, and organizational) if it is not prevented or stopped.

Conceptual Framework

The conceptual framework for this study was derived from the research literature describing adult bullying, workplace bullying, mobbing, values, and organizational culture.

Review of Related Literature

What is Adult Bullying and Mobbing

Is it Harassment, Bullying, or Mobbing?

The workplace of today is awash with the most age and value diverse workforce this country has known since the field and farm were abandoned for the office and factory (Zemke, Raines, & Filipczak, 2000). With these varying values present in the workplace, it is important to remember that people are guided by their values (Drazin, Hess, & Mihoubi, 2006; English, 2008). It is one’s core values that determine how one
responds, performs, and acts in any given situation (Begley, 1999) and as such, some people may choose to harass or bully or mob others in the workplace.

There is a distinct difference among all three of these behaviors. As per federal law, harassment is abusive conduct that is based on an individual’s race, religion, national origin, sex, sexual orientation, age, citizenship status, disability, or other protected status as outlined in federal law. Bullying, on the other hand, is an individual’s repeated offensive behavior towards another through vindictive, cruel or malicious attempts to humiliate, disrespect, or undermine an individual and it includes, but is not limited to psychological pressure, harassment, intimidation, threats, conspiracies, manipulation, extortion, coercion and hostile behavior which could impact the worth, dignity, and well-being of the individual (www.worktrauma.org). Mobbing then is group bullying with similar goals in mind and it is often done through rumor, innuendo, discrediting, isolating, and intimidation (Elliott, 2003).

Bullying and mobbing are forms of aggression against anyone, rather than specific discrimination or harassment against someone based on age, gender, race, creed, nationality, or disability. It is a malicious attempt to force someone out of the workplace. It comprises negative behaviors that rob individuals of their reputation, professional integrity, and competence (Davenport, Schwartz, & Elliott, 2005). The bully or bullies are called “the perpetrator(s)” and the victim is called “the target”. For any negative behavior to be deemed bullying or mobbing, the behavior must be persistent, repeated, enduring, and escalating and can take place in-person or on-line. There is a deliberate intent and power disparity, and it may or may not be against any law.
Research has indicated that there are at least 45 different mobbing behaviors that can be grouped into five different categories. These five categories include: 1) Impacting one’s self-expression and the way communication happens; 2) attacking one’s social relations; 3) attacking one’s reputation; 4) attacking the quality of one’s professional and life situation; and 5) directly attacking a person’s health (Davenport et al., 2005).

Research has also shown that there are three major degrees of mobbing: First, second, and third. In the first degree the target manages to resist it or he escapes the workplace at an early stage. In the second degree the target cannot resist or escape immediately and he suffers temporary or prolonged mental and/physical disability. In the third degree, the physical and mental injuries are such that the target is unable to reenter or return to work (Davenport et al., 2005).

**Why Bullies Bully and Mobbers Mob**

No matter if it is bullying or mobbing, the reasons for it taking place are many. Bullies bully and mobbers mob not only because of values differences, but they also do it because they can, they are allowed to do it. For some perpetrators it can be due to a lack of respect for diversity and for others it is simply a power play or an attention seeking and getting behavior.

Research has also recently shown that perpetrators may bully because they may be “wired” differently (Barnes, 2012), demonstrating psychopathic and/or narcissistic, and/or Machiavellian traits. The psychopathic bully scares, confuses, and disorients others to help achieve his or her goals. The narcissistic bully is the self-centered person whose ego is frail and who possesses the need to put others down, preferring to use
indirect tactics. Finally, those who are Machiavellian bullies manipulate and exploit others to advance their perceived personal agendas.

People who bully may: 1) Appear to be outgoing, funny, and charming so as to gain private and personal information that they then can use for threatening and manipulating their targets; 2) be sarcastic, putting others down with negative humor, then saying they were only kidding; 3) brag and convince others that they are smarter, know the right people, and have more knowledge and experience; 4) sabotage the work performance of others by giving incomplete or no information about a work assignment; 5) use “divide and conquer” techniques; and 6) give supervisors false information about their targets (Middelton-Moz & Zawadski, 2014).

The Perpetrator’s Toolkit and Tactics

Perpetrators have many tactics and tools that they use in order to attack their target. The World Health Organization (2003) has identified some of the more common tactics that are used that include: Exclusion, slander, humiliation, turning co-workers against the victim, intrusions into one’s private life, isolation, provocation, ridicule (especially in the presence of others), taking away key areas of a target’s responsibilities, threats of violence, verbal abuse, repeated criticism and blame, physical abuse, assignment of meaningless tasks, assignment of new duties without training, excessive monitoring of the person, forced inactivity, unjustified evaluation ratings, unjustified transfers or disciplinary actions, intentionally underrating or ignoring a target’s proposals, and work overload with impossible deadlines.

Barnes (2012) identifies additional behaviors in the “bully’s toolkit” that consist of: Glaring, staring, showing hostility, flaunting status, ignoring the target or his/her
contributions, failing to respond to calls or memos, giving the “silent treatment”,
shouting, throwing tantrums, starting or spreading gossip or rumors, consistently stealing
credit for the target’s work, blaming the target for mistakes made by others, excluding the
target from important activities and/or meetings, swearing, making obscene or offensive
gestures, playing mean pranks, and moving a target’s desk or office to a remote area to
humiliate him.

How to Deal With an Adult Bully or Mobber

Basic Strategies for Dealing With One

There are seven basic strategies that can be used to deal with any in-person
bullying or mobbing (Middelton-Moz & Zawadski, 2014). They include: 1) Looking the
bully straight in the eye; 2) using confident body language; 3) choosing carefully whether
to confront the bully alone or with others present so as to have witnesses; 4) focusing on
the behavior that you wish to have stopped without using labels; 5) saying things simply;
6) avoiding absolutes, sarcasm, and attacks; and 7) being direct.

Specific Adult Bully Types and Specific Techniques for Dealing With Each One

All adult bullies most likely fit into one of five basic bully types and besides using
the above mentioned basic seven principles, there are specific techniques that can also be
used with each of the different types (Middelton-Moz & Zawadski, 2014). The first type
of adult bully is known as the “head-on” collision. This is the person who comes out of
nowhere with no warning. With this type of bully, you must be assertive, using calm firm
statements and addressing the bully by name without arguing. If the bully is standing, you
should ask him to sit down and he should not be allowed to interrupt. If he refuses to sit
down, you should stand up, so as to be on “equal footing”.

The second type of bully is the “rear-end” collision. This bully delivers his verbal abuse from behind, screened in humor or sarcasm, then claims that the you have no sense or humor or you are just being “too sensitive”. With this type, you must not laugh at the jokes that he is making and you must stand up for yourself, again without arguing. You must confront rear-end attacks every time by calmly and simply stating the facts and asking if the bully really meant what he said when he made the cruel joke (Middelton-Moz & Zawadski, 2014).

The “speed up, slow down” type of adult bully is a controller and this is the bully who is righteous and slashes your self-esteem to shreds. He has a distorted view of reality and he is unpredictable, being loving one minute to you, then shredding your ego the next minute. Control for this bully is ego survival. You should not try to make sense out of the controlling bully’s behavior or analyze his intentions. It is what it is. You also need to remember that your self-esteem depends upon you, not someone else (Middelton-Moz & Zawadski, 2014).

The fourth type of adult bully is the one known as “slippery road ahead”. This bully’s behavior can appear out of nowhere and it is very hard to recognize at first. This is the person who is warm and charming and who wants to be your best friend. He believes that “all is fair in love and business” and he will do anything to get ahead or get what he wants. The only strategy to use with this type of bully is to not trust him and to exercise caution around him (Middelton-Moz & Zawadski, 2014).

A final bully type is the one who “sideswipes”. A sideswiper will share things with you that are being said about you “for your own good”. Then you find out that is is really the sideswiper who is saying many of these things “behind your back”. Sideswipers
attempt to destroy you through vicious gossip and rumors in an attempt to get back at you for some perceived attack. When dealing with a sideswiper, you must get the facts about the rumors or gossip that is being spread and then speak in private to the person who is allegedly spreading it. Relate the information directly and simply to this person and then ask if this was in fact what was said. The person will usually deny saying it and he will usually blame the misunderstanding on whoever told you about it. You may also find out that it was the sideswiper who was doing the gossiping. If so, state that you will then speak with the person who supposedly said it. Always look any bully in the eye and let him know that in the future you expect to have any concerns regarding you or your life brought directly to you first (Middelton-Moz & Zawadski, 2014).

**What Research Says About Workplace Targets and Bystanders**

**Who May Become a Target**

Research has demonstrated that there are certain reasons that people become workplace targets of adult bullying or mobbing. Individuals who lack self-confidence or sufficient conflict management skills are most likely to be targets of workplace bullying. People who are characterized as overachievers also have more potential to fall prey to a workplace bully because the bully feels threatened by the target’s competence. Bullying may occur due to the bully’s need to boost his own worth and to undermine another as a result feeling envious of the target’s talents or work ethic (Georgakopoulos, Wilkin, & Kent, 2011).

Other reasons that certain people may become workplace targets include the facts that he may refuse to be controlled by someone else, he may appear to be an “easy”
target, he may have exhibited some type of ethical “whistle-blower” type of behavior, or the bully envies the superior competence or overachievement of that individual.

**The Toll of Workplace Bullying on the Target**

Through their national survey, the Workplace Bullying Institute (Namie, 2014) had found that adult bullying behavior is more prevalent in the workplace than harassment. Victims of workplace bullying and mobbing suffer both emotionally and physically. They experience varying symptoms that include: 1) Increasing distress; 2) physical and/or mental illness; 3) problems sleeping and fatigue; 4) lack of concentration; 5) weight gain or loss; 6) drug/alcohol abuse; 7) isolation and social misery; 8) avoidance of the workplace; 9) uncharacteristic fearfulness; 10) crying for no apparent reason; and 11) panic attacks. Many victims suffer from post-traumatic stress disorder, an injury that results from an overwhelming assault on the mind and emotions, and with some targets, death may occur through failing health or suicide (Davenport et al., 2005).

**What Targets Can Do**

As the target of adult bullying or mobbing, you may feel helpless and you will experience a gamut of emotions and symptoms that range from feeling anger, depression, stress, worry and anxiety while asking yourself “Why me? and “What did I do to deserve this?” When you feel anxious or worried, you must recognize that only you can control your thoughts and perceptions (Reinecke, 2010). To allow others to do so is providing them with the ability to control you.

If you are a target, do a reality check as to the insults that are being hurled at you from a bully. For example, if you are being told how stupid you are, ask questions of
yourself and respond. Below is an example exercise demonstrating this idea (Middelton-Moz & Zawadski, 2014).

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Did I make a mistake on a report?”</td>
<td>“Yes.”</td>
</tr>
<tr>
<td>“Am I stupid?”</td>
<td>“No.”</td>
</tr>
<tr>
<td>“Are you always making mistakes?”</td>
<td>“No.”</td>
</tr>
<tr>
<td>“Am I an airhead?”</td>
<td>“No.”</td>
</tr>
</tbody>
</table>

Going through an exercise such as this empowers you and reaffirms your self-esteem, which in turn helps you to be able to not personalize a bully’s bad behavior.

As an individual who is being mobbed or bullied, you should seek professional help early. Normal stress management techniques, pursuit of a hobby, having a pet, meditating, keeping a journal, and regular exercise may help temporarily. However, as the emotional abuse escalates, it is necessary to seek medical and therapeutic help. You may want to work with your physician to see if you qualify for a “Family and Medical Leave Act” leave. You must put your health before anything else.

People who have survived persistent bullying or mobbing situations are those who have responded to the attacks with confidence, not assigning self-blame or participating in the game, but rather confronting the bully. They have refused to be a victim and they did not isolate themselves. They also displayed a great deal of spiritual and mental strength, trusting that things would change, while consciously taking steps to leave the organization. They learned to distance themselves from the workplace and to feel and practice indifference and emotional detachment. Bullied survivors found people to be
with who served as pockets of safety and support. In addition, they did whatever they could do to limit their exposure to the perpetrator.

They also did many things that built their self-esteem, such as volunteering or learning a new skill. They kept their sense of humor and surrounded themselves with the things they loved. The ability to perceive that you have the power to shape even small aspects of your fate can have a huge impact on your well-being.

If you are being mobbed, bullied, or harassed, Namie and Namie (2003) suggest that you must report it to your superiors and make a business case as to how the bullying is affecting your productivity and driving up your absenteeism. You also need to equip yourself with any available employer policies and procedures and you must document what is happening to you. Your documentation needs to include the date, the time, the place, who is involved, witnesses to the event, and a detailed description of what happened. You will also want to solicit witness statements as this will provide a record of bullying and mobbing actions so that you can avoid being put in the position of having your word alone against the word of the bully.

Ultimately if you are being bullied or mobbed you have four options (given in no particular order). Your first option is to stay and hold on, involving union representation (if available) and filing an internal complaint. The second option is to maintain union representation (if available) and resign yourself to staying, but direct your emotional energies outside of your job. The third option is to resign and your fourth option being to bring forth legal action (Namie & Namie, 2003).

During any bullying or mobbing experience, as a target, you must also try your best to practice resilience and positivity. Resilience is the capacity to deal with the
complexities of life, including the ability to positively handle adversity. “Resilience depends on our ability to recognize pain, acknowledge its purpose, tolerate it for a reasonable time until things begin to take shape, and resolve our conflicts constructively” (Flach, 1988, p. 50). Positivity is having positive emotions. These positive emotions “fuel” psychological resilience (Fredrickson, 2009). Hopefulness, optimism, and coping are all forerunners of resiliency (Siebert, 2005). “By finding positive benefits in adversity, you regain control over your destiny.” (Siebert, 2005, p. 175)

You must remember that if for some reason you can’t escape your source of stress, you can change your mind-set about what is happening to you and you can reframe so as to reduce the damage being done to you. Some reframing strategies include avoiding self-blame, hoping for the best but expecting the worst, and developing indifference and detachment.

**What a Bystander Can Do**

Often there are bystanders who witness bullying incidents and who turn their heads because they don’t know what to do. Being a friend is one of the most important things that you can do for a victim of mobbing or bullying. Just by knowing that there is a person who cares and accepts the individual the way they are can make all the difference. As a bystander, you should address any noted changed behaviors of the target or concerns that you may have with your supervisors. Often those who are being bullied or mobbed feel helpless. They might be afraid to bring the actions to the attention of their supervisors. They may fear greater retaliation for addressing the situation. You, as an outsider, can bring the bullying to the attention of those in charge in an effort to stop this behavior. As a friend you can also show empathy and provide support to the person being
bullied. You may be the person to provide the support they need in order for them to leave an abusive workplace.

**What an Organization Can Do**

**Assess your Workplace Culture**

It’s important to assess the workplace culture and to determine whether or not it is positive or negative (toxic). In order to make this assessment, there are many strategies available for use. The first strategy is rather obvious—it’s that of observation. In a positive culture, people are comfortable taking risks that often initiate positive changes. They have integrity and they are honest, supportive, and helpful. There is cooperation, rather than competition. A toxic culture is much the opposite. In this type of culture, people are focused on negative values and they are pessimistic. There is constant sniping, complaining, and attacking of each other. Threats, intimidation, and personal insults abound.

There are many signals that an organization is toxic and it is experiencing a bullying or mobbing problem. Some signals to watch for include: 1) A sudden loss of key individuals; 2) an increased use of sick leave; 3) an unusually high staff turnover; 4) a loss of credibility; and 5) unexplainable low morale.

Another technique for assessing the organization is to hold regular quarterly interviews with different groups of employees. You will also want to hold exit interviews with employees who are leaving. When using these strategies, you will want to ask open-ended questions and simply listen and take notes. Should you choose to use a conversation-based technique, you will also want to consider whether you will get better
data by bringing in an outside facilitator or not, as well as if those costs are worth the return on investment that your organization will receive.

A third technique is that of using a paper/pencil/online survey or a culture audit that asks questions pertaining to how much employees value certain beliefs, behaviors, group norms, goals, etc. and then ask them how often they see them being enacted. The data is then compiled and analyzed looking to determine if a particular item is valued more than it is being seen enacted. Wherever there are the largest gaps between the value level and the enactment level, these are the areas that should be targeted first for organizational improvement. Select those top 3-5 areas for the creation of an action plan. Your action plan should include SMART goals (those that are specific, measurable, achievable, relevant, and time-bound), strategies for achieving your goals, a timeline, assigned responsibilities, and a statement of what it will look like when the desired level of functioning is attained. Creating a positive, collaborative and continuous improvement action plan in this manner and holding people accountable for its completion is one of the best steps that any organization can take to improve its culture. Again, you need to determine if it may be worth the money to bring in an outside consultant to lead the process.

Other Strategies for Improving Organizational Culture

There are some simple common sense steps that can be taken immediately when seeking to transform an organizational culture into one that is positive. Negative behaviors such as glaring, swearing, yelling, shouting, spreading rumors and gossip, sexist/racist remarks, giving someone the “silent” treatment, and throwing temper tantrums must be confronted immediately. Should they continue, management must take
steps to change the offender’s negative behavior(s), and inform them that they may be subject to discipline up to and including dismissal.

Other common sense steps for reshaping organizational culture include strengthening the positive elements that already exist. Positive established values, traditions, and celebrations, should be maintained, while new ones can be added. The recruitment and hiring process is also very important in reshaping organizational culture. In an interview, ask some types of bully/victim-related situational questions, and if there is any doubt, the candidate should not be hired (on the basis that they do not have the desired qualifications that will “fit” into your organization. Any new hires should be those who share the positive values of the organizational culture and who will add new insights to it.

Professional development should be required for all employees of the organization on the following topics: 1) Bullying behaviors and its effects/costs, 2) harassment laws; 3) awareness of potential violence in the workplace; 4) professional ethics; 5) appreciating diversity; 6) teamwork; 7) communication skills; and 8) conflict resolution skills.

An organization must also have a well-defined organizational chart and clear job descriptions that describe duties and responsibilities. Likewise, it must also have a clear anti-bullying policy in place that addresses adult bullying and mobbing behaviors. It must be a comprehensive, legal, and simple policy that can be enforced with fidelity. The components of the policy need to include a description of bullying or mobbing behaviors, clear reporting procedures, prohibition of retaliation in any form against complainants,
and clearly written consequences for bullying/mobbing behaviors, outlining progressive discipline (Barnes, 2012).

In any organization a manager or supervisor has three basic rights that can and should help in managing those who display bullying or mobbing behaviors. These three basic rights are: 1) Requiring that employees comply with directives; 2) changing employee assignments and standards; and 3) requiring excellence from employees.

When requiring compliance with directives, as long as you are not asking your employee to do something that is illegal, immoral, or unethical, he must do what you ask, or it may be viewed as insubordination. Employees must understand that they have responsibilities and that one of them is that they must learn to work well with others. As a supervisor you can issue this directive and if an employee does not know how to do this, send him or her to a class and/or buy books, or bring in an expert facilitator to provide professional development. The bottom line is that the employee must work well with others and while you, as a supervisor, should coach, counsel, and warn a difficult employee, if his behavior does not improve, you can place him on a performance improvement plan and ultimately recommend termination if needed.

Any performance improvement plan should include: 1) A clear statement of the deficient behavior or work performance issues; 2) the reasons why the improvements are needed; 3) the specific behaviors or replacement strategies that the employee needs to implement to improve; 4) the timeline according to which the improvements should be started and fully implemented; and 5) a schedule stating not only when you and the employee will meet again to talk about progress made in relation to the required criteria,
but also when you will gather data or observe to assess the growth accomplished by the employee.

**The Costs of Adult Bullying to Organizations**

**Overall Costs**

Bullying is costly to organizations both directly and indirectly. Therefore, management must take all reports of bullying or mobbing quite seriously. The costs of not taking these reports seriously are great in terms of time lost due to extensive use of sick leave, workman’s compensation insurance claims and the Americans with Disabilities Act. Potential penalty payments for Occupational Safety and Health Administration violations, increased health insurance premiums, lost productivity, turnover, and bad publicity for the organization are also costs that will be paid.

Hollis (2012) shares that the replacement cost of turnover is enormous, being about 150% of the departed employee’s salary. This cost encompasses background checks, advertisements, any search process fees, rehiring and retraining procedures. She (Hollis, 2012) also found that the average worker was spending 3.9 hours per week trying to avoid a bully at work. This, then calculated out to be $6869.50 per person that is lost annually (Hollis, 2012).

**Legal costs**

Organizations that fail to aggressively discipline and weed out those who engage in the behaviors of bullying or mobbing may find themselves vulnerable to expensive settlement costs, dispute resolution fees, severance package costs, employer liability charges, tort claims, legal fees, and/or difficult lawsuits. Charges such as defamation of character, aggravated stalking (a 3rd degree felony), assault, assault and battery, criminal
charges, hate crimes, and civil rights violations form the basis for most legal actions taken. “Estimates for the cost of bullying to American employers range from $64 billion to more than $300 billion.” (Barnes, 2012, p. 9)

Addressing Adult Bullying and Mobbing in the Workplace on the National Level

While some European countries have had workplace bullying/mobbing legislation in place for years, the campaign to enact “healthy workplace” legislation in the United States is fairly recent. In the 2010 Workplace Bullying Institute survey (Namie, 2010), 64% of the respondents supported workplace bullying legislation to protect workers from “abusive conduct”. By 2014, that same survey showed that support for the legislation had grown to 93% (Namie, 2014). As of April 9, 2015, 25 states had introduced legislation to this effect, with three states passing some form of it. Tennessee was the first to pass the law in May of 2014; however, it only applied to public-sector employers (Rubenfire, 2014). Also, only personal liability was included in that law. Then on September 4, 2014, California passed its “healthy workplace” legislation, with Utah following suit, making their law effective on July 1, 2015.

Conclusion

This review of the literature concerning adult bullying and mobbing in the workplace provides current research and best practices to targets and organizations on how to recognize it and deal with it. While much information is provided, the limitation of this review is that not every book or article ever written on this topic was perused. However, using the information provided, any organization and any target should now be able to recognize an adult bully, their tactics and they should be able to use proven techniques to prevent or stop it. In addition, this review provides many strategies that
organizations can use to determine what is really going on in their culture, as well as steps to take to improve it.

Adult bullying and mobbing behaviors can only persist in an organization as long as it is allowed to exist. It is up to management to set high expectations, role model expected behavior, consistently and fairly apply policies and procedures, and to confront organizational negativity and toxicity head-on.

John Maxwell (2003) maintains that one simple rule, the Golden Rule (to treat others as you would ask to be treated), is the only rule that organizations need. He believes that it is what builds organizational morale, increases productivity, encourages teamwork, lowers employee turnover, and keeps clients coming back. If an organization could accomplish all of that by following one simple rule, wouldn’t you follow it? Certainly, enacting this rule on a daily basis would be a good start in the elimination adult bullying and mobbing in the workplace. As Elliot (2003, p. 57) so succinctly states, “Treating each other with dignity and respect, or not doing so seriously impacts the future—for all of us.”
REFERENCES


Submission Title: Future Teachers Clubs and the Socialization of Pre-Service and Early Career Teachers, 1953-2015.

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Abstract:

Although universities across North America are training more teachers now than ever before, teacher attrition remains high in the first five years after certification. In 2004, the turnover of new teachers in Canada within five years of completing a Bachelor of Education was 30%, with some specialized fields – like French Immersion – being much higher than others. Reasons cited by early career teachers for their decisions to leave teaching range from high stress and lack of support to dissatisfaction with workload or salary. These figures are also complicated by the current difficulty new teachers experience in finding full time work in a city where they have a support network, forcing many to choose between remaining Teachers Teaching on Call for an extended period or moving to more rural areas where there may be more vacancies or less competition. Despite a robust literature on the challenges of new teacher induction and retention, surprisingly little historical scholarship has contributed to the discussion. This poster examines the initiative known as “Future Teachers Clubs” (FTCs), from both historical and contemporary perspectives. In particular, we explain FTCs and their origins; discuss how they evolved in British Columbia and why they diminished. Finally, we outline where and why FTCs have remained an important part of teacher training programs that may help to stem the tide of early career teacher attrition.
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Abstract

Subtitled video materials have been developed for a College Algebra course. The course is a part of a program offering dual-enrollment, blended learning opportunities to high school students. Since 2000, approximately 7,500 high school students have enrolled in College-level outreach courses of Algebra, Trigonometry and Calculus. The first set of newly developed video materials will be used in approximately 40 high schools and also will be made available as a supplemental resource to on-campus students. This paper describes the motivation for the development of the video materials and the session will present technical information for those interested in pursuing similar undertakings.
Making Videos Accessible for College Level Math

The WvEB program includes a collaborative offering of college-level courses to high school students. Higher Education instructors of record work with high school teacher facilitators in the teaching of the courses. Measures are taken to assure that the level of rigor in the high school courses is the same as that in the corresponding courses taught at the partner post-secondary institution. The WvEB program courses are offered in a blended learning environment such that lectures, assignments, and assessments, are completed both on-line and face-to-face. Information about the development of the project can be found in earlier publications (Pyzdrowski & Pyzdrowski, 2002, 2003; Pyzdrowski et al., 2009, 2011). Since Fall 2000, approximately 7,500 students have completed WvEB courses in Algebra, Trigonometry, and Calculus. Typically the DFW rate for the dual-credit courses in the project is less than 10%. The DFW rate is the percentage of students earning a “D”, “F” or Withdrawing from a course. Students also have been found to do well in subsequent courses (Pyzdrowski et al., 2013, 2014, 2015).

The first course developed in 1999 for the WvEB Math project was College Algebra. Rather than focus efforts on the development of one primary course component, such as video lectures, course developers intended to provide a variety of course components to help students learn. As such, once the initial set of course videos (of a University instructor) were completed, laboratories with computer animations, online homework quizzes, and a study guide were systematically developed and implemented to facilitate students’ learning. Though videos have been redone periodically, recently it was decided to revisit the development of a complete set of course videos. Closed-captioned, or subtitled, video materials have been developed for College Algebra. They were developed to complement the Study Guide used in the course which has been consistently chosen as a helpful course
component by on-campus students, but not so much by those students enrolled in the dual-credit sections. It is the intent to explore this finding in more depth once the subtitled videos have been implemented.

The first set of newly developed video materials will be used in approximately 40 high schools in West Virginia and will be made available as a supplemental resource to on-campus students enrolled in College Algebra.

**Motivation for the Development of New Videos**

*Universal Design for Learning*

A few years ago, a blind student was enrolled in a high school section of the College Algebra Course. The course developer/instructor was able to make accommodations to provide for the successful completion of the course by the student. This experience caused an interest to learn more about the characteristics and needs of special populations and the accommodations that can be made in the content and classroom that can help all students learn Algebra. A workshop was attended on Universal Design for Learning (UDL). Universal design is defined as "the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design" (Center for Universal Design, 1997, para. 3). Universal design focuses on removing barriers through initial designs that consider the needs of diverse people, rather than overcoming barriers later through individual adaption (Rose et al., 2006). As such, UDL focuses on removing barriers to learning for all types of learners rather than just students with disabilities. As a result, students from other historically under-represented populations are likely to experience a more welcoming learning environment. UDL offers a blueprint for designing flexible curriculum methods, materials, and assessments that meet the needs of diverse learners with diverse experiences (Rose, Meyer & Hitchcock,
Subtitling and Students with Disabilities

Brady-Myerov (2015) reports that same-language subtitling (SLS) has been referred to as an “undervalued language-learning strategy” and has been found to support literacy. It has also been found that SLS of film songs leads to reading skill improvement (Brijkothari, Ashok & Avinash, 2002). Most importantly for the purposes of this project, it has been found that “the processing of subtitled films is cognitively effective: It leads to a good understanding of film content without requiring a significant tradeoff between image processing and text processing” (Perego, Del Missier, Porta, & Mosconi, 2010).

In February 2015, it was reported by the New York Times that federal lawsuits were filed against Harvard and M.I.T, for violations of anti-discrimination laws by failing to provide closed captioning in educational materials including their online lectures and courses. It is reported that the universities have “largely denied access to this content to the approximately 48 million — nearly one out of five — Americans who are deaf or hard of hearing.”

McCrea (2015) reports through interviews of university leaders that though many may not think about providing accommodations for deaf students, it is both a legal and ethical obligation to provide educational access to students with disabilities. She also reports that improvements have taken place on university campuses in the US. It is the intent for the subtitled videos, developed to complement the College Algebra study guide material, to provide a valuable resource not only for those students who are deaf, or hearing impaired, but also for other diverse learners in the course.

Fundamentals of Video Development

Overarching Considerations for the Subtitled Videos

It was decided to minimize the use of instructor "body" images while redoing the videos. The
undertaking requires a large investment in time and money and having instructor body images in the videos can quickly "date" them. The new videos contain a mixture of PowerPoint slides, written work via a document camera, and instructional audio. This choice was made based on feedback from participants and facilitators who used several versions of the videos throughout the years. The videos will be made available through online delivery as well as DVD due to connectivity issues throughout the state.

**Video/Audio Recording and Editing**

While making the new subtitled videos, the switching between the document camera and the PowerPoint slides on the computer is accomplished through the document camera. The video from the document camera along with the audio are simultaneously recorded by a digital tape recorder. This allows for the initial recordings to be of high quality; and once completed, they are transferred to a computer running a video editing software. Appropriate edits are then made to the video including fade-in and fade-out. In addition to editing the video, the audio is cleaned and normalized. Removing noise makes for a quiet background and normalizing the audio makes all videos end up at approximately the same audio level. The audio tracks are needed for the text transcription. The audio can be extracted from the video by exporting the audio as an MPEG file. Throughout the process a high level of quality is kept in both the video and audio because the size and quality can be decreased at the end of the production.

**Text Transcription and Subtitling**

After the audio has been cleaned, normalized, and exported, a speech recognition program is used to transcribe the speech to text. The text document is edited, corrected and formatted. This is a very time consuming process due to the mathematical nature of these videos. It was decided to adjust the text document so that each line has a short sentence or idea segments no longer than two lines of the final
Making Videos Accessible

subtitling in length. Once the text document is formatted, the document is saved as an ASCII Text file. Using a movie captioning program, load the video file and import the ASCII Text file. Each line of the text file will appear as one line for the subtitling. It is necessary to synchronize each line of text with the appropriate time in the video. Upon completion of the synchronisation of the text lines with the video, it is necessary to preview the subtitled video in order to make appropriate timing adjustments. The subtitled video can then be exported for final production.

Final Production of the Subtitled Video

Using a video editing package, the subtitled video is rendered into an appropriate format for web delivery or DVD viewing. At this time the final size and quality of the video can be adjusted. It was decided to use an MPEG-4 video format for these videos because it has a high level of data compression and is played by most video players.

References


Making Videos Accessible


Pyzdrowski, L. Pyzdrowski, A, Ogden, L.,and Walker, V.(2013). Indicators for Success in First year


Two Techniques to use for the Differentiation

of Teaching Students with Challenging Learning Behaviors

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Abstract

This study investigated the impact of two techniques on the social and academic behaviors of middle school level students whose general curriculum teachers described as disruptive to the learning environment for themselves and other students, assignment incompleters, although seemingly bright enough to complete work. These students were or at risk for failing all of their classes in the first semester and were being considered for the second tier of the Response to Intervention model. Four research questions were identified to explore the use of the 9-grid technique as a tool for teachers’ use in the identification of needed assignment adaptations and the RAFT technique to implement identified adaptations for assignment differentiation in the content areas of music, mathematics, history, science, and physical education. Results indicated that students increased in positive social and academic behaviors when the two techniques were implemented by teachers.
Two Techniques to use for the Differentiation of Teaching Students with Challenging Learning Behaviors

Students with challenging behaviors have a long history of academic deficits (Levendoski & Cartledge, 2000; O’Shaughnessy, Lane, Gresham, & Beebe-Frankenberger, 2002), whether it be because of lack of skills, organic origins, and/or cognitive errors. When students are engaged in and able to function within the curriculum, misbehavior is typically less likely to occur (Kauffman, 2010; Witt, VanDerHeyden, & Gibertson, 2004); however, many of these students also have learning problems that keep them from being able to participate effectively in grade level assignments (Sabornie, Cullinan, Osborne, & Brock, 2005). Their disabilities are found across the content areas (Reid et al., 2004); within their wide range of abilities there are many gaps in their academic skills, which often leave teachers at a loss as to how to support them. Finding ways to engage struggling students with techniques that allow access to the teachers’ content area of expertise is a successful solution for both teacher and students. When material is presented initially through approaches that allow students to feel competent, teachers can then support students to further accept and attempt more sophisticated deliveries. It is beneficial to have students begin work in their areas of strength, bypassing the discouragement that is often presented when they are introduced to an unfamiliar or challenging assignment. Teachers need ways of allowing students to work within their strengths, using connections within subject areas of interest and/or authentic life activities or events as motivators. This may require that they elicit performances from students that demonstrate output of learning beyond formats that are traditionally accepted.

The RAFT (Holston & Santa, 1985) is a very versatile technique because it embeds differentiated instruction within a format that can be used for all curricular areas; it has
traditionally been used to enhance written assignments in English. A common definition of a RAFT is that it is a strategy that includes information provided about a topic from a perspective other than the students’, and can be seen applied to an exploration of the topic. Using the acronym of RAFT students are guided to identify their role, their audience, the output format of their work, and the expected content topic covered. Students will take a different role rather than simply being a student reporter of information to teacher demonstrating learning about a particular topic. They will demonstrate their learning to a hypothetical audience in varying delivery formats. The RAFT technique allows students with challenging behaviors and academic deficits to make gains and be engaged in an instructional challenge and thus, less likely to exacerbate misbehaviors. RAFTs provide teachers with a vehicle to differentiate assignments within the content they teach, how they will teach, and how the students will demonstrate what knowledge they have gained using an output preference for that demonstration.

Grant and Gradwell (2010) used the RAFT as a motivational tool by directing students to become a fictional figure. This imaginary enabled students to address big ideas and meet English state core content standards. It is reported that adolescents enjoy the format (Lenski & Lewis, 2008) and teachers report that they believe students benefit if the RAFT technique is used as a method of writing across the content areas (Holston & Santa, 1985). Having another way of approaching teaching and thinking about how learning occurs helps teachers not only identify the differences in diverse groups but also provides a framework in which they can respond with differentiation (Tomlinson, 2014). As teachers prepare lessons they consider student learning, recognizing it as a highly personal process, which is also individualized for absorbing and retaining information (Williamson & Watson, 2006). It is essential for teachers to personalize learning for students who appear unmotivated due to social and academic difficulties; however,
many teachers need a tool that will allow them to support these individual student needs within their lessons.

The RAFT development requires that the teacher use their understanding of readiness levels at which their students are functioning, what student interests are, and student preferences for demonstration of learning. The teacher aligns the topical concepts with the content standards that they want to emphasize as their students’ outcome knowledge. Each line on a RAFT can be matched with specific content and with the assessment standards.

Often students may find challenging or are not interested in the particular subject or the way in which the assignment product is expected to be completed. RAFTs can not only be used to promote thematic teaching across content areas, but also expand traditionally-based student output. For instance, a RAFT can incorporate movement, literacy, and mathematical components to address several content standards, and include at least one area of which may be more appealing to student interest than another. Mathematics instruction is expanded and strengthened when areas such as sense making, reasoning and proof, problem-solving, and communicating are combined. Communication in mathematics should involve talking, reading, and/or writing. Talking with others about mathematical concepts and ideas not only broadens the students’ ability to articulate their understanding, but, also allows them to explore multiple perspectives. The RAFT may be developed to capitalize on a student’s high potential for communication while simultaneously incorporating mathematical concepts that they may otherwise not see as viable due to previous or current mathematical difficulty.

This study was conducted in order to investigate the use of the RAFT as a tertiary strategy to strengthen students with deficits primarily displayed as challenging behaviors and lacking assignment completion. A secondary tool, the 9-grid (DeSchenes, Ebeling, & Sprague,
1994), was used to strengthen teachers’ differentiation understanding while developing the RAFTs.

Method

Participants

Five 6th grade middle school teachers teaching in the content areas of physical education, music, history, science, and mathematics agreed to use RAFTs for 5 weeks. The current grading period had five weeks remaining. The 5 teachers collectively shared 20 students who were being considered for referral to a Tier 2 Response to Intervention plan due to failing grades. Each of the students were described by their teachers as “disruptive, assignment incompleters, to have a generalized uncaring attitude toward school, and were seemingly intelligent enough to do the work assigned.” It was hypothesized by the teachers that both the students’ social and academic misbehaviors were used to avoid what was perceived as boring and/or difficult assignments.

The teachers examined their use of the 9-grid (DeSchenes, Ebeling, & Sprague, 1994) to align adaptation needs with specific RAFT assignment differentiation for the students. Based on initial conversations with each of the teachers, four research questions were composed.

1. Would students’ positive social and academic behaviors increase if they had more choice in how they demonstrated what they learned?

2. Would students’ positive social and academic behaviors increase if the teachers supported work completion with variation of input?

3. Would students’ social and academic misbehaviors decrease if the teachers used instructional methods that allowed more student choice, interaction, and/or physical movement than they currently allowed?
4. Would students’ social and academic misbehaviors decrease if assignments were integrated with items of interest to their daily lives?

Instruments

Each student completed an interest survey. The survey identified students’ hobbies, favorite outings, school subjects, sports, foods, books, movies, likes/dislikes, best self-identified learning modalities, talents, and skills. This information was used to identify the various ways teachers could connect their content areas lesson formats and to the ways in which students could demonstrate learning from lesson information.

The teachers created RAFTs as outlined by Holston and Santa (1985) for assignments that they perceived needed differentiated based on student needs and strengths. Each RAFT followed the sequence of the acronym format; the R identified the role from which the student delivered information, the A identified the audience to whom the student was addressing, F identified output of the product the student produced, and T identified the topic that would be addressed in the assignment. RAFTs were often used for the entire class, sometimes students were assigned a specific line, were given the choice of line, or across a unit were to complete all lines on the RAFT. As can be seen on the example RAFTs some assignment lines were written for individualized student work while other lines were directed at small group completion.

Before the RAFTs technique could be aligned with students’ need, the teacher had to identify areas that they needed to adapt in order to provide tailored differentiation. A tool titled, 9-grid (DeSchenes, Ebeling, & Sprague, 1994) identified student needs by considering adaptations in nine areas, of which seven were targeted as essential for students with learning disabilities. The two additional areas were for students with more severe adaptations needs. Keeping the interest survey information in mind, teachers used the 7 areas of the 9-grid to
identify the most beneficial and/or effective adaptations for the students. This was done individually and then shared as a group, providing brainstorming across content areas and encouraging ideas for thematic content use. After identifying student need, each teacher aligned the next 5 weeks of assignments with the students’ adaptive needs as identified on the 9-grid and created RAFTs for assignments where adaptive differentiations were needed.

Results

Teacher Qualitative Reports

Teachers reported that the most difficult aspect of the study was to find the time when five teachers could meet at once for an extended amount of time, although they found the brainstorming session was valuable for developing thematic assignments across content areas.

9-Grid Development and Use

The teachers reported that completing the 9-Grid was initially difficult because they realized they did not know some of the students’ needs; they only saw the outward display of challenging behaviors that they found to be disruptive to the teaching and learning process. As they examined the 7 areas for need of adaptation they reported a greater ability to add supports to the lessons developed. They also reported as they completed the 9-grid for these students they saw how the same adaptations could be used for many students in their classes. See an example of a completed 9-grid from mathematics in Figure 1 for a student with high anxiety, a preference for verbal modality of expression, difficulty with fine motor skills in handwriting, and slow processing of information read or delivered auditorily.

RAFT Creation and Implementation

The music teacher found that over the 5 week period it was necessary to create 7 different RAFTs. Her example of a RAFT for student identification of vocabulary and musical forms,
with an emphasis on Rondo is found in Figure 2. The English and History teacher collaborated on many assignments during the 5 week period. Figure 3 depicts an example of their collaborative RAFT; in English where types of writing were being reviewed (e.g., informational, persuasive, informal, and editorial) and in History where the reasons and impact of the Civil War were being studied. The English and History teachers developed and used 12 RAFTS in 5 weeks. Figure 4 is an example of one of the 8 RAFTs developed by the Physical Education teacher; this one was for a unit on teaching Tennis. The mathematics teacher created 5 RAFTs across 5 weeks. Figure 5 is a RAFT created for a review prior to the quiz on lines. The Science teacher created 13 RAFTs across 5 weeks and the RAFT example displayed in Figure 6 is for the organization, function, and roles of cells.

Student Perceived Change

Teachers reported that all students, actively participated in the lessons when using RAFTs. Teachers said it was obvious to them what student weaknesses were in academic skill areas when the students demonstrated their learning even through preferred modalities (e.g., spelling was a deficit skill when students were writing a script for a play when acting was their skill strength and learning preference used for the RAFT). This gave the teachers greater insight into what kinds of supports to provide during assignments that required the weaker skill. For instance, they began using Word Walls for vocabulary, word banks for independent worksheets and quizzes; thus, ensuring spelling did not detour or hamper student work completion. All teachers reported positive changes in all students’ social and academic behaviors. Seven of the students did not have failing grades at the end of the grading period and were no longer considered for Tier 2 of the RtI model.

Research Question Results
In response to Research Question 1 (i.e., Would students’ positive social and academic behaviors increase if they had more choice in how they demonstrated what they learned?) all student positive social and academic behaviors increased in a positive direction according to teacher report. Teachers also recognized that they provided a greater degrees of choice in students’ demonstration of learning that now fit how the students viewed their own understanding and learning. For Research Questions 2 and 3 (i.e., Would students’ positive social and academic behaviors increase if the teachers supported work completion with variation of input? and Would students’ social and academic misbehaviors decrease if the teachers used instructional methods that allowed more student choice, interaction, and/or physical movement than they currently allowed?), teachers reported the use of the 9-grid allowed them to examine how they provided initial instruction and to explore if they could expand the modalities they used. The more variation a teacher reported the greater amount of student work was completed in that course. Teachers in this study who had difficulty articulating how they would divert from their standard input of instruction saw less positive gain by students in academic behaviors. Teachers reported that all students increased in positive social behaviors during assignments when teachers used the RAFTs.

For Research Question 4 (i.e., Would students’ social and academic misbehaviors decrease if assignments were integrated with items of interest to their daily lives?) both teachers and students were asked how they viewed social and academic behaviors when assignments included students’ indicated interests. Teachers said the target students participated at least twice as much as they had previously, that the quality of academic work included a great degree of care and quality of completion, and a decrease in the number of misspellings and grammatical errors on written work and syntax during verbal presentations. Students reported that they enjoyed the
assignments more because they felt capable of doing what was asked of them from the start. They said that they felt that they didn’t have to work as hard to integrate their knowledge into the assignment.

**Conclusion**

Teachers can use students’ strengths and interests to promote attempting difficult tasks through various modalities of teacher input and the student learning output. Adaptations can support students in the development of attempting alternative approaches to difficult or new learning tasks. Teachers can understand the diverse nature of the classroom of students while simultaneously expanding their own abilities through the incorporation of student interest and preferences. Students’ new learning can help eliminate avoidance of perceived difficult assignments and disruptive behaviors.

In this study, the use of the 9-grid to identify specific student’s social and academic need in combination with a RAFT that integrated student interest and preferences led to greater assignment completion and student positive participation in classes. Transitioning students back into content areas from which they have been or are being considered for removal due to academic or social behavioral reasons is the goal; whether a tier program for interventions is used or another model. We must ensure teachers are able to differentiated instructional interventions to meet behavioral as well as academic needs. In these cases as identified previously by Kauffman (2010) and Witt, VanDerHeyden, and Gibertson (2004), when the students were enabled to engage in and function within the curriculum, not only did their misbehavior occurred less often, but their academic participation and grades increased in a positive direction.
References


Tomlinson, C. A. (2014). *Differentiated classroom: Responding to the needs of all learners*. ASCD.


**Nine-Grid Curriculum Adaptations**

<table>
<thead>
<tr>
<th><strong>Quantity</strong></th>
<th>Mica has processing deficit – will only complete every nth problem for in-class or homework when number is over 10.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Time</strong></td>
<td>May ask for extra time up to one day on homework when necessary due to anxiety.</td>
</tr>
<tr>
<td><strong>Level of Support</strong></td>
<td>Provide peer buddy – caution Mica is talkative – so on task buddy needed. Meet me after class or school for one-on-one support.</td>
</tr>
<tr>
<td><strong>Input</strong></td>
<td>Will provide visual demonstrate, verbal examples, and relate to life examples when possible. May need to use manipulatives. Will try use of Cooperative Groups format.</td>
</tr>
</tbody>
</table>
| **Difficulty** | Will consider based on in-class and homework scores.  
****Will potentially impact grading procedures |
| **Output**   | Will consider calculator printout instead of near-copy work for equations. Will allow verbal explanation on quizzes and tests. |
| **Participation** | Will lead cooperative group once a week. |
| **Alternate Goals** | For students with severe adaptation needs |
| **Substitute Curriculum** | For students with severe adaptation needs |
Figure 2. Music RAFT Example

<table>
<thead>
<tr>
<th>Role</th>
<th>Audience</th>
<th>Format</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross Country Skier</td>
<td>The Forest and Woodland Creatures</td>
<td>Performance on the xylophone</td>
<td>Skiing downhill  Rondo Style -- Form “A”</td>
</tr>
<tr>
<td>Dancer</td>
<td>People in Performance Hall</td>
<td>Performance of repetition --- Dance to the music when you hear B, C, D section of Rondo</td>
<td>Happy Feet Copy Rondo</td>
</tr>
<tr>
<td>Ankeruhr Clock in Vienna</td>
<td>People in the Streets of Vienna</td>
<td>Imitation of the clock with the bells</td>
<td>Can You Rondo? (Identify and Imitate)</td>
</tr>
<tr>
<td>Singer</td>
<td>Folks Song audience</td>
<td>Teach a Rondo Folk Song of your choice to audience</td>
<td>Sing songs in Rondo Form</td>
</tr>
</tbody>
</table>
Figure 3. Collaborative English and History RAFT.

<table>
<thead>
<tr>
<th>Role</th>
<th>Audience</th>
<th>Format</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Union (or Confederate) Soldier</td>
<td>People in Public Square</td>
<td>Public Speech</td>
<td>I Must Fight for the Union (or Confederacy)—Don’t You See Why it is Important?</td>
</tr>
<tr>
<td>Adolescent female (or male) who is still at home</td>
<td>Father</td>
<td>Persuasive Letter</td>
<td>Dad, I Support the Union (or Confederacy). The War has Affected my Potential Future.</td>
</tr>
<tr>
<td>Common Woman on Union side</td>
<td>Confederate soldier</td>
<td>Informal letter</td>
<td>Do You Know How or Can You Care About the Impact on my Family if my Husband is Wounded or Killed?</td>
</tr>
<tr>
<td>Well-Known Public Figure of the time (you select)</td>
<td>Readers</td>
<td>Newspaper Editorial</td>
<td>My Side is the Correct One. (?) Reasons You Need to Join Me!</td>
</tr>
</tbody>
</table>
Figure 4. Tennis RAFT Example.

<table>
<thead>
<tr>
<th>Role</th>
<th>Audience</th>
<th>Format</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exercise Coach Leading Proper Warm-Up Stretching Routine</td>
<td>Class</td>
<td>Lead a Routine</td>
<td>It More Than Going Through Motions</td>
</tr>
<tr>
<td>TV Announcer</td>
<td>Audience Watching Match</td>
<td>Video Visual Slow-Moe</td>
<td>Don’t Backhand Me! Let’s See It Again</td>
</tr>
<tr>
<td>Pencil</td>
<td>Score Sheet</td>
<td>Cartoon</td>
<td>You Can’t Keep Score Without me – Let Me Show You How it is Done</td>
</tr>
<tr>
<td>Ball Teaching Forehand Technique</td>
<td>Racket</td>
<td>Poster</td>
<td>Show me the Way</td>
</tr>
</tbody>
</table>
**Figure 5. Mathematics RAFT Example**

<table>
<thead>
<tr>
<th>Role</th>
<th>Audience</th>
<th>Format</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Police Scanner</td>
<td>General Public</td>
<td>Police Report</td>
<td>The NefariousY-Intercept: How Did You Track Him Down?</td>
</tr>
<tr>
<td>The Chief</td>
<td>The Gumshoes</td>
<td>Picture for Where in the World is Carmen San Diego?</td>
<td></td>
</tr>
<tr>
<td>Line Segment</td>
<td>Other Line Segments, Lines, and Rays</td>
<td>Journal Entry</td>
<td>Quadrants of the Cartesian Plane: Will They Help Us Find Her?</td>
</tr>
<tr>
<td>Straight Line</td>
<td>Other Lines</td>
<td>Full Page Personal Ad</td>
<td>Why Am I a Dead End?</td>
</tr>
</tbody>
</table>
Figure 6. Science RAFT Example

<table>
<thead>
<tr>
<th>Role</th>
<th>Audience</th>
<th>Format</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Cytologists)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active/Passive Transport</td>
<td>4th grade class</td>
<td>Field Trip Travel Guide for Cell Homeostasis</td>
<td>Going With (or in this case) Against the Flow</td>
</tr>
<tr>
<td>Mechanism</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Photosynthesis &amp; Respiration</td>
<td>Teenagers</td>
<td>Rock and Roll Lyrics for cell energetics</td>
<td>We Need Each Other</td>
</tr>
<tr>
<td>Mitosis/meiosis</td>
<td>Expectant Mothers</td>
<td>Advice column on the Cell Cycle</td>
<td>More Than Just a Pretty Face</td>
</tr>
</tbody>
</table>
Title: Growing STEM Scholars through the MAOP Summer Research Internship

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Abstract:
Higher education professionals are challenged to increase and retain students of color within the STEM field and prepare such students for graduate education and the workforce. Over the last 23 years, the Multicultural Academic Opportunities Program (MAOP) Summer Research Internship (SRI) at Virginia Tech has provided over 600 students the opportunity to partner with a faculty member in a mentor/protégé relationship. This summer, 37 undergraduate interns from 18 different higher education institutions spent 10 weeks designing, conducting, and then presenting their scholarly research. The purpose of this evaluation study was to examine students’ experience while participating in the internship. Pre-and post-surveys were used to collect data. The surveys focused on understanding reasons why students selected the program, what they hoped to receive from the internship and their experiences while in the internship. Additional questions centered on the students’ experience with the learning process. Preliminary results suggest the learning experience was enhanced when interns understood the expectations of faculty mentors, confirmed the feasibility of attending graduate school, and strengthened research skills.
Infusing Demographic-Specific Applications into a Digital Logic Adaptive Learning System

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Abstract  

This paper describes the development of a novel web-based adaptive learning system to improve student mastery of digital logic concepts while considering the demographics of the individual student. Adaptive learning is a pedagogical approach that dynamically alters the difficulty of content based on an ongoing assessment of the student’s capability. This technique is becoming more popular with the advancement of web-based learning solutions and increased student enrollment. Using this type of e-learning environment has the potential to address background deficiencies of students that lack the necessary prerequisite skills coming out of high school. This type of system also has the potential to challenge top performing students and free up instructor time during class for active learning exercises. This paper also presents the novel concept of broadening the impact of an adaptive learning system by tailoring the material to the demographics of the students. This can be as simple as the wording used in the problem or posing the problem as a relevant example of interest to a particular student group. This approach has the potential to enhance a student’s perception of the value of the content. This leads to increased content retention and improves student motivation to excel in the course. This paper will discuss the work being conducted at Montana State University in developing and deploying adaptive learning modules at a diverse set of universities to collect data on how different student groups use and are impacted by the materials.

Introduction

With the recent increase in college enrollments, instructors are struggling with how to effectively teach large introductory-level engineering courses. What makes this problem even more complex is that entering college freshman typically have a wide-range of background preparedness in science and math, which increasingly requires individual
instruction. In most cases, reducing the instructor-to-student ratio to solve this problem is impossible due to constrained university budgets. While supplementary instruction techniques such as tutoring, peer advising, and student success coordinators have shown promise, they still rely on human personnel. This limits their ability to effectively scale with the enrollments being seen nationwide in universities.

Using e-learning environments to supplement face-to-face instruction has received great interest of late due to the promise of a scalable, low-cost, method to personalize instruction and address background deficiencies of incoming freshman. An adaptive e-learning system is an exciting pedagogical tool that can provide individual instruction to students by dynamically altering the difficulty of content based on an ongoing assessment of the students’ capability. In its simplest form, an adaptive learning system is a bank of online quiz questions on a particular subject, each with an associated difficulty level. As students answer questions, the difficulty of the next question either increases or decreases based on the students’ response. In a more comprehensive form, supplemental instruction can be provided as students answer questions incorrectly. This provides individual instruction to address background deficiencies. Additionally, more thought-provoking material can be presented to students that consistently answer questions correctly. This provides a technique to challenge the top students and prevent boredom in the course. Individualized, computer-based, adaptive learning has been shown to be nearly as effective as a live instructor guiding the student through the material when implemented carefully [1,2]. Most course management systems (i.e., Desire2Learn, Moodle, Blackboard) support question banks that are dynamically assigned based on difficulty and continual student assessment. Additionally, textbook publishers are beginning to offer learning systems that can provide multi-media rich instruction materials based on student performance on assessment quizzes. Thus, the infrastructure to exploit adaptive learning systems for personalized instruction is becoming a reality.

One of the more exciting aspects of personalized adaptive learning systems is that additional knowledge about the material can be stressed beyond the technical theory. This allows the material to be put into context with a broader view of how it is used. This can be used to stress the application of the material, which has been shown to improve student understanding and increase interest in the subject. When students see how the material is relevant to their own lives, their motivation to study the material increases [3,4]. While stressing the application of the material has been a technique employed in STEM education for the past decade, the challenge is that the application stressed may not be relevant to every student in the class. An adaptive learning system provides the opportunity to have a broad range of application-based examples that can be dynamically used depending on questions posed about student interests. Furthermore, the type of examples used can stress characteristics about the content not typically addressed by existing quiz banks. Highlighting items such as how the material contributes to the overall public welfare of society, or how the field that uses this material serves others, can change the perception that a student may have about an entire profession. This is especially important when trying to increase diversity in a field such as engineering as it has been shown that women and first generation college students tend to choose careers that are more other-oriented [5]. While engineering is a field that certainly does
contribute to public welfare and help others, it is commonly not perceived as so. As such, adaptive learning has the potential to have a much broader impact on education and professional development than just technical training.

Motivation

In our work, we are developing a comprehensive, adaptive learning framework for digital logic content taught at the freshman and sophomore levels. Our unique contribution is that once the baseline system is created, we will augment it with learning content that provides applications of the material relevant to specific student demographics. It is our hypothesis that providing demographic-specific examples of the material will improve student understanding. One of the overarching goals of this work is to simultaneously increase the motivation of underrepresented minorities to persist in a STEM degree program. This will have a direct impact on the number of STEM degrees granted in the U.S. Increasing the number of STEM degrees has become a national priority over the past decade. Numerous reports by agencies such as the National Academy of Engineering [6] and The National Science Board [7] highlight how the U.S. is being outpaced in the production of engineering degrees relative to emerging countries. Part of the issue is retention. Indeed, only 60% of all students in the U.S. entering an engineering degree program are able to achieve graduation in 6 years [8] and at our university, Montana State, a similar pattern emerges with only 52% of engineering students able to achieve graduation in 6 years [9]. Furthermore, not all students are equally likely to pursue or persist in engineering. For example, in 2011, 83,000 engineering bachelor's degrees were awarded in the U.S.; however, only 18.4% of these degrees were awarded to women [10]. At MSU, again, a similar pattern emerges with only 14.2% of engineering degrees going to women [9]. Currently, women represent 50.8% of the U.S. population [11]; thus women are the largest underrepresented group in engineering. Broadening the participation of all students, especially women, will have the largest positive impact on the number of engineering degrees being produced in the U.S.

One of the most key predictors of persistence is a student’s experience of interest [12] as even highly competent students drop out of science and engineering majors citing “lack of interest” in the field [13]. One technique to increase interest is to use examples that the students are familiar with. This approach has shown great success in the Everyday Examples in Engineering (E³s) program [14,15], in which problems are simply posed using material that the student body is familiar with as opposed to classical examples that don’t relate to today’s students. This approach doesn’t change the content, or difficulty of the problem, it simply uses different examples that are more relevant to the students. As an example, consider the following example of how to calculate how long a battery will last.

<table>
<thead>
<tr>
<th>Concept</th>
<th>Problem Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC Power Consumption</td>
<td>A 9v battery is has a capacity of 500 mAh. If you are driving a circuit that consumes 20mW of power, how long will the battery last?</td>
</tr>
</tbody>
</table>
This problem is stated in the typical manner, but has little relevance to the student. A better way to pose the same problem is to use an application that the student is familiar with, such as a smart phone.

**Example 2. Calculating How Long a Battery Will Last (2)**

<table>
<thead>
<tr>
<th>Concept</th>
<th>DC Power Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem Statement</td>
<td>Your smart phone consumes 1W of power. Its rechargeable battery has a capacity of 1000 mAh. If you charge your phone overnight and then disconnect it at 8am when you go to class, at what time will you run out of power?</td>
</tr>
</tbody>
</table>

Posing the problem in this way uses an example that each student is familiar with. Furthermore, this example is relevant to the students since each of them as had their phone run out of power at some point. Wording of the problem can also be used to stress other aspects of engineering, such as its contribution to public welfare and how it helps others. Consider the following example.

**Example 3. Calculating How Long a Battery Will Last (3)**

<table>
<thead>
<tr>
<th>Concept</th>
<th>DC Power Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem Statement</td>
<td>A pacemaker consumes 1nW of power. Its battery has a capacity of 100mAh. How long will the pacemaker operate before it needs to be replaced?</td>
</tr>
</tbody>
</table>

This example may not be directly relevant to each student in the class, but it illustrates how the content can be presented as one that helps others and contributes to public welfare. This stresses the communal value of engineering, which has been shown to be an important factor in the motivation of underrepresented groups, particularly women, to persist to graduation.

Notice that each of these three examples ask questions about the same concept. The only difference is the application that is used. The practicality of simultaneously using different forms of the same content is made possible by an adaptive e-learning system and is the novel contribution of our work.

**Our Adaptive Learning System**

The adaptive learning course materials being developed at Montana State University are for a sequence of digital logic courses found in every accredited computer engineering program in the U.S. Since the materials are deployed most broadly in this project using the existing courses at MSU-Bozeman, the MSU course names and numbers are used to describe the content for the remainder of this paper. The two courses that are impacted by this project are EELE 261 – Introduction to Logic Circuits and EELE 367 – Logic Design [16].

The adaptive learning system being developed in our work fall into three primary categories: skill development tasks, formative assessment, and summative assessment. For the skill development tasks and formative assessment, four levels of competency are
defined: deficient, beginner, competent and advanced. Learning activities exist (both tasks and formative assessment) that correspond to these levels in order to facilitate the adaptive learning approach.

**Skill development tasks** are items that are assigned to the students in order to increase their level of understanding of a topic. Skill development tasks consist of reading assignments in HTML format and/or print textbook, instructional videos using the Camtasia Relay Screen Capture tool [17], working practice problems with solutions provided, and performing laboratory exercises. Videos and reading assignment tasks are used to develop cognitive skills. Practice problems are used to develop affective skills. Laboratory exercises are used to develop both affective and psychomotor skills. Each task corresponds to one of the four levels of competency defined above.

**Formative assessment** is accomplished using automatically scored quizzes within the course management system. For each level of competency, a statistically large number of quiz questions is created. When a student is assessed, the tools are pulled from the large pool in a randomized fashion. This addresses academic dishonesty, which is a significant concern for web-based courses. Quiz questions are created for each of the learning modules that assess multiple knowledge domains at each of the four levels of competency. Cognitive skills are assessed using auto-graded multiple choice questions. Affective skill assessment are measured using a combination of auto-graded multiple-choice questions, auto-graded circuit analysis questions with numerical entry fields and uploaded circuit design files. The automatically graded questions are implemented in a generic text-based file format, which can be imported into any course management system. The questions are developed based on widely accepted concept inventories for computer engineering courses [18-21].

**Summative assessment** is performed at the end of each learning module through an automatically graded exam administered in the course management system. Students are notified of their score on each module exam.

The adaptive learning algorithm is shown in the following flow chart. For each learning outcome, an initial set of tasks is assigned (e.g., videos, reading assignments, practice problems, lab exercise). These tasks represent the traditional items that are assigned in a course without adaptive learning. An initial assessment quiz is given to measure the level of student understanding. The performance on this assessment will determine the current level of understanding and put the student into one of the four levels of competency (e.g., deficient, beginner, competent and advanced). Students categorized as deficient are given a series of additional tasks to build their background information. An interim quiz will then be given to determine if they are ready to move into the beginner category. If they are, they then must complete a set of tasks at the beginner level. If they are not deemed ready, they are given additional deficient level tasks. This iterative process continues until the student passes the interim quiz and moves into the beginner category. The same process is used for students in the beginner category with the exception that the tasks are at the beginner level and the interim quiz assesses whether they are ready to move into the competent category. Students deemed...
competent by the initial quiz (or reaching competence by working through deficient and/or beginner level tasks) are qualified to take the module exam. Students may optionally choose to receive more training at the competent level. Students deemed advanced by the initial quiz (or reaching advanced by working through competence level tasks) will also be qualified to take the module exam or do optional training at the advanced level. This process provides inherent formative assessment and tracks the progression of each student as they learn the content matter. All interim quizzes used for formative assessment are ungraded and exist to dynamically adapt the difficulty of the material and track student progression. It is at the discretion of the instructor if the module exams count toward the students’ course grade.

Figure 1. Adaptive Learning Algorithm.

Current Project Status

During 2015, our team has developed all of the baseline (i.e., traditional) content for both courses covered in this work. This includes a new textbook, associated lecture videos, and over 600 quiz questions. During the fall semester of 2015, the material is being used to collect a baseline of student performance across all of the learning
outcomes being measured. In 2016, the material delivery will be changed to an adaptive learning format and outcome data will be collected. This will measure how effective the adaptive learning format is in improving mastery of the topics. In 2017, demographic-specific examples will be integrated into the system. The material is being used at Montana State University in 2015 and will be pushed out to three other colleges in Montana (MSU-Billings, Flathead Valley Community College, and Salish Kootenai Tribal College) to collect data on a more diverse population of students. Data is only collected on students who sign a voluntary consent form that allows their demographic information to be pulled from university records and correlated to their performance on the learning modules. All data is coded for anonymity.

Conclusion

This paper presented work underway at Montana State University on building an adaptive learning framework to facilitate mastery of digital logic concepts while simultaneously personalizing the instruction for the students based on their demographics. An overarching goal of this work is to increase diversity in engineering. Research has shown that underrepresented minorities, especially women and first generation college students tend to choose and persist in fields that have communal value (i.e., helping others and contributing to public welfare). The way in which the material is presented and the type of examples used have a direct impact on how important a student perceives the information. Thus in this work, we aim to present demographic-specific content and examples for each student that makes the material relevant to the individual.

Acknowledgements

The authors would like to thank the National Science Foundation for supporting this project. The preliminary work on this project was supported through the Course, Curriculum and Laboratory Improvement (CCLI) Program (Award # 0836961) under the Division of Undergraduate Education. The current deployment and effort is being supported through the Improving Undergraduate STEM education (IUSE) program (Award # 1432373), also under the Division of Undergraduate Education.

References


Developments of Motor Skills in 6 to 12 Years Old Girls with Visual Synchronization Task

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ABSTRACT
Visual synchronization tasks are difficult. We need intensive brain activity for completing visual synchronization tasks. Recently, we can measure the precise movement of a human with cheap and easy to use sensors. We proposed a method to estimate the smoothness of the visual synchronization task and implement the measuring system. Using the proposed method and the implemented measuring system, we measure the developments of motor skill of pupils in a primary school. This paper shows the results of the measurements and discusses the development of girls from 6 to 12 years-old.

Introduction

There are many motor tasks that measure the abilities of motor functions of a human. They are the Purdue pegboard task, a seal affixation task, a tray carrying task, and etc. [1] [2] [3]. These tasks estimate the ability of a motor function of a human with the results of the tasks. There is no observation of the process of the tasks.

There are also some synchronization tasks used to measure human abilities. For example, they are synchronization of finger taps with periodically flashing visual stimuli and
synchronization with an auditory metronome. In these tasks, the timing between the stimuli and the action is measured. There is no observation of the process of the tapping [4] [5] [6] [7] [8] [9] [10].

Recently, many cheap and easy measurement methods for the movements of a human body have been developed. For instance, some of these sensors are a Kinect sensor, and a Leap motion sensor [11] [12]. There are many applications that use those sensors for controlling computers. For instance, there are many video games that use those sensors for controlling an avatar in the games [13].

The human hands are the parts of a body that can make the most complex movements. This paper proposes the method that measures the precise movements of hands synchronizing the movements of hands on a display. The synchronization needs visual perception of the displayed hands’ images and precise control of the arm muscles. The process includes the perception of motion about a hands’ image presented on a display, the perception of motion about subject’s hands, motor recognition with muscular sensation, and recognition of processing delay in a subject’s brain.

We proposed the new synchronization task and the evaluation method. The resulting measure is very sensitive. With this measure, we can observe the developments of the motor function.

First, we discuss the new visual synchronization task with visual presentation. Then, non-smoothness measure is proposed. Next, this paper shows the non-smoothness measure experiments in a primary school in Japan. Then, we discuss the experimental results. And last, we conclude this work.

New visual synchronization task

Our new synchronization task requests subjects to synchronize the movements of both hands with the displayed movie. Of course, there many alternatives to hands. However, we make many hands’ movements without dangers. A hand is an organ that is able to make most complex movement in a human body. The performance evaluation system estimates the difference between the displayed hands’ movement and the measured hands’ movement of the subject.

The displayed movie shows the hands’ rotation. The angle of the rotation is controlled as a sine curve. A finger tapping task requests a subject to tap a finger synchronizing to an impulsive stimuli such as flash of a light or ticktack sound of a metronome, and measures the difference between the time of the stimuli and the time of tapping. Our proposed motor function performance evaluation system measures the movements of subject’s hands and evaluates the difference between the displayed hands’ movements and the hands’ movements of a subject.

To complete the visual synchronization task, a subject looks at the displayed hand, recognizes movements on the display, generates motions, feels and looks his hands’ movements, recognizes movements of his hands, and synchronizes two movements. The proposed visual synchronization task needs many kinds of brain activities. Figure 1 shows the relations among the elements included in the visual synchronization task.
On a trial, our visual synchronization task measures about 100 measurements of pairs of rotation angles of both hands. The finger tapping task measures one difference of time between the stimuli and the tapping. In a trial, the proposed visual synchronization task has 200 times measurements than the finger tapping task.

An infant aged 6 to 7 years old can rotate his hands quickly. To complete the proposed visual synchronization task, a subject must control the rotation angle as the displayed movie. This is more difficult than simple rotation of hands.

The angle of displayed hand’s rotation is controlled as a sine curve in a time series. As a result, the angles of rotations is described as (1).

$$A(t) = \sin(at + c) \times b$$ (1)

In (1), a is the parameter that defines the speed of rotations. In our experiments, a is set to $2\pi$. b defines the range of rotation angle. In our experiments, b is set to 90 degree. The function sin spans from -1 to +1. As a result, hands rotate 180 degree. c define the phase. In our experiments, c is set to $\pi/2$.

If a subject makes complete synchronization to the displayed movie, the resulting observed rotation angle of hands also shows same curve defined as (1).

**Non-Smoothness Measure**

We describe proposed non-smoothness measure as NSM. We define NSM depending on the definition of noise in signal theory. With the precisely controlled hands motions proposed on a display, we can define NSM clearly. The definition of NSM is (2).

$$NSM = \sum_{x=2}^{t/4} \frac{m_x}{m_1}$$ (2)

In (2), $t$ is the number of measurements in a cycle of rotation. $m_x$ is the absolute value of the x-th term of the result of Fourier transform. $m_1$ is the power of the lowest frequency. This represents a one cycle of a hand’s rotation. If the rotation of a hand follows the stimuli images precisely, the $m_1$ carries all powers of the hand’s rotation. Other terms carry no power. In the case, the NSM defined as (2) is 0.

In our experiments, we measure the rotation angle of hands at every 1/100 second. So, we have 100 measurements in a cycle of rotation. We calculate the NSMs at each hands. In a cycle, we have a pair of NSMs. In a trial, a subject make 25 times of hands’ rotations. A subject need some time to synchronize his hands’ rotations to the displayed movie. So, we ignore first 10
rotations. As a result, we have 15 pairs of NSMs at each trial. For evaluating the performance, we select the minimum of the average of continuous three NSMs. In the selected three NSMs, we select the minimum one for the session NSM. As a result, at each trial, we have two NSMs that represent the right and left hands. We implement the NSM measuring system [14].

**Experiments for measuring Non-Smoothness Measure**

At a primary school in Nikko, we measured NSM of all pupils at June/23/2015. Table 1 shows the number of pupils in the primary school. The school is small in Japanese standard. Pupils in Japanese primary schools are aged from 7 to 13 years old.

One session of the measurement needs 25 times of rotations of hands. Each rotation takes one second. The one session needs only 25 seconds. We made two sessions simultaneously. In an hour, we completed all measurements.

In the experiment, there are some failures. Most of failures are the special relation between subjects’ hands and the measuring sensors. The used sensor measures the position of hands and fingers precisely. However, there is a limitation about the special relation between the sensor and the measured hands. In the failure, we guide subjects to keep the proper position of hands.

<table>
<thead>
<tr>
<th>School Years</th>
<th>Female</th>
<th>Male</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>6</td>
<td>4</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>21</strong></td>
<td><strong>29</strong></td>
<td><strong>50</strong></td>
</tr>
</tbody>
</table>

**Distributions of Non-Smoothness Measures along ages**

We show the average of NSMs by school years in Table 2. Figure 1 and figure 2 show the distribution of NSMs with months from birth of boys and girls, respectively. Boys show a little
correlation between the months from birth and NSMs as in figure 1. Girls aged 6 to 13 years old show clear linear correlation between the month from birth and the NSMs as figure 2. The correlation is described as (3) in linear approximation.

\[ NSM = -0.0038M + 0.7363 \]  

(3)

In (3), NSM is the non-smoothness measure. \( M \) is months from birth. In the approximation, the \( R^2 \) is 0.4895. In other experiments, we have about 0.35 of NSM for adult peoples. However, our adult data mainly includes male. Gender difference about the development of motor control function.

From (3), we can estimate the standard developmental age from NSM as (4) for the girls aged 7 to 12 years old.

\[ M = 193.8 - 263.2NSM \]  

(4)

In (4), \( NSM \) is a measured NSM. \( M \) is the estimated standard developmental age by months from birth. A normal female pupil shows 0.047 decrease of NSM at each year.

<table>
<thead>
<tr>
<th>School Years</th>
<th>F</th>
<th>M</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.504</td>
<td>0.593</td>
<td>0.558</td>
</tr>
<tr>
<td>2</td>
<td>0.535</td>
<td>0.511</td>
<td>0.519</td>
</tr>
<tr>
<td>3</td>
<td>0.399</td>
<td>0.330</td>
<td>0.358</td>
</tr>
<tr>
<td>4</td>
<td>0.270</td>
<td>0.329</td>
<td>0.292</td>
</tr>
<tr>
<td>5</td>
<td>0.279</td>
<td>0.531</td>
<td>0.423</td>
</tr>
<tr>
<td>6</td>
<td>0.303</td>
<td>0.362</td>
<td>0.343</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>0.364</strong></td>
<td><strong>0.450</strong></td>
<td><strong>0.413</strong></td>
</tr>
</tbody>
</table>
Conclusion

Our new visual synchronization task and non-smoothness measure help to observe the development of motor skill of pupils in a primary schools. The visual synchronization task is easy to perform and safe. In normal primary schools, it is easy to measure the NSMs of all pupils. The measured NSM is objective and well defined measure that represents the development of motor skill.

The proposed small experiments shows the standard development of motor skill of girls in a primary school. For estimating standard developmental age of motor skill of boys, we need much more experiments. Our next step is collecting much more measurement results.

Acknowledgment

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References


Motor Skill Estimation System with Precise Motor Measurements of Visual Synchronization Task of Hands

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ABSTRACT

Recently, we can measure the precise movement of a human with cheap and easy to use sensors. We propose a method to estimate the motor skill of a human. This paper proposes the motor skill estimation method with precise motor measurements of visual synchronization task of both hands. The task needs only 30 seconds. First, this paper proposes a visual synchronization task. Then, we show the motion measuring method about the visual synchronization task. Next, we discuss about non-smoothness measure. Then, we show our implementation. Next, experimental results are proposed. And last, we conclude our work.

Introduction

There are many motor tasks that measure the abilities of motor functions of a human. They are the Purdue pegboard task, a seal affixation task, a tray carrying task, and etc. [1] [2] [3]. These tasks estimate the ability of a motor function of a human with the results of the tasks. There is no observation of the process of the tasks.

There are also some synchronization tasks used to measure human motor functions. For example, they are synchronization of finger taps with periodically flashing visual stimuli and synchronization with an auditory metronome. In these tasks, the timing between the stimuli and the tapping is measured. There is no observation of the process of the tapping [4] [5] [6] [7] [8] [9] [10].

Recently, many cheap and easy measurement methods for the movements of a human body have been developed. For instance, some of these sensors are Kinect sensor, and Leap motion...
sensor [11] [12]. There are many applications that use those sensors for controlling computers. For instance, there are many video games that use those sensors for controlling an avatar in the games [13].

The human hands are the parts of a body that can make the most complex movements. This paper proposes the method that measures the precise movements of hands synchronizing the movements of hands on a display. The synchronization needs visual perception of the displayed hands’ images and precise control of the arm muscles.

We proposed the new synchronization task and the evaluation method. The resulting measure is very sensitive. With this measure, we can observe the developments of the motor function.

This paper proposes the motor skill estimation method with precise motor measurements of visual synchronization task of both hands. The task needs only 30 seconds. First, this paper proposes a visual synchronization task. Then, we show the motion measuring method about the visual synchronization task. Next, we discuss about non-smoothness measure. Then, we show our implementation. Next, experimental results are proposed. And last, we conclude our work.

**New visual synchronization task**

Our new visual synchronization task is synchronization to a proposed movie on a display. The synchronization task requests subjects to synchronize their both hands with the displayed movie. The displayed movie shows the rotations of both hands. In the movie, the rotation angle is precisely controlled as a sine curve. Figure 1 shows the sequence of frames that present an internal rotation of hands. One cycle of hands’ rotation include the internal rotation as in figure 1 and an external rotation.

One session of a new visual synchronization task include 25 rotation cycles of hands. A subject must try to synchronize his hands’ motion to the displayed hands’ movie.
Non-smoothness Measure

In the visual synchronization task, we have 25 cycles of hands’ rotations. A subject cannot synchronize his hands motion to the displayed hands instantaneously. We only use last 15 rotation cycles to evaluate the motor function.

At each rotation cycle, we have a sequence of hands’ directions. We transform the sequence of hand’s directions into frequency domain with Fourier transform.
In frequency domain, the lowest frequency is the constant. The second lowest frequency is the wave that repeats one cycle in the rotation cycle. This wave is same as the wave described by the displayed image.

We describe proposed non-smoothness measure as NSM. We define NSM depending on the definition of noise in signal theory. With the precisely controlled hands motions proposed on a display, we can define NSM clearly. The definition of NSM is (1).

\[
NSM = \sum_{x=2}^{t/4} \frac{m_x}{m_1}
\]  

In (1), \(t\) is the number of terms. \(m_x\) is the absolute value of the \(x\)-th term of the result of Fourier transform of one cycle of hand’s rotation. \(m_1\) is the power of the lowest frequency wave. This represents a one cycle of a hand’s rotation. The wave corresponding \(m_1\) is the wave presented on a display. If the rotation of a hand follows the stimuli images precisely, the \(m_1\) carries all powers of the hand’s rotation. Other terms carry no power. In the case, the NSM defined as (1) is 0. If the rotation of subject’s hand differs from the displayed rotation of hands, \(m_x\) other than \(m_1\) increases. As a result, NSM defined as equation (1) increases.

Non-smoothness measuring system

The proposed non-smoothness measuring system for the visual synchronization task has two main parts. One is the part that proposes the movie of precisely defined hands’ motion. The other part measures the hands’ rotations. We need to propose the movie with precise timing.

Figure 2 shows the relation between the stimuli presentation part and the rotation measuring part. The stimuli presentation part records the presentation timings. The rotation measuring part records the pose of hands with time.

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Figure 2. Outline of the visual synchronization task generation and measuring system.
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We implement the visual synchronization task generation and measuring system using Python and pyglet [14] [15]. To measure the poses of hands, we used Leap-motion sensor [12]. Using Leap-motion sensor, we have one measurement of hands’ poses at every 1/100 second. At each cycle of hands’ rotation, we have 100 measurements of ands’ poses.

The movie presentation part and the pose measurement part must move simultaneously. Our implementation has two processes. One process works for presenting stimuli images. Another process works for measuring the poses of hands. With this multi-processing implementation, we can have precise stimuli presentation and precise measurement of hands’ poses.
Non-smoothness measure calculation

We have the precise presentation timings and the pairs of time and rotation angle. At each cycle of rotation, we make FFT (Fast Fourier Transform), and calculate NSM as (1). Our system proposes 25 times of hands’ rotations. One rotation takes one second. As a result, one measurement needs 25 seconds. In 25 rotations, we have 25 pairs of NSMs. A subject need about ten seconds to synchronize his hands’ movement to the displayed movie. So, we ignore first ten pairs of NSMs. As a result, we have 15 pairs of NSMs at each session. In a rotation cycle, the rotation of a hand may synchronize the rotation displayed by chance. For a session, we select the minimum of the average of continuous three NSMs as the best performance in the session. We define the session NSM as the minimum of the continuous three NSMs. Figure 3 shows the session NSM calculation process.

![Diagram of Session NSM calculation process](image.png)

Figure 3. Session NSM calculation.
Experiments

For testing the implemented NSM measuring system, we measured the adult peoples. Table I shows the results. In the column of ‘Subject’, the number is an age, and M/F shows male or female. The average of the session NSMs is 0.35 and the normal distribution is 0.1.

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**Conclusion**

The pair of the new visual synchronization task and the proposed NSM measuring system enables to measure the motor skill in a minute. This shortness of task help us to use this measuring system in many applications. The proposed system enables to measure the development of motor skill in objective manner.

We only use the NSM for measuring the performance of motor function. The sequence of NSM at each rotation cycle carries much more information about the personal type.

**ACKNOWLEDGEMENTS**

This work is supported with JSPS25330405.

**References**


“Understanding and recognising anxiety in young people: the role educators can play in minimising anxiety in the classroom and thus promoting learning and wellbeing.”

b) Topic Area: Teacher Education

c) Presentation Format: Paper Session

d) Description of presentation:
Mental health issues, such as anxiety, affect 1 in 4 young people. It is imperative that educators focus on ways to help to reduce stress and anxiety in the classroom and the school setting.

This paper will focus on practical, evidence based strategies to help teachers reduce the anxiety levels of the students in the classroom and thereby enhance the learning experience and their wellbeing.

e) Presenter/ Paper author:
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2. Abstract:

“Understanding and recognising anxiety in young people: the role educators can play in minimising anxiety in the classroom and thus promoting learning and wellbeing.”

Anxiety is the most prevalent mental health problem in children and teenagers in Australia today (beyondblue 2015). It is vital that educators understand the impact anxiety has on young people and that they establish strategies that can assist in minimising these often debilitating effects on children.

Through understanding anxiety and the symptoms and triggers that exist in the classroom, educators can gain insight into how anxiety, even at low levels, can affect learning and can interfere in the social, academic and emotional functioning of children and thereby affect the learning experience and wellbeing.

This presentation will focus on establishing an understanding of anxiety and developing practical teaching and learning strategies that can become part of each teacher’s daily pedagogy. These strategies will aim to help students develop a calm mind, a growth mindset to minimise anxiety, maximise performance and enhance wellbeing.

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Proceedings Submission ID 505: 14th Annual Hawaii Int’l Conference on Education

1. Title of the submission:
   A Team-Based Project for Freshman Engineers and Pre-Service Elementary Teachers

2. Names of the authors:
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   Kathleen A. Fadigan

3. Affiliation of the authors:
   Penn State University, Abington College

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   “Kathy Fadigan”< kxf24@psu.edu>

6. Abstract:
   Connecting classroom learning to real-life situations is a critical part of education. This presentation highlights a unique collaboration between freshmen engineering majors, pre-service early childhood education majors, and preschool students. During this multi-week project, teams of engineering students complete a design unit that results in the creation of cardboard, playhouse modules that upon completion are donated to local early childhood education centers. This team-based project is one of several projects created for an end-of-semester freshman engineering design course. The intent of this project is to encourage freshmen engineering students to learn to collaborate, to address the requirements set by a client, and to value the expertise of a consultant.

   Each fall since 2012, two sections of introduction to engineering design (EDSGN 100) have had the good fortune of being able to tap into the knowledge and classroom experience of pre-service elementary teachers and their professor. These sophomore education majors form teams and come prepared to present a broad range of criteria for the budding engineers to consider in formulating their designs. For example, the pre-service elementary teachers caution the engineers to avoid incorporating sharp edges and toxic paints into their designs.

   All total, the elementary education majors meet and interact with the engineers 2-3 times during the 15-week semester. The actual cardboard, playhouse modules are due during the week of final exams. The week prior, the 14th week of the semester, the pre-service teachers are invited back to the EDSGN 100 class to inspect each playhouse module and provide feedback in the form of advice, ideas, and changes needed to assure a safe, quality product (playhouse module) that will be sure to pique the interest (and attention) of their pint-size clients.
MOOC as a Recruitment Tool: A Practical Approach to Marketing for New Graduate Students

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Introduction

A MOOC (Massive Open Online Course) can be defined as a free, online course that is open to the public and has no limitation placed on participants. It is widely accepted that MOOCs have been around since 2008 and have much potential to deliver education on a global scale (Liyanagunawardena, Adams & Williams, 2013). MOOCs, in general, do not discriminate participation as they are geared for anyone interested in learning the topic of the course. TOOCs, on the other hand, are targeted open, online courses that provide free course credit to students at institutions of higher learning (Baker & Gentry, 2014). This paper will discuss the background and need for such a course at a regional university, the approach this university took in deploying the course, and the results of the course.

Background and Need

A&M-Texarkana has a presence in northeast Texas, southwest Arkansas, northwest Louisiana, and southeast Oklahoma. As a comprehensive university, A&M-Texarkana offers 17 undergraduate programs and 12 graduate programs. The region is largely rural, and the university attracts a large population of first generation college students. The enrollment at the university hovers around 1800 with a goal of becoming a regional institution that serves approximately 2500; consequently, much of administration’s focus is on ways to attract students. When university faculty and administration considered offering this MOOC, public school teachers in the service area in Texas and teachers in the Texarkana, Arkansas district (TASD) were targeted. There were several key benefits related to providing this MOOC to this population in the summer, 2015:

- Regional school personnel would benefit from meaningful educational experiences related to new and emerging technologies in education;
- Area teachers would receive professional development opportunities for local, public school educators;
- University personnel would benefit from in the following ways:
  o an increase in potential students in the instructional technology program (as well as other programs);
  o an increased awareness of graduate programs;
  o an established reputation for providing quality professional development to local school districts.
In Texas, the state is zoned into service areas, and, within each region, school districts contribute to a centralized service center that provides professional development support for the paying districts within the region. Region VIII Education Service Center serves 48 independent school districts/consolidated independent school districts throughout northeast Texas (AskTed, 2015); A&M-Texarkana is situated within the Region VIII territory. Within the 48 school districts in Region VIII, there are 176 individual schools (AskTed, 2015). The Texarkana, Arkansas, school district, which is considerably smaller than Region VIII in Texas, is also considered as part of the service area of Texas A&M University-Texarkana. TASD currently has 10 schools in its district (Texarkana Arkansas School District, 2015) with over 800 faculty/staff (TASD: Human Resources, 2015). Through an analysis of the technology capabilities and needs within these two target areas—Region VIII and TASD—program faculty determined that individuals within these 186 schools possessed varying skill levels and had a variety of needs. In order to serve each teacher in their individual locations and their knowledge of technology, the following course description was developed:

This course has been designed to address emerging trends, problems and solutions, and technologies and technology applications facing K12. This course will be germane to professionals who serve in a variety of roles in K12 institutions. This course explores innovative ways of utilizing technologies to facilitate learning and to improve the way we teach. Topics include social learning theory/social constructivist learning, flipped classrooms, digital text books, video content, BYOD, virtual schools, social media, student engagement, and problem based learning.

**Barriers to the MOOC Delivery**

The faculty member associated with this project had to overcome several barriers in order to provide the MOOC. Specifically, those barriers included buy-in from administration, communication between the learning management systems, and marketing of the product. First, buy-in from administration presented challenges. To provide content for “free” would mean a loss of valuable revenue to the university. Further, how could the faculty member insure that adequate rigor was maintained for those who wanted the college credit while, simultaneously, keeping the information relevant and interesting enough to encourage participants to complete the course? Finally, how could the university justify paying a faculty member for a “free” course that could potentially generate little or no income for the university? A second challenge involved communication between the learning management system, Blackboard, and the student management system, Banner which is reserved for enrolled students. It
was determined that the MOOC would be delivered through the Canvas learning management system, Instructure (canvas.instructure.com). Third, because of the quick turnaround—once the MOOC was approved—marketing and recruitment of the content had to be completed quickly.

Advertising, Recruitment, and Populations

It was decided early in the MOOC development cycle that our audience would be public school teachers in Region VIII of Texas as well as teachers in Texarkana, Arkansas (TASD). An email was sent to school administrators with a request that the included invitation be forwarded to teachers and paraprofessionals who might benefit from the content. The email provided a description of the course and the information about applying this course toward a future graduate degree. A link to sign up to the course was provided in the email. Figure 1 below is the flyer that accompanied the email.

Figure 1. Flyer Describing the MOOC
The email was sent out approximately three to four weeks before the course began. The original cap of 150 students was optimistic; ultimately, 49 teachers (students) signed up for the course. Although the enrollment fell short of the goal, the 49 participants represented potential students for the university. The students, who were all certified teachers, varied in the year in which they were certified; the earliest being 1974, and the most recent in 2014. Figure 2 shows a scatterplot of the years each teacher reported being certified in. Teaching subject matter and grade level were also widely distributed amongst the students that signed up for the course.

Figure 2. A Scatterplot of Participants’ Year of Certification

MOOC Outcomes

Overall, students reported high levels of satisfaction with the design and delivery of the TOOC/MOOC. Students were asked to submit a course reflection paper at the end of the course. The following bulleted list indicates the most widely recurring examples of likes/dislikes in the course:
• Discussion board/collaborations were greatly enriched because of the variety of grade levels and subject matters taught by the teachers;
• Course participants, when asked about their favorite course assignments, found that two particular modules stood out: The Creation of APPs and BYOD;
• Many would have preferred to have met at least once in a face-to-face environment;
• Students developed bonds with each other through the MOOC and indicated intentions to stay in contact with each other.

From an administrative standpoint, the TOOC/MOOC was considered a success. Forty-nine students signed up to take the course. Of that number, 30 or 61% were completers. Among the completers, 28 or 93% demonstrated success by receiving a C or better as a final grade. Among the 28 students that received a C or greater, 7 students signed up to graduate programs or indicated that they planned to sign up. From the university’s perspective, 14% of those who participated received benefit from the opportunity and became graduate students.

**Future Implications and Conclusions**

There is no doubt that the delivery of higher education has evolved greatly over the last few decades. Wagner (2008) explains that students need seven “survival skills”: critical thinking and problem solving, collaboration and leadership, agility and adaptability, initiative and entrepreneurialism; effective oral and written communications, accessing and analyzing information, and curiosity and imagination. Survival skills such as these along with the continued improvements of learning management systems have driven universities to be creative in their marketing attempts, course/program deliveries, and overall student interactions in order to thrive and not simply survive. Whether a course is offered face to face, hybrid, asynchronous online, synchronous online, or another combination, students must be engaged and challenged in their courses but need to be allowed flexibilities in learning. As educators, we must educate these learners in innovative ways that will ensure their success.

Because of the success of this experiment, the MOOC will likely be delivered again with several modifications. Specifically, four lessons learned from this first effort include the following:

• Outline who is eligible to receive credit for the MOOC. Several individuals who participated in the MOOC were existing students in the Instructional Technology program. As a result, the university personnel had to make programmatic decisions as they occurred.
• Develop a strategic marketing plan. By the time the MOOC was developed, discussed and approved, little time remained for marketing. For the next round, a strategic approach to marketing with enough time to recruit additional participants will be included.

• Consider restructuring content of the MOOC to serve audiences outside of PK-12 education. Clearly, technology inculcates every aspect of today’s life. With a focus on practical application of the technology, the potential to attract other potential students is possible.

• Offer the course as a faculty overload. Because the idea was presented by a faculty member, the administration approved the MOOC to count as one of the two courses for a summer load which proved to be a costly endeavor. For the university to demonstrate a profit in the endeavor, future consideration will be given to pay the faculty member as an overload or to offer the course by an adjunct.

The lessons learned in the development, delivery, and marketing of the TOOC will serve invaluable in the deployment of Texas A&M University-Texarkana’s next iteration: TOOC 2.0.
References


Title: Co-Teaching as a Method to Benefit English Language Learners

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Abstract:
This literature review investigated co-teaching methods that may benefit English Language Learners (ELLs). Studies indicate that co-teaching strategies utilized in the content classroom have a positive impact on both ELL students and teachers. Research demonstrates positive learning gains for students in an inclusive setting for all learners. This paper will focus on employing research-based teaching strategies for implementing, such as, the one teach, one assist method, parallel teaching, and collaboratively developing lessons.
Co-Teaching as a Method to Benefit English Language Learners

English Language Learners (ELLs) are the fastest growing preK-12 student group in the United States, growing 64% from 1994 to 2010 (National Clearinghouse for English Language Acquisition, 2011). As of 2010, out of nearly 50 million students in the U.S., 5.2 million (10%) were identified as ELL students. There is an increased need to assist the growing ELL population in today’s classrooms, as data show that the academic needs are not being met. For instance, on statewide assessments across the country, the percentage of ELL students who achieve proficiency is 20 to 30 percentage points lower than among their non-ELL peers (Abedi & Dietel, 2004; Hemphill & Vanneman, 2011). ELL students have the challenge of learning grade-level content and a new language all at the same time. Traditionally, the two tasks are separated; but Echevarria, Short, and Powers (2006) found that combining the two has assisted students in learning English without losing subject area content, so one potential method to help students is co-teaching. The purpose of this research is to investigate co-teaching methods that may benefit ELL students.

Co-teaching is defined as “two or more professionals delivering substantive instruction to a diverse blended group of students in a single physical space” (Cook & Friend, 1995, p. 14). Co-teaching appeared in the literature in the early 1990s as a way to better address the needs of special education students. There are several different models of co-teaching that were developed by St. Cloud University researchers focusing on the student teaching experience (St. Cloud State University, 2014). The seven strategies or models described below can be used in a variety of classroom situations to assist students of diverse learning backgrounds better.

1. **One Teach, One Observe:** One teacher has primary instructional responsibility while the other gathers specific observational information on students or the (instructing) teacher.
2. **One Teach, One Assist:** One teacher has primary instructional responsibility while the other assists students with their work, monitors behaviors, or corrects assignments.

3. **Station Teaching:** The co-teaching pair divides the instructional content into parts; each teacher instructs one of the groups, and groups then rotate or spend a designated amount of time at each station.

4. **Parallel Teaching:** Each teacher instructs half the students. The two teachers are addressing the same instructional material and presenting the material using the same teaching strategies.

5. **Supplemental Teaching:** Allows one teacher to work with students at their expected grade level, while the other teacher works with those students who need the information and/or materials re-taught, extended, or remediated.

6. **Alternative or Differentiated Teaching:** Each teacher provides two different approaches to teaching the same information. The learning outcome is the same for all students; however, the avenue for getting there is different.

7. **Team Teaching:** Incorporates well planned, team taught lessons, exhibiting an invisible flow of instruction with no prescribed division of authority. Both teachers are actively involved in the lesson.

Co-teaching is an ongoing process that forces teachers to communicate more intimately with each other and with their students. Different co-teaching methods can require different levels of planning (Cook, 2004).

**Benefits of Co-Teaching**

Several researchers have demonstrated the benefits of co-teaching for students. In a study conducted by Almon and Feng (2012) in an urban elementary school, co-teaching in the
fourth grade classroom had a more positive effect than solo teaching, as measured by student math achievement. The study analyzed the performance of two fourth grade classrooms, one with co-teaching instruction and the other with solo teaching instruction. Students increased their time on task engagement during co-taught lessons versus solo-taught lessons. In addition, St. Cloud University (2014) highlights several examples of the positive effects co-teaching has on students. For instance, these include: a reduction in the student/teacher ratio, an increase in instructional options for all students, an increase in diversity of instructional styles, and greater student engagement and student participation levels. Further, co-teaching models also appear to exhibit success when conducted with student teachers (Merk, Waggoner, & Carroll, 2013).

Much research has demonstrated that co-teaching benefits students. For instance, research done by Walsh (2012) shows that co-teaching can be considered a high-leverage strategy capable of accelerating achievement to close the achievement gaps in reading and mathematics. The study emphasizes that students demonstrate more growth and increased academic performance when teachers are well trained in implementing co-teaching methods and well supported by the school administration.

As schools prepare to implement a co-teaching model and make selections for successful strategies, it would be helpful to know which co-teaching strategies work better than others in an inclusive classroom. However, sufficient research has not been conducted on the specific use and most effective co-teaching methods. It appears that the lack of data is due to the fact that co-teaching is not conducive to large-scale, standardized research (Hanover Research Report, 2012). Also, there is too much variance in the definitions of co-teaching and typically classes are not similar enough to provide meaningful comparative data. However, one study highlighted in the Hanover Research Report (2012) stated that a team of teachers faced with specific behavioral
challenges alternately used parallel teaching, alternative teaching, station teaching, and team teaching. The co-teaching team has to decide when to utilize each strategy. Methods may be implemented independently or in combination, however the most prevalent form of co-teaching in schools is One Teach, One Assist.

**Co-Teaching to Benefit ELL Students**

Only recently has the notion of co-teaching to benefit English Language Learner (ELL) students become more prominent, with early research demonstrating positive learning gains for students. Honigsfeld and Dove (2008) conclude that co-teaching with an English as a Second Language (ESL) teacher a) becomes an effective support for inclusive practices to accommodate the needs of diverse ELL students; b) helps all students meet national, state, and local standards; and c) establishes a vehicle for creative collaboration between ESL and mainstream teachers.

A collaborative approach has worked for St. Paul Public Schools in their work with immigrant populations including Somali, Hmong, and Latinos. Their instructional methods have narrowed the academic achievement gap (Pardini, 2006). For example, Pardini shares how an ELL teacher in St. Paul teaches alongside the mainstream teacher, working with ELL students during a fractions lesson. During the lesson, the ELL teacher uses the One Teach, One Assist method to ensure the correct use of the word “whole” vs. “hole” by reinforcing the fractions concept and giving language support. In this example, ELL teachers work with one or two grade levels in two to five classrooms a day. St. Paul Public Schools can serve as a model for other schools implementing co-teaching in the ELL classroom.

There are many benefits to using a co-teaching model with ELL students. Co-taught lessons are inclusive and offer more support for diverse ELL students. Students are able to stay
in the content classroom and not be “pulled out” for remedial ELL programming. ELL students are also able to interact more with their English-speaking peers.

Research shows that collaborative teaching can provide more support for students. For example, a three-year study in an urban elementary school supports the idea of implementing more collaborative teaching in the classroom with heterogeneous groups of students (York-Barr, Ghere, & Sommerness, 2007). The collaboration models utilized were slightly different by grade level for first and second grade. In first grade, the 90-minute literacy block allowed for the teachers to parallel teach a jointly developed lesson and to switch groups every other day. Later during the block, another ESL teacher arrived, and the special education teacher joined to facilitate four guided readings groups.

In second grade, teachers assigned different models of instruction each day, consisting of whole class instruction, reading level groups, and partnered reading with higher and lower proficiency paired readers. Teachers made decisions on model selection depending on what the lesson called for each day.

At the end of year 1 of the study, teachers had positive responses about the fostered professional support they felt because of the collaboration and combined classroom instruction. Some of the responses included: more flexible and creative use of instructional time, greater shared ownership of students and student learning, increased reflection on individual and collective teaching practices, increased collective expertise resulting in greater effectiveness with a variety of students, decreased teacher isolation and feeling valued by colleagues, and having more energy and greater enjoyment from teaching (York-Barr, Ghere, & Sommerness, 2007).
At the end of year 2 the positive responses about the experience continued. Overall, teachers were supportive of co-teaching and appreciated the growth they saw in the students. Even though the advantages of co-teaching outweighed the disadvantages, there were still some challenges during the process. Teachers stated that they did not appreciate the loss of instructional decision-making autonomy, role shifts and confusion about how to share instructional time (i.e., who leads, who follows, how to co-teach), feelings of insecurity because teaching became public, and differing philosophies (i.e., the term often used to describe differences between teachers related to orientations or beliefs about instruction and professional practice) (York-Barr, Ghere & Sommerness, 2007).

Ultimately, the co-teaching experience was a successful endeavor for the teachers involved. Five key factors attributed to the success. First, teachers were interested in a more inclusive approach to educating ELL students. Second, there was administrative support with the addition of extra staff resources and more time allotted for collaborative planning. Third, more individualized student attention is possible by using the collaborative instructional models. Co-teaching allows for much needed small group instruction (York-Barr, Ghere, & Sommerness, 2007). Teachers emphasized that much of the student learning transpired when teachers taught side-by-side. Fourth, collaborative planning is considered the most essential element for program success. Administrators adjusted schedules for teachers to have simultaneous planning time within classroom teams. Fifth, the teachers appreciated the flexibility to create multiple and varied instructional models as a classroom team. These factors illustrate the benefits of using co-teaching models of instruction, especially in a classroom with ELL students.

Hendrickson (2011) found that 72% of teachers felt their co-teaching experience had been successful that year. Similar results are true in the York-Barr, Ghere and Sommerness
(2007) study. At the end of Year 1 the outcomes were viewed to be very positive for teachers and students. At the end of Year 2 one teacher boasted, “I can’t believe that team teaching was something I was kind of fighting. Now…I am willing to fight to keep it together.” All teachers preferred the co-teaching model to the previously used ESL pull-out model (Pappamihiel, 2012).

Additionally, the study (York-Barr, Ghere & Sommerness, 2007) highlighted how students also benefited greatly from the use of collaborative teaching models. Student changes included: viewing all adults as their teachers, learning from different teaching styles, feeling more included and less scared, experiencing a sense of community and more friendships between ELL and non-ELL students, being more engaged in instructional and social situations, improved behavior, and increased student achievement in both reading and math as indicated by classroom assessments and standardized tests. Research therefore suggests clear benefits for both teachers and students when collaborative teaching models are implemented in classrooms.

**Recommendations for Implementing a Co-Teaching Model**

York-Barr, Ghere and Sommerness (2007), make various suggestions to administrators and schools interested in implementing a model for co-teaching in the ELL classroom. Below are strategies to consider:

1. Provide professional and contextual knowledge that supports instructional collaboration;
2. Strategically allocate instructional personnel;
3. Take a whole-school inventory of instructional resources;
4. Assign specific instructional personnel to teams that support specific groups of students;
5. Create a schedule to maximize instructional support at high-needs times;
6. Provide ongoing opportunities for collaborative learning and development;
7. Build in regular time for collaboration;
8. Actively support co-teaching;
9. Embed ongoing student assessment;
10. Intentionally design flexible student groups;
11. Commit to individual and team development.

Further, teachers should implement more than one co-teaching model even in the same lesson (Hendrickson, 2011). If focused on the students’ needs, co-teaching may look different every day. It is also suggested that teachers co-plan at least 45 minutes per week. This can be done by meeting after-school to plan, having a substitute teacher take the class for two hours per month, or schedule planning time appropriately to allow the ESL teacher time with the mainstream teachers. One of the most important factors of a successful co-teaching model is that team members have a significant amount of time to build positive working relationships (Merk, Waggoner, & Carroll, 2013).

Other recommendations suggest more staff input in the co-teaching pairing. One way to do this is by having teachers fill out surveys as to with whom they would like to co-teach (Hendrickson, 2011). Teachers also stated that they would like to have more co-teaching training at different times of the school year. They would also like to see more modeling of good co-teaching.

**Conclusion**

Murawski (2005) states that for true co-teaching to occur, both professionals must “co-plan, co-instruct, and co-assess a diverse group of students in the same general education classroom” (p. 10). In order for this to happen, co-teachers must use best practice strategies before, during, and after co-teaching. Ultimately, planning time surfaces as the most important part of the puzzle for successful co-teaching. Sometimes little time is needed for co-teachers to
plan together. For a veteran teacher team, only about 10 minutes per week to plan may be sufficient (Dieker, 2001). Co-teaching may seem scary and overwhelming at first to develop and implement, but in the end co-teachers and students confirm that the collaborative teaching method is more successful than the traditional “pull out” method for meeting the needs of ELL students.
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Mapping the Intersections between Language and Content Needs for ELLs Using Teacher Preparation Standards as the Roadmap

**Topic Area.** Teacher Education

**Presentation format.** Paper Session

**Description.** This paper describes a collaborative research project designed to support faculty as they infuse strategies for teaching English Language Learners into STEM methods courses at a large teachers college. In our session, presenters will demonstrate the lesson design process for an elementary education science methods class, and they will lead participants through the process of integrating and teaching standards for language within the content methods classroom.

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Abstract

This paper presents findings emerging from a large-scale, grant-funded initiative aimed at better preparing teacher candidates to work with students classified as English Language Learners (ELLs). The purpose of the present study was to document a single-case of the course enhancement process in the undergraduate elementary education teacher preparation program. Leveraging an instructional congruence framework (Lee & Fradd, 1998), the course enhancement process is a collaborative effort between Bilingual Education and Science Education faculty as well as ELL instructional coaches. Together we collected data on the alignment between language development constructs written into national teaching standards (InTASC), national language standards (TESOL), and the syllabi for science methods courses in one of the nation’s largest teacher preparation programs. We then identified opportunities to refine science methods course so that teacher candidates could learn strategies for teaching academic language alongside strategies for teaching content. By using both InTASC and TESOL standards to guide the specific elements that should be included in STEM methods courses, we are a step closer to ensuring that all teachers are prepared to meet the academic and linguistic needs of ELLs. This paper advances scholarship that is inclusive of collaborations across disciplines within a school of education in order remedy deficiencies in teacher preparation toward creating classes of pre-service teachers whose skill set is representative of the students they intend to serve.

Introduction

The Mary Lou Fulton Teachers College (MLFTC) at Arizona State University is one of the largest teacher preparation programs in the country and is the largest preparation program in the state, graduating approximately 1,500 new teachers each year. MLFTC is positioned in a state where ELLs are among those with the lowest achievement outcomes (CDF, 2013; U.S.
Department of Education, 2014). Therefore, MLFTC has the opportunity to address the considerable challenges associated with education for English language learners (ELLs), and, in doing so, to become a model for other teacher preparation programs which are not adequately meeting the needs of ELLs. This population of students comprise a significant portion, an estimated 4.4 million students or 9.2%, of the public school population (U.S. Department of Education, 2015).

In Arizona, students who are identified as ELLs are removed from most content classes for four hours a day during each school day to receive English language instruction. One unfortunate consequence is that ELLs students having restricted access to the general curriculum, including science. Many ELLs do not enter schools in Arizona until their adolescent years and because they are removed from core content instruction, to receive second language instruction, they have limited access to learning rigorous content. Therefore, ELLs in Arizona often struggle to acquire math and science content knowledge due to a lack of access, not necessarily due to their English proficiency. In addition, it is important to address the issues of varying definitions of English proficiency, both in Arizona and across the Nation (Linquanti & Cook, 2013), with proficiency criteria often tied to communication ability rather than the ability to use language for learning. This can create a situation in which teachers create lessons to enable development of content (e.g., science, math) not realizing that these lessons also need to include opportunities for use of academic language.

In an attempt to meet the needs of Arizona’s ELLs, and with the generous support of a recently awarded Teacher Quality Partnership grant from the U.S. Department of Education, MLFTC is seeking to address the academic and linguistic needs of ELLs. The four main goals that MLFTC seeks to meet include the following: (1) reform PreK-8th grade teacher preparation to address the need for highly qualified general and special education teachers for ELLs; (2) redesign math and science methods courses to include instructional strategies that promote language and literacy development; (3) redesign course signature assignments to use problem-
based learning (PBL) pedagogy and design principles supporting teacher candidates’ application of knowledge and skills in “real world” classrooms; and (4) integrating and understanding evidence-based practices and scientifically-validated research for teaching and learning of ELLs, including data-driven decision to improve differentiated instruction.

Our first action step is to provide professional development for faculty to integrate instructional strategies for ELLs into science and math methods courses. In order to do this, we need to understand the contexts in which our faculty work and integrate strategies for ELLs with what they are already required to include in content methods courses. This paper describes the first step toward understanding how to support faculty who teach content methods courses by analyzing various professional teaching standards and understanding how we can leverage the standards to better meet the needs of ELLs in science methods courses.

**Literature Review**

The impetus for standards based, k-12 education reform emerged from a public opinion created by the commissioning the report, *A Nation at Risk* (National Commission on Excellence in Education, 1987), which posited that the underachievement of students in our country was a direct consequence of low societal expectations for performance (McLaughlin and Shepard, 1995). Since that time, standards have evolved for student learning (content knowledge) and student performance (assessment). Coinciding with this movement, The National Board for Professional Teaching Standards (NBPTS) (1987) and the Interstate New Teachers Assessment and Support Consortium (INTASC) (1992) have determined the expectations for the skills and dispositions teachers should demonstrate in order to improve student achievement. The standards based reform movement has not evolved without controversy, as many scholars have argued that the achievement gap is really a misrepresentation of the opportunity gap (Carter and Welner, 2013) caused by the lack of fidelity in the implementation of opportunity to learn standards as initially recommended by the National Academy of Education Panel on Standards-Based
Education Reform (McLaughlin and Shepard, 1995). Likewise, the evolution of national teaching standards has been critically examined by scholars concerned about their theoretical underpinnings, particularly in the representation of the skills and dispositions of teachers of urban schools and of culturally and linguistically diverse learners (Beyerback and Nassoiy, 2004; Carter, ed., 2003; Ladson-Billings and Darling-Hammond, 2000; Moss and Lee, 2010).

The approach of some of these scholars has been to first examine the practices of successful urban teachers  (Ladson-Billings and Darling-Hammond, 2000) in order to determine the validity of the national teaching standards for use across social contexts. Findings revealed that the NBPTS were not representative of the skills of successful urban educators, and that the performance assessments of these standards may not be valid for teachers of color (2000). Low validity may be caused by cultural bias in the “conceptualization of the domains to be assessed” (p. 11), which may affect the certification and retention of teachers of color. On the other hand, Moss and Lee (2010) argue that the NBPTS should not dictate or control teaching practices. In their analysis of the narratives of 62 pre-service teachers, Moss and Lee (2010) found that it was the philosophical difference between pre-service teachers that impacted how they “perceived and enacted educational standards” (p. 40). Those with essentialist and perennialist philosophies placed greater emphasis on basic academic skills (reading, writing and arithmetic) and the role of the teacher in preparing students for tests that measure skills they may lack (2010); whereas, teachers who took up progressive and critical philosophies advocated for student-centered education and placed a greater emphasis on the role of culture in learning. In this way, Moss and Lee argue for an application of standards in ways that allow teachers to “actively participate in the politics of education” (p. 43).
Beyerback and Nassoiy (2004) analyzed, with a critical perspective, the language within the NBPTS (2001a, b and e) for experienced teachers, the National Council for the Accreditation of Teacher Education (NCATE, 1994, 1995 and 2000) for pre-service teachers, and the InTASC standards (1992) for beginning teachers. Their investigation included coding the standards for language that attended to themes of diversity and equity by conducted word counts of terms related to equity. Common terms included diversity of learners, equity, diversity and fairness, and respect for diversity (2004). Ultimately, Beyerback and Nassoiy found that the three sets of standards “skimmed the surface on equity” (p. 34), because although equity and diversity terminology was present, these standards “do little to unpack the meaning of these words or how a teacher would accomplish this” (p. 34). The authors (2004) felt that the NBPTS, while still limited, came the closest to defining the role of the teacher as an activist and a driver of critical pedagogies in the classroom. Overall, none of the standards specifically mentioned racism, sexism, or oppression (2004).

Carter and Larke (in Carter, ed., 2003), also found that equity terminology for diverse learners is generically represented in the InTASC standards. Taking up a multicultural education (MCE) framework, the authors (2003) analyzed the InTASC standards in relation to central tenets of MCE including culturally responsive pedagogy, teacher efficacy and deficit orientations, hegemonic behaviors, and learning styles and constructivism. They also reviewed research on the applicability and instruction on these tenets in teacher preparation. Carter and Larke (2003) concluded that while the InTASC standards “are filled with words that use the language of multicultural education,” (p.67), there need to be more deliberate action on behalf of teacher preparation programs in order to support teachers as they operationalize these standards.
The conversation around the national teacher standards seems to in agreement that they are not specific enough to determine how best to prepare teachers to work with culturally diverse students. While such limitations as a lack of validity for teachers of color, or limited representation or clarity of how to apply equity related principles are cited, little as been documented on the compatibility of these standards for use in preparing teachers to teach students who are classified as English Language Learners. Because English Language Learners are the fastest growing subgroup of students in k-12 public schools today, these standards must be analyzed with this specific population of students in mind.

**Professional Teacher Preparation Standards**

MLFTC requires that all syllabi include both Interstate Teacher Assessment and Support Consortium (InTASC) and the International Society for Technology in Education (ISTE) Standards. Course objectives and course assignments are explicitly aligned with both sets of standards. In addition, every course has to be addressed with one other set of relevant professional standards. For example, for science methods courses, the National Science Teacher Association (NSTA) preservice science standards are addressed in course syllabi. Courses that serve as state endorsement courses for a Bilingual or English as a second language endorsement or for a Structured English Immersion (SEI) endorsement also address the Teaching English to Speakers of Other Languages P-12 professional teaching standards.

**InTASC Standards**

In 2011, the Council of Chief State School Officer’s (CCSSO) Interstate Teacher Assessment and Support Consortium (InTASC) published an updated “set of model core teaching standards that outline what teachers should know and be able to do to ensure every K-12 student reaches the goal of being ready to enter college or the workforce in “today’s world”
There are 10 standards organized into four general categories: the learner and learning, content, instructional practice, and professional responsibility (See Table 1). Each of the 10 standards is further described by indicators in the areas of teacher performance, essential knowledge, and critical dispositions. In their standards framework, InTASC defined a diverse learner as “those who, because of gender, language, cultural background, differing ability levels, disabilities, learning approaches, and/or socioeconomic status may have academic needs that require varied instructional strategies to ensure their learning.” (InTASC, 2011, p.21). InTASC (2011) reports that these learners are represented by the inclusion of a variety standards that call for teachers to possess the requisite knowledge and skills for modifying and adapting lesson plans to meet the needs of many types of learners.

Table 1

*Description of the InTASC standards*

<table>
<thead>
<tr>
<th>The Learner and Learning</th>
<th>Standard 1: Learner Development</th>
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<td></td>
<td>Standard 2: Learning Differences</td>
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<td></td>
<td>Standard 3: Learning Environments</td>
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<tr>
<td>Content Knowledge</td>
<td>Standard 4: Content Knowledge</td>
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<td></td>
<td>Standard 5: Application of Content</td>
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<tr>
<td>Instructional Practice</td>
<td>Standard 6: Assessment</td>
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<td></td>
<td>Standard 7: Planning for Instruction</td>
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<td></td>
<td>Standard 8: Instructional Strategies</td>
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</tbody>
</table>
TESOL

Teachers of English to Speakers of Other Languages (TESOL) released P-12 Professional Teaching Standards in 2010 with the intention of better preparing English language teachers. The authors of the TESOL professional standards organized the standards by domain and performance indicators (TESOL, 2010). The standards are comprised of five domains, which include: language, culture, instruction, assessment, and professionalism. Each domain includes performance indicators that further describe the standards.

ISTE

According to the International Society for Technology in Education’s (ISTE) website (http://www.iste.org/standards/iste-standards), educators need to work together to provide students with the skills, knowledge, and approaches that they need in order to be successful in the digital age. ISTE has created various ISTE standards to provide students, educators, and leaders with clear guidelines for learning, teaching, and leading in the digital age. ISTE has created the following standards (a) ISTE Standards for Students; (b) ISTE Standards for Teachers; (c) ISTE Standards for Administrators; (d) ISTE Standards for Coaches; (e) ISTE Standards for Computer Science Educators. Since all syllabi within MLFTC are required to include the ISTE Standards for Teachers (http://www.iste.org/standards/iste-standards/standards-for-teachers), that set of standards was included in this analysis.

The ISTE Standards for Teachers including the following five major headings (a) facilitate and inspire student learning and creativity; (b) design and develop digital age learning
experiences and assessments; (c) model digital age work and learning; (d) promote and model
digital citizenship and responsibility; (e) engage in professional growth and leadership. Within
each of those headings, four specific standards are listed. For each major heading, ISTE
provides a short paragraph describing those sets of standards. For example, under the heading of
Model digital age work and learning, the paragraph reads “Teachers exhibit knowledge, skills,
and work processes representative of an innovative professional in a global and digital society”
(p. 1). For each major heading, five specific standards are listed. Under the Model digital age
work and learning heading, specific standards include demonstrate fluency in technology systems
and the transfer of current knowledge to new technologies and situations and communicate
relevant information and ideas effectively to students, parents, and peers using a variety of
digital age media and formats.

**NSTA**

In 2012, the National Science Teacher Association (NSTA) revised their pre-service
science standards. These standards were developed based on reviews of the literature and to align
with the conceptual framework of the Council for the Accreditation of Educator preparation
(CAEP) (NSTA, 2012). These standards list six major areas: (a) content knowledge, (b) content
pedagogy, (c) learning environments, (d) safety, (e) impact on student learning and (f)
professional knowledge and skills. The major areas are each accompanied by a brief description
followed by two or three sub-headings called elements. Table 2 shows an example of Standard 1,
content knowledge and its supporting elements.
Table 2

*NSTA Preservice Science Standards*

<table>
<thead>
<tr>
<th>NSTA Standard 1: Content Knowledge</th>
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<tr>
<td>Effective teachers of science understand and articulate the knowledge and practices of contemporary science. They interrelate and interpret important concepts, ideas, and applications in their fields of licensure.</td>
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</tbody>
</table>

Preservice teachers will:
1a) Understand the major concepts, principles, theories, laws, and interrelationships of their fields of licensure and supporting fields as recommended by the National Science Teachers Association.  
1b) Understand the central concepts of the supporting disciplines and the supporting role of science-specific technology.  
1c) Show an understanding of state and national curriculum standards and their impact on the content knowledge necessary for teaching P-12 students.

**Methods**

The present study sought to address the following research questions:

1. How do the InTASC and ISTE standards describe effective teaching for language learners?
2. How do the TESOL standards describe effective content-language teaching?
3. How do the NSTA standards describe effective content-language teaching

This quantitative study involved a collaborative process involving science education faculty, bilingual education faculty, and ELL instructional coaches within MLFTC. The goal was to inform our work as we move forward to infuse effective strategies for ELLs in methods course syllabi.

Bilingual Education and Science Education faculty as well as ELL instructional coaches analyzed InTASC and ISTE standards to identify those that consider language development and teaching diverse learners. Inclusion criteria aligned with the InTASC standards framework, which was updated to be reflective of “not only new understandings of learners and learning but
also by the new imperative that every student can and must achieve to high standards” (InTASC, 2011, p. 3). As a group, we reviewed the new standards framework for descriptors including such terms as diversity, diverse learners, second language acquisition, culture, linguistic, language and culture, make language comprehensible, and/or individual learner. Selected standards were coded for performance, essential knowledge, and the critical dispositions, which are the constructs through which the inTASC standards are categorized. Next we evaluated the standards for ISTE (2008), for Teachers of English to Speakers of Other Language (TESOL, 2010), and for the National Science Teacher Association (NSTA, 2012). These standards were analyzed with a functional linguistic lens to identify which standards could specifically address how to teach language within content classrooms. Finally, the list of standards that met our inclusion criteria were documented in a secure spreadsheet, which was shared with research team. We independently reviewed the standards and ranked them with the dummy variable (0) if they represented the essential knowledge teacher candidates must gain in order for them to teach STEM to language learners. This data was quantified to examine the level of agreement that each of the InTASC, ISTE and TESOL standards was representative of teaching content to language learners. We also then measured consensus on which standards should be included in the methods courses.

**Findings**

Each framework of national standards were analyzed to determine the extent to which they addressed language, content, all learners, diversity, and English Language Learners. Table 3 represents the number of standards that met the inclusion criteria for each set of national standards. Results from the standards review are presented in the following four sections: InTASC, TESOL, NSTA, and ISTE.
Table 3

Standards meeting inclusion criteria

<table>
<thead>
<tr>
<th>Standards</th>
<th>InTASC</th>
<th>TESOL</th>
<th>NSTA</th>
<th>ISTE</th>
<th>Totals:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of standards</td>
<td>174</td>
<td>56</td>
<td>18</td>
<td>20</td>
<td>268</td>
</tr>
<tr>
<td>Address language</td>
<td>19</td>
<td>41</td>
<td>0</td>
<td>0</td>
<td>60</td>
</tr>
<tr>
<td>Address specific content</td>
<td>31</td>
<td>8</td>
<td>18</td>
<td>1</td>
<td>58</td>
</tr>
<tr>
<td>Address general “all students”</td>
<td>37</td>
<td>0</td>
<td>8</td>
<td>2</td>
<td>47</td>
</tr>
<tr>
<td>Address “diverse populations”</td>
<td>21</td>
<td>8</td>
<td>0</td>
<td>2</td>
<td>30</td>
</tr>
<tr>
<td>Address “ELLs”</td>
<td>18</td>
<td>43</td>
<td>0</td>
<td>0</td>
<td>61</td>
</tr>
</tbody>
</table>

**InTASC.** Of the 174 InTASC Standards, 18 overtly address the needs of English Language Learners. For example, standard 2e focuses on English Language Learners and “supporting their development of English proficiency.” Ten percent of the standards address diverse populations while 21% of the standards focus on “all students.”

**TESOL.** All 56 standards threaded throughout five domains were analyzed. As the purpose for these standards include better preparing teachers to work with English Language Learners, a heavy emphasis on addressing ELLs and language was noted. Seventy-three percent of the standards addressed language while 77% of the TESOL standards addressed ELLs specifically. In The TESOL Guidelines for Developing EFL Professional Teaching Standards,
Kuhlman and Knezevic (2010) posit, “TESOL encourages respect for diversity, multilingualism, multiculturalism, and individual language rights” (p. 3). This is evident as domain two of the standards intentionally addresses diverse populations. Eight of the 56 standards explicitly address content.

**ISTE.** When analyzing the ISTE Standards for Teachers, a total of 20 standards under five headings were examined. Five of the standards met the criteria analyzed. No standards specifically addressed issues of language. Although the first major heading, *Facilitate and inspire student learning and creativity* indicates that teachers should use their knowledge of subject matter, only one standard overtly mentioned content. In addressing issues of meeting the needs of culturally and linguistically diverse and exceptional learners (CLDE) (Table 4), two standards addressed issues of “all students,” two standards addressed diverse populations (Table 4), and no standards specifically addressed ELLs.

Table 4.

**ISTE standards addressing CLDE students.**

<table>
<thead>
<tr>
<th>ISTE Standard</th>
<th>Content</th>
<th>General - &quot;all&quot;</th>
<th>General - Diverse</th>
</tr>
</thead>
<tbody>
<tr>
<td>2d Provide students with multiple and varied formative and summative assessments aligned with content and technology standards, and use resulting data to inform learning and teaching</td>
<td>&quot;aligned with content and technology standards&quot;</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>2b Develop technology enriched learning environments that enable all students to pursue their individual curiosities and become active participants in setting their own educational goals, managing their own learning, and assessing their own progress</td>
<td>&quot;all students...individual curiosities&quot;</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>4b Address the diverse needs of all learners by using learner-centered strategies providing equitable access to appropriate digital tools and resources</td>
<td>No</td>
<td>&quot;all learners&quot;</td>
<td>No</td>
</tr>
<tr>
<td>2c Customize and personalize learning activities to address students’ diverse learning styles, working strategies, and</td>
<td>No</td>
<td>No</td>
<td>&quot;diverse learning styles&quot;</td>
</tr>
</tbody>
</table>
abilities using digital tools and resources

4d Develop and model cultural understanding and global awareness by engaging with colleagues and students of other cultures using digital age communication and collaboration tools

<table>
<thead>
<tr>
<th></th>
<th>No</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&quot;cultural understanding and global awareness&quot;</td>
<td></td>
</tr>
</tbody>
</table>

**NSTA.** All 18 NSTA pre-service science standards elements were analyzed, as they met the standard for analysis. No standards specifically addressed issues of language, diversity or ELLs. As expected, the NSTA standards have a strong emphasis on content. In fact, seventeen out of eighteen standards specifically address content. Table 3, demonstrates this as standard 1’s focus is on content knowledge and the three elements listed all discuss content in terms of domain knowledge as well as standards. Eight of the standards do address learning of all students, but do not specifically address issues of diversity, exceptional or ELLs. Of these eight standards, six address learning in terms of “all students” while the other two standards address “students” in terms of engagement. For example, “students collect and interpret data” and “Engage students….”

**Discussion**

The findings from this study support preceding research indicating that diverse learners are underrepresented in the InTASC Standards (Beyerback and Nassoiy, 2004; Carter, ed., 2003; Ladson-Billings and Darling-Hammond, 2000; Moss and Lee, 2010). For example, only 12% of the InTASC standards specifically address the needs of diverse populations while 10% focus on addressing English Language Learners. Similarly, 10% of ISTE standards highlight the need to address diverse populations. None of the ISTE or NSTA standards address the needs of ELLs.

Each set of standards generically describe effective teaching for language learners. The findings from this study provide evidence that InTASC, ISTE, and NSTA standards emphasize
addressing the needs of “all students.” For example, 44% of NSTA standards focus on addressing “all students” needs. Carter and Larke (2003) warn, “When issues about equity are raised, they are addressed by including language in the standards that make a commitment to high standards for all learners. The standards however do not call attention to teachers whose sociocultural, linguistic, and economic backgrounds are different from their students, nor do they address the ramifications of these factors” (p. 55).

As expected, data revealed that the TESOL Professional Teaching Standards call attention to the needs of diverse learners with an emphasis on language learners. Over 76% of the TESOL Professional Teaching Standards focus on addressing English Language Learners. However, only 14% of TESOL Standards focused on content. The findings from this research suggest the TESOL standards minimally describe effective content-language teaching.

Carter and Larke (2003) assert, “Teachers cannot teach what they do not know – and how can they know if teacher education programs and evaluators do not know how to evaluate the standards through the lens of multicultural education” (p. 67). In response to this assertion, MLFTC is engaging in a systematic approach for preparing all teachers in today’s culturally and linguistically diverse classrooms. We have begun by mapping the intersections of the various teacher preparation standards used to guide our course design. We will continue by taking explicit and purposeful steps to help teacher educators understand these critical intersections to be able to authentically address both the content and linguistic need of ELLs.

**Implications**

Because our university is situated in a state with a diverse cultural and linguistic landscape, we must carefully select standards that explicitly support faculty as they prepare teachers with the skills they need to be successful with diverse learners. Because the national
teaching standards do not specifically focus on the skills teachers need to teach academic content to students classified as English Language Learners, we may find it prudent to train faculty to use other standards such as those from TESOL. Making connections between the standards for teaching in general, the standards for teaching specific content, and the standards for teaching language, is therefore a key component of our efforts to drive curricular reforms with our teachers college. Faculty must not only understand these connections, but they should be prepared to help teachers make these connections as well.
References


Implications for Assessments. Report by the National Partnership for Excellence and Accountability in Teaching, Washington, D.C.


Inclusion of Computer Simulation on Engineering Student Formation.

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Keywords:
Computer simulation, Reinforcement of knowledge, Complex problem solutions, Improvement of student’s performance.

Abstract.
This work is focused to show the importance of the use of computer simulation on the teaching-learning process for the engineering students. There some courses with technical topics about statics, mechanics and mechatronics that student must take during their formation as engineers in universities; nevertheless these courses includes the solution of some complex problems with numerical methods, the understanding is difficult for the students due to these solutions requires the appropriated used of many mathematical and physical concepts and many times a lot of imagination. Nowadays, some computer simulators have been used to improve the teaching methodologies towards the students. The software used during the course in the present work is ADAMS provided by MSC and PACE which was successfully used to teach the student in the mechanic of solid course. The use of this software improved the students’ performance and motivated their imagination to explore beyond about physical and mechanical concepts.

1. Introduction.

The teaching-learning process for students has been quickly changing since 60s, 70s, 80s and 90s1-3. Then the only way to solve a problem about statics or mechanism was the blackboard in the classroom or to take a pencil and a piece of paper. The only ways to be contact with a mechanical analysis or to analyze the performance of a machine and study any particular was a laboratory, to build a prototype or a practical in the real world; unfortunately these methodologies were also tedious and expensive. The most sophisticated tools were some programmable calculators or basic but very expensive computers with limited capacities. So this was not an available option.
Beginners and enthusiasts developed numerical methods and iterative solutions to solve some mathematical and geometrical problems; then some pioneers tried to incorporate these concepts to their particular problems in many engineering areas such as aeronautics, mechanics, electrics, electronics etc. and created some of the first computer simulators [3-6].

Nowadays, the increment in management and storage data and the improvement in programming and numerical methods have allowed the development of new complex computer software for analysis of many engineering problems. Many friendly facilities and graphical displays have also been included providing environments very easy to use [5-8]. These software can solve complex problems in only a few seconds and draw in the computer screen an animation about the model simulated in a virtual concept.

Technology has brought us to the knowledge and new unexpected forms of studies; in addition, the reduction on the cost of electronic devices and gadgets has become more accessible to everyone [3, 4 &7].

The software used to teach many topics during the mechanics of solids course is ADAMS provided by MSC and PACE which has become in a powerful tool for solving and analysis of tasks due to it has many graphical and visual options for display results, which allow verifying many different cases and changing the variables and conditions [8].

2. Complexity of Mechanical Analysis.

Problems in mechanics are complex due to a great quantity of variables and conditions that must be established; reason why the computer simulators divide the problem analysis according with particular purposes. Some problems involve a static analysis only; nevertheless some others involve a kinematical and dynamical analysis.

In mechanical design a model must be created, this is the first step, the model is the machine or mechanism to be simulated. It must be two mechanical components at least with a relation between them. A mechanical component is an isolated piece. Nevertheless mechanical components are also complex thus every element can be a complex geometry or can be formed with some basic geometrical bodies such as spheres, cubes, extruded areas etc. and Boolean operations such as additions, subtractions, holes etc. which are used to become more complex the original geometries. Furthermore special tools have been developed to create complex components directly such as gears, chains, screws etc.

Files in folders are used to store the information; this information is stored separately using an ordered format to provide the option for modifying every model or every component of a single model. Moreover the physical properties such as the materials used for every component are established using data bases provided in the same software system. So the design process is also easy to use.
The second step is to establish a ration between the mechanical components. Then the user can select which component will remain without motion and which others will generate movement or will be moved. The ratio between two mechanical components or more are chosen from pop up menus and are called joints. These joints are also used to declare the freedom grades of every component. In contrast constraints are used to restrict the movement.

The information generated is a set of sentences which are computationally interpreted to make the rules for the simulation and the animation. In the same way files and folders are used to save the information generated during analysis. This management will allow selecting and modifying the conditions for working in a particular model. All this complex management of files and data needs rules for an efficient work; so the best way to do it has been to employ a navigator which allows to load, modify and save new cases and conditions. So the course involves the solution of some typical problems in blackboard; in one weekly theoretical lesson and two weekly practical lessons solving the same or similar problems using ADAMS.

Many of the examples solved in class were tutorials at the beginning of the course; this means that the environments, bodies, mechanism, and simulation conditions have been established and defined previously and provided in a previous training course. Nevertheless the use of these tutorials aided to save time on these topics; once the students had been understood the basic concepts about the ADAMS they were capable to create their own mechanism and conditions for simulation.

The model shown in figures (1a) and (1b) was created by the students in a test. Here a demolition ball is used to hit a box. The purpose of the exercise is to calculate the force of the hit and the measurement of the box displacement along the surface. Then the arm was built over a platform according with a specific data, the materials are also selected and the mass of the box is declared. Here the arm is formed with 2 rectangular sections one vertical and other horizontal; then a ball carried with another rectangular section is joined but allowing a circle movement, the material of the ball is steel and according with the general assumption the ball will down freely from different angular positions (0º, 15º, 30º, 45º, 60º & 90º) in other words only gravity will influence on the impact between the ball and the box. A condition of contact is also established between the box and the ball to test the hit. In addition a drag force is also declared between the box and the surface of the platform.

After all this, the case is run to obtain the results. Then a group of variables such as the angle over the horizontal arm and the balls material are changed to make a more complex analysis.

Figure (1a) shows the initial position and figure (1b) shows the animation of the box movement and the graphical display of the acceleration, the speed and the displacement as a function of the time.
It seems an easy or basic example without any specific purpose; but here the students can practice and test the influence of some physical forces like inertial, gravity and drag on a dynamic system.

Figure (1) Computer analysis of a demolition ball simulated using ADAMS. a) Stationary initial condition. b) Final condition when the box has been hit.

3. Student opinion about computer simulators.

The following questionnaire was asked to the student to know their opinion about the inclusion of the software simulators during the course; the only two responses allowed were yes or not.

1) Are you agreed with the inclusion of computer simulator during the course?

2) Do you think that computer simulation helped you to understand theoretical concepts and complex math solutions?

3) Do you think that computer simulation will aid you on your professional life in future?

4) The examples, solved using computer simulation were appropriated to the course?
The questionnaire was applied to 30 students divided in 3 groups of 10. The graphics in figure (2) shows the students responses to the questions asked, according with their opinion, they think that the inclusion of computer simulation was a great idea to learn the basic concepts about mechanics and reinforce them; moreover they think that computer simulation is a powerful tool to develop their own projects in the future.

![Answers to questionnaire](image)

Figure (2) Students opinion about the inclusion of computer simulation during the course.

Conclusions.

After the end of the course, the students talked about the importance of the inclusion of new technologies in classroom, they think that is especially important in engineering courses due they will work using and developing these and new technologies; moreover the necessity to include in the formation of young engineers using informatics tools is so evident. Students also feel that these lessons put them in contact with real industrial situations.

Software ADAMS has also wake up the students’ enthusiasm and it was consider as a good tool to reinforce knowledge in theoretical lessons.

Acknowledges.
The authors wish to express gratitude to their institutions: Autonomous and Technological Institute of Mexico (ITAM), National Counsel of Science and Technology (CONACyT). Partners for the Advancement Collaborative Engineering Education (PACE).

References.


Importance of Computer Simulators for Industrial Planning.

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Keywords:
Computer simulation, Industrial planning, Programming activities.

Abstract.
This work is focused to show the importance on the developing of software to create computer simulators for planning production. The simulator shown here was developed to reproduce the dynamics and operating of the continuous casting process in steelmakers industries. These industries work in journeys of 24 hours at day and 7 at week without interruption; these industries use the basic metallurgical procedures to produce big bulks of steel. Nevertheless the activities must be organized in order to avoid delays and probable risks or undesirable else unexpected situations must be evaluated to minimize impact. Thus engineers and workers must have an appropriated training. The simulator was successfully tested for reproducing many activities for casting; moreover it was also employed to train all the personal about how take the best decision and re-program activities if necessary.

1. Introduction.

Simulation has become in a very powerful tool to reproduce any industrial situation. Physical simulators were the first to be created; some engineers began to reproduce their own experiments under controlled conditions especially in chemical and mechanical; these enthusiasms built laboratories and devices because they wanted to know the influence of any parameter over their entire systems. Nevertheless the evolution in computer science has allowed developing powerful computer simulators to test almost any laboratory condition; and the applications have also been expanded towards nearly every industrial requirement.

2. Importance of training in Industry.

Some industrial processes such casting process requires of a very sophisticated management of the information. The improvement on management and storage of data
capacities became possible to simulate complex problems with computers. Nowadays computer simulation gives precise and fast answers to complex problems.

Today in many industries the importance of very good trained workers is a priority in order to avoid delays, accidents and risk situations; so the students are teaching and educating their workers [1-3]. The workers are being motivated not only for better salaries, there are convinced, a better professional development is important for them shelf. They know that they must remember basic concepts learned on schools and integrated and find all the relationships with their actual jobs [4-7].

In metallurgical industries, the casting operations must be programmed daily as a function of the bulk required, the selection is done according with the grade of steel required by the customers demand and priority. So many casters go farer programming their production activities weekly or a monthly. Thus the simulator must include appropriated tools for changing the geometrical conditions of the industrial equipments (define the strands on the continuous casting machines and their dimensions); the option to modify the ladle and tundish capacities for every casting operation. The grade of steel can also be input and the dimensions of the billets or slabs to be cast. Moreover the operating conditions such as the casting speed and the opening and closing times are defined for every strand in order to run every particular case.

3. Simulation of events during a virtual simulation.

The simulator described in this work was created by some of the present authors [8-9] to reproduce the continuous casting process of steel. The simulator was created to give the user many options to modify the working environment due to every caster is different. In addition appropriated tools were developed to input the corresponding operating conditions.

The simulator initially was created to reproduce one single casting operation; nevertheless the necessity to simulate an interrupted process was evident to obtain a more realistic approach. Thus facilities to simulate different situations were incorporated to the original simulator.

Nevertheless during the simulation many events can affect the casting process; these events can be simulated such as declared events or random events. The declared events are those previously defined by the user; so the user can establish when will occur; this option can be used to include a programmed event such a maintenance works, that will cause a delay in the original planning and then reprogram the activities or how this delay must be compassed or solved.

If a strand is closed; for any reason like: a breakout, a failure in sensors, a problem with the water supply or the final product quality etc. the production will be delayed because the volume remaining inside the ladle and in the tundish will have to be re-driven towards the working strands. In the other hand the random events can occur at anytime, these events are declared only with a probability to happen during the execution of the simulation main loop. Thus, this option is frequently used to include an unexpected event.
Figure (1) shows the flowchart of the main loop executed for the simulation of the continuous casting process; then the events are included during the simulation; here the main loop is a function of the number of casting operations (nt) and the time of everyone. So a simulation for a particular caster can be run with or without interruptions previously defined.

![Flowchart of the simulation process including multiple casting operation and the execution of some unexpected situations](image)

Figure (2a) shows a graphical display about a casting operation indicating the moment when every billet is cut at the end of the continuous casting machine and then it is counted; moreover the figure (2b) shows a graphic for the volume cast in the ladle; the slope of this curve is the steel remaining in the ladle.

Thus when the procedure is nested in a new loop for any number of casting operation the calculation is repeated. These figures represent some of the formats in which the information can be displayed for an easy understanding; although more tables and graphical displays are available. According with this, it is necessary to include appropriated tools for multiple reading data and save the information for every casting operation. The casting time for every casting operation is stored and then the volume remaining in the ladle is also stored with the information about the time when every billet is produced and in which strand were cut.

Figures (3a) and (3b) show the dynamic simulation of the process simulated. Here it is possible to see, what is happening at every step time during simulation. These facilities help the user with visual and graphical information in order to plan the casting operations according with the programmed productivity and are used to provide the most appropriated training course for engineers and workers.
Figure (2) Report of the casting operation simulated with graphical information about the steel cast and the billet production.

Figure (3) Dynamic simulation of the continuous casting process in the computer screen a) continuous casting machine with 6 strands working. b) continuous casting machine with 4 strands at the end of the casting operation.
The training course was divided in 8 lessons the 4 initial lessons were for the engineers who plans and programs the activities for every casting operation daily. Because the organization is their responsibility; they must understand how to establish conditions for working. The workers were included in the second part of the training course due to they are just in contact with the operative conditions and they must be prepared to solve any expected or unexpected situation that was defined by the engineers.

The following questionnaire was ask to workers and engineers at the end of the course in order to know their opinion about the training; questions 1 to 3 were ask to the engineers and questions 4 to 6 to the workers. They had the option to evaluate the simulator and the course in a scale from 0 to 10; here 0 is the worst and 10 is the best result.

1. Do you consider that the simulator can help you to make a more effective programming and re-programming for the casting requirements?
2. Do you consider that the concept for expected and unexpected situations is appropriated in the simulator?
3. Do you think that the simulator allow to interact with the workers to find better solutions?
4. Do you think that simulators can help you to learn about the industrial process?
5. After the training course; do you think you are better prepared to solve any situation?
6. Do you consider as realistic the environment shown in the simulator?

The answers obtained to these questions were positives and are shown in the figure (4). Nevertheless engineers and workers coincide in the fact that the simulator can be improved including more unusual situations.

![Figure (4) Responses to the questionnaire asked.](image-url)
The simulator for continuous casting process originally oriented to reproduce this process was successfully used as a training tool for workers. It was a good visual tool for training simulating hypothetical and unexpected risk situations in a virtual environment, allowing a deeper evaluation and study.

Conclusions.

The simulator developed is capable to simulate different casters and different operating conditions allowing simulating any particular case.

The simulation of multiple casting operations allows the engineers to plan every casting operation in good agreement with the customer’s orders and minimizing death times and reducing unnecessary works.

The inclusion of probable interruptions helps the engineers to develop their own criterions about how to solve any problem.

The simulator can also be employed to train workers and engineers about some unexpected situations but without a real risk; furthermore the training cost is low.

A better trained worker can have a better control of the equipments.

Acknowledges.
The authors wish to express gratitude to their institutions: Autonomous and Technological Institute of Mexico (ITAM), National Counsel of Science and Technology (CONACyT).

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The Real-Time Tutorial

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San Jose, California 95192
ABSTRACT

It is common for university libraries to provide students with online tutorials that teach information literacy skills. Equally common is for these tutorials to quickly become out of date as the websites, databases, and library services featured change their formats. At San Jose State University (SJSU), the extensive *InfoPower* information literacy tutorial was created in 2002 and remained unchanged until 2014 when the by then outdated state of the tutorial became a priority due to San Jose State University undergoing the accreditation process by the Western Association of Schools and Colleges Senior College and University Commission (WASC SCUC). To accomplish a comprehensive revision of the tutorial in a timely and efficient manner, it was felt that adapting an extant open-source tutorial to San Jose State University’s needs would be the most efficient solution. This paper details how librarians at SJSU used LibGuides, Guide on the Side, and Qualtrics software to create an information literacy tutorial that can be updated in real time to reflect the rapidly changing online environment of today’s university library.

*Keywords*: higher education, academic libraries, information literacy, online tutorials
INTRODUCTION

As institutions of higher learning move towards online learning and academic research materials are increasingly found in electronic format only, students find themselves in a digital environment that can present a number of issues. While access to and retrieval of research materials has undeniably become more convenient, authors Agee and Higgins’ experience has shown that students have difficulty mastering some fundamental research skills. For example, according to conversations held by Higgins with a number of teaching faculty in her assigned liaison departments over the course of the Spring 2015 semester, instances of plagiarism have risen to an alarming level. Most of the faculty pointed out, however, that the majority of these instances turned out to be the result of students truly not having understood the concept of plagiarism--some because of their having been first-semester international students from school systems with differing rules, some because they thought it permissible to copy and paste as long as the citation was listed at the end of the paper.

These and similar examples bring to the fore the immediate need for students to have access to relevant instruction in information literacy. While many librarians describe the ideal situation to be a for-credit course for information literacy, institutions of higher learning may not want to offer such a course, or the “workload of designing and developing the course can be great in comparison to the number of students taking the course” (Yelinek, Neyer, Bressler, Coffta, & Margolis, 2010, p. 352). According to Bowen (2014), Mokia and Rolen (2012), and Yelinek et al. (2010), making available online information literacy tutorials that have been created with LibGuides software presents a viable alternative. LibGuides, an online content management and web-publishing platform created and maintained by Springshare, has multiple advantages over creating similar content in a web-based environment. Librarians “with no web design experience can master the use of LibGuides fairly quickly because firsthand knowledge of HTML and coding scripts is not required” (Mokia & Rolen, 2012, p. 38). Furthermore, the system combines “Web development tools, such as HTML editing software with wikis, blogs, RSS feeds, Web-based videos, and other social networking tools, into one package designed specifically for librarians with or without Web design expertise (Yelinek, et al., 2010, p. 353). Additionally, LibGuides tracks usage statistics and “automatically detects a user’s mobile browser and easily gives patrons access to research content wherever they may be” (Mokia & Rolen, 2012, p. 38).
Bowen (2014), whose comparative research project revealed that “the LibGuides and Web page platform differences were not a significant factor in student learning” (p. 165), writes that the LibGuides system “has become the primary proprietary platform for guide creation within the library world,” removing many of the previous barriers to placing information literacy online (p. 151).

BACKGROUND

At San Jose State University (SJSU), the InfoPower information literacy tutorial was launched in 2002 for use in lower-division courses. Created using HTML and PHP, InfoPower included modules on choosing the best information sources; effectively searching library databases, and evaluating the information found. On average, the tutorial took students 90 minutes to complete. Although the tutorial was overdue for an update, library staffing, workload issues, and other time constraints prevented the restructuring of the tutorial for more than a decade.

When SJSU became due for reaccreditation in 2014, however, the outdated state of the tutorial became a priority. The Western Association of Schools and Colleges’ Senior College and University Commission (WASC SCUC) requires universities to provide evidence of student mastery of five core competencies: writing, oral communication, quantitative reasoning, critical thinking, and information literacy. Using statistics from InfoPower and Plagiarism, another tutorial widely used on campus, the University Library contributed the majority of the data that demonstrate student competency in information literacy. While the library successfully provided evidence to support this competency during the 2014 reaccreditation process, SJSU librarians felt that, going forward, InfoPower should be updated to provide stronger analytics in this area. It was further felt that the content could be streamlined to reduce the amount of time the tutorial required. Equally important, the revised tutorial needed to be in a format that could be updated more easily to keep pace with the rapidly changing information environment.

METHODOLOGY

To accomplish a comprehensive revision of the 2002 InfoPower tutorial in a timely and efficient manner, it was felt that adapting an extant open-source tutorial to San Jose State University’s needs would be the best-fit solution. In its assessment of information literacy for WASC SCUC,
SJSU used the Association of American Colleges & Universities (AAC&U) Information Literacy VALUE Rubric to measure students’ ability to identify, locate, evaluate, and ethically use information (2010). This rubric is patterned on the Association of College and Research Libraries (ACRL) Information Literacy Competency Standards for Higher Education, and it is these latter standards that established the framework for the original *InfoPower* tutorial (2000).

To be consistent in its measurement of student competency in this area, one of the main criteria in choosing a replacement for *InfoPower* was that the new tutorial be structured using these same standards. Two other criteria used in the selection were the quality of the tutorial content and the ease with which it could be adapted to an existing library content management system.

The resource that best met these three criteria was the University of Notre Dame’s Pot of Gold tutorial, which was designed by Laurie McGowan, Instructional Designer; Tim Jones, UI/Graphic Designer; and Sherri Jones, Head of the User Services Learning and Assessment team for the university’s Hesburgh Libraries. It can be found at https://library.nd.edu/instruction/potofgold/. Like the original SJSU *InfoPower* tutorial, Pot of Gold’s content was based on the ACRL information literacy competency standards and introduced students to each of the necessary research skills using a clear, unintimidating presentation. The page-by-page structure of this tutorial also allowed it to be easily adapted to the LibGuides format.

LibGuides is a popular content management system used by many libraries, and it was chosen as the platform for the revised tutorial because it enables library faculty to work collaboratively and edit the tutorial in real time. The original tutorial, a series of web pages, required the library’s Web Services team to make any changes. LibGuides removes this intermediary step and gives librarians the ability to make changes as soon as a resource or the library website is updated, allowing for the tutorial to consistently be kept up-to-date. An additional benefit of using LibGuides for the tutorial was its responsive design, which integrates well with smartphones, tablets, and laptop computers. Lastly, it was felt that because LibGuides are easily duplicated between libraries, using this platform provided the opportunity to create an open educational resource that could be shared with the larger educational community.
Processes and Tools

Site Map
The first part of the conversion process consisted of creating a sitemap that noted the placement of the individual web pages, animations, and interactive elements within the tutorial. This was done manually by paging through the Pot of Gold tutorial.

LibGuides
After the sitemap was finalized, pages were prepared in the LibGuide so the guide's navigation mirrored that of the Pot of Gold tutorial. After this process was completed, text was copied from the original tutorial, pasted as plain text into the InfoPower LibGuide, and reformatted using the LibGuide's text styles. Photos and graphics were saved to the LibGuides image library, and then pasted into the appropriate pages.

Animations
Mapping the animations became an especially important part of the tutorial adaptation because they had originally been created using Adobe Flash, a file format that many popular browsers are in the process of phasing out. The SJSU library's Web Team used Google's Swiffy tool to convert the majority of these Flash files (.SWFs) into HTML5 code, although a few had to be recreated completely. The conversions were successful, and the resulting animations look and function as well as the originals. In addition to changing the file formats, accessible PDFs describing the content of the animations were created and made available as links at the bottom of pages that included animations. SJSU is committed to making all instructional material accessible, and these additions were made as part of that commitment.

Guide on the Side
The original InfoPower created in 2002 was ahead of its time in incorporating a live database search within the tutorial. To maintain this interactive, real-life element, the new InfoPower includes a Guide on the Side tutorial. Guide on the Side is open source software designed by the University of Arizona Libraries and is freely available online in the GitHub repository. Guide on the Side creates a frame around a web page and allows step-by-step instructions to be entered next to the page, so students can use a database by following instructions placed right beside the
search boxes. Within *InfoPower*, Guide on the Side is used to walk students through a live search of the Academic Search Complete database using the "online dating" topic that is the research theme of the tutorial. Students are led from a keyword search to a subject search and are also introduced to the Boolean operators (AND, OR, and NOT), which can be used to connect search terms. At the end of the Guide on the Side segment, students are linked back into the main *InfoPower* tutorial and continue as before.

**Qualtrics**

A major appeal of the Pot of Gold tutorial was its built-in assessment. Evaluative elements appear throughout the tutorial and provide data on specific aspects of students' research skills, such as recognizing the differences between primary and secondary sources. SJSU has a campus license for Qualtrics survey software, and this was used to recreate the "Test Yourself" and "Check Your Understanding" self-check quizzes. One problem created by using Qualtrics was the software’s built-in advance button, which conflicted with the page-forward feature in LibGuides. The problem was solved within Qualtrics by writing custom CSS code that suppressed its advance option.

In addition to the formative assessments, a "Test for Class Credit" was also created for *InfoPower*. This test collects demographic information, such as student ID, class level, gender, and age, and its 18 randomized questions are designed to provide a summative assessment of students' information literacy skills. Qualtrics also allows students to enter their email addresses and have their test results sent directly to themselves. These can then be forwarded to instructors to provide a record of students’ scores.

**Implementation**

The tutorial was completed in time for the Fall 2015 semester and was well received by faculty. Students also benefitted as the average time required to complete the tutorial dropped from 90 to 50 minutes. Because the original *InfoPower* had been a mainstay of information literacy instruction on campus for more than a decade, a redirect page from the old web address was created to lead users directly to the revised tutorial at http://libguides.sjsu.edu/infopower. By
mid-October 2015, more than 600 students had completed the tutorial with only minor technical problems arising.

CONCLUSION

The tutorial that resulted from this revision process provides a model for librarians, faculty, and administrators interested in creating digital learning objects that can be quickly and easily updated to accurately reflect the current information environment. Although initially conceived of as a quick fix in order to have available continuous data on student performance in the area of information literacy, it has quickly become clear that the tutorial created by Agee and Higgins has the potential to become a longer-term solution.

The ever increasing pace of change in teaching and learning environments, and the continuous push to online learning have made it clear that, going forward, it will be impossible to once again retain the same tutorial unchanged for more than a decade. LibGuides provides a platform that allows for the continuous adaptations required by technological change. Already there is discussion among some of the members of the SJSU library faculty about expanding the tutorial in ways that would allow for its use in place of in-person information literacy sessions.

While this appears counter to what many librarians perceive to be one of the most important aspects of their work--namely the opportunity for in-person contact with students in order to share their knowledge about information literacy--they are seeing a rising demand for instruction in upper-division, research-intensive courses. By moving basic instruction online, students receive the necessary foundational information literacy information and librarians are freed to answer the need for more advanced instruction.

While there may be limitations to the long-term applicability of the tutorial, InfoPower’s latest iteration speaks to the current generation of students who were raised with the Internet and have a do-it-yourself outlook. Digital learning objects such as InfoPower make learning accessible around the clock--important for time-poor undergraduates--and contribute to students’ academic success.
REFERENCES


Title: Mental Health Capacity Building in Schools: Merging Applied Research, Evaluation and Practice

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Outline of the Study

Abstract

This study responds to the urgent need of complementing traditionally prevalent cognitive perspectives in school educational environments with approaches that target students’ mental health awareness and development. The study reports results of ongoing evaluation and applied research around the innovative projects targeting mental health capacity building in schools, where schools act as hubs or “entry points” for community collaboration on mental health promotion and prevention. The preliminary results focus on students’ awareness of mental health and wellbeing, perceived control over potential mental health or life issues, integration of mental health promotion and prevention in everyday learning activities and possible associations with student academic achievement. The conference presentation highlights a selection of this broad range of results.

Background

The Mental Health Capacity Building in Schools (MHCB) Initiative featured in this submission addresses a pressing need for developing mental health education and literacy in schools for promotion and prevention purposes. More than two-thirds of young adults living with a mental health problem or illness say their symptoms first appear when they were children (Mental Health Commission of Canada, 2013). Schools are ideal venues for developing positive mental health cultures by educating and engaging students, school staff, families and communities.

For many decades education systems were focused on measuring cognitive components of student educational attainment, and summative standardized tests emerged as important ways of measuring academic outcomes. The 21st century societal and associated education systems are distinguished by increased complexity and dynamism of all their major elements, including intertwined multi-cultural and socio-economic realms, family structures and ever changing domestic and world economies, which consistently confront society and education with evolving demands and challenges. Increased complexity of contemporary education systems compel more comprehensive approaches to balancing and measuring aspects that span beyond traditionally considered cognitive educational components into an intricate domain of “non-cognitive” factors. The latter comprise students’ personal qualities other than cognitive ability (Duckworth & Yeager, 2015), as well as beliefs and attitudes. Besides the pressure to meet challenging education standards in a time when college readiness becomes a norm, students face other daily issues associated with peer pressures, uses of technology and social media, unhealthy relationships (including bullying), struggling with sexual and gender identity, substance abuse, etc. Additionally, increasing proportions of immigrant and minority students may face challenges of cultural and language adjustments, fitting in with their peers, meeting academic requirements and other issues. Consequently, school staff are faced with a demanding task of delving into a broad array of non-academic, non-cognitive realms in order to create school environments that are equitable, safe, inclusive, empathetic and stimulating for diverse student populations.

Research suggests that acquirable personal qualities, such as resilience, self-confidence, self-control and emotional intelligence may be important aspects in learning processes, ability to function and career potentials (Christenson, Reschly & Wylie, 2013; Collaborative for Academic, Social, and Emotional Learning [CASEL], 2003; Nadirova & Burger, 2014; Richardson, 2008; Rutter, 1999;
These concepts are closely associated with the notion of positive mental health – a state of well-being that allows individuals to feel, think and act in ways that enhance their ability to enjoy life and deal with challenges they face (Public Health Agency of Canada [PHAC], 2014). Mental health related attributes of complex school environments increasingly attract the attention of researchers and practitioners, including interdisciplinary mergers of mental health and educational research and practice. Indeed, schools are the places where children and youth spend a large portion of their lives, and hence are milieus where educational, relational and mental health issues naturally intertwine. Applied scholarship plays a key role in connecting communities and practitioners with applied research and evaluation to inform the development of school settings that are responsive to both educational and mental health needs of students.

This study will present preliminary results of the third cycle (2014-2017) of ongoing applied research and evaluation surrounding the Mental Health Capacity Building in Schools (MHCB) Initiative in Alberta, Canada. Schools are perfect venues as hubs for community, family and government collaboration to advance student mental health. The MHCB Initiative is led by Alberta Health Services in partnership with the provincial Ministry of Education. The initiative provides supports required to implement integrated, school-community mental health promotion, prevention and early intervention programs. The projects are locally implemented through partnerships with Alberta Health Services Zones, school districts, families, community agencies and other service providers. The diversity of MHCB approaches and programming are reflective of the needs and resources of a broad range of communities, including engagement of traditionally under-served populations. Therefore, the associated experiences and practices transcend the scope of a single initiative and may be of value to a broad audience.

The important feature of the MHCB Initiative is extending beyond a 10 month school cycle by offering year-round diversified programs for children and youth. The MHCB programs are critical in creating a clinical pathway and/or entry point into a larger community-based integrated care continuum as mental health needs evolve and change over time throughout a child’s developmental journey. The envisaged developmental and experiential mental health care model progresses with a child through his or her life journey, challenges and struggles, promoting protective factors (e.g., resilience, coping and social supports) and also access to more intensive supports and services as required. The MHCB Initiative strives to create a transformational change by spawning the learning and developmental process that children and adults (i.e., school staff, families and community members) go through together to create healthy environments, tackle stigma and taboo areas, and create safe space to discuss mental health issues.

The MHCB is an emerging endeavor, which started with only five pilot projects in 2006. By the end of 2014-15 school year the 37 MHCB projects served 70 communities and encompassed 189 schools from 35 public, Catholic and Francophone urban and rural school districts and also a small number of charter and private schools. An important feature of the projects is the focus on an overarching proactive (“universal”) preventive approach to mental health programming, which targets all K-12 students in participating schools along with offering options and resources if issues arise.

Each project has dedicated staff, including a project coordinator, success/wellness coaches and other personnel who work directly with students, teachers, families and community partners. The programming for students include activities and learnings to become literate in mental health and
wellbeing, overcome mental health stigma, become comfortable with mental health issues, develop resilience and attain self-helping skills to address mental health or life issues or seek appropriate external resources. The MHCB staff also delivers professional learning and presentations to teachers and other school staff, as well as learning activities to families and community members. Many MHCB projects have a growing number of satellite (non-project) schools, which receive consultation and information from the projects and model their approaches.

**Objectives of the Study**

The purpose of this study is to examine various aspects of mental health capacity building in schools using the recently collected comprehensive survey data from large samples of grade 1 to 12 students and teachers. The specific objectives include:

1. examining variations in the important intended outcomes, such as reduced mental health stigma in students and perceived ability to tackle potential mental health or life issues depending on students’ engagement in the projects and maturity (length) of MHCB projects in the schools;
2. examining the gender and grade-based patterns in students’ responses to the MHCB surveys;
3. examining the degree of integration of the MHCB projects in everyday education practices as perceived by students and teachers;
4. discussing mental health capacity building practices applied in schools and communities;
5. analyzing possible associations with student academic outcomes.

**Data**

The data sources for the study incorporate comprehensive survey data from over 10,000 grade 1 to 12 students and over 800 teachers from the MHCB schools, as well as the publicly available school-based achievement data for the MHCB schools and comparison schools.

The student survey data were collected via online and paper-and-pencil surveys during spring – summer 2015. Student sampling accounted for the size of student population in each of the MHCB schools. All teachers from the MHCB schools were asked to complete an online survey.

Student achievement data were publicly available at a school level for the recent five school years (2009/10 – 2013/14) and incorporated the results of large-scale standardized tests in grades 3, 6, 9 and 12 (diploma exams). Achievement data were available for the MHCB schools as well as for a carefully selected set of comparison schools. The comparison schools were selected from the pool of schools from the MHCB school districts that were neither MHCB project schools nor satellite schools, or from the adjacent comparable school districts which did not have MHCB projects. The geography, grade composition and school size (student population) were accounted for during the selection of comparison schools.
Data Analyses and Insights

The proposed data analyses for detecting possible effects of the MHCB projects include multiple regression and/or repeated-measures analysis. In addition, the results of t-test and ANOVA will be used to compare student survey outcomes according to gender and grade as well as compare the results across the “older” MHCB schools, with more mature projects, and the “newer” ones, which joined the initiative at later points.

The data analyses will explore the following points:

- **Mental health stigma and comfort level with mental health issues**: Students who report relatively high engagement in the MHCB projects (i.e., seek opportunities to make their contribution) and students from more mature MHCB schools are hypothesized to exhibit less mental health stigma and be more comfortable with discussing mental health issues (including their own mental health) compared to their less engaged counterparts as well as students from the schools which only recently joined the MHCB projects.

- **Gender and grade-based patterns**: Various student responses to the survey will be examined by gender and grade, including relevance of the programming to students in lower and higher grades.

- **Integration of the MHCB projects in everyday education practices**: As the MHCB projects mature, higher proportions of teachers are expected to incorporate (formally and informally) mental health related practices in their everyday teaching and other activities with students. Also, in more mature projects students and teachers are expected to perceive themselves as active partners in mental health capacity building planning and implementation in their schools. Teachers’ and students’ feedback will be examined to confirm these propositions, as well as the accounts of specific associated practices.

- **Association with student academic achievement**: Based on previous research, student mental health and emotional state are hypothesized to be associated with academic achievement. The dynamics in student academic achievement will be compared across the MHCB project schools and comparison schools.

Significance of the Study

The MHCB projects informing this study respond to the urgent need of incorporating perspectives other than cognitive traits into the educational process by helping students, educators, families and communities build school cultures which are supportive of student mental health. A mental health promotion and prevention perspective is an important factor in changing the social and cultural context of education through developing relationships and caring environments to ensure better academic and social outcomes for all students. The MHCB projects offer specific avenues for operationalization of mental health education, promotion and prevention in school environments and building foundations for broader family and community engagement in schools.

Since the MHCB projects involve a wide array of schools with student populations from various cultural and socio-economic backgrounds and span across a broad geography and contexts (from schools in large urban centers to very small rural schools), the associated approaches and applied
research could be of value to many other schools, school districts, governments and health authorities or agencies.

**Authors’ Note**

The views expressed in this submission are those of the authors and not necessarily of their employing organization.

**References**


1. Title of the submission
Linguistic Attitudes towards the Use of Hawai’i Creole (Pidgin): Findings from a Questionnaire

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6. Abstract
Linguistic Attitudes towards the Use of Hawai‘i Creole (Pidgin): Findings from a Questionnaire

Hawai‘i Creole (locally known and hereafter referred to as Pidgin) is an English-lexifier language spoken in the state of Hawai‘i. In spite of its large number of speakers (an estimated 600,000 speakers) and its important role as an identity marker for locally born residents in Hawai‘i, it has been mostly used only in private domains, i.e., among family members and with friends within the local communities one belongs to.

In public domains, it is often believed that there is a negative role that Pidgin plays especially in educational and employment opportunities. There was even a time when the use of Pidgin was banned at any level of education. One of the reasons for the concerns that using vernacular languages in general in education will be detrimental to students is language interference. It is sometimes believed that introducing vernacular languages interferes with learning standard English.

Researchers have concluded that concerns about the interference are not justified, and have argued that certain methods of introducing vernacular language variety in education are effective. In the case of Hawai‘i, Siegel (2008) says two types of educational programs are effective: accommodation programs and awareness programs.

How do speakers of Pidgin think about the appropriateness of Pidgin used in different settings? The objective of this paper is to explore the linguistic attitudes towards Pidgin by its speakers based on the questionnaire conducted in Hawai‘i in 2007 (N=30). In the questionnaire, young people living in Hawai‘i were asked about how they feel about the use of Pidgin in different domains and settings as well as what they think about the use of Pidgin at school by teachers. Analyses reveal mixed feelings towards Pidgin use in public domains. (280 words)

Selected References
Proceedings Submission

1. Title of the submission
Teaching Plan and Material of Writing Instruction for Taiwanese Senior High School Students

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6. Abstract

Abstract

This teaching plan is for Taiwanese first-graders in senior high school. It aims to help them (1) better understand how to compose a well-organized paragraph, (2) get familiarized with picture description, one of the most frequent genre in college entrance exam, (3) promote their metacognitive skills, enabling them to monitor their own learning process and (4) prepare them to write a composition in their second year. The design is based on two language aspects: paragraph structure and cohesion. There are totally fourteen weekly lessons, which are divided into six stages.

Stage one is intended introduce paragraph structure to students. First, the teacher will lead students to do a warm-up exercise which tap into their knowledge about sentence and paragraph. By doing so, teacher can detect whether there is any misconception or not and try to anchor new information (paragraph) to their prior knowledge (sentence). Then, the teacher will distribute a reading material containing two paragraphs. For the first paragraph, the teacher will guide them to analyze and draw a basic structure of paragraph, providing main function of each part (①introduction: topic sentence, ②body: supporting sentences and ③conclusion: concluding sentence). For the other paragraph, students do analysis on their own.
Later on, the whole class discuss together.

The second stage is like a preparation stage; the focus is teaching students two general organizing strategies: brainstorming and concept map. The teacher will give students three pictures. (Picture A, B and C) For picture A, the teacher will demonstrate first by (1) eliciting students’ ideas related to this picture, (2) writing those ideas down on the blackboard (3) classifying ideas and (4) organizing a concept map: determine the broad concepts, sub-topics and more specific ones, (5) drawing a concept map: use arrows and lines to connect ideas and illustrate relation. For other two pictures, students work as a group (4~5 people) to brainstorm and draw the concept map for each picture.

In stage three, students are going to start writing. The main focus is to teach them how to write appropriate topic sentences. Teacher will first instruct on the function of topic sentence and its relation to supporting sentences and then students do task 1 and 2, which aim to test their understanding.

In stage four, students learn (1) what is HT (hyper theme), MT (macro theme), T and (theme) R (rheme) and (2) what are three common types of thematic progression patterns. It is expected that students can use theme/rheme analysis to examine cohesion of their own writing and gain a clearer picture of text structure. For task 3, students write topic sentences for picture A, B and C.

In stage five, the teacher will give a new picture for students to compose a paragraph of picture description. After their first draft, the teacher will assign pairs for them to do peer-review. Review and revising strategy: theme/rheme analysis is offered to give students some direction for achieving cohesion. Students revise their 1st draft and write their 2nd draft. Their 2nd drafts are collected and commented by the teacher and then students revise again to write their 3rd draft.
The last stage is reflection. Students fill out the feedback worksheet which encourages them to self-evaluate and reflect on their learning process.

The teaching plan is well informed by theories of language learning and systemic functional linguistics. It is hoped that it could provide some insight and a practical new approach to writing instruction.
1. Title: *Eradicating Diversity, Equity, and Inclusion as an Afterthought, a Fleeting Thought, and a Superficial Thought*

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6. Full Paper: The full paper is provided below.
Eradicating Diversity, Equity, and Inclusion as an Afterthought, a Fleeting, and a Superficial Thought

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14th Annual Hawaii International Conference on Education
Honolulu, Hawaii
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Overview

This paper demonstrates continual use of culturally responsive literature as curricula (K-5) to increase knowledge about “more than a handful” of individuals from diverse populations who used ingenuity to conquer adversity, achieve milestones, and thrive. Strategies are also designed to foster ingenuity among students via multiple intelligences. Plus, professional resources and a comprehensive bibliography with aligned themes is disseminated to eradicate diversity, equity, and inclusion as an afterthought, a fleeting thought, and a superficial thought.

Unveiling the Disconnect: A Lot of Rhetoric, Very Little Practice

Mirror mirror on the wall, who’s the fairest of them all? When issues of diversity and multicultural education arise, across the nation educators and child and family professionals can “talk” very soundly about the importance of culturally responsive practices. However, transitioning the theory into practice can be quite different. A functional assessment was conducted about culturally responsive literature that entailed in-service and pre-service educators to identify two children’s books featuring African-, Asian-, European-, Latino-, and Native Americans, along with multiracial individuals respectively as the main characters. The results showed that the majority of the participants were only able to identify two books for just one group, European Americans (Brinson, 2012). Note: The study has been informally replicated on numerous occasions, and the results were similar-Most participants were only able to identify books featuring European American characters. In the school world of young children from diverse populations what are the implications? If educators cannot identify culturally specific- and multicultural books, realistically there is not an adequate supply included in scholastic programs. Also, the lack of identification strongly indicates the lack of integrating culturally responsive books that are needed to reflect all students in curriculum and instruction. As a result, there seems to be a comprehensive need for professional development in the area of culturally responsive literature children’s literature for preservice- and inservice educators. Consider the startling facts:

Participants were only asked to identify two books featuring African American-, Asian American-, European American-, Latino American-, and Native American-, as well as Multiracial characters respectively. Just two books, and even still, with the exception of European American characters most of them could not. Even more alarming, barring the identification of books with African American characters, the majority of the participants could not identify any other culturally specific- or multiracial books.

“Multiculturalism is, in most instances, being presented as mere “parsley on the plate,” in the words of Joy Degruy-Leary-which is to say, something that feels thrown together as an afterthought. And as with that sprig of parsley next to your meal at the restaurant, mainstream multicultural efforts are there for one of two reasons: either prettiness, or for cover-up. Either way, neither the parsley nor the material about folks of color is understood to be all that important, whether to the meal or the classroom content. When it comes to the way nonwhite folks and cultures are presented and discussed in class, the typical arrangement tends to reduce them to “food, fabric, and festival. By learning what exoticized “others” wear, eat, and how they celebrate, hardly alters the fundamental dynamics at work in the schools-dynamics that continue to favor the dominant group by making that group’s story the center piece of everything that one studies, and everything about which one is supposed to know, in order to be deemed educated.” (Wise, 2008, pp. 19-20)

The Cooperative Children's Book Center (2015) reported that approximately 5,000 children's books were published in 2014. However, all of the children’s books about ethnic groups of color combined only amounted to 396 books (African American-180, Asian American-112, Latino American-66, and Native American-38). Furthermore, the total number of books about ethnic groups of color that were written by individuals of color amounted to 292 (African American-84, Asian American-56, Latino American-59, and Native American-20). The right book can help a child see the importance of his or her culture and its literacy (Brewer, 2001). Books can aid in the development of children's social and emotional capacities as related to self and others (Anderson, 2012).

As childhood educators obtain information about culturally responsive literature a “train-the-trainers” model should be practiced to pass it on to colleagues for on-going use in curricula to help engage all children. The use of multicultural literature enhances student self-esteem, involvement and engagement, and academic performance in literacy (Spears-Bunton, 1992; Willis & Johnson, 2000).
Educators should also share high quality, multicultural literature with parents to encourage reading activities for children in their home settings. Teachers who recommend outstanding books to families model respect for the culture and provide a high standard of book selection for families to adopt (Lilly & Green, 2004).

**Integrating Culturally Responsive Literature into Curricula**

What do slippers, timbales, trails, and wheels have in common? Each of these items was used ingenuously by World Changers like Misty Copeland, Tito Puente, Sacagawea, and Soichiro Honda. Namely, Misty Copeland is a captivating dancer who entered the ballet world at 13 years of age and arabesqued on to make history a few years later as only the second African American soloist at the American Ballet Theatre. After which, Misty pirouetted into history again when she became the first African American female woman named the Principal Dancer at the American Ballet Theatre. Tito Puente was crowned "King of the Mambo;" and, he directed his own Big band, “Tito Puente Orchestra” at the center of the Latin Jazz Explosion. Sacagawea was a fearless Native American woman from the Lemhi Shoshone tribe; she accompanied the Lewis and Clark Expedition as an interpreter and guide during their exploration of the Western United States; and, Sacagawea’s face appears on the United States dollar coin (aka the golden dollar). Plus, Soichiro Honda was a trailblazing entrepreneur whose dream of cars as a child in Japan inspired him to invent the motorized bicycle, and then manufacture cars as his Honda Corporation grew into a global industry.

The primary objective of this paper is to demonstrate the power of culturally responsive literature as curriculum to spark ingenuity (cleverness, resourcefulness, creativity) among students (K-5) that include effective problem-solving and multiple intelligences (e.g., visual-spatial, musical, and bodily kinesthetic) to tap into the strengths, talents, aptitudes, and interests of students. Equally important, strategies depict avenues to integrate a ‘fair-minded amount’ of culturally responsive literature into curricula across content areas; maximize the use of culturally responsive literature on a ‘continual basis’; and, utilize culturally responsive literature in a ‘meaningful manner,’ to help eradicate diversity, equity, and inclusion as an afterthought, a fleeting thought, and a superficial thought.

Research on culturally relevant and responsible instruction indicates that knowledge of students' family, community, and socioethnic cultures-their languages, literacy practices, and values can help address the interests and build on the skills of students (Abt-Perkins & Rosen, 2000). Anderson (2012) noted that people have always told stories; it is the oldest form of remembering. Long before written language was developed, people told stories to preserve the history, traditions, desires, and taboos of their social groups. Each generation told their stores to the next, which in turn told stories to the youth of the generation that followed them. Children are constantly growing and developing and each new stage brings changes in the way they move, think, socialize, and behave (Lilly & Green, 2004). Reading enhances children's ability to flourish academically, socially, and emotionally (Brinson, 2002).

Culturally responsive literature can be utilized to enrich multiple areas of education like art education, indigenous education, mathematics education, music education, science education, social studies education, and special education. Integrating books about multiple cultures into curricula can heighten all students' understanding about individuals from diverse populations. It also prepares children for a future which embraces and celebrates diversity so they will be able to interact successfully in our global society (Gutierrez, 1993). For example, *Firebird: Ballerina Misty Copeland Shows a Young Girl How to Dance like the Firebird* by Misty Copeland, *Honda: The Boy Who Dreamed of Cars* by Mark Weston, and *Sonia Sotomayor: A Judge Grows in the Bronx* by Jonah Winter are examples of enthralling books that inspire students to dream and live in the beauty of the moment.

**The When’s, How’s, and Why’s of Culturally Responsive Literature as Curricula**

**Music Education (Curricula Example): Sparking Ingenuity by Tapping into Multiple Intelligences, Talents, and Interests**

Howard Gardner’s Theory of Multiple Intelligences (1983) proposes there are at least eight different intelligences to account for a broader range of human potential in children and adults (meaning there are a variety of avenues that people demonstrate intelligence). Multiple Intelligences include Verbal-Linguistic (word smart), Logical-Mathematical (numbers/reasoning smart), Visual-Spatial (picture smart), Bodily Kinesthetic (body smart), Musical (music smart), Interpersonal (people smart), Intrapersonal (self smart), and Naturalist (nature smart). Note: Another intelligence that may be formally recognized in the future is Existentialist (Why?-wondering smart). As a result, children learn in different ways, they demonstrate intelligence in different ways, and they possess individualized strengths, talents, aptitudes, and interests.
Culturally responsive literature can be used to profile multifaceted avenues of talents, interests, and abilities to be tapped into for amazing accomplishments. Case in point, intriguing books like *Tito Puente, Mambo King/Rey del Mambo King of the Mambo* by Monica Brown, celebrates positive attributes that make us unique, while profiling the remarkable results of Tito’s musical intelligence. “I’ve got the music in me!” Readers will feel the rhythm of this bilingual story because Tito Puente was making music on anything handy like spoons, pots, and table tops before he could walk. After serving in the United States Navy and attending the Julliard School of Music, Tito’s amazing talent exploded into a musical extravaganza of singing, dancing, composing music, playing multiple instruments, and ultimately directing his own big band (the Tito Puente Orchestra). Tito traveled the world and became loved far and wide for his signature brand of Mambo Music, often played with the bongos, the congas, and the timbales (three of Tito’s favorite instruments). During his remarkable career Tito Puente recorded over 100 albums and won 5 Grammy Awards for his music, but undeniably the biggest reward of all is universal, because the music and passion of Tito Puente is forever imbedded in the heart of society.

**Tito Puente, Mambo King/Rey del Mambo King of the Mambo** by Monica Brown is an excellent book that can be integrated into music curriculum. It is an uplifting, bilingual, picture book that can be also as a resource to help teachers meet the reading needs of students who learn in different ways. For example, the book can be used as a read-aloud for students who are auditory learners. Moreover, due to the bilingual text, the book can be used to facilitate language skills and improve reading comprehension of students who speak English as a second, third, or fourth language. Besides, the book can be used to counter alliteracy (being able to read but being uninterested in doing so) among students. Namely, due to the high-interest content and highly animated illustrations, the book can be used to motivate students to read, and to want to read more often. Hence, this book can be used in early grades like kindergarten and first grade to integrate reading and music into assignments that actively engage students in the learning process. To illustrate, the first time the book is introduced, read it aloud to the class. To immediately engage students in the story, take time to discuss the book cover (e.g., ask students what the book is about based on the title and let students share their favorite aspects about the illustrations). While reading the book, continue to engage students in the story (e.g., pause often to define concepts, assess students’ comprehension, pose questions, encourage student remarks, and let students make predictions). When students are familiar with the book, showcase some of the musical instruments featured in the story (it is okay to include other instruments available from music centers). Be sure to give students plenty of time to learn about the instruments through hands-on explorations and discoveries. Once the students are comfortable with the book and the instruments it is time for another read-aloud. More importantly, this read-aloud will be a student-led, melodic version (e.g., while some students are taking turns reading from the book other students can play up the passages musically).

**Student Projects:** This book can also be used in upper level elementary grades (e.g., third to fifth) to integrate reading, writing, and music into student-led projects. Foremost, after the book is read, let students work together in small groups to research different concepts introduced in the book like Mambo Music and its origin. The talents of students can also be enriched by giving them opportunities to collaborate with peers on shared interests such as composing songs, writing musical scores, and choreographing dance routines, resulting in the most rewarding experiences of all-dancing, singing, and playing to the music they create. Additionally, *Tito Puente Mambo King/Rey del Mambo* by Monica Brown, along with other children’s books featuring musical themes can be used to build home-, school-, and community libraries.

**Social Studies Standards-Based Instruction (Curricula Example): Utilizing Books as a Bridge over Troubled Waters**

How can we halt the miseducation of ALL students and ensure white history, otherwise known as “history” is not the only history taught in school? How can we counter civil and social issues like institutionalized “isms,” teacher habitudes, implicit bias, and generational oppression? Facilitating lessons through students’ cultures is important to nurture equality, justice, and unity. Children who are fortunate enough to be exposed to engaging stories cherish and remember them, even through adulthood. Often they model main characters or act out central themes (Brinson, 1997). Walters noted the importance of opportunities for people to have lasting experiences with literature that provide windows to view others. Equally important are opportunities for people to have lasting experiences with literature that provides mirrors to see reflections of themselves and their loved ones (2002). Bishop (1992) provides a compelling rationale for these points. If literature is a mirror that reflects human life, then all children who read or are read to need to see themselves reflected as part of humanity. If they are not, or if their reflections are distorted, there is the danger that they will absorb negative messages about themselves and people like them. Those who see only themselves or who are exposed to misrepresentations are miseducated into a false sense of superiority, and the harm is doubled.
Culturally responsive books can be used to pass on the rich legacy of reading while abolishing the structure of racism, sexism, classism, and other discriminating practices with students. The books can also foster holistic benefits for students' cognitive-, social-, emotional- and moral development. Moreover, the books can facilitate anti-bias practices because all children need to see their reflections in stories via positive role models, which tends to increase their self-esteem and pride in their heritage (e.g., *Rhythm Ride: A Road Trip through the Motown Sound* by Andrea Davis Pinkney, *Sacagawea* by Liselotte Erdrich, and *The Girl who could Dance in Outer Space: An Inspiration Tale about Mae Jemison* by Maya Cointreau). Stories play an important role in many cultures, weaving words into lessons or daily life (Lilly & Green, 2004). Likewise, vicarious experiences and ensuing emotional involvement with characters of color in well written books have the potential to correct misconceptions about people who are different from the reader. This may also help children avoid developing prejudiced attitudes (Anderson, 2012).

Books model coping strategies for children learning to deal with powerful emotions. Literature also provides information and helps address questions (Jalonga, 2004). Reading books about civil-, social-, and civic issues (e.g., *Child of the Civil Rights Movement* by Paula Young Shelton, *Dia's Story Cloth: The Hmong People's Journey of Freedom* by Dia Cha, *Separate is Never Equal: Sylvia Mendez and Her Family's Fight for Desegregation* by Duncan Tonatiuh, and *The Amazing Age of John Roy Lynch* by Chris Barton) can heighten students' awareness about the experiences of individuals striving for civil rights, equality, and social justice. Although these books illustrate struggles of inequality, they offer methods of past resolutions, and blue prints to overcome possible struggles in the future. When teachers help children interpret stories like these, children become aware of the problems and complexities of issues like inequality (Cowhey, 2006). Through literature, children can perceive how others have encountered and resolved problems that cause sadness, stress, fear, and uncertainty. More importantly, children learn how to use conflict resolution strategies to deal with these problems (Tu, 1999). Exposure to historical accounts also lead readers to discover major contributions of individuals from diverse groups.

Books featuring social reality themes (e.g., *Gordon Parks: How the Photographer Captured Black and White America* by Carole Boston Weatherford, *Only the Mountains do not Move: A Maasai Story of Culture and Conservation* by Jan Reynolds, and *Passage to Freedom: The Sugihara Story* by Ken Mochizuki) can also help children understand the importance of global civil rights and good citizenship. Quality literature takes children beyond their own lives, broadens their experiences, nurtures their imaginations, and helps them develop understanding and respect for others (Hancock, 2000). Plus, compelling books like *All is Different Now: Juneteenth, the First Day of Freedom* by Angela Johnson, can strengthen common bonds that join us together. Seemingly it was just another hot June day full of routine labor. The sun rose as we got dressed, ate, and headed to the fields on the plantation. Hour after hour after hour young, old, and in-between worked hard and steady under the glare of the hot Texas sun. Bending, rising, plopping; bending, rising, plopping; bending, rising, plopping in sync with the usual routine while picking cotton. Suddenly an electrifying buzz of whispers, shrieks, single words, and shouts of glee spread from the port to town, through the countryside, and into the fields, zigzagging the lines in jubilant defiance of the routine. Read from a balcony by a Union general on a seemingly ordinary day, the most extraordinary message: All would be different now. F-R-E-E-D-O-M. As my aunts, uncles, and cousins, and my brothers and sisters, Papa, Mama, and I gathered, more folks joined us, to celebrate, as free people. F-R-E-E-D-O-M.

Planning strategies are on-going to ensure that teachers are sensitive to the need to engage in standards-based teaching. Teacher training should lead to mastery of course content and techniques to teach it meaningfully, with special attention to material in content standards, and include strategies tailored to diverse student populations and students with different learning styles (Spring, 2013). To illustrate, in social studies consider the Thematically Based Curriculum Standard X: Civic Ideals and Practices. Studying civic ideas and practices prepares learners for full participation in society and is the main purpose of social studies. Examining civic ideas and practices across time and in diverse societies helps learners bridge gaps between present practices and the ideals upon which our democracy was founded (National Council for the Social Studies, 2015).

*All is Different Now: Juneteenth, the First Day of Freedom* by Angela Johnson is an effective book for use with Social Studies because it is an informative story of historical fiction that is enriched with spirited illustrations. Likewise, it illuminates a crucial time in American History through a child-friendly perspective; and, it can easily be integrated into the curriculum. Besides, it is well written, includes accurate information; and, portrays characters and settings in a realistic manner. Also, the book introduces readers to a variety of concepts that include family ties, kinship connections, history, slavery, victory, and freedom. As a result, this book can be used to address Social Studies Standards via activities to inform students about the end of American slavery in an amiable manner. Told through the eyes of a child on a plantation, the reality of oppression, hard work, and eventual victory are relayed to readers through a moving, but non-threatening picture book. For instance, it is an excellent resource for read-aloud group activities that can pique students’ interest, stimulate their curiosity, and answer their previously-generated questions while actively engaging them in the learning process. Moreover, the book can be integrated into social studies to help students transition theory into practice.
American Award
Asian Pacific Indian Youth Literature Award recognizes the best writing and illustrations by and about American Indians. Notable literary awards like the following can aide in the selection of high-quality, culturally responsive children’s books.

Guiding Tools children in a gale of positive energy, amiable perspectives, and good-humor (Brinson, 2009). children can facilitate the advancement of thought-provoking competencies, endeavors, and achievements. Literature can also uplift learning and subsequently satisfy inquiries via active engagement. Literature that taps into the intelligences, strengths, and interests of and publishers of high quality fictional and biographical children-, intermediate-, and young adult books that appropriately depict understanding and appreciation of the cultures of all people.

American Award recognizes an outstanding book written by an individual of Asian or Pacific Islander descent. Carter G. Woodson Award recognizes authors of outstanding books germane to social studies that treat topics related to ethnic groups of color with sensitivity and accuracy. Coretta Scott King Award recognizes African American authors and/or illustrator whose books promote an understanding and appreciation of the cultures of all people. Dolly Gray Children’s Literature Award recognizes authors, illustrators, and publishers of high quality fictional and biographical children-, intermediate-, and young adult books that appropriately depict individuals with developmental disabilities. John Steptoe Award for New Talent is given to African American authors and illustrators whose books affirm new talent and offer visibility in writing or illustration at the beginning of their careers. National Jewish Book Award recognizes distinguished children’s books that authentically and sensitively express Jewish thought and experiences. Outstanding International Books recognize stellar books originally published in countries other than the United States and published then published here. Pura Pelpre Award recognizes authors and illustrators of Hispanic heritage who best portray, affirm, and celebrate the Latino cultural experience in an outstanding work of children’s literature.

Student Projects: Practitioners can also incorporate this book into their curriculum via multifaceted, student-oriented strategies. For example, provide students with ample opportunities to process the key terms featured in the lexicon (e.g., abolish, amendment, and Civil War). Likewise, apprise students of the interactive, online sources (e.g., juneteenth.com) noted in the book. Foremost, these resources can greatly increase their understanding about freedom. Also, a sound understanding of key terms and related events can aid readers’ transformation back into history and heighten their mastery of learning. Furthermore, establish a safe, nurturing environment and facilitate on-going opportunities for students to engage in courageous conversations that might include them posing uncomfortable questions. Nevertheless, once answered in a candid manner, they can move forward with their own analyses and resolutions about the issues being addressed. Moreover, provide students on-going opportunities to investigate the timeline of important dates and events (e.g., Emancipation Proclamation) to help them gain a deeper understanding of the complexity of issues related to freedom. Equally important, a comprehensive description of Juneteenth is outlined through both historical and contemporary practices to provide students insight into the progress made over time, along with the importance of maintaining the celebration of freedom in today’s society. As a result, students may be inspired to work cooperatively in groups to develop home-, school-, and community celebrations about Juneteenth (June 19, 1865) that are meaningful to them; thereby connecting social studies learning to additional aspects of their lives via proactive demonstrations. However, in addition to one time celebrations, be committed to providing students with on-going opportunities to engage in a variety of culturally responsive practices designed to benefit everyone equally via anti-bias applications, such as promoting multiple perspectives by letting them share their own perspectives, while respecting the viewpoints of others.

Beyond 28 Days of Fleeting Use: Culturally Responsive Literature Recollected, Present and Accounted for

The history of racial and cultural bias in the United States continues to influence the dynamics in many schools. Most schools in the United States influence their students’ perceptions of who is entitled and who have special privileges in our society through curricula and instructional practices. Thus, when curriculum and instruction in a school focuses primarily on one cultural group to the exclusion of others represented in the student or national population, there can be a harmful impact of the educational outcomes of students whose groups are left out. It is a common condition in many school communities regardless of their demographic makeup. (Browne, 2012). Students not seeing themselves reflected in the curriculum may impact their effort, motivation, and on-task behaviors, which can negatively impact educational outcomes, especially in the absence of other support systems being in place (Noguera, 2008).

Accordingly, multicultural literature is designed to give all children a SIP: Strong Self-worth, Information/Inspiration, and Pleasure (Brinson, 2002). Foremost, children need to be immersed in a variety of literature experiences that make them feel good about themselves in every aspect of their development. Literature provides a wealth of information that can stimulate a lifelong thirst for learning and subsequently satisfy inquiries via active engagement. Literature that taps into the intelligences, strengths, and interests of children can facilitate the advancement of thought-provoking competencies, endeavors, and achievements. Literature can also uplift children in a gale of positive energy, amiable perspectives, and good-humor (Brinson, 2009).

Guiding Tools

Notable literary awards like the following can aide in the selection of high-quality, culturally responsive children’s books. American Indian Youth Literature Award recognizes the best writing and illustrations by and about American Indians. Asian Pacific American Award recognizes an outstanding book written by an individual of Asian or Pacific Islander descent. Carter G. Woodson Award recognizes authors of outstanding books germane to social studies that treat topics related to ethnic groups of color with sensitivity and accuracy. Coretta Scott King Award recognizes African American authors and/or illustrator whose books promote an understanding and appreciation of the cultures of all people. Dolly Gray Children’s Literature Award recognizes authors, illustrators, and publishers of high quality fictional and biographical children-, intermediate-, and young adult books that appropriately depict individuals with developmental disabilities. John Steptoe Award for New Talent is given to African American authors and illustrators whose books affirm new talent and offer visibility in writing or illustration at the beginning of their careers. National Jewish Book Award recognizes distinguished children’s books that authentically and sensitively express Jewish thought and experiences. Outstanding International Books recognize stellar books originally published in countries other than the United States and published then published here. Pura Pelpre Award recognizes authors and illustrators of Hispanic heritage who best portray, affirm, and celebrate the Latino cultural experience in an outstanding work of children’s literature.
**Tomas Rivera Mexican American Award** recognizes the most distinguished books for children and young adults about Mexican Americans. Likewise, more helpful resources include the **Children's Choices List**—Annual list of the best books selected by children; and, the **Children's Book Council**—National non-profit trade association that collaborates with other national groups to help identify books of high interest for children.

**The Audacity of Accountability**

Books with inspirational characters from diverse populations can facilitate on-going meaningful activities, spark ingenuity, help abolish the structure of "isms," and enhance home-, school-, community-, and professional libraries. As a result, educators and child and family professionals should strive to build anti-bias libraries that include a wide variety of culturally responsive books. Equally important, students can select suitable titles for their own interests, self-studies, civic investigations, and social discoveries. Likewise, students can build their own anti-bias, classroom libraries as they discover books that fill in historical omissions, and grow into more social discoveries such as acceptance of themselves and others. Self-selections of apropos titles can speak volumes to denounce differences as deficiencies, while simultaneously celebrating individual expressiveness and strengthening common bonds that join us together.

In light of prevalent practices of 21st century omissions and gaps in curriculum and instruction that lack focus on culturally responsive groups, multifaceted strategies of culturally responsive literature were demonstrated for use in curricula to proactively address civil-, social-, and civic issues with students; heighten recognition of history, customs, and achievements of more than a handful of individuals from diverse populations; and, tap into students' multiple intelligences and individualized talents and interests to facilitate positive self-affirmations. Successively, the ultimate goal is the multifaceted use of culturally responsive literature to eradicate diversity, equity, and inclusion as an afterthought (e.g., drumming up a few culturally diverse books when someone sounds the alarm that they are not present); a fleeting thought (e.g., touting African American books during the 28 days of Black History Month); and, a superficial thought (e.g., just showcasing culturally responsive books to demonstrate a “commitment to diversity”). Therefore, the aforementioned strategies are also reinforced below with professional resources and a comprehensive, theme-based, bibliography of culturally responsive literature to keep the books in mind, present for use, and accounted for in curricula on a continual basis.

**Learning Outcomes**

- Strategies to integrate a ‘fair-minded amount’ of culturally responsive literature into curricula across content areas; maximize the use of culturally responsive literature on a ‘continual basis’; and, to utilize culturally responsive literature in a ‘meaningful manner’ via a “train-the-trainers” model.

- A cache of aligned themes designed to spark students' ingenuity via multiple intelligences, talents, and interests; increase their understanding of civil-, social-, and civic issues; and, facilitate their social and emotional well-being.

- A comprehensive bibliography of culturally responsive literature, professional resources, and guiding tools to continue to select apropos titles to build and enhance home-, school-, community-, and professional libraries on a continual basis.

**Lexicon**

**Anti-bias Practices:** Anti-bias practices include an active approach to challenge prejudice, stereotypes, bias, and the “isms.” It is not enough to be unbiased (and unlikely), nor is it enough to be an observer. Everyone has to actively intervene to challenge and counter personal and institutional behaviors that enable oppression (Derman-Sparks, 1989).

**Applied Cultural Studies:** The utilization of cultural precepts, processes and laws to solve, guide and understand human functioning, requisites and imperatives relative to the stimulation, reinforcement and internalization of the educational process.

**Core Culture:** The central portion/strand or essence of “the process which gives the group its general design for living and patterns for interpreting reality.” It is the “essential spirit” or energy of the group which characterizes and is reflected in all processes consistent with the group's cultural reality, including educational content and methods.
Culturally Consistent Educational Praxis: A systematic process of developing and/or stimulating the knowledge, skill, ability, attitude and character necessary for the subject (student) to undertake socially defined, goal oriented and culturally meaningful activity designed to allow them to achieve mastery of all aspects of human functioning, (re)product themselves in the objective world, make explicit their personality, and validate their self and kind.

Culturally Responsive Literature: Culturally responsive literature reflects an awareness, knowledge, and appreciation of different cultural groups, including sensitivity and receptivity to the sociocultural context of others’ lives. Culturally responsive books also include details that help define the characters as members of a particular group. Awareness of and attention to individual’s perceptions of individual-, cultural-, and institutional prejudice are also considered to be important elements of cultural responsiveness.

Culturally Responsive Practice: The practice is intended to ensure that all groups are benefitting equally from instruction and classroom management practices. It is often applied for race and ethnicity, but should be considered whenever there is a group that is not benefitting in an educational environment. It involves a set of congruent educator/stakeholder behaviors, attitudes, and policies that come together in a system that works for all students. At the classroom level, a culturally responsive approach means being aware of cultural differences, examining teaching materials and practice, and adapting programs and interventions, as appropriate, to respond to different student needs. On an institutional level, culturally responsive practice involves monitoring the effects of programs and interventions for all students, especially those from groups that have been historically marginalized. At its heart, cultural responsiveness involves self-reflection, continuous examination of data, and raising difficult and sometimes awkward questions about why some students succeed and others do not.

Culture: Culture is a human process representing the vast structure of behaviors, ideas, attitudes, values, habits, beliefs, customs, language, rituals, ceremonies and practices peculiar to a particular group of people and which provides them with a general design for living and patterns for interpreting reality.

Implicit Bias: An explicit bias is an attitude that somebody is consciously aware of having. In contrast, an implicit bias is a positive or negative mental attitude towards a person, thing, or group that a person holds at an unconscious level. Research has found that our implicit and explicit biases often diverge (e.g., a person may consciously express a neutral or positive opinion about a social group that they unconsciously hold a negative opinion about).

“Isms” including Racism, Classism, Sexism, Ableism, and Colorism: Racism is the belief that race is a primary determinant of human traits and capacities and that racial differences produce an inherent superiority of a particular race. Or, on the opposite side, racism can be described as the belief that a certain race or races portray undesirable characteristics. In the case of institutional racism, racial groups may be denied rights or benefits, or get preferential treatment. Classism is prejudice and/or discrimination on the basis of social class. It includes individual attitudes and behaviors, systems of policies and practices that are set up to benefit the upper classes at the expense of the lower classes. Classism is grounded in a belief system that pits individuals with differing socioeconomic statuses, and other class related divisions like education, against each other. Classism can be extremely divisive, because in the midst of the current recession a definite distinction is growing between “the haves” and “the have nots.” Sexism is prejudice or discrimination based on gender. Behaviors, conditions, or attitudes that foster stereotypes of social roles based on gender. An important, but often overlooked, part of the term is that sexism is prejudice plus power. Ableism is a form of discrimination or social prejudice against people with disabilities. It may also be referred to as disability discrimination, physicalism, handicapism, and disability oppression. Colorism is a form of prejudice or discrimination in which human beings are treated differently based on the social meanings attached to skin color alone.

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- Anti-bias Education for Young Children and Ourselves- Louise Derman-Sparks and Julie Olsen Edwards
- Can We Talk about Race (And Other Conversations in an Era of School Resegregation)-Beverly Daniel Tatum
- Color Matters: Skin Tone Bias and the Myth of a Post-Racial America-Kim Norwood
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- Dialects in Schools and Communities (2nd ed)-Carolyn Temple Adger, Walt Wolfram, & Donna Christian
- Dreams from My Father: A Story of Race and Inheritance-Barack Obama
- Elementary Children’s Literature: Infancy through Age 13 (4th ed)-Nancy A. Anderson
- Letter to My Daughter-Maya Angelou
- Letters to a Young Brother (Manifest Your Destiny)-Hill Harper
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- Skin Deep: How Race and Complexion Matter in a “Colorblind” Era-Cedric Herring, Verna M. Keith, & Hayward Derrick Hortes, Editors
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<td>Amistad</td>
<td>2013 (Book Two in Trilogy) (Coretta Scott King Author Award)</td>
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- **Science, Technology, Engineering, and Mathematics**


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- **Media Arts, Performing Arts, and Visual Arts**

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2. Name of Author: *Carol Stanford*
3. Affiliation of Author: *Doctoral Student - Education Leadership & Management - Drexel University*
4. Address of author: *7300 Shelborne Drive, Granite Bay, CA 95746*
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6. Abstract below:

**Barriers to Substance Abuse Treatment for Nurses**

Abstract

The aim of this research paper is to address the current epidemic of prescription drug misuse and abuse among the nursing population and bring attention to how substance use disorders, that occur in the nursing profession, affect the profession and endanger the public. Data was synthesized from existing literature to explain discipline and treatment programs and explain why prevalence of nurses that participate in treatment in general is lower than the prevalence of the general public’s participation in treatment. Recommendations and methods are presented in the research that can be used to increase awareness in nursing education programs and within the nursing profession to remove obstacles to treatment. This could significantly impact the number of student nurses and licensed nurses entering into treatment early in their nursing careers; thereby, providing greater protection to the general public.
WISEngineering Kindergarten Kids: A Feasibility Case Study

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ABSTRACT

The current research documents findings from a qualitative feasibility case study of a blended engineering design project, WISEngineering Kindergarten Kids, implemented by 5 families with their Kindergarten aged children (5 or 6 year olds). Specifically, the study explores the feasibility of implementation, parental and child engagement, and appropriateness of activity level. The study considers similarities and differences in the way parents implement the activity with their children. Educational implications are discussed.
INTRODUCTION

The current research documents findings from a qualitative feasibility case study of a developmental blended engineering design project, WISEngineering Kindergarten Kids (WISEngineering Kids), that blends formal and informal learning, and hands-on and online learning environments. Specifically, the study explores three research questions: 1) Can WISEngineering Kids be feasibly implemented as a take home activity implemented by parents/caregivers with their Kindergarten children? 2) Do parents and children find the WISEngineering Kids engineering design challenge engaging? 3) Is the activity level appropriate for parents/caregivers and children? Additionally, the study considers similarities and differences in the way parents implement the activity with their children, and discusses educational implications.

As a scale-up of WISE Guys and Gals (WGG), a project funded through a grant from the National Science Foundation (Award Number DRL 1422436) which brings blended learning design challenges to middle school aged learners in informal STEM (science, technology, engineering, and mathematics) settings, WISEngineering Kids builds upon the underlying premises of WGG. These state that children, especially those from groups underrepresented in STEM, will be exposed to and develop engineering design thinking through use of the engineering design cycle, and that exposure to blended engineering design activities will facilitate children’s awareness of and appreciation for STEM careers. WGG activities provide learners with opportunities to engage in problem-solving while developing problem-solving strategies and developing habits of mind, or a set of behaviors that are enacted when answers to problems are not known, from an engineering perspective (Chiu et al, 2013; DeJaegher et al.,
WGG builds upon a Knowledge Integration (KI) framework whereby learning involves “building upon and sorting out the numerous, varied, and often conflicting ideas students have about phenomena” (Chiu et al, 2013).

WISEngineering Kids extends upon the WGG framework by involving a different population of learners, namely Kindergarten students and their parents or caregivers, and integrating three additional lines of thought. The first line builds upon the theoretical framework of social constructivism (Palincsar, 2005) and family systems theory (Christian, 2006) through which families co-construct knowledge and increasing the knowledge, engagement, and interest of parents and caregivers in specific content areas presents the possibility of influencing the knowledge, engagement, and interest of their children. The second line incorporates the understanding that learning of content and of academic language is enhanced when it occurs in context (Gibbons, 2015). This is a key concept acknowledged in the English Language Arts Common Core standards (http://www.corestandards.org/ELA-Literacy/CCRA/L/) that extends to STEM learning environments (Lee, Quinn, & Valdes, 2013). In fact, the Next Generation Science Standards (NGSS) discusses the importance of literacy in developing scientific knowledge, and the work done to draw connections between content and literacy. The content in the current work, as highlighted in the NGSS Crosscutting Concepts, are multi-dimensional and focused on crosscutting concepts in science and engineering (NGSS Lead States, 2013). The third is the understanding that early exposure to social and educational learning experiences increases children’s potential for positive academic outcomes later in life (Howes et al., 2008; Phillips & Shonkoff, 2000).
Family Systems

WISEngineering Kids presents blended engineering design challenges for use by parents/caregivers with their children. These activities offer both parents/caregivers and children opportunities to develop the habits of mind of engineers, engage in problem solving situations, and develop their problem solving strategies. Presenting learning experiences that involve parents/caregivers and their children builds upon social constructivism (Palincsar, 2005) and family systems theory (Christian, 2006).

The connectedness of each family member is a key understanding in family systems theory (Van Velsor & Cox 2000) through which the experiences encountered through family situations impacts how family members behave and form expectations for their interactions with others (Christian, 2006; Kern & Peluso 1999; Nieto 2004). The family system consists of interdependent subsystems (Bornstein & Sawyer, 2005; Cox & Paley, 2003; Minuchin, 1985). The theory involves family cohesion, adaptability, and communication (McHale & Sullivan, 2008; Olson, Russel, & Sprenkle, 1980). Families are constructing knowledge together.

Although the family systems model has been largely applied to clinical settings, research in science and language literacy supports the potential of influencing parent and caregivers in order to influence the child. Lonigan and Whitehurst (2008) conducted research exploring the impact of different shared reading experiences on children’s oral language development. In the study, parents and teachers were trained using videos to implement specific interactive reading techniques. Children were then exposed to different conditions (e.g., control, school only reading condition, home only reading condition, and combined home and school reading condition). Children exposed to home reading conditions experienced the greatest effects. Likewise, in a
study by DeBaryshe (1995) mother’s reading beliefs positively related to their children’s interest in books. Pingree, Hawkins, and Botta (2000) explored the impact of family communication patterns on children’s science story evaluations, and found that when families exhibited orientation towards concepts in science stories their children in turn thought about science issues when engaging with the science stories.

WISEngineering Kids builds upon the understanding that increasing the knowledge, engagement, and interest of parents and caregivers in STEM and their awareness of STEM careers can impact the influence parents and caregivers exert on the knowledge, engagement, and interest of their children in STEM and their children’s awareness of STEM careers. It also supports NAEYC standards for Developmentally Appropriate practice by integrating its key concerns (e.g., learning experiences that are crafted through an understanding of child development and learning theories, individual appropriateness, and attention to cultural considerations) (Copple & Bredekamp, 2009) into activity design and revision considerations, as well as project functioning.

**Learning of Content and Academic Language in Context**

WISEngineering Kids activities provide parents/caregivers and children with the opportunity to enhance their understanding of the content by promoting their academic language development. For example, certain key terms are carried across activities (e.g., design challenge, specification, constraint, and other terms associated with each part of the design cycle). Each activity therefore supports learner comprehension of content and academic language skills as learners use key terms repeatedly and in different contexts (Spycher, 2009) as they review key
concepts, communicate design choices and revisions, and reflect upon key decisions during the
design cycle.

Moreover, research indicates that learning of academic language is enhanced when it
explored kindergarten children’s oral language development through an intentional versus
implicit instructional approach. In the intentional approach, Kindergarten children were taught
key science terms through a vocabulary intervention in science. Children in the control condition
received science instruction but the key terms were not explicitly taught. Findings not only
showed that children receiving the explicit instruction learned more of the target terms, but also
that these children were better able to express their understandings about the scientific concepts.
In this vein, Pollard-Durodola et al. (2011) created a shared book-reading vocabulary
intervention in order to help Head Start preschool children develop vocabulary knowledge
through their understandings of new words which they connected to concepts in science and
social studies.

Therefore, although the project focus is STEM, WISEengineering Kids also addresses
ELA Common Core standards, such as applying “knowledge of language to understand how
language functions in different contexts to make effective choices for meaning or style, and to
comprehend more fully when reading or listening” (http://www.corestandards.org/ELA-
Literacy/CCRA/L/).

**Supporting Early Learning to Facilitate Positive Outcomes Later**

WISEngineering Kids brings STEM learning and awareness of STEM careers to
parents/caregivers and their young children in order to facilitate early exposure to social and
educational learning experiences. Research indicates the importance of early intervention, and the potential early intervention has for increasing children’s positive academic outcomes later in life (Howes et al., 2008; Shonkoff & Phillips, 2000).

Karoly, Kilburn, & Cannon (2005) conducted a literature review to identify evaluations of programs providing early services for children (prenatal though kindergarten). Twenty programs were identified, and considered to have enough evidence of child outcome data to include in the study. Nineteen of the 20 programs evidenced positive effects on children’s development. Programs varied in focus, from those that provided parent education, to those that provided early childhood education, to those that combined parent and early childhood education. While longevity of program outcomes varied, lasting gains were evidenced for outcomes such as grade retention, and high school graduation rates. Additionally, data indicated that the parents of these young children benefited when they were the object of the intervention.

Moreover, McClelland, Acock, and Morrison’s (2006) research on the links between kindergartener’s learning-related skills and pathways in reading and math also support the importance of early intervention work. Their research explored the links between 538 kindergarten through sixth grade children’s learning-related skills (including self-regulation and social competence) on outcomes in children’s reading and math in later elementary school grades. Findings indicated that children’s learning skills predicted their development in reading and math in second grade, and that the gap between lower-rated and higher-rated children’s skills increased from kindergarten and second grade, although the gap then remained consistent until sixth grade. Findings highlight the importance of early intervention.
WISEngineering Kids

WISEngineering Kids breaks new ground by attempting to influence children’s exposure to and engagement in engineering design challenges by exposing and engaging parents/caregivers in these very same activities with their children. WISEngineering Kids unites the aforementioned lines of thought through a program which provides parents with access to blended engineering design challenges which they then implement with their children. Parents are given the supplies needed for each activity and access to the WISEngineering platform. The online component provides parents with all the information they need to work through the necessary content knowledge and hands on component of each activity. Parents and caregivers of WISEngineering Kids do not need to know the content in order to implement any of the activities. As with WGG, in WISEngineering “the activities are based on the informed engineering design pedagogy, where Knowledge and Skill Builders (KSBs) provide the scaffolding information about the challenge so the youth understand why and what they are doing” (Advances in WISE Guys & Gals). The WISEngineering environment contains all necessary information, as well as links to STEM careers. In fact, each activity links to a particular engineering discipline (e.g., Chemical, Mechanical, Civil) and videos engage viewers in thinking about challenges these engineers consider. Participants in the current study implemented “SlimeY” with their children. SlimeY engages participants as chemical engineers in the challenge of creating and testing SlimeY. Participants are then brought through a spiral learning model where they develop domain knowledge, ideate solutions, build a prototype, then test, evaluate, and refine their design. This process can be implemented multiple times until each participant reaches his or her goal.
Next, we will explore the methodology and results of a feasibility study. Core research questions will be considered.

**METHODOLOGY**

Five families provided feedback on the first iteration of the WISEngineering Kids program. All families came from multi-lingual households and all children attended an urban school where at least 40% of the student population is classified as disadvantaged. Each family implemented one WISEngineering Kids activity, *SlimeY*, with their children and had their child create an avatar on the WISEngineering platform. At the start of the program, one parent from each family was given materials for *SlimeY* consisting of borax, glue, and food coloring. This parent was then provided with a logon for the WISEngineering platform, and verbal and written instructions for platform use and avatar creation. Parents were instructed to have their children create an avatar, and complete the *SlimeY* activity following the steps provided in WISEngineering. The parents were also told to explore key platform features for saving thoughts and work (e.g., comments, pics, videos) online through a private journal feature (e.g., *Design Journal*) and for communication amongst families (e.g., *Design Wall*). One parent from each family then provided feedback about *SlimeY* after completing the activity with their child. Feedback was guided by a series of semi-structured interview questions focused on exploring implementation feasibility, activity level, and parent/caregiver and child activity engagement. and prompts related to the three key research questions after creating an avatar for their child and completing one WISEngineering Kids activity (*SlimeY*) with their children. Prior to completing *SlimeY*, participants were given information about the WISEngineering project, the
WISEngineering platform, and provided with logon information for one child and supplies for one child to complete the activity with their Kindergarten aged child.

**FINDINGS**

**Feasibility**

All caregivers were able to implement the WISEngineering Kids activity with their children although implementation varied from caregiver to caregiver. All caregivers, except one implemented the activity with more than one child. Caregivers reported bringing in older and younger siblings, as well as visiting friends to take part in the activity. In total, 14 children participated, with two caregivers implementing the project with 4 children, and the remaining caregivers implementing the activity with 3 children, 2 children, and 1 child respectively. Although all Kindergarten aged children were 5 or 6 years old, ages of siblings and friends ranged from 3 to 10 years old.

All caregivers reported viewing the online portion of the activity prior to initiating the activity with their children, noting they wanted to be certain they explained the concepts correctly to their children and would be able to answer their children’s questions. Additionally, caregivers wanted to see what the hands-on portion of the activity would look like and noted researching videos on the making of slime in preparation for completing the activity with their children.

Two families completed the activities the same day and three families completed the activities over the course of several days. While all children participated in the hands-on portion of the activity, and were shown the avatar, caregivers reported that only older siblings were exposed to all the online concepts and questions, with caregivers selectively choosing pieces
from the online portion to discuss with younger siblings (e.g., *SlimeY* ingredients). Caregivers reported feeling that younger children would not be able to understand all the online concepts but felt some information was understandable even for younger children. Since all families were only given one logon for their Kindergarten aged child, all families used the avatar selection and entered the question responses of the original Kindergarten aged child when completing the online portion of the activity. Additionally, when friends participated, caregivers reported they only took part in the hands on component of the activity. Families reported using laptops for the online portion of activities, although many noted they would prefer to use tablets or smart devices going forward.

Moreover, three caregivers reported doing the activity more than once with their children in order to revisit the underlying concepts and revise their *SlimeY* designs. Although provided with material for only one child, and one implementation, caregivers reported having the majority of supplies needed for the activity in their homes, and purchasing the remaining supplies which caregivers indicated were not costly. Two caregivers noted extending upon the activity by bringing in other items to enhance their *SlimeY* production (e.g., glitter).

**Engagement**

All caregivers reported that the children found the activity engaging (e.g., “They really loved it.” “They are extremely excited and they want to do it again tomorrow.”) Caregivers stated that the children wanted to do the activity again, and found the activity enjoyable. Two caregivers reported that their children even took their slime to school to show teachers and friends.
Challenges were identified in engagement for the online portion of the activity. However, caregivers reported addressing these challenges by breaking up the activity over a series of days, modifying the language, and bringing in online videos (e.g., “Oh definitely they were engaged and even the little one was grabbing at it – I want to stretch or stir. I have your piece – you have mine. Answering the questions was the tougher part of it. Drag and drop – would work much better for the younger kids – because it’s already there for them to see.” “We did a little each day for them to answer the questions properly.”) Caregivers reported engaging multiple children and that all children were enthusiastic and excited about taking part in the activities (e.g., “They are extremely excited and they want to do it again tomorrow. It’s so exciting. [Child Y stated] I’m going to go to school. I’m going to tell my teacher. Child Y’s teacher is the science teacher. So then he said he’s going to show her and tell her how we did it. And why we didn’t have the consistency.” “I love how it keeps them into it – they were never bored during the whole process. So interesting. After the first one they are already asking when is the second one.”)

Additionally, parents reported finding the activity engaging and learning from the activity (e.g., “We didn’t know there is the kind of this thing. We only let them play with the play dough and squishy things. We don’t know this. It’s good for them.” “Can’t say for other kids. I can only say for myself, I would be totally interested in this kind of activity – every other week may be too much but once a month would be totally doable. A simple kind of activity.” “And then this thing called Borax. I kind of – for me it’s the first time I experienced it as well – I was as excited as they were – I want to see what’s the result, what’s going to happen. It’s a really fun activity.”) Parents identified areas where they came across new ideas, struggled with the activity, but used online resources to look further into the information, and ultimately found the activity “fun.”
Moreover, although the online environment offers tools for communication and collaboration, as well as an online journal that is private and where a user can document his or her work and thoughts, caregivers who participated communicated with each other in person (e.g., “I loved it. Heard from Caregiver X – she said the children seemed like they had so much fun. She even went out and got more stuff – [I asked] what other stuff do you need. She got sparkly material, put her own spin on it, and made it more fun for the kids.”) Some caregivers uploaded videos of their children competing activities to YouTube, although they were encouraged to use the Design Wall, a tool built into the online learning environment that allows users to post comments, videos, and pics for all to see. However, caregivers reported using tools with which they were already familiar (e.g., YouTube).

**Level**

All caregivers reported that the activity level was doable with slight modifications. Although, two caregivers reported they were either “scared” or apprehensive prior to starting the activity, referencing lack of prior knowledge or ability to complete the hands-on portion of the activity, these caregivers reported that the activity was doable and enjoyable upon activity completion (e.g., “I was scared I wouldn’t know what to do. But when I started doing it – it was definitely doable and my children loved it. They said thank you.”)

Caregivers reported kindergarten aged children could complete the activity with caregiver support, noting the hands-on portion of the activity was understandable. But, that the language and online concepts required some translation by caregivers so that children could fully understand the concepts. Caregivers reported changing language, showing children online videos, and providing pictures as visual support for the various online concepts. Suggestions for
activity development included changing more questions to drag and drop items, or having item 
responses be visual rather than text based (e.g., picture representations for words) that children 
might touch to answer questions, and simplifying language. However, caregivers reported that 
they were still able to do the activity with their children and that both children and caregivers 
found the activity engaging (e.g., “It’s engaging but at the same token it feels like – there’s a lot 
of steps that I’m trying to figure it out too as I’m learning it so video would help”).

DISCUSSION

Feedback supports the feasibility of parents or caregivers implementing WISEngineering 
at home with children. Reports indicate that the activity is not only doable, but that the activity 
can also be conducted simultaneously with multiple learners as a team through the use of one 
account. Data suggests that the experience could be enhanced through an extended training 
session where parents and caregivers could be provided with more support in utilizing the 
offerings of the online environment (e.g., Design Journal, Design Wall). Additionally, responses 
indicate that activity enhancements should include revising activity language to make it more 
“kid friendly,” revising question items to make them more accessible to younger children (e.g., 
supporting text with pictures), and either shortening activities or creating pre-defined stopping 
points to guide parents as they implement the activities with their children. Finally, feedback 
suggests that including support videos for key concepts and directions in the online platform 
might enhance the experience for parents, caregivers, and children.

Data supported that the WISEngineering Kids activity was engaging for both children 
and parents. It also supported that the activity level is appropriate for Kindergarten students 
when guided through the activities by their parents and caregivers, although slight modifications
are needed (e.g., language revision, item enhancements). Additionally, although parents indicated using external supports to enhance their understanding and implementation of the activity, all reported that they felt the activity was appropriate for their families.

Moreover, all feedback consistently indicated high levels of engagement for both parents and children. Additionally, two parents reported the activity bringing them closer to their children (e.g., “Encourage parents to do this type of work because it connects parents with their children and with the children they are working with because they have fun.”)

**Implications**

Data suggests that the WISEngineering Kids program is feasible, at an appropriate level, and engaging for parents, caregivers, and children. Next steps include exploring changes in participant (e.g., parents, caregivers, children, and teachers) STEM content knowledge, engineering design thinking, awareness of and attitudes towards STEM, and connectedness.

Every family that participated, except one family, involved older and/or younger children and friends with parents supporting children as they engaged in each step of the activity. Families found the WISEngineering platform easy to navigate, although they had suggestions for activity improvements. The program presents a way to bring parents and caregivers together as collaborative learners of STEM. Moreover, the program brings parents and learners together in a developmentally appropriate and socially and cognitively stimulating activity.

WISEngineering Kids presents a way to expose parents to engineering habits of mind, stem careers, and key stem concepts. This program presents the possibility of influencing parental learning and attitudes towards STEM and STEM careers so they in turn can influence their children’s learning and growth regarding STEM and STEM careers.
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Interviewing the STEM classroom:

Using hermeneutic phenomenology to better understand the relationship between architectural space and curriculum enactment

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Introduction

Although Canadian students are consistently ranked among the highest-performers on international tests such as PISA (Brochu, et al., 2013; Bussière, et al., 2004), the nation’s business, governmental, and educational leaders are increasing concerned that today’s students are not developing the skills and knowledge required for them to prosper in the uncertain economic, social, and environmental landscape of 21st century (Boudreault, et al., 2013; Conference Board of Canada, 2014a; and Orpwood, Schmidt, & Jun, 2012). The assertion that future economic and social progress relies on innovation, and innovation relies on education is replicated in numerous reports published by the Organisation for Economic Co-operation and Development (including Kärkkäinen, Vincent-Lancrin, 2013; OECD/Eurostat, 2005; OECD, 2010; and Toner, 2011). Canadian ministries of education, like their international peers, are working furiously to (re)develop curricula that will facilitate the development of so-called ‘21st century skills’ in their students; skills such as critical thinking, problem solving, creativity, adaptability, collaboration, cultural fluency, environmental responsibility, and technological literacy. Part of these curriculum reform initiatives include movement towards greater interdisciplinary between traditionally discrete school subject areas (Gislason, 2011; Motz, Biehle, & West, 2007) demonstrated, most obviously, by the rising prominence of STEM (Science, Technology, Engineering, and Mathematics) programs of study across the member nations of the OECD.

The Conference Board of Canada (2014b) and the Canadian Organisation of Chief Executives (Orpwood, Schmidt, & Jun, 2012) are concerned that relatively low student participation in Canadian university ‘STEM courses’ and interest in careers in ‘STEM fields’ (compared to rates in other OECD nations) indicate that Canada’s
competitive future is at stake. As such, many school districts are attempting to integrate 21st century and STEM approaches to teaching and learning into their existing programs of study. Yet the vast majority of jurisdictions that try to move towards 21st century STEM integration “will find their progress limited by the facilities available in their schools,” (Motz, Biehle, & West, 2007, p. xi).

The Right Honourable James Bacon, former premier of Tasmania, articulated the need for 21st century school redesign eloquently when he said, “schools should be places in which... young people are granted opportunities to do/make/be/create/explore that are not available anywhere else in their lives,” (Nair, Fielding & Lackney, 2009, p. 15). No longer are classrooms designed for 'sitting-and-getting' information adequate, regardless of the presence of an interactive whiteboard at the front of the room. Teachers need more from their 21st century classrooms; educators who are taking project-based, design-thinking approaches to teaching STEM courses even more so. Academics with expertise in both education and architecture agree that there are significant gaps between how schools are planned architecturally and how they are used by their occupants (Gislason, 2011; Motz, Biehle, & West, 2007; Nair, Fielding, & Lackney, 2009; and Woolner, 2014). As the previously discrete fields of STEM become more integrated in the enacted curriculum of secondary schools, architects are increasingly being asked to design new learning spaces which are adaptable (Hille, 2011) and offer multiple uses and configurations that allow for numerous pedagogical approaches and activities. Building occupants alter their behaviour to fit the built constraints of their physical environment (Leaman & Bunn, 2014), it is essential that teachers and students work with school designers to imagine these new spaces to ensure that they indeed offer new pedagogical possibilities.
A starting point to considering what 21st century STEM classroom spaces could look like is an examination of current science classroom spaces. There are many ways to do this including the rather novel approach of ‘interviewing’ the space itself.

**Interviewing Objects**

In their article “Interviewing Objects: Including Educational Technologies as Qualitative Research Participants”, Adams and Thompson (2011) argue that educational researchers need to pay more attention to the non-human elements that surround teachers and students. They argue:

Educational activities and practices are similarly caught up in, tethered to, and shaped by the artifacts at hand: blackboards and books, passwords and online profiles, and PowerPoint and plagiarism software. Yet, for the most part, things [emphasis in original] are overlooked as incidental or inconsequential entities rather than problematized and enlisted as important participants in qualitative research projects. (p. 733)

Adams and Thompson proceed to demonstrate how different educational technologies can be ‘interviewed’ to better understand their relationships and effects on the learning environment. The authors do not propose the sort of sit down interview that a journalist or researcher may be accustomed to conducting where interviewer and interviewee sit face-to-face for a prolonged dialogue. The sort of interview that Adams and Thompson propose is not so much back-and-forth banter, but the surfacing of insights that result by making an object or artifact the centre of ontological consideration by using eight heuristics to explore its being and connections.

Heuristics are rules-of-thumb, short-cuts, filters, or starting points that may provide possible approaches to new understanding (Adams & Thompson, 2011, p. 734) that
allow the researcher to draw on various experiences and theoretical frameworks to attempt to surface new ways of looking at an issue, problem, or topic. Adams and Thompson, for example, draw on their expertise with hermeneutic phenomenology and actor-network-theory (ANT), respectively, to explore pedagogical human-technology of interactions. Phenomenology orients itself to the experienced phenomena of the world “pre-reflectively, pre-verbally, pre-theoretically” (p. 736). Actor-network-theory explores the network of relationships and intentions between human and non-human actants. While there are areas of overlap and dissonance between phenomenological and actor-network-theory, “both have a primary interest in ‘letting the things of the world speak for themselves’ (Heidegger as cited in Adams and Thompson, 2011, p. 738).

Adams and Thompson suggest that although their paper is focussed on two particular digital technologies that they “believe it is reasonable to apply [their] heuristics to a full range of teaching and learning” (p. 747) objects, artifacts, and things. Rather than using their proposed heuristics to explore a particular technological tool or object, in this paper I provide an interview of the school science classroom itself. Due to the length of discussion that each heuristic generates, I will limit myself to only two of the eight heuristics in this paper: listening to the invitational quality of things and applying the laws of media. In my opinion, these two heuristics are the most eye-opening and thought-provoking of the eight and are best-suited for conference roundtable discussion. I’ll address the remaining six heuristics in future papers.

**Listening for the Invitational Quality of Things**

This heuristic draws on hermeneutic phenomenology and requires the researcher
to be attuned to the objects in their environment. To become more aware of the ‘voices’ of current science classrooms and what they’re telling us about how 21st century STEM spaces should be designed, it is helpful to wonder how classrooms of different arrangements encourage and invite certain behaviours while discouraging or constraining others. The most useful tool to help elucidate this wondering is the theory of affordances proposed by James Gibson (1977).

“The affordances of the environment are what it offers the animal, what it provides or furnishes, either for good or ill” (Gibson, 1977, p. 127). For example a hammer affords the ability to strike objects (such as a nail, wall, or finger) with great force. A large body of water may afford drinking and swimming, but because its materiality in liquid form is not rigid enough to support bodies of a certain weight, it also affords drowning. Affordance is closely associated with perception; an animal must be able to perceive the action potential of an object or surface to hear the ‘invitation’ of what it affords. Here are two examples.

When I was young, I watched at the zoo as a young chimpanzee used a stick to retrieve potato chips which had fallen between the outer security fence and its enclosure. The chips that couldn’t be grabbed by the chimp’s hand were reached using a nearby stick that afforded a longer reach. When the stick could no longer reach the remaining potato chips, the chimp used his stick to retrieve a longer stick and used it to drag the most distant treats towards itself. At this point an older chimp became aware that potato chips were being consumed and came over to its subordinate and took the long stick away. After several minutes of trying to figure out how the stick produced potato chips, the senior chimp left in frustration. He could not perceive how the object afforded access to the potato chips a few meters away.

During my childhood, I would periodically watch episodes of MacGyver. In most
episodes, the titular character would combine mundane objects to solve life and death situations. One of my favourites is a moment when he stops leaking sulfuric acid with chocolate, explaining afterwards that acid reacts with the sugars in the chocolate to create a carbon plug in the cracked container. It is MacGyver’s awareness of what the chemical reactants affords that allows him to escape. When he sees chocolate and sulfuric acid, he perceives a helpful chemical reaction that produces a sooty solid.

When it comes to designing and teaching in a 21st century STEM classroom, school designers and teachers need not have MacGyver’s encyclopedic knowledge of material potentiality; chimp-level awareness should do.

Allow me to demonstrate the nature of affordances by comparing three different types of classroom space where most science-related lessons are currently taught: general classrooms, combination classroom/laboratories, and dedicated laboratories.

**The General Classroom**

My first assignment was teaching science to four different grade five and six classes in one wing of the school. My teaching days were spent driving a cart of supplies from room to room; setting up, teaching, cleaning up, and moving on to the next room. Despite the obstacle of not having a classroom of my own, my students were able to participate in a number of hands-on learning activities over the course of the year.

For lecture-type activities and class discussions, these general classrooms worked well enough. Individual student desks, whether they were organized in rows or pods, afforded sitting and writing. The rooms had whiteboards along the front wall with ceiling-mounted projection screens that could be lowered as needed for instructional purposes. Each room had a portable TV and VCR/DVD combo player (this was a few
years before LCD projectors become widespread in Calgary classrooms) at the front of the room where it could be seen and heard by most students without the need to adjust seating arrangements. These classrooms were well-suited for direct instruction of science concepts, but, as Hodson (1993) points out, science education is not just learning science and learning about science, but also doing science. For hands-on science explorations, these rooms fell short.

The rooms didn’t afford much in the way of usable surfaces for projects and investigations. Despite the total surface area of the student desks, there was a veritable dearth of stable horizontal surfaces on which to conduct scientific project work. Their personal equipment and scientific apparatus (including pencils, batteries, plasticine, drinking straws, and containers of solutions) were constantly falling off their desks or getting kicked across the floor. Every time a student rose from their seat or adjusted their position, the contents of their desks would jiggle, shift, and topple over. Seeking to overcome the shortcomings of their desks, students would work on the horizontal cover of the radiator at the back of the room or on the floor in the hallway.

Each room had a sink which afforded easy-access to water and provided some ability to access water for classroom animals and plants, mix paints and solutions, and soapy water for clean-up. The sink did have a hot water tap but it could take ten minutes for the warm water coming out of the faucet to become hot enough to use to dissolve substances or clean containers with any sort of efficiency. Often electric kettles were brought in to meet hot water needs. Luckily the room had a number of electrical outlets around the exterior walls and only rarely did a circuit get tripped while the class was using kettles, microwaves, and other electrical devices simultaneously.

Along the back of the rooms were banks of windows. This afforded daylighting (the benefits of which have been extensively researched over the past decade) and
transparency; outside weather could be observed and exterior life could permeate the classroom. Only two small window panes could be opened, however, and these only by a matter of about thirty degrees. So natural light could enter the space and the world beyond the classroom could be observed, but functionally, the class was permanently separated from the exterior environment.

Two desktop computers (massive by today’s standards) sat on small wheeled desks at the side of each classroom, their position determined by the location where ethernet cable jacks had been added to the school a number of years prior. This afforded some ability to connect with the internet and access software, albeit for only a small number of students at any given time.

Each classroom came with eight foot tall wooden cabinets that afforded a modest amount of storage for supplies and the teachers’ materials. More often than not, these were disorganized and crammed with ‘dead’ markers, old textbook resources, and forgotten assignments. Sometimes these were better organized and students could easily access scissors, paper, art supplies, and the other materials they needed for project and group work.

A sixth of the useable classroom space in each room was a partially closed-off cloak room which afforded hooks for students to hang their coats and areas to keep their wet boots. Once class began, however, these spaces became more no-space than ‘know-space’: interfering with the flows of children between their desks, the sink, computer, and cupboards.

Although notions of progressive education existed well before the construction of these classrooms, their design reinforced a teacher-centric stand-and-deliver approach to teaching and learning. The presence of the sinks didn’t indicate that learning was going to be active, hands-on, and ‘messy’ as the rest of the space (including the
choice of student furniture and display technologies) oriented the enactment of curriculum towards desk work and passive observation of audio-visual stimuli. Although the outdoors were visible through relatively large windows, the limits of their open-ability and the cloakroom just inside the classrooms’ thresholds silently reinforced that the outdoors were to remain outside.

**The Combination Laboratory/Classroom**

Beginning in my second year of teaching, I was assigned to teach grade eight and nine science in a wing of the school that had been built as part of an extension two decades earlier.

The classroom set-up of this room is what the National Science Teachers’ Association Guide to Planning School Science Facilities (Motz, Biehle & West, 2007) would classify as a “combination laboratory”; the centre of the room was dedicated to student desk space and but the area at the back of the room and its periphery were lined with laboratory benches (including sinks, electrical outlets, and natural gas valves). A large lab bench for teacher demonstration was at the front of the room along with three sliding whiteboards and a retractable ceiling-mounted projection screen. Bookshelves and cabinets lined the room on both sides and an area for four computers had been built along one wall where ethernet ports had been installed.

Due to the placement of the boards and screen, there was a definite ‘front of the room’; it was apparent where information was going to be coming from. So, like the general classrooms, the construction of this room reinforced a teacher-centred model of how science should be taught. The lab benches did afford more space for hands-on science activity than the general classrooms but their placement at the back and edges of the class seemed to advertise that their purpose in teaching and learning were secondary to whatever was happening at the front of the class. I taught in this
room for four years. Although the students were certainly at their desks a lot, I tried to get them up to work at the lab benches as often as I could.

The abundance of horizontal work space was a considerable improvement over students using their desks, radiator, or the floor for their activities. The lab benches throughout the the room afforded the ability for students and materials to be spread out. The combination classroom arrangement allowed students to move from their desks to the lab benches during any particular period. Students would store their textbooks, binders, and backpacks at their desks and take only minimal supplies (such as pencils, pens, and data sheets) to the work benches where space was consumed by the technical equipment of the day. This separation of activity areas allowed students to protect the majority of their supplies from the inevitable spills that occurred when beakers of water and other solutions were to be used. In any given period, students would migrate between their desks and the lab benches; familiarizing themselves with the lab procedure at their desks, conducting their research at the lab benches, and returning to their desks for follow-up analysis writing when their practical work was completed.

Needed lab equipment and consumables could be placed at hubs around the room for relatively easy access. So much of every lab activity is spent on the housekeeping of gathering and cleaning up supplies (Hofstein & Lunetta, 1982; Hofstein & Lunetta, 2004). This combo lab benches greatly facilitated the exchange of materials throughout the period. I could, for example, make supply depots of chemicals and indicators at certain locations around the room and waste containers, garbages, and recycling bins next to the sinks. Rather than lines of students forming to access any resource (which occurred frequently in the general classrooms) the room’s plethora of horizontal surfaces afforded a multidirectional traffic flow.
The lab benches, especially the one at the back of the classroom (which was not attached to the wall), allowed for a different sort of social spatiality to teaching and learning than the elementary students’ desks provided; they afforded ‘gathering around’. Students could lean in close and put their heads together while working on lab activities and group tasks. The whole class could meet up around me at the back of the class so I could lead them through demonstrations, provide more intimate instructions, or talk face-to-face around a sort of science conference table.

The particular science combination class I taught in was windowless. When I first moved into the room, the lack of windows greatly disappointed me. Time passed outside the classroom unseen as my students and I worked isolation from the world around us under banks of fluorescent lights. Only the two students who sat in the centre front-most desks had an inkling of what was happening outside (and this, only because the vent directly above their heads allowed the sounds of song birds or the occasional snowflake to drift down upon them). When walking into the room for the first time, I was disappointed that its windowlessness wouldn’t allow for monitoring changing weather, tracking the position of the sun, and growing plants. But, as Gibson suggests, affordances are present for neither “good or ill”. Over time, I came to see that my windowless classroom offered a unique benefit, one not found in any other room in the school: it afforded total darkness. By putting a strip of felt along the foot of the classroom’s doors, the entire lab became a functional darkroom where multiple photographic enlargers and light-sensitive solution baths could be set-up. I introduced a hands-on photography component to my grade eight light and optical systems unit. My room became an invaluable teaching space for large group instruction before they could work semi-independently in the school’s two dark rooms. By becoming attuned
to the invitation of my windowless classroom, I could suddenly see that it afforded a state that no other classroom in the school could provide.

Although the orientation of the boards and screen reinforced front-of-the-class direct instruction pedagogies, the laboratory work benches afforded other approaches to learning science, learning about science, and doing science. The intentional design of the combination lab (the most common science room configuration at the secondary school level) are to provide a balance between direct instruction and hands-on experimentation. I expect, however, that due to overcrowding, dense outcome-based curricula, and heavily-weighted standardized tests that many of these classrooms are used principally as lecture spaces with only the occasional laboratory activity.

**The Dedicated Laboratory**

Due to budget cutbacks and ballooning student enrollment, it is increasingly rare to have dedicated science laboratory spaces in most schools. These rooms remain the norm for hands-on science learning at the post-secondary level where lab components are scheduled separately from lecture seminars and tutorial class time. Where they still exist at the secondary school level, dedicated lab spaces are usually signed out by teachers for hands-on science activities that would not be safe or reasonable to conduct in their regular lecture-oriented classrooms; learning science and learning about science are conducted in the regular classroom, but doing science occurs in the dedicated laboratory. When no classes are booked in the lab, it sits empty and unused.

I’ve taught secondary science in a number of dedicated laboratories over the last five years of my teaching career. The furniture in these rooms are primarily stationary lab benches which stretch across the class parallel to the front board and projection
screen area. The workbenches contain multiple electrical outlets, natural gas valves, and sinks. Along the walls of these labs are ample storage of the various scientific apparatus that could be needed during investigations and nearby prep rooms contain other materials (such as chemicals) which are kept separately under lock and key. Some labs were to the study of a particular scientific discipline and contained specific apparatus for studies in biology, chemistry, or physics; others were multi-purpose labs that were appropriate for any application. Half of the dedicated labs that I’ve taught in have included specific areas for computer workstations, but these were disappearing near the end of my time as a classroom teacher as laptops, tablets, and wireless internet made built-in desktop computers obsolete.

The affordances of lab benches have been described above in the combo labs, but the extra workspace afforded in dedicated laboratories due to the lack of student desks in the middle of the room, provided students with extra workspace for their investigations and experiments. Whereas combination labs afforded a back-and-forth spatiality for students to move between their desk and lab work, dedicated labs facilitated relatively long-term focussed investigations; in a sense they afforded ‘hunkering down’.

**Affordances and the 21st Century Science Classroom**

In the three classroom types listed above, the classrooms were oriented towards a ‘front’ of the room, the location where information was going to be delivered (most often, by the teacher). A 21st century STEM classroom which is to be more student-centred, needs to afford input from more directions while furnishing workspaces that are not permanently configured for one type of activity or the other.
Rather than whiteboards on a single wall, it is worth (re)considering how students can write on all surfaces. Desks and walls can be coated to afford write-ability (what Gibson called “trace-making”). Windows are already perfect writing surfaces for whiteboard markers and overhead pens; teachers and students just need a small push to perceive framed glass as writing surface. Technology (such as Apple AirPlay) already exists so photos, videos, documents, and drawings on digital tablets and laptops can be sent to monitors and projectors within the same wifi network. It is only a matter of time before students will be ‘dragging and dropping’ content from one surface to the next as easily as Tom Cruise does in the Minority Report or Tony Stark does in the Iron Man or Avengers movies. Information will no longer be coming from the front of the class, it will be found, created, and displayed throughout.

In my description of the combination lab, I mention how the back workbench in my science classroom afforded ‘gathering-around’ and how the ample work spaces in the dedicated lab afford ‘hunkering-down’. Furniture in a 21st century STEM classroom need these affordances to be more front-and-centre. Rather than rows of desks and lab benches, STEM work surfaces need to be octagonal or round so students can gather on all sides and work face-to-face. New classroom spaces must be multiplicitous and configurable. Workbenches should slide apart to make desks, should connect and lock together to make hands-on work areas large and small, all should be height-adjustable. Utilities can still be provided at fixed points around the room so the moving horizontal work spaces do not necessarily need their own gas, electrical, or plumbing as long as these can be connected in a smart way. Already we’re starting to see these sorts of flexible furnishings in some new schools. Lecture spaces can become
laboratories, conference spaces, think tanks, and maker spaces as needed by the students and teachers.

Gone now are bulky desktop computers with their monitors, mice, and keyboards. Twenty first century STEM classrooms need to afford power for charging digital devices (from smartwatches and smartphones, to cameras and laptops) in a way that safely manages the tripping hazard of cords and the potential to spill on digital devices when solutions are present. Fixed ethernet ports are no longer required so long as each room has access to robust high speed wireless internet and the school’s server and firewall design affords easy access to file and resource sharing. Printer space is still worth considering as 3D printers become more commonplace.

Students deserve better than the outdoor world displayed behind glass. They require adjustable windows that can fully open and close, that can be shuttered to afford total darkness or opened for total light saturation. To connect lessons about the natural world and sustainability, STEM classrooms should afford direct passage from the indoor learning environment to well-planned outdoor learning spaces such as gardens, playgrounds, and learning parks. Similarly, the separation of the classroom to other learning areas inside the school should be permeable with movable walls and doors to reconfigure the learning environment to match the demands of the learning activity.

By opening ourselves to the invitational ‘voices’ of existing science teaching spaces, we are more likely to design better STEM classrooms for new and renovated schools. It is important, however, that as we design the schools of the future that we are aware that our innovations, while enhancing pedagogy, can simultaneously reverse it.
Applying the Laws of Media

Marshall and Eric McLuhan’s (1988) four laws of media, allow a “means of identifying the properties of and actions exerted upon ourselves by our technologies and media and artefacts”, (p. 98). The laws proposed by the McLuhans are posed as four related but contrasting questions:

1) What is enhanced or intensified by the new artefact?
2) What does it push aside or render obsolete?
3) Does it retrieve anything that was previously made obsolete?
4) When pushed to the extreme of its potential, what does it generate?

This tetrad of questions are not meant to imply “a sequential process, but rather four simultaneous ones. All four aspects are inherent in each artefact from the start,” (McLuhan & McLuhan, 1988, p. 99). To use an educational technology example, a SMART Board immediately enhances the display capabilities and interactivity of the board at the front of the room while rendering overhead projectors, blackboards, and chalkboards obsolete. Yet, in an attempt to create a more engaging classroom environment, it simultaneously reinforces teacher-directed modes of instruction since only one or two students (if the SMART Board is dual-touch) can be actively involved with using the board at any given time; the rest must sit and observe. When pushed to the limits of its potential, a SMART Board reverses into something akin to a family television screen where the bulk of ‘users’ in the room have no control over its content and turn their attention to their own hand-held digital devices.

“In composing a tetrad, it is helpful to reflect on the more extreme examples” (Adams & Thompson, 2011, p. 743). To this end, let me carry on the interview of science classrooms by composing a tetrad of a “Da Vinci studio”, an ‘extreme’ 21st

“In the real world, scientists work in a variety of environments doing activities such as independent research, working on team projects, engaging in debates in social settings, and interacting via technology with colleagues in other parts of the world,” (Nair, 2014, p. 89). For this reason, the Da Vinci studio contains numerous work areas for different sorts of student activity; from individual workstations to group collaboration areas, from paper and pencil writing and drawing areas to construction bays and wet labs.

Central to Nair’s concept is the notion of interdisciplinarity. “The Da Vinci studio is a metaphor for the twenty-first century, where the hard lines that had separated the arts and the science in the twentieth century are being blurred. Instead of pigeonholing subject areas into right- or left-brain categories, schools need to make more opportunities for students to escape these restrictions and to blend different ways of thinking”, (Nair, 2014, pp. 94-95). Just as Leonard Da Vinci’s workshop would contain artefacts of art, mechanics, anatomy, mathematics, and astronomy, Nair’s Da Vinci studio affords activity areas that can be configured to allow for painting, sculpture, drama, dissection, robotics, and more.

With some basic understandings of how the Da Vinci studio is an ‘extreme’ version of the school science spaces addressed previously, consider now its tetrad (presented in Figure 1, below).
The design of a Da Vinci studio is rooted firmly in student-centred pedagogies so it enhances project-based learning, inquiry, and making while obsolescencing more traditional teacher-directed approaches. Since there is more opportunity for groups of students in the same class to pursue very different projects of the same time, the structure of the school might need to change as well. A ‘cells and bells’ system where students’ days are portioned into periods that occur in certain classroom spaces would be expected to change as Da Vinci studios catch on, providing students the time they need for their work rather than disrupting them for class change every sixty minutes. Changing the learning environment in this ways will lead to significant changes to teacher practice, most obviously a change from being ‘the sage on the stage’ to the ‘guide on the side’. Instead of providing “the answers to all the questions that no student has asked,” (as my colleague, Dr. Kent den Heyer, is fond of saying) teachers

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**Figure 1.** Da Vinci studio tetrad. Using the laws of media proposed by McLuhan and McLuhan, (1988), this demonstrates how the novel STEM classroom design proposed by Nair (2014) causes simultaneous enhancements, obsolescences, retrievals, and reversals.

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will have to become more involved with each student and their work and provide more of a co-producer than a directorial role. As teachers step out from behind their lecterns and behind the ‘genius bar’ of the Da Vinci studio, the way they go about assessing students will change radically. Although this is not the paper to discuss these ramifications in any detail, I don’t believe these changes will amount to the de-professionalization of teachers, but to a new definition of what a 21st century teacher is and does.

Moving towards Da Vinci studios may retrieve certain concepts and notions from the past. Imagine a high school Da Vinci studio with multiple practical workbenches and wet lab areas, similar to what we see on episodes of *Mythbusters*. Students may come to specialize in certain areas of the studio, preferring to demonstrate most of their learning through three dimensional art or graphic design. As staffing models for the school change we may see more teachers or paraprofessionals assigned to mentor students in certain skills which retrieves the model of apprenticeship.

The move towards less teacher-directed and spatially confining classrooms does not only conjure romantic notions of Renaissance apprenticeship, but also visions and memories of the Victorian city square where ‘unwashed masses’ of youth ran amuck and participated in various games and explorations of their own choosing (Burke & Grosvenor, 2008). Perhaps a modern equivalent of the city square is allowing students to use their mobile devices to ‘surf the net’ without any direction for days at a time; they will certainly learn things, gain expertise in some areas, but the lack of structure and pedagogical direction opens up their learning to perhaps an unhealthy degree. What are they learning about?!
Students are noisy and active students even more so. It is entirely possible that the Da Vinci studio will be beset by the same issue as the ‘open’ classrooms of the 1970s. “Open settings contain relatively few barriers to social interaction, noise, and visual distraction, so students need to be relatively self-motivated and self-regulating in order to maintain focus,” (Gislason, 2011, p. 46). It is this retrieval that takes us paradoxically backwards in terms of innovative classroom spaces and pedagogies.

As we open up the closed science classroom to make a Da Vinci studio and enhance student-centred 21st century STEM learning opportunities, we simultaneously reverse this movement by creating situations where teachers could complain about the aimlessness and noisiness of their students and call for more focus on supervision and student discipline. Walls may get put up, teachers may return to controllable default pedagogies, and we may see a contraction from student-centred to more teacher-centred learning.

As the McLuhans (1988) point out, all of these movements and shifts occur at the same time. Initiatives to open up the classroom create reasons to close it off. Student-centred learning, supported by educational research and a widespread desire to produce 21st century citizens who are globally competitive, can be limited and even reversed by teachers who find themselves stuck in a new and uncomfortable paradigm and long for a return to predictability, standardization, and quiet. Creating interconnected interdisciplinary learning spaces can be undone by fears of resurfacing the ‘failure’ of the 1970s open classroom ‘experiment’.

**Conclusion**

Heuristics do not seek to fully address an issue or problem, but may help to
explore a topic from different angles. While this paper only makes use of two of the heuristics proposed by Adams and Thompson (2011), it surfaces various aspects of science classroom innovation that architects and teachers need to pay attention to.

The physical design of science classroom configurations afford different types of teaching and learning. Mobile work surfaces offer flexibility and can be used to configure the class into traditional classroom formats, think tanks, project spaces, or laboratory workbenches. Writing and display areas should not be limited to the front of the room but distributed throughout the space for greater access and use by all. The placement of material distribution and clean-up areas throughout the class need to be carefully considered. The space needs to allow for the use and charging of multiple mobile devices for teaching and learning (and this must be done in a very forward-looking sort of a way since digital devices are evolving so quickly). Perhaps most importantly, all science classrooms must afford access to the outdoors so students can come into direct contact with the natural environment on a daily basis.

While taking affordances into consideration, educators and architects need to attend to the tensions that are revealed by plotting various technologies, pedagogies, and classroom spaces on a tetrad. Certainly new approaches will enhance and amplify desirable qualities in the learning environment. Creating Da Vinci studios, for example result in easier interdisciplinary and student-centred learning activities to be conceived and enacted. Subject divisions and classroom walls may be broken down. But as progress is made, calls for reversal to more traditional patterns of school and instruction will grow louder.

Although there is an obvious need to provide students with the most innovative learning environments possible, careful consideration and continuous conversation between school designers and school users must occur to ensure that the program of
the school, the curriculum to be enacted, the pedagogical values of the faculty, and the space itself all evolve together. Otherwise, we’ll find the students of 2050 sitting in rows staring at the front of the room.

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Exploring the metacognitive orientation of school makerspaces:
A research proposal for a sequential explanatory mixed method study

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The Emergence of Makerspaces

Over the past five years, the so-called ‘maker movement’ has been sweeping across North America and has resulted in the sudden appearance of makerspaces in libraries, museums, community centres, post-secondary institutions, and K-12 schools (Rosenfeld Halverson & Sheridan, 2014). A school makerspace may resemble an art studio, construction shop, garage, science laboratory, computer room or any combinations of the above. They are places where ‘makers’ work independently or collaboratively on the construction of physical and digital artifacts (Sheridan et al., 2014). The emergence of makerspaces in schools coincides with a swing of the pedagogical pendulum away from teacher-directed instruction to more student self-directed approaches to teaching and learning.

School makerspaces are sites of project-based learning where students can make use of available tools and resources to seek unique solutions to questions posed by their teachers or develop their own personal projects (Harvard Educational Review, 2014).

For instance, a ten-year-old boy began with a simple plan for an old computer mouse: he drew an oval with wheels labeled ‘mouse car’. . . . He figured out how to break apart the mouse, attach wheels, find an appropriate motor, and wire a battery to it to make it move. Initially the car just went around in circles, so he made adjustments so it would drive straight. At first he stopped it by grabbing it and disconnecting the battery; later . . . he installed a metal switch on the top. In a video posted to the makerspace web site, he smiles as he demonstrates that his car moves fast and straight and is easily switched on and off. His design process began with a structured, teacher-led workshop and later became a more sustained, personalized design process.” (Sheridan, et al., 2014, p. 523-524)
Although this example describes an individual student’s quest to make an electrical car from a discarded computer mouse, everyday groups of students across the continent run into their school makerspaces to work on projects that are comparably low tech (such as using hot glue to reinforce linguini bridges or making ballgowns out of plastic bags and duct tape). The learning in a makerspace is social, hands-on, and experiential; it is not only constructivist in its philosophical orientation, but constructionist.

**Constructionism & Design Thinking**

Like constructivism, constructionism posits that people develop knowledge through their experiences, but “adds the idea that this happens especially felicitously in a context where the learner is consciously engaged in constructing a public entity, whether it’s a sand castle on the beach or a theory of the universe,” (Papert & Harel, 1991, p. 1). Constructionism came about when Seymour Papert (a colleague of progressivist John Dewey) noted that students seemed more engaged in art classes (when they were building something physical with their hands) compared to when when they were working in math class on more abstract intangible tasks. Constructionists believe that building not only actively engages learners in meaningful tasks but also provides them with tools which can be used to express their emerging knowledge (Ackermann, Gauntlett, & Weckstrom, 2009). Constructionism and makerspaces go hand-in-hand.

In makerspaces, makers are encouraged to not only ‘build-out’ their ideas, but to draw on ‘design thinking’ principles to more deeply understand project goals, propose alternative approaches, and develop models and prototypes that might lead to a solution (Brown, 2008). Although making a physical or digital product that can be shared and celebrated is important,
engaging in design thinking may be of value on its own. The design thinking process involves an initial period of problem identification or question posing; a period of incubation (or ‘percolation’) that leads to the generation of ideas; and then a period implementation, marked by prototyping, building, and refining of ideas towards an end goal (Ackermann, Gauntlett, & Weckstrom, 2009; Brown, 2008). What may appear to be simple design projects (building a chair and desk out of cardboard, for example) often tend to become extremely complex and require considerable trial-and-error, research, and support beyond what was initially expected (Lawanto, 2010). The sort of thinking required to negotiate such a design problem is not insubstantial. To co-opt a line from a famous Jerry Lee Lewis tune, there seems to be “a whole lot of thinking going on” when project-based learning, design thinking, and constructionism collide in a makerspace.

Unfortunately, it is hard to say for sure what cognitive processes are used by students when they’re engaged in making tasks as there is a veritable dearth of scholarly research on makerspaces (Sheridan, et al., 2014) and, in what literature exists, the topic of metacognition is all but non-existent.

Metacognition

As Brown (1994) suggests, “One of the most interesting things about human learning is that we have knowledge and feelings about it, sometimes even control of it,” (p. 6). The elements of monitoring and control seem to be missing from many definitions of metacognition including those from seminal papers on the subject, where metacognition is defined as “knowledge of one’s cognitive processes and products” (as cited in Thomas, 2012, p. 134). A
useful synthesis of Ann Brown and John Flavell’s definitions proposes that metacognition is the “knowledge, awareness, and control of their own thinking and learning strategies,” (Thomas, 2003). This definition seems germane to a study of thinking in school makerspaces as it aligns with the connection of metacognitive knowledge being related to person, strategy, and task (Flavell, 1979); ergo, that while engaged in the design thinking process, student makers may draw upon knowledge of themselves in relation to other makers (some with valuable expertise), consider the demands of the task at hand, and possess some cognitive flexibility in which strategies they use to work towards their goal.

**Makerspaces and Metacognition**

Although very little has been written on metacognition in relation to school makerspaces, research focused on the pedagogically-similar learning environments found in engineering schools is beginning to explore design thinking and metacognition. For example, a study by Lawanto (2010) found a positive correlation between engineering students’ ability to self-appraise (monitor their cognitive abilities and identify potential difficulty) and self-manage (plan, adjust, and revise their approaches), regardless of project difficulty. Metacognitive ability seems to allow some students to solve problems in more effective ways than others (Lawanto, 2010). Brown (1994) suggests that students with more metacognitive awareness may be better able to transfer their learning strategies and problem-solving skills to different scenarios. Those engineering students who were better at monitoring their thinking and choosing (and altering) the strategies used during design tasks, could be expected to become better problem-solvers when faced with novel challenges. Since many of their project-based learning tasks require engineering students to engage in long-term iterative design processes, it is possible that their
metacognitive abilities evolve with each additional project (Lawanto, 2010).

The degree to which these findings can be extrapolated to students working in school makerspaces depends on how similar these learning environments and learners are. Is the learning that engineering undergraduates receive in a ten week course focused on design-thinking and project-based learning comparable to the sort of learning K-12 students undertake in their school makerspaces over the course of a year? It is hard to say as very little is known about school makerspaces as metacognitive environments. Even in *Invent to Learn: Making, Tinkering, and Engineering in the Classroom* (Martinez & Stager, 2013), ostensibly the teachers’ makerspace bible, there is little mention of design thinking nor any elaboration on the cognitive processes that occur when students are making.

**Research Question**

Although it would be ideal to dive right in to a study which explores how lateral problem solving training impacts student metacognitive ability and mental flexibility while engaged in makerspace design activities, the almost total absence of research focused on the psycho-social environment of school makerspaces suggests that to do so would be to put the cart before the horse. For this reason planning an intervention study (where time in the makerspace is the manipulated variable and metacognitive strategies are the responding) is not yet appropriate. What is needed is an exploration of the metacognitive orientation of the makerspace as a learning environment. While I am very interested in pursuing a study of this sort, my doctoral research on the interaction between 21st century curriculum reform and classroom design will occupy the bulk of my time for the next few years. I offer the following research design for those who may
wish to explore the question *To what extent is a school makerspace metacognitively oriented?* in my stead.

**Research Design**

To explore this research question in a way that will provide detailed data from potential research sites as well as data that can be generalizable across other contexts (Johnson & Onwuegbuzie, 2004), I recommend the use of a mixed method design. According to Creswell and Plano Clark (2007) quantitative research methods tend to go hand-in-hand with experimental studies which employ a deductive approach to research relying on the scientific method. Qualitative research, on the other hand, involves inductive methods and a subjective exploration of individuals and research sites based on the assumption that individuals experience the world differently and that a multiplicity of realities exist. These divergent perspectives initially led many researchers to criticize mixed-method research on the basis that the perspectives are essentially incompatible (McMillan, 2008), but the combination of both quantitative and qualitative research are, contemporarily, seen to be increasingly important and useful.

An explanatory mixed method design where quantitative data from the administration of a learning environment inventory is followed by qualitative data from interviews (Creswell & Plano Clark, 2007; Creswell, 2013) is ideal for the exploration of the research question.

A standard annotation system using capitalization, arrows, and addition signs exists to help clarify to readers the approach taken in a mixed method study (Creswell, 2013). Because the proposed study is sequential and puts greater emphasis on the initial collection and analysis of
quantitative data with subsequent interview data providing supporting detail, the study can be annotated a QUANT → qual.

**Selection of a Research Site**

Although any school with a makerspace could serve as a research site, since so little research currently exists on student thinking in makerspaces, the ideal site would be one where the enacted curriculum sees all students using the school’s large makerspace on a regular basis. This provides the potential for the entire student population to participate in at least the quantitative portion of the study. For example, researchers might want to find schools where recent major renovations replaced an aging library or centrally-located computer lab with a learning commons and makerspace that teachers and students access throughout the day. In my experience, schools with centrally located and accessible makerspaces often see small group of students using the makerspace before school, at lunch, and after school to carry out their own making projects, but all classes make use the space for problem-based learning as part of their various STEM (Science Technology Engineering and Math) related classes.

**Proposed Data to be Collected**

A variety of data could be collected to fully examine the research question from multiple angles:

1. Makerspace observations can be used to gain insights about what students do when they are in the makerspace. Field notes and video recordings from these observations would
be helpful in understanding how students engage in designing and building, but may also produce prompts that can be used in student interviews.

2. Since many students use the makerspace to complete STEM related projects, an instrument designed to explore the metacognitive orientation of Science classrooms would provide valuable quantitative data. A version of the MOLES-S, the Science version of the Metacognitive Orientation Learning Environment Scale (Thomas, 2003) could be used to assess the degree to which the school’s makerspace “supports the development and enhancement of students’ metacognition,” (Thomas, 2003, p. 175). I recommend that the MOLES-S questionnaire be altered to shift the focus from learning Science in a Science-specific classroom to designing and building in a makerspace. I have made a number of alterations to the MOLES-S for this purpose and have included the revised tool in the appendix. So as not to confuse the altered tool with the original, I’ve added MS for ‘makerspace’ in superscript to the instrument acronym. The MOLES-MS could administered to all students in the school over a period of a few weeks (preferably after they have a spent series of class periods in the makerspace). The development of a makerspace-specific instrument (the MOLES-MS?) is research that would be valuable for a graduate student to pursue.

3. Semi-structured student interviews can be used to explore the sort of thinking that students employ while working in the makerspace. Students could be asked to recall and reflect upon previous project work in the makerspace and to seek to identify examples of them demonstrating metacognitive knowledge, awareness, and control in their making. I
have included a potential interview protocol in the appendix. Some questions are adapted from items found on another metacognitive instrument by Thomas, Anderson, and Nashon (2008), the Science version of the Self Efficacy and Metacognition Learning Inventory (SEMLI-S) and focus on the metacognitive orientations of the student makers themselves. Researchers should work with their research site’s teachers and students to select possible interview participants from each class. Ideally interviews should be conducted in the makerspace outside of class time. I recommend that interviews make use of the hermeneutic dialectic circle described by Guba & Lincoln (1989) in which consecutive interviews are conducted with an ever-expanding circle of individuals until interview data converge around similar themes and information gathered from subsequent interviews becomes redundant.

I acknowledge that the primary sources of data collection that I recommend (namely the MOLES-SMS and semi-structured interviews) are what Veenman, Van Hout-Wolters, and Afflerbach (2006) refer to as “off-line” assessments in that the data is collected after makerspace experiences and not during. I considered the use of “on-line” methods of data collection such as encouraging students to think-aloud as they worked in the makerspace and capturing this dialog and student activity by positioning GoPro cameras throughout the makerspace, but I discarded this approach for a number of reasons. First, to ensure that the cameras and their microphones would be able to clearly record all areas of the makerspace would require numerous cameras and intensive set-up and testing. Second, recording hundreds of students as they use the makerspace would result in an amount of footage and transcript data that would be impractical to collect, store, process, and code. Lastly, recording all students over the course of multiple weeks is
almost certainly an invasion of their privacy as students are likely to discuss personal matters as well as their thinking over the course of the research project. What I propose instead is a reasonable compromise. By using a single video camera, a researcher can direct their recording device towards subjects of interest and exclude those who do not wish to be recorded. Regardless of Veenman, Van Hout-Wolters, and Afflerbach’s (2006) assertion that “on-line” assessment is the way to go, I feel that combining data from the MOLES-SMS, student interviews, and field notes provides more than enough triangulation to allow researchers to be confident in their findings.

**Proposed Timeline**

If data collection is to include multiple classes, it will likely have to occur over a two-month period in the middle of either the fall or winter semesters so as not to interfere with class start-up or final exam preparations. Following an initial introduction to the staff and student bodies, I recommend that the will position themself in a central spot of the makerspace each day for the duration of the research project. After an initial two week period of observation (during which time the researcher will hopefully ‘fade into the background’ of the makerspace and have students become comfortable with them) they can begin administering (with the help of the classroom teachers) the quantitative instruments to classes of students immediately after these students have spent a period of time working in the makerspace. It will likely take the better part of a month to collect questionnaires from all classes. Follow-up interviews can be conducted over the final two weeks of the study period. Data analysis should occur on an ongoing basis throughout the research period.
Data Analysis

Quantitative Data

Data analysis will focus on the MOLES-SMS data collectively rather than on individual responses. Responses to MOLES-SMS items will fall onto an ordinal measurements scale; numerical ratings are assigned to each item (such as 5 for a response of “almost always” or a 1 for “almost never”). These ratings imply a ‘greater than/less than’ relationship although the numerical value of the difference between a 5 and 4, for example, is not quantified (Boone & Boone, 2012). “Descriptive statistics recommended for ordinal measurement scale items include a mode or median for central tendency and frequencies for variability,” (Boone & Boone, 2012, p. 3). Quantitative data analysis using SPSS will calculate frequency, mean, and standard deviation for responses to individual items and MOLES-SMS subscales.

Qualitative Data

Interviews should be transcribed the day they are conducted. Typed transcripts could be hand coded to identify potential themes and analyzed using the constant comparative method; a process whereby information raised in one interview or an other data source is fed back into the hermeneutic dialectic cycle at subsequent interviews for consideration and comment by the participants (Lincoln & Guba, 1989). Themes from the quantitative data, field notes, and initial interviews will be continually identified, explored, and refined as the researcher works towards developing consensus.
Potential Benefits and Future Research

As more schools develop makerspaces, it is increasingly important to discover more about the sort of learning that actually occurs in these student-centred, project-based learning environments. This proposed research project is an important first step towards understanding the psycho-social dimensions, and specifically the metacognitive orientation, of constructionist makerspaces. Future research may test the impact of different cognitive strategies that students can employ while designing and building and the impact of these strategies on their development of metacognitive knowledge, awareness, and control. Possible teacher interventions may be explored that are designed to enhance particular dimensions of the learning environment or improve student mental flexibility and problem-solving.

It is possible that the students participating in this research will benefit from completing either the learning environment questionnaire or participating in an interview. Each assessment asks them to reflect on the metacognitive orientation of the makerspace or their thinking while engaging in project-based learning in the makerspace. The reflection required to consider an item on the questionnaire or an interview prompt could be a metacognitive experience (Flavell, 1979); an intervention in itself.

This research proposal was designed to take place in a secondary school, but a similar study should be conducted at the elementary school level. Such research is important since different strategies are required to enhance metacognitive ability in elementary students compared to older students (Dignath and Buettner, 2008).

For some people, making is not something that is only done while working on school-based projects, but it is an important part of everyday life. For students from less affluent homes
where “do-it-yourself activities are not necessarily a hobby but informal ways of knowing, thinking, doing, and surviving,” (Harvard, Educational Review, 2014, p. 494) it might be possible to enhance children’s existing making competence through cognitive training and increase their social mobility by enhancing their metacognition.

Community makerspaces have been criticized as being places of “white male nerd dominance,” (Rosenfeld Halverson & Sheridan, 2014, p. 497). It would be interesting to run an ANOVA analysis on MOLES-SMS data to see if patterns of responses emerge along cultural lines as they did in Thomas’s (2006) exploration of metacognition in Science classes in Hong Kong.

**Conclusion**

Engineers and entrepreneurs don’t only come from wealthy households. I can’t help but think about the ten-year old North American boy mentioned in the introduction who converted a computer mouse into a toy car. He was engaging in interesting making and innovative thinking for the sake of play. Compare this to William Kamkwamba in Ghana who, at fifteen, converted a discarded bicycle into a windmill to power his parents’ home and pump water. Their thought processes while making are likely similar, but the benefits and the stakes for William are much higher.

There is certainly something beneficial about makerspaces, design thinking, and project-based learning. It behooves us as educational researchers to continue to explore the relationship of thinking, metacognition, and building so school makerspaces and be places of even more significant learning.
MOLES-SMS Items & Subscales
Based on (Thomas, 2003)

Students will respond to each item using the following Likert scale:

5- Almost Always  4- Often  3- Sometimes  2- Seldom  1- Almost Never

Metacognitive Demands
In this makerspace:

1. Students are asked by the teacher to think about how they design and build
2. Students are asked by the teacher to explain how they solve designing and building problems
3. Students are asked by the teacher to think about their difficulties in designing and building
4. Students are asked by the teacher to think about how they could become better designers and builders
5. Students are asked by the teacher to try new ways of designing and building

Student- Student Discourse
In this makerspace:

1. Students discuss with each other about how they design and build
2. Students discuss with each other about how they think when they design and build
3. Students discuss with each other about different ways of designing and building
4. Students discuss with each other about how well they are designing and building
5. Students discuss with each other about how they can improve their designing and building

Student- Teacher Discourse
In this makerspace:

1. Students discuss with the teacher about how they design and build
2. Students discuss with the teacher about how they think when they design and build
3. Students discuss with the teacher about different ways of designing and building
4. Students discuss with the teacher about how well they are designing and building
5. Students discuss with the teacher about how they can improve their designing and building

Encouragement and Support
In this makerspace:

1. The teacher encourages students to try to improve how they design and build
2. The teacher encourages students to try different ways of designing and building
3. The teacher supports students who try to improve their designing and building
4. The teacher supports students who try new ways of designing and building
5. The teacher encourages students to talk with each other about how they design and build

**Emotional Support**

In this makerspace:

1. Students are treated fairly
2. Students’ efforts are valued
3. Students’ ideas are respected
4. Students’ individual differences are respected
5. Students and the teacher trust each other

**Student Voice**

In this makerspace:

1. It is OK for students to tell the teacher when they don’t understand
2. It is OK for students to ask the teacher why they have to do a certain activity
3. It is OK for students to suggest alternative learning activities to those proposed by the teacher
4. It is OK for students to speak out about activities that are confusing
5. It is OK for students to speak out about anything that prevents them from learning

**Distributed Control**

In this makerspace:

1. Students help the teacher plan what needs to be learned
2. Students help the teacher decide which activities they do
3. Students help the teacher decide which activities are best for them
4. Students help the teacher decide how much time they spend on activities
5. Students help the teacher decide when it is time to begin a new activity
SEMI-STRUCTURE INTERVIEW PROTOCOL

Including some prompts from the SEMLI-S (Thomas, Anderson, and Nashon, 2008)

1. How is working on projects in the makerspace different than working in a regular classroom? (How are the students different? The teachers? The assignments?)

2. What sort of things have you designed or built in the makerspace this year? (Can you tell me about something you’ve designed or built this year that you’re particularly proud of? – aka X)

3. When you’re in the makerspace working on a project, how do you decide what to build? (Where do you come up with ideas for your designs? Can you tell me about how you decided to design/build X?)

4. What sort of planning do you do before you start building? (Do you ever change your plans after you start? How do you know it’s time to change plans? Can you tell me about a time when this happened? Did this happen when you were designing/building X?)

5. When you’re working on a project, do you try to predict possible problems that might occur or do you just wait and see what problems pop-up? (What sort of problems did you anticipate when you were working on X? Before you start a new project, do you think back on problems that you’ve had before?)

6. When you’re working on a project, what do you do if you get stuck and aren’t making the progress you think you should be? (How do you go about getting ‘unstuck’? Did this happen when you were working on X?)

7. When you’re working on a project how do you know that you’re making progress? (When you were working on X, how did you check your progress? How does checking your work change how you proceed with your project?)

8. In my research I’ve noticed that ____________. What do you think about this? Why do you think it might be?

9. We’ve talked about a lot but is there anything that you think is really important that I might be missing?

10. Who do you think I should talk to next? Is there anyone that you can think of who might have valuable or different answers to these questions?
References


Today’s students need teachers prepared for classroom responsibilities on the first day of school. Research shows it can take up to five years for teachers to develop their craft to the focus on impacting student learning rather than the novice focus on classroom management. Students cannot wait that long. Teachers must be ready on day one. This study examined the impact of a yearlong internship for 16 undergraduate candidates preparing to become middle grades teachers. The results of the mixed methods study showed an increase in the participants’ self-efficacy for preparedness for the classroom, as well as classroom management. A follow-up study is currently being conducted with graduate students preparing to receive initial teaching certification. This study is examining the impact of a yearlong internship on teacher preparation and will follow the participants’ development through their third of teaching.
Classroom responsibilities include so many factors: student contexts, student abilities, behavior management, procedure management, curriculum delivery, impact on student learning, remediation, lesson extension, evaluation, in addition to the mounds of paperwork needed to document all the aforementioned factors. What is a first year teacher to do? How does a first year teacher manage? Research shows it takes three to five years for teachers to move from the stage of survival to that of master teacher (Fuller, 1969, Wong & Wong, 2001). Today’s students cannot afford to wait three to five years for teachers to develop into master teachers and neither can we as a society. Teachers must be ready on day one of the first year to impact students’ growth and development. How do we help teachers be ready on day one? We propose that it is an increase in clinical experience. Clinical experiences have traditionally focused on a division of labor, whereas, the focus needs to be on how the experience helps candidates develop into effective teachers who impact student learning (Anderson & Stillman 2013).

Due to the need to increase the rate of teacher readiness, we decided to take the approach much like a doctor’s internship and place teacher-candidates in a yearlong internship with a master teacher. Our teacher-candidates, with their master teacher, began their academic year together with a workshop on co-teaching and relationship building and then continued their work together with pre-planning week and open house. We eliminated the term student teacher, as that label often gives the impression that the teacher-candidate is a student without authority in the classroom. We wanted the Grade 6-12 students to see our candidates as co-teachers with equal authority in both content knowledge and management as the master teacher and not as a “student”. Thus, we referred to the candidates as interns or co-teachers. To further establish their role as co-teacher, interns’ names were placed on the syllabus and other documents that were distributed to students and/or parents. One of the schools even issued the interns school laptops.
and name badges. The idea was to completely immerse the interns in the culture of the school. Interns attended the same faculty meetings, team planning meetings, and professional development sessions with their master teacher. The interns reported at teacher report time and did not leave their assignment until teacher dismissal time. Other than times designated for university courses, the intern engaged in active learning within the school-based experience. The idea of interns being seen as colleagues of the cooperating teachers is supported by the findings of a study by Glenn (2006). The research question that guided our inquiry was, how does a yearlong internship impact the development of teacher candidates?

The Need for Earlier Teacher Readiness Development

Students are having to compete in a national and international market for post-secondary education admissions as well as positions within a competitive workforce. This means every minute counts, in every learning environment. It is not until teachers emerge from the stage of survival teaching into mastery teaching that they focus less on classroom management issues and other procedural aspects of teaching. At that point, they have learned to integrate their tacit knowledge, content knowledge, pedagogical knowledge, seamlessly. Waiting an extended amount of time for teachers to elevate to the level of master teacher may cost a student their entire secondary academic career. Students cannot afford to wait.

Impact of Clinical Placement

Clinical experiences can provide a space for teacher-candidates to practice their craft but can also be a space of non-educative experiences (Darling-Hammons, 2006). Because the impact of the clinical experience has been directly related to the mentoring component of the cooperating teacher (Osunde, 1996) and because teacher-candidates test their personal theories,
knowledge, skills, and dispositions during clinical experience (Kelchtermans & Ballet, 2002), appropriate placements are crucial.

**Methodology**

This study was a mixed method study. Quantitative data was collected through the Ohio State Teachers’ Sense of Efficacy Scale- long form (TSES, Tschannen-Moran & Hoy, 2001) to measure the self-efficacy of the participants. This data was collected from 16 yearlong interns and 15 students participating in the traditional student teaching program. Data was collected three times throughout the student teaching experience: August, January, and May. Qualitative data was collected from the yearlong interns’ journaling to given prompts related to preparing to be a teacher. Examples of prompts are things I want to steal from my cooperating teacher and best practices. Qualitative data was analyzed separately by the researchers using content analysis (Covert, 1977). After individual codes were established, meetings were held to agree on codes for the study. The quantitative data was analyzed using reliability analysis (coefficient alpha) to measure internal consistency of the items.

**Findings/Discussion**

The findings of the quantitative data showed the participants of the yearlong internship showed a higher level of overall self-efficacy than the traditional student teachers and notably, also in the sub-factor of Efficacy of Classroom Management. The qualitative data supported the quantitative data. Participants were comfortable contacting parents, a trait usually not obtained until after the completion of a preparation program. “I want to make sure that I do utilize my parent contact sheet and keep a record of when I call parents to then later be able to use it when there is an administrator involved.” Another participant stated that she was able to better “Learn management and procedures and really get to know the students.” This was statement was in
reference to how once management issues are addressed, a teacher can focus completely on the students learning.

The data also showed that the yearlong participants are more self-efficacious in preparedness for the classroom. When asked about their experience in a yearlong internship, participants replied in statements that reflected their knowledge of their students and how they learn. One participant stated, “I was able to plan lessons designed for students and their different abilities.” Another said, “[I] was very comfortable most of the year with planning and discipline.” A third replied, “I was able to plan lessons designed for students and their different abilities. I knew the students well enough to effectively use a variety of grouping methods for group and partner activities. I also knew their various learning styles, and was able to incorporate them into my lesson plans.” There were many more that conveyed the same message, that a yearlong internship was beneficial in “acquir[ing] skills more like those of a first year teacher.”

These findings demonstrate that yearlong internships advance the skills of teacher-candidates to that of a teacher completing his/her first year of teaching. These teacher-candidates have undergone classroom situations that only experience can provide. As these candidates enter their own classrooms they are more prepared to impact student learning, more quickly. They have experienced classroom management, parent interactions and other procedural aspects of teaching to the extent that they are now more focused on designing lessons that meet the needs of their students.

Subsequent Research

The previous study was conducted with undergraduate students in the last year of their teacher preparation program (Williams, Gray, Stockdale, 2012). The question of how the results
might differ if the teacher candidates were Masters of Arts in Teaching (MAT) students then emerged. These candidates have a college degree (bachelors or higher) in various content areas and some with professional career experiences, but do not have backgrounds in curriculum, educational instruction, assessment, or student development. Through the MAT program, candidates will gain initial teacher certification upon completion. Based on that question, a subsequent research study was developed. The purpose of the follow-up study is to determine the development trajectory of teacher candidates with an increased amount of clinical hours.

Funded by the Woodrow Wilson Foundation, our Masters of Arts in Teaching program for secondary mathematics and the sciences has been reformed to decrease the number of courses and increase the amount of time spent in the classroom. This was done so that teacher candidates have more of an experience much like their first year of teaching, but with support. Teacher candidates begin the clinical experience with a workshop in co-teaching followed by the school district’s pre-planning week. Candidates take courses in the evening, but spend four to five complete days per week in the schools working with students. After completing a yearlong internship, candidates receive three years of mentoring with a mentor teacher based at their school as well as a mentor from the university.

The subsequent study is a longitudinal mixed-methods study. Quantitative data is collected using the Ohio State Teachers’ Sense of Efficacy Scale- long form (TSES, Tschannen-Moran & Hoy, 2001). This data will be collected during the initial semester of the program prior to any field experience and then again at the end of each of the clinical semesters as well as during the three mentoring years. Qualitative data is collected during the initial semester prior to the beginning of the clinical experience, periodically during the clinical year and continue until the candidates complete their third year of teaching. While in the program, qualitative will be collected in the
form of reflections. This quantitative data and qualitative data collected during the program will be used to measure candidates’ initial self-efficacy and their growth throughout the program. Data collected after graduation and once candidates are in their classrooms, will be used to measure the implementation or lack thereof of the candidates’ self-efficacy and to examine the trajectory of the candidates’ teacher development. Additional data collected during the mentoring years will include, professional development plans the candidates’ development, classroom observations, and interviews.

Preliminary analysis of quantitative data reveals a higher self-efficacy for preparedness for the classroom. Data was collected during their initial semester in the program, prior to any clinical experience. This is consistent with the data collected in the previous study with undergraduate students. In the initial study, students completing a traditional clinical experience, an observational practicum during the fall semester and a student teaching experience during the spring semester, showed a high level of self-efficacy until they actually entered their student teaching experience, whereas the yearlong interns continued to have a higher level of self-efficacy. Data for the subsequent study will continue being collected once the clinical experience begins and will be analyzed to determine if similar or different results occur.

**Conclusion**

It is important for students to be equipped with the skills, knowledge, and dispositions to be competitive in a global market. In order for students to be equipped, their teachers must be ready on day one. This study showed the dramatic impact of teacher-candidates completing a yearlong internship as opposed to a more traditional observational practicum followed by one semester of student teaching. The yearlong internship gave teacher candidates experiences of a first year teacher. They were able to learn to address classroom management and behavior issues
while having the support of a master teacher. They learned first-hand that teaching is a relational profession and that once they got to know their students. Classroom management became automatic, which allowed them to focus more on student learning. The only way to gain these types of experiences is time. Being assigned as a partner in a classroom for an entire academic year provides just that…time. The participants are entering their first year of teaching with the knowledge of a second-year teacher. It is hoped that the preparation experience will lead to impacting student learning sooner. The subsequent research will provide a glimpse into how the yearlong internship actually impacts the classroom performance of teacher candidates with extended clinical time.

References


Title: Evaluating the Effectiveness of the Interactive Language Program, DISPL-A, with Students with ASD in Self-Contained Settings

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Autism Spectrum Disorder (ASD) affects 1 in 68 children. Language impairment is a common characteristic of ASD, affecting the acquisition of more abstract language components and concepts. Fifty percent of ASD individuals are unable to interpret or use spoken language in other than rudimentary ways, greatly inhibiting learning at all grade levels and settings. However, existing visual instruction methods use isolated language elements and do not teach critical contextual relationships (such as generalization) between the real world and language representations.

This study focuses upon the development and field testing of a structured application (called “DISPL-A”) of video like scenes and corresponding discrete images could accelerate acquisition of language skills and, by extension, learning by children with ASD. DISPL-A was tested at 4 different national sites representing public and private schools and different teaching/therapeutic approaches (ABA, TEACCH, Language-based, and Blended) with 14 students with ASD, 7 diagnosed as Severe (Group 1, mean developmental age 2 yrs. 4mo) and 7 as Moderate (Group 2, mean dev. age 4 yrs. 1 mo.). Participants were in self-contained classrooms.

After initial baseline tests and 6 to 9 weeks training for 20 minutes per day, 3/4 days/week, Group 1 (severe) students’ showed improvement based upon changes in mean scores and mastery (of appx 70%) was achieved by 3 of 7 students. Group 2 (moderate) students scored at or above the 70% target on the initial baseline, but were included to determine if they were able to improve on generalization measures. Group 2 showed a mean improvement from 1% to 6%. The preliminary results demonstrate the feasibility of facilitating language improvements in children with moderate to severe ASD using the DISPL-A Interactive Language Program. Overall project and results will be discussed.
1. Title of the submission:
Change in Student Nurse Perception Towards Homeless Individuals and Families in Hawaii

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6. Abstract and/or full paper: See below
Abstract

The homeless problem in Hawaii continues to challenge social and health services in the community. Many of the homeless have taken up residence on the beaches however transitional housing and emergency shelters provide short term alternative. Some nursing students in Hawaii work with the homeless population during their senior year of clinical training. Students engage and develop relationship with their clients to understand their specific situation and health care needs. Over the course of five years, data was collected from different nursing students in their senior year before and after their experience caring for homeless individuals and their families. The data reflects a significant change in student’s attitude toward homeless individuals and better understanding of their role in addressing the health care needs of this population. The majority of students explained feeling less fearful toward the homeless. Students shared a deeper sense of empathy as well as passion to help others. Besides increased awareness and a change in attitude on the part of the new generation of nurses, a bridge will hopefully continue to be built to increase mutual trust and improve access to health care. The results of this project have implications for nursing education as well as for the agencies that work with the homeless.
From Content To Format: How To Make Screenwriting Fun

Art Education

Workshop

A workshop environment focusing on the basic principles of screenwriting and how to teach the subject in a fun and open environment. Will include an original short screenplay reading and a writing exercise.

Samantha Hughes, Graduate Student M.F.A Screenwriting, California State University, Northridge
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Dianne Durazo, Graduate Student M.F.A. Screenwriting, California State University, Northridge
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This workshop will be split into three parts. First explored will be the basics of screenwriting including structure, plot, development, and tips and tricks. This will be followed by an original screenplay reading involving audience participation, which will enforce the lessons taught on format and structure. The last section of the workshop will include the audience actively participating in a writing exercise that will highlight the benefits of creating a safe and fun environment for emerging screenwriters.

Scheduled time:

30 minutes dedicated to the presentation
30 minutes dedicated to the script reading
30 minutes dedicated to the workshop

Using our status as recent graduates we’ve put together the most effective methods that we’ve seen played out successfully in the classroom environment. From the hero’s journey to ten-minute meditations, different approaches in screenwriting will be examined and applied. Thus showing that an eclectic approach to screenwriting is a successful formula that allows for individual creativity while maintaining structure.
The Adventures Of Beck And Shell

By

Samantha Hughes
Dianne Durazo

An Original Short Screenplay

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INT. YONIC BOOKS SINGLES MIXER - NIGHT

In Pinterest style loopy writing a sign reads, "Books and Wine: Oh so fine, they help you mingle. So long being single... Love-the staff of YONIC BOOKS"

Stuffy pale DIVORCEE’S (Late 40s) wander a bookstore attempting to flirt with whoever makes eye contact.

In the far corner, next to a table filled with hard cheeses awkwardly stands BECKY (25) too young and too messy to be there. She grips two wine glasses and chews a ridiculous mouthful of cheese.

She notices a RANDOM DUDE checking her out. She quickly swallows her mouthful of cheese and attempts to flutter her eyelashes.

Random dude is not impressed. He moves in the opposite direction.

Becky sighs and dives in for more cheese.

EXT. OUTSIDE BOOKSTORE - NIGHT

SHELLY (25, hippie chic) stops at the curb in front of the bookstore in a loud beat up old car. Her passenger is a super HOT GUY (25) dressed like a GQ model.

Shelly pulls him by his shirt, roughly kisses him, takes a deep breath and hands him a crisp $20 bill.

    SHELLY
    You’ll know her when you see her.

Hot Guy exits the vehicle and walks with the confidence of a man who’s never been rejected.

INT./EXT. LIBRARY SINGLES MIXER - NIGHT

Hot Guy lures Becky outside and pushes a bewildered Becky into the car. Hot Guy slams the passenger door and Shelly zooms off.

INT. SHELLY’S CAR - NIGHT

    BECKY
    What the hell just happened?

Shelly attempts to explain, but Becky isn’t finished ranting.
BECKY
Why weren’t you inside? Who was that hot unicorn who pushed me in here? Where the fuck are we going?

SHELLY
Calm down.

BECKY
I’m not a fifties housewife, you will not ask me to calm down!

Shelly is so focused on the convo that she is driving like a maniac. The car swerves back and forth.

SHELLY
But you’re acting like a fifties housewife! And by that I mean a woman who is currently 80 years old. You’re in a straight up old lady rut. You’re at a singles party for people over 50.

BECKY
I’m really mature for my age. And plus, they deserve to find the love of their lives for the second time. Second marriages are great because you can be the cool-step-mom half the time.

A car horn HONKS as Shelly causally changes three lanes at once. The girls continue without missing a beat.

SHELLY
You’re 25. You have plenty of time to be a step mom. Last week you skipped out on our lunch date because you wanted to do water aerobics at the YMCA. That’s not mature, that’s geriatric.

BECKY
Screw you.

SHELLY
No, screw you and by that I mean you need get screwed. Tonight, whether you want to or not we are going on an adventure of body, mind, and soul.
BECKY
Are you high? What are you even saying?

SHELLY
I have a plan.

Becky looks terrified. Shelly’s scary smile confirms her fears as she hits the accelerator.

CUT TO:

EXT. SPA - DUSK

CHYRON: BODY 6 p.m.

Becky and Shelly pull up to a spa. Becky looks relieved at the calm and peaceful scenery.

BECKY
I would have willingly gone to a spa.

Shelly pulls out two free entrance coupons.

INT. SPA - CONTINUOUS

Shelly hands over her coupons and in exchange gets two towels. A scantily clad attractive MALE RECEPTIONIST greets them.

MALE RECEPTIONIST
Welcome to Glen Heathen. Ladies locker rooms are to the left. Please remove all forms of clothing before entering the outdoor spa. Enjoy your stay.

Becky and Shelly follow the signs.

BECKY
Is it just me, or are there hot unicorns just popping up left and right tonight?

SHELLY
Girl, we’re about to be at a rare hot unicorn convention...
INT. WOMEN LOCKER ROOMS - CONTINUOUS

Shelly strips off all her clothes. And places them in a locker.

    BECKY
    Wait, did that guy just tell us to take off all our clothes back there? You’re naked.

Shelly does a little twirl.

    SHELLY
    No shit. What did you think when we entered the spa, Glen HEATHEN. This is the hottest nudest colony/spa in Los Angeles county.

    BECKY
    Nudest? As in bare-butt-pong-playing retirees?

    SHELLY
    Today’s theme is 30 and under. I’m not an idiot, I checked the website. And spare me with your agesist comments. I just picked you up from the AARP dating pool.

Becky rolls her eyes and removes the top layers of her clothing, revealing a sports bra and boy shorts.

EXT. GLEN HEATHEN SPA - NIGHT

Shelly drags Becky out to the main spa. Shelly is nude and confident. Becky still wears her sports bra and shorts. Her free hand covers her stomach.

The pair both stop in their tracks as they notice that the NAKED PEOPLE around them are a lot more wrinkled and a lot less firm than expected.

A wonderfully hairy NAKED MAN in his sixties saunters up to the girls. He’s red and sweaty, dabing himself with a hand towel, jiggling with every wipe.

    NAKED MAN
    Hey, I’m Archie, may I just say that you two ladies are keeping it right and tight. I’d never guess you’re thirty.
BECKY
We aren’t?

NAKED MAN
Today is over thirty Thursday
though?

Becky throws eye daggers at Shelly.

SHELLY
Uh, my bad.

The Naked Man gestures at Becky.

NAKED MAN
And you should take off your
clothes before Earl notices. You
won’t like it when Earl gets angry.

BECKY
That’s alright. I’m comfortable
just the way I am. Thank you.

Naked Man walks away, before his towel accidentally slips
off his shoulder, dropping the towel a few feet from the
girls. He picks it up, mooning them in the process.

BECKY
Not today, Satan!

SHELLY
Don’t make a scene. This is
supposed to be a spiritually
enlightening experience for us.

BECKY
Fine. I’ll follow your lead. You’re
lucky I desperately need a massage.

Becky and Shelly find an empty pair of recliners and lay
their towels down.

Earl, a 85 year old staff member, walks up to the duo.

EARL
What do you think you’re doing?
This is a no-clothing zone. This
whole spa is a no-clothing zone.

SHELLY
You must be Earl. I’m Shelly. This
is Becky. It’s our first time. I
think she just wants experience
this in clothing.
EARL
You clowns are ruining our atmosphere. And honestly, I don’t think you’re thirty. You need to buck up and remove your clothing or leave.

BECKY
THIS IS AMERICA. I don’t have to do anything. You can’t force me to get naked.

EARL
Yes I can.

Earl walks towards Becky.

BECKY
Not today, Satan. What, are you Gonna make me? You’re like a 100?

EXT. SPA HEATHEN - DUSK
Becky and Shelly get pushed out of the spa doors and skitter on to the sidewalk. Shelly’s still completely nude as cars whiz past the girls on the street next to them.

Becky rages at Earl as the doors to the spa close.

BECKY
(yelling)
I didn’t know Earl was your nickname, Satan! This is America! This is unjust, misogyny run rampant. You probably fought for Germany you sexist old--

More cars zoom down the street, HONKING And WHISTLING.

Shelly reaches over and covers Becky’s mouth. She attempts to use the hand she has free to cover her exposed breasts while she’s crossing her legs.

SHELLY
STOP. Catcalls Beck. I’m getting catcalled. Priorities. I’m naked on a corner. Even hookers have more dignity with their leather booty shorts.

Becky shrugs.
BECKY
You wanted to be a Heathen.

Becky points to the Spa Heathen Logo.

Their clothes and bags get thrown over the wall, landing on various tree limbs and shrubs. Shelly’s bra tangle at the top of the tree.

Shelly quickly grabs her shirt and shorts from the bushes. Shelly stares at the bra.

SHELLY
I always wanted an excuse to be more free.

She shrugs and the duo walk away leaving the bra behind.

BECKY
The Heathens took more than just your bra. They took our dignity.
I’m writing a letter. I don’t know to who, maybe my congressman. I’ll figure it out.

Becky stomps away to the car, with all her clothes still in her hands.

INT. SHELLY’S CAR - NIGHT

CHYRON: MIND 9:14 pm.

The girls pull up to a sketchy neighborhood. Dogs are howling. HOOLIGANS are partying on the street. Glass BREAKS in the distance.

BECKY
Where the fuck are we now!??

SHELLY
The valley.

BECKY
The valley! No wonder it took us seventy years to drive here.

Shelly growls in frustration.

SHELLY
Come on, let’s go. I can’t handle you sober anymore.

Shelly moves to exit the car. Becky stays put.
BECKY
No way, I don’t want to die in the valley.

SHELLY
Then stay here, asshole.

BECKY
This is your thing, don’t be a dick! Take me home.

Shelly leaves the car without another word. SLAMS the door shut.

Becky runs after her.

BECKY
Wait, don’t leave me here.

Becky catches up at the front of a run down house with a broken screen door.

CUT TO:

INT. DRUG DEALERS HOUSE - NIGHT

An emaciated drug dealer LONNY wordlessly leads the two girls inside. Greets the pair with a simple lift of his chin.

The living room is a disaster filled with fast food leftovers, drug paraphernalia, and a giant TV.

Shelly’s unfazed. She follows Lonny further inside as he gathers her order.

Becky hangs back by the door. Stands, arms crossed. Her eyes immediately dart to the bathroom, which has no door.

LONNY
Shell, is that chick a Narc?

BECKY
I’m not a Narc. I swear. I promise. Cross my heart, I’m cool. Don’t hurt me.

Shelly and Lonny laugh.

DRUG DEALER
Ah, I see she’s just a nerd.

Becky and Shelly are both about to respond when three loud WASTED WOMEN (early 20s) burst through the door.
The door hits Becky and her body makes contact with the RING LEADER.

RING LEADER
EXCUSE ME! Who the hell are you?

The other two wasted women stand behind the ring leader in solidarity. They all look too skinny and too easily agitated.

BECKY
Um...

SHELLY
We’re just here--

RING LEADER
You’re fucking two girls this time!
Fuck you, Lonny! Now I gotta waste my manicure on these ratchets.

Lonny slowly backs down the hall as the ring leader and her friends attack.

The Ring Leader goes after Becky like a caged animal. Clawing and kicking a stunned Becky.

The two friends take on Shelly who looks practiced in the art of street fighting.

SHELLY
Run, Forest, run.

This shocks Becky into action and she shoves the girl as hard as she can and makes a break for it.

In a Hulk like move, Shelly whips the other two girls off her. Grabs the forgotten drugs off the ground and runs out the door.

The wasted women run after them.

BECKY
(running)
Dear God, Make me a bird, so I can fly far, far away from here.

The girls haul ass and make it into the car. The Ring Leader is so close Shelly’s door hits her hand as it slams shut.
INT. SHELLY’S CAR – NIGHT

Shelly speeds off, battered and breathing heavy.

Becky is mid rant.

BECKY
I was hit in the face. The face.
I’ve never been hit in the face.
I’ve never been hit.

SHELLY
You’ve never been hit?

BECKY
I’m an only child. My parents are therapists, I didn’t even have time outs. My best friends growing up were the wind instrument section of band class. We weren’t hitters. We’d all just make out with each other and talked about My Chemical Romance.

SHELLY
Emo? Really Beck?

BECKY
Stop trying to distract me. I’ve been injured because of you!

SHELLY
Woah, no because of that drugged out psycho. I didn’t do shit.

BECKY
Semantics. I’m here because of you. Take me home!

SHELLY
But I got the drugs and the nights not over!

Shelly pulls out a small bag from her pocket. Smiles as she waves it at Becky.

BECKY
You think I wanna do drugs! Take me home.

SHELLY
Fiiiiiiine, wet blanket.
EXT. OUTSIDE OF WAREHOUSE— NIGHT

CHYRON: Soul 11:07 pm.

Shelly pulls up to a giant warehouse with a faint light coming from under the door.

The car sputters and dies.

INT. SHELLY’S CAR – NIGHT

BECKY
I knew you agreed to take me home way too easily.

SHELLY
Did you not just hear my car die!

BECKY
Likely story.

SHELLY
You know you’re the worst, right? You’ve been a total dick this whole night and about as understanding as Stalin.

BECKY
(Sarcastic)
And you’ve just been a peach. You irresponsible, practically an attempted murderer--

SHELLY
You know what I’m fucking happy my car died. You don’t deserve Nikki Minaj.

Becky gasps.

BECKY
Nicki?!

SHELLY
Yah, that rare unicorn got me two tickets to a private after party hosted by the legend herself.

Before Becky can respond, Shelly exits the car, slams the door and heads for the light.
BECKY
(Pained)
Nikkkiiiiiiii

Becky leans back in her seat. Confident, her friend will cool down and come back.

CUT TO:

INT. WAREHOUSE - NIGHT

CHYRON: 45 Minutes Later

A giant party is in full effect. People everywhere, lights, thumping MUSIC.

The beat drops.

An angry Becky makes her way inside.

Shelly crowd surfs around the packed warehouse. Her hands holding the nearly emptied paperbag of drugs.

Becky spots her and bum-rushes the crowd and tries to get Shelly’s attention.

BECKY
Get down here Shelly Marie Silverstein! You just left me!

SHELLY
I’m sorry, it’s too loud. Come closer!

BECKY
Put her down!

Shelly magically floats towards Shelly.

SHELLY
You may release me.

The crowd drops Shelly to her feet.

BECKY
This is not okay. We need to go home and when did you steal my iphone?

SHELLY
I Still can’t hear you.. come closer! I don’t read lips.
Becky elbows her way closer to Shelly. Shelly reaches into her mysterious brown paperbag and pulls out a handful of special pills.

She grabs Becky by the head and stuffs the pills in Becky’s mouth.

**SHELLY**
Shhhh. It’ll be all better soon.

Becky attempts to spit the pills out, but swallows a few in the process.

**BECKY**
Fine, Satan, today you win.

Shelly throws the remaining pills into the crowd.

**SHELLY**
Bless you all. You’re welcome.

Becky wipes at her mouth.

**BECKY**
Ugh, I hate you.

INT. AMAZING RAVE - LATER

CHYRON: One hour later...

THUMPING MUSIC engulfs the venue.

Becky and Shelly dance their asses off in a crowd of people all having the time of their lives.

The girls hug each other tightly.

**BECKY**
I just love you-

**SHELLY**
No, I LOVE you!

**BECKY**
Let’s dance!

MONTAGE:

The girls bust out some amazing choreographed dances.

The girls take shots at a neon bar with two HOT GENTLEMEN.

Shelly and Becky in the DJ BOOTH, one wears the head phones, the other one scratches a record.
The girls get piggyback rides from the hot gentlemen.
The beat drops again.
The whole raves attention is at the front door and in walks NICKI MINAJ!
The girls drop off their rides in shock.

SHELLY
Holy shit! She’s here. How? Why?
Goddess. Dream maker. Icon.

The crowd magically parts and...
Shelly runs to Nicki and literally bows at her feet.
Becky comes running after. Happily screaming.

BECKY
BEST NIGHT EVER!!!

End Montage.

CUT TO:

EXT. OUTSIDE WAREHOUSE - DAY
Becky and Shelly wake up near the trashcans, sprawled across trash and litter. Shelly groans with regret.

SHELLY
What happened?

Becky slowly gets up, holds her stomach.

BECKY
I think last night is coming up.

Becky finds a nearby empty gallon of paint and attempts to hurl.

BECKY
Nope. Last night is definitely coming down and out.

Becky then sits on the empty paint bucket and relieves herself.

SHELLY
Stop, Becky. You’re better than that. Oh, no! Don’t do that. Stop. Please.
BECKY
I’m crowning.

Shelly rises to her feet, wiping her mouth from dried saliva.

SHELLY
Never again. I think I’m dead. You just pooped in a bucket. You were right, old lady life sounds pretty good.

Shelly rubs her face. whimper.

BECKY
Are you kidding me? Goodbye old lady rut! Last night was the best night ever. We danced with Nicki. And she’s bff’s with Bey. So, we were like three degrees away from Blue. Poop shmoop.

Shelly shakes her head in disagreement. Groans as the sun shines in her eyes.

FADE TO BLACK.

SHELLY V.O.
Seriously though, when’s that next wine and cheese mixer? I could make a hot stepmom.

THE END.
FOSTERING INCREASED PARTICIPATION OF WOMEN AND MINORITIES IN STEM STUDIES

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Abstract:

Participation of women and minorities in STEM fields is a persistent issue, and one that has its base in education. One study found that the STEM workforce in the United States today is no more diverse than it was fourteen years ago. Data in another report show that in Silicon Valley, for example, the gender and racial gap has even widened since last year. That report indicates that this is rooted in education. Within the past thirty years, there have been major changes in both the economy and the population United States. The economy has moved to an increasing dependency on technology, and the population has become much more diverse. In 2010 the President’s Council of Advisors on Science and Technology stated, “STEM education will determine whether the United States… will be able to solve (the) immense challenges in such areas as energy, health, environmental protection, and national security.”

Our work shows that community colleges can contribute to the effort to increase the participation of these underrepresented groups in STEM studies. There have been programs, efforts, and studies in this area sponsored by government and private organizations, including the National Science Foundation and the US Department of Education. The most intervention work has been in the areas of Supplemental Instruction, Learning Communities, Mentorships, and Early Research Experiences.

Our work shows that lessons learned from Supplemental instruction programs at other educational institutions can aid in creating effective and manageable SI programs in community colleges. We have data that indicates our SI program is particularly effective and valuable for increasing the success in gateway science courses for both community college women and minorities. We have found that the circumstances at community colleges makes creating Learning Communities more challenging. Yet, we will share ways that this can be done, and how they, too, can be part of an integrated program that leads to successful results. We will share the factors and work that has made an early research experiences possible thorough partnerships with surrounding universities, and we will give examples of its success.

While increasing the success and interest of community college students in STEM fields has it own specific and unique challenges, it is an important effort
Introduction:

To address the goals to increase the success of our students in the science, engineering, technology and math (STEM) classes and to encourage underrepresented populations to pursue a STEM career, we have created a culture of STEM awareness and support. We have implemented a comprehensive approach that included academic support for students enrolled in specific science classes, creating a supportive and encouraging environment in Learning Communities, exposing students to STEM opportunities and research experiences, and motivating students to explore STEM courses. Most of this work was funded by a grant from the Department of Education, the Minority Science and Engineering Improvement Program (MSEIP). San Bernardino Valley College (SBVC) is a federally designated “Hispanic Serving Institution” (HIS) and “Minority Serving Institution”, with around 25,000 full time and part time students a year. San Bernardino County has one of the lowest college matriculation rates in California. Only 18.6% of adults age 25 and older in San Bernardino County hold bachelor’s degrees or higher, and 48.3% of adults in San Bernardino County never attended college. Our college has a Hispanic population of over 56% and an African American population of over 15%. This work, therefore, addressed the need for greater educational achievement in a “minority-majority” region of southern California that lags behind the rest of the state in K-12 preparedness, college matriculation rates, and education levels.

The Work presented here has a number of components employed to enhance the success of women and minorities in STEM. Supplemental Instruction, Learning Communities, Early research opportunities and involvement, and early outreach were all part of this comprehensive program.

Support for current STEM students Supplemental Instruction (SI)

The implementation of the Supplemental Instruction program provided a safety net and instructional support for STEM students. Our faculty developed handbooks for the student Supplemental Instruction Leaders, and for the faculty whose class sections were assigned SI leaders. The faculty was introduced to the program at division or department meetings and one-on-one discussions. The student SI Leaders receive extensive initial training and on-going weekly training, led by a combination of classified staff, instructional faculty, and a counselor. Topics in this training include: peer mentoring, time management, redirecting questions, encouragement of active participation, strengths training, techniques for creating mock exams, note taking skills, and strategies to engage the students.
In Supplemental Instruction sessions students review material from class sessions with the direction and support of the SI Leaders. Supplemental Instruction sessions are offered twice a week for 2 hours. There are about 15 - 20 student participants in each session. The SI Leaders use instructional sheets and materials developed with the course instructor. In addition the SI Leaders themselves attend the course lectures. This reinforces the SI leaders own personal knowledge and understanding, and enables them to more directly assist students in being successful in the class. These SI leaders in turn provide mentoring as well as instructional guidance during the SI sessions with students. The SI leaders are trained to encourage and cultivate a community of learners among the students attending their sessions.

The Supplemental Instruction SI sessions are not mandatory, but faculty encouraged students to attend. Data clearly demonstrated a higher success rate (grade C or better) for students who participated in five or more Supplemental Instruction sessions. This enhanced success is particularly prominent with women and minority participants.

This work included over seven hundred students per semester. Touching well about two thousand five hundred students during the course of the program. And, our data indicates that these SI sessions have enabled an increased success rate for our students.

The classes and their enrollment that were evaluated are listed in the chart below.

<table>
<thead>
<tr>
<th>Class</th>
<th>Enrollment Spring 2014</th>
<th>Enrollment Fall 2014</th>
<th>Enrollment Spring 2015</th>
<th>Enrollment Summer 2015</th>
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<tr>
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<td>515</td>
<td>503</td>
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<td>General Chemistry I</td>
<td>127</td>
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<td>125</td>
<td>49</td>
</tr>
<tr>
<td>General Chemistry II</td>
<td>47</td>
<td>55</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td>Organic Chemistry I</td>
<td>28</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Biology I</td>
<td>69</td>
<td>74</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>General Biology II</td>
<td>34</td>
<td>23</td>
<td>38</td>
<td></td>
</tr>
</tbody>
</table>

Our data shows increased success rates for minority students who attended the SI sessions. In the first semester of SI implementation, for example, the success rate for African Americans was 63% for those who attended 5 or more sessions compared to
only 17% for those who did not participate in SI sessions. For Hispanic students the success rate was 64% for those who participated in 5 or more SI sessions while only 35% for those who did not participate in SI sessions. And the data shows over a 25% better success rate for African Americans in each semester of SI service with the exception of one. (Fall 2014 data does not demonstrate a strong difference in success for African Americans, but this anomaly can be due to a small sample size). Success rates for Hispanics are consistently higher in those who participated in 5 or more SI sessions.

The tables below (Tables 1-4) demonstrate a higher success rate for the majority of minorities if the student attended at least 5 SI sessions in a semester.

TABLE 1: Success Rate Ethnicity Spring 2014

<table>
<thead>
<tr>
<th>Workshop Attendance</th>
<th>African-American</th>
<th>Asian</th>
<th>Hispanic</th>
<th>White</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 workshops</td>
<td>50%</td>
<td>56%</td>
<td>46%</td>
<td>47%</td>
</tr>
<tr>
<td>1-4 workshops</td>
<td>67%</td>
<td>20%</td>
<td>45%</td>
<td>50%</td>
</tr>
<tr>
<td>5+ workshops</td>
<td>40%</td>
<td>77%</td>
<td>55%</td>
<td>64%</td>
</tr>
</tbody>
</table>

TABLE 2: Success Rate Ethnicity Fall 2014

<table>
<thead>
<tr>
<th>Workshop Attendance</th>
<th>African-American</th>
<th>Asian</th>
<th>Hispanic</th>
<th>White</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 workshops</td>
<td>50%</td>
<td>56%</td>
<td>46%</td>
<td>47%</td>
</tr>
<tr>
<td>1-4 workshops</td>
<td>67%</td>
<td>20%</td>
<td>45%</td>
<td>50%</td>
</tr>
<tr>
<td>5+ workshops</td>
<td>40%</td>
<td>77%</td>
<td>55%</td>
<td>64%</td>
</tr>
</tbody>
</table>
TABLE 3: Success Rate Ethnicity Spring 2015

Success Rate per Workshop Attendance and Ethnicity - Spring 2015

<table>
<thead>
<tr>
<th>Workshop Attendance</th>
<th>African-American</th>
<th>Asian</th>
<th>Hispanic</th>
<th>White</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 workshops</td>
<td>47%</td>
<td>60%</td>
<td>46%</td>
<td>68%</td>
</tr>
<tr>
<td>1-4 workshops</td>
<td>50%</td>
<td>63%</td>
<td>40%</td>
<td>46%</td>
</tr>
<tr>
<td>5+ workshops</td>
<td>75%</td>
<td>86%</td>
<td>64%</td>
<td>64%</td>
</tr>
</tbody>
</table>

TABLE 4: Success Rate Ethnicity Summer 2015

Success Rate per Workshop Attendance and Ethnicity - Summer 2015

<table>
<thead>
<tr>
<th>Workshop Attendance</th>
<th>African-American</th>
<th>Asian</th>
<th>Hispanic</th>
<th>White</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 workshops</td>
<td>73%</td>
<td>60%</td>
<td>51%</td>
<td>33%</td>
</tr>
<tr>
<td>1-4 workshops</td>
<td>33%</td>
<td>80%</td>
<td>83%</td>
<td>100%</td>
</tr>
<tr>
<td>5+ workshops</td>
<td>100%</td>
<td>100%</td>
<td>86%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Gender Success Data for SI

In addition to increased success rates for minority students who attended the SI sessions, the data also indicate that women’s success rate is also higher with participation in these sessions. Again, our first SI implementation semester showed a success rate of 57% for those women who did not participate compared to a 79% success rate for those with at least 5 sessions. Each semester’s results indicates a greater success rate for women who participate in SI sessions.

The tables below (Tables 5-8) demonstrate a higher success rate for female students who attended 5 or more workshops

### TABLE 5: Success Rate Gender Spring 2014

<table>
<thead>
<tr>
<th>Success Rate per Workshop Attendance and Gender</th>
<th>Spring 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>0 workshops</td>
<td>0%</td>
</tr>
<tr>
<td>1-4 workshops</td>
<td>20%</td>
</tr>
<tr>
<td>5+ workshops</td>
<td>40%</td>
</tr>
</tbody>
</table>

### TABLE 6: Success Rate Gender Fall 2014

<table>
<thead>
<tr>
<th>Success Rate per Workshop Attendance and Gender</th>
<th>Fall 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>0 workshops</td>
<td>0%</td>
</tr>
<tr>
<td>1-4 workshops</td>
<td>20%</td>
</tr>
<tr>
<td>5+ workshops</td>
<td>40%</td>
</tr>
</tbody>
</table>
TABLE 6: Success Rate Gender Fall 2014

TABLE 7: Success Rate Gender Spring 2015

TABLE 8: Success Rate Gender Summer 2015
Support for current STEM students: Learning Communities

Another component of our plan to nurture and cultivate students pursuing STEM careers has been a pilot of “learning communities”. The learning communities consisted of having two classes such as College English with General Chemistry I, or General Chemistry I with General Biology I with the same enrolled cohort. Since students majoring in biology, chemistry, or biochemistry take General Chemistry I (CHEM 150) as their first college level science class, we included this course in most of our learning communities. Faculty from each class worked together to improve student success by aligning the sequence of curriculum, and linking the concepts in the course. Also, different strategies were used to support and nurture the students. For example, the linked faculty members applied “Gallup’s StrengthsFinder” to create more course engagement in students as they utilize their unique skill sets to be successful students. Additionally strengths-based learning, promotes hope in individuals. Others invited counselors to the class to address anxiety and in particular, test anxiety. Several faculty taught note-taking, study and organization skills, and integrated brain-based learning into their teaching. In addition, all students were required to see a STEM counselor once, and preferably twice, during the semester. These students also have greater access to STEM counselors and are provided the guidance for successful transfer to a university and career preparation.

The Learning Communities that we attempted are the following:

<table>
<thead>
<tr>
<th>Year</th>
<th>Classes Offered</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013, fall</td>
<td>Introductory Chemistry (CHEM101) + Preparation to College Writing (ENGL015)</td>
</tr>
<tr>
<td>2014, spring</td>
<td>Attempted General Chemistry I (CHEM150) + Freshman English (ENGL 101)</td>
</tr>
<tr>
<td></td>
<td>General Chemistry I (CHEM 150), only.</td>
</tr>
<tr>
<td>2014, fall</td>
<td>General Chemistry II (CHEM151) + Organic Chemistry I (CHEM212)</td>
</tr>
<tr>
<td>2015, spring</td>
<td>General Chemistry I (CHEM150) + General Biology I (BIOL 201)</td>
</tr>
<tr>
<td>2015, fall</td>
<td>General Chemistry I (CHEM150) + General Biology I (BIOL 201)</td>
</tr>
<tr>
<td></td>
<td>Introductory Chemistry, fast track, then General Chemistry, fast track</td>
</tr>
<tr>
<td>2016, spring</td>
<td>Planned General Chemistry I (CHEM150) + General Biology I (BIOL 201)</td>
</tr>
<tr>
<td></td>
<td>General Chemistry I (CHEM150) fast track, then General Chemistry II (CHEM151)</td>
</tr>
</tbody>
</table>
There were some obstacles to establishing the learning communities in this community college setting. It took several trials to find the best methods to register the students in the specific sections of these classes. It also took some time, resources and effort to find the best fit for faculty, and to identify the classes that students were ready to take. Unfortunately, as expected, some interested students had schedule conflicts and could not enroll in the learning community classes. Yet, we were still able to involve a great number of our students.

Visits to local universities (for example, the University of California, Riverside (UCR) are included as part of the Learning community activities. During these visits, students are provided tours of several STEM labs, and interact with panels of students and graduate students who talk about transfer, graduate schools, and STEM disciplines. These visits have generated enthusiasm for transfer, and for persevering as a STEM major and they have encouraged students to continue their long-term planning in a STEM career.

In traditional courses, students typically engage at a superficial level when they collaborate in course assignments and laboratory activities, but learning community students seem more likely to form informal study groups, they seem to challenge each other more often, and the peer-peer bond seems to persist longer and beyond LC courses. Moreover, as students participate in course activities they seem to be more engaged with course content and with the faculty. With the use of Gallup’s Strengths-based education, students have also become introspective about their learning journey which has led them to target specific ways of modifying their learning skills. All these are non-academic predictors of successful students and lifelong learning.

**Support for current STEM students: Field Trips**

To enhance exposure to STEM research and careers, students in the STEM areas participated in STEM field trips, such as tours of the Scripps Institute Center for Marine Biotechnology and Biomedicine or the Salk Institute for Biological Studies, where they were able to talk to researchers and tour their labs. Following their visit to the Salk, the students toured both University of California San Diego (UCSD) and San Diego State University (SDSU.) One of our students expressed this written sentiment:

“The Salk Institute was so amazing!! I felt so lucky to be one of the students to get to see it. It was one of the greatest opportunities I've come across thus far. I really enjoyed visiting both colleges as well. It was super fun and I also feel that it has opened a lot of doors for me and my future career.”
Support for current STEM students: Summer Research

Through a cooperative plan developed with the University of California Riverside, UCR, (the nearest of the University of California campuses) each summer, three to four selected students participated in the UCR Summer Bridge Research Program. This program provided a research experience and mentoring on transfer and graduate school. Each year, we received well over six times as many applicant as we could support, indicating a very high level of interest in these opportunities. The students were selected from the pool of applicants, matched with a faculty member at UCR, and received a stipend for the 10-week summer research experience. These students participated in ongoing research projects conducted by university research faculty. The students actually received a UCR ID card; they participated in lab safety training, and attended a 2-day research “boot camp program.” During the boot camp program, in preparation for their research experience, the students became acquainted with techniques they would use in the lab. For example, students doing research in molecular biology were taught techniques, such as PCR, primer design, electrophoresis, bacterial transformation and basic bioinformatics tools. There was also a review of basic genetics and cell biology.

Our students also attended workshops on research presentations, and how to prepare for more advanced study. Finally, they presented their research at a forum on the university’s campus.

So far ten or our students have had this valuable experience. As a result of this experience, these student participants have become ambassadors for STEM research and future education. On their return to San Bernardino Valley college campus, they were invited to talk about their research to our STEM students. Their presentations both encouraged new groups of students to seek summer research opportunities, and increased the interest and awareness of our STEM students in opportunities for additional studies at universities.

Cultivate new STEM students

To attract and guide more minorities and women into our STEM programs, each spring, over 200 eighth graders were brought to our campus for a “Science and Technology Day”. These activities with the community may attract and guide more minorities and women into our STEM programs. The students were introduced to current college students in our Valley Bound program, who spoke to them about their transition from middle school to high school to college. The eighth grade students were able to identify with the college students who encouraged them to use high school to prepare for college. The eighth grade students then participated in hands-on workshops in the STEM fields. The workshops included experiences such as The
Physics of Motorsports, Fun with DNA, An Hour of Code, Water Conservation, The Chemistry of Lip Balm, and Battle of the G's- Google Earth Meets Geocaching. They were escorted to these events by our college’s Valley Bound students who also participated in the activities. Surveys from the eighth grade students indicated that many students showed an increased awareness and interest in science as a result of their experiences at Science and Technology Day.

Conclusion

A comprehensive approach was used to cultivate an environment that encouraged and supported success of underrepresented populations in STEM courses and that exposed students to potential careers in STEM. Our objectives were to provide support for increased success through the SI program; provide a nurturing environment in learning communities; and stimulate interest in transfer to four year colleges or universities by visiting university laboratories. The SI success data demonstrates that students who attended any SI sessions had increased success rates. Once the students understood the value of SI sessions, they were more likely to attend an SI session for other courses. The summer research experience encouraged students to pursue further research opportunities and to consider continuing their education at the post-graduate level. These interventions are working to foster an increased participation of women and minorities from our community in STEM.
Title: Pacific Islander women veteran’s transition from military to civilian employment and educational opportunities.

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Paper Abstract

While there may be significant studies about other minority women veterans such as Hispanics, Blacks and Asians, little is known about Pacific Islander women veterans. Pacific Islander women who volunteer to serve in the Armed Forces then subsequently decide to leave may face transition challenges due in part to their cultural background. They may remain silent about struggles with deployments, mental health, loneliness, or personal well-being conditions since discussing personal matters with non-family members can be considered taboo and disrespectful to one’s family. This study seeks to explore and understand the lived experiences of Pacific Islander women veterans from different generations who have departed the Armed Services and to shed light and give voice to their stories of challenges and successes in securing civilian employment and educational opportunities after serving their country honorably.
Using Technology for Multisite Assessment in Health Science Education

Health Education

Paper Session

A final health team evaluation (Team Objective Structured Evaluation) was conducted using Lifesize technology in order to connect students, a patient and evaluators from four sites. This process was evaluated through feedback received from all participants including an experienced course developer. It was found that this platform provides a reliable technology that allows for effective team interaction and provides a similar assessment process. Students felt that it prepared them for their future practice using technology.

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Abstract page 2
Using Technology for Multisite Assessment in Health Science Education

Objectives: A section of students enrolled in a large interprofessional health science team class in three external locations at the University of Alberta in Canada participated in the class utilizing an online learning platform versus a traditional format. The final evaluation of the course was a Team Objective Standardized Assessment (TOSCE) with a standardized patient scenario utilizing Lifesize technology to connect the student team, evaluators and patient. A review of the assessment was completed in order to ensure that the student teams could be assessed in the TOSCE in a similar manner to the traditional in person TOSCE.

Methodology – Using online student evaluations, feedback from section instructors and an experienced course developer, a review was done of the evaluation process.

Results – The use of Lifesize technology provided a reliable technology for use within a team examination. Students felt that they were able to communicate and work effectively as teams and that this type of experience supported their preparation for future telehealth and team practice. Evaluators suggested that this was an effective platform for student assessment.

Conclusion – The use of technology is a viable way to assess students in multiple locations. If appropriate technology is used it can help students also learn skills for future health care practice.
Expert Consulting – Does it need to be in Person for Effective Learning?

Curriculum, Research and Development

Paper

Students working with standardized patients in a mental health course were provided with an opportunity to compare online consultation with a clinical expert versus in situ immediate consultation with faculty. Using qualitative methods the process was reviewed through written feedback, evaluation of online comments and student focus groups. Online expert consultation was found to be an effective method of communication and for some students provided a better learning environment to practice their clinical reasoning skills.

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Full abstract page 2
Expert Consulting – Does it need to be in Person for Effective Learning?

Objectives: A senior mental health course in occupational therapy utilizes three standardized patient experiences as part of the student learning strategy. Students were given the opportunity to consult with an expert faculty member immediately after the interview in situ or with an online expert clinician. The purpose was to evaluate the effectiveness of the online consultation versus in situ immediate feedback. Students were told that this was an opportunity to enhance their learning through consultation with an expert. The students were randomly assigned to either the in situ faculty member or online expert on all three experiences so had the opportunity to experience both forms of consultation.

Methods: A qualitative method was used to collect feedback on the types of questions that students asked from both in situ faculty and online clinicians. Copies of all online interactions were collected for analysis as well. Focus groups were also held with the students to discuss their experiences.

Outcome: In situ questions tended to be more frequent and often were process orientated. When students utilized online consultation they delayed asking questions until they had evaluated their own process and the questions were less frequent but had greater clinical significance. Students were very conscious of the time commitment of the online experts and in many cases actually “booked” online time with the expert.

Conclusion: Online consultation appears to provide students with a good learning experience and may better support their clinical reasoning skills, and ultimately provided an excellent learning venue.

Acknowledgement: This study was funded by a grant from the Teaching and Learning Enhancement Fund at the University of Alberta.
Title: Innovative Technology Implementation in Elementary Schools: A Study of Challenges and Successes

Topic area: Educational Technology

Presentation Format: Poster Session

Description: Ten elementary school classrooms were studied as teachers implemented standards-based technology to enhance daily instruction. The presentation will summarize key findings from five data sources; teachers’ pre-implementation descriptions, classroom observation, teacher blogs, surveys, and interviews. Results indicate teachers’ desire and willingness to enhance instruction with technology. However, discrepancies occurred between the teachers’ intended and observable use of technology to improve instruction.

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Innovative Technology Implementation in Elementary Schools: A Study of Challenges and Successes

Abstract

Technology implementation in ten K-5 classrooms was investigated to examine how teachers used technology to enhance student content knowledge. Five sources of data were collected: teachers’ pre-implementation description of how they would use the technology to improve instruction, teacher blogs, surveys, interviews, and classroom observations. Data sources were triangulated to check for congruency between self-reported and observed uses of technology to enhance content learning. Results demonstrated teachers’ desire and willingness to enhance instruction by using technology. However, discrepancies occurred between the teachers’ intended and observable use of technology to improve instruction.

Objectives

As more classrooms have access to digital technologies, our inquiry shifts from how to use technology, to how technology can enhance content learning. Voogt Erstad, Dede, and Mishra (2013) support that pedagogy and content should be the driving force for technology implementation. It is not the actual technology device that impacts learning, but the way it is used in the classroom has the potential for improving learning outcomes (Warschauer, Zheng, Niiya, Cotton, & Farkas, 2014). Hence, technology is the instrument used to improve pedagogy. This investigation looks at how teachers are using technology to improve their pedagogy. The nuanced ways in which personal, professional, and external influences impact technological implementation is examined.
Rich and engaging instructional strategies should remain the prominent initiative when focusing on technology implementation (Butcher, Leary, Foster, & Devaul, 2014). Much of a teacher’s success in using technology comes from pedagogy that strives to have meaning and understanding emerge from the students’ active participation in daily conversation that is enhanced by the use of technology (Roe, 2007).

Teachers that aspire to improve their practice by incorporating technology see themselves as change agents (Roe, 2007). They are eager to experiment with technology use and welcome the chance to learn from their mistakes, which improves their technological pedagogy. Systematically documenting what they do and how the technology impacts student learning enables teachers to share their successes as well as learn from others. The sharing process is critical for continued learning and innovation through collaboration, co-teaching, and teaching-revising-teaching (Hepp, et al., 2015).

**Purpose of This Study**

Analysis of the productive use of technology within various laptop environments, diverse teacher competencies, and student groups leads to a fuller understanding of a technological pedagogy model that is developing currently in elementary schools (Cavanaugh, Dawson, & Ritzhaupt, 2011). The purpose of this study is two-fold. The first purpose of this study is to add to the existing literature, seeking to support best practices in instructional technology by investigating the processes that technologically-minded elementary teachers use as they implement new laptop technology. The second purpose is to investigate the successes and barriers that teachers encounter during implementation to further understand the supports necessary to develop successful content learning with technology as the delivery tool.
Perspectives

Technology, pedagogy and content knowledge (TPACK), described by Koehler and Mishra (2009), is the framework underpinning this research. From this perspective, instructional technology practices are viewed as the interaction between content knowledge, pedagogy, and technology knowledge within the construct of digital literacy. Teaching with technology is a complex process that requires much more than technical skill. The TPACK framework views instructional technology practices as the interaction between content knowledge, pedagogy and technology knowledge. Our research seeks to understand the interplay of TPACK components in the planning, instructional and reflective practices of classroom teachers as they implement new technology.

Digital literacy and digital competence (used interchangeably in our research) are constructs with ever-evolving definitions that form a foundation for this study. O’Brien and Scharber (2009) describe digital literacy as “…socially situated practices supported by skills, practices and stances that enable the representation and understanding of ideas using a range of modalities enabled by digital tools” (p. 66-67). Digital literacy has been broken down further into five components of: photo-visual literacy, reproduction literacy, branching literacy, informational literacy and socio-emotional literacy (Eshet-Alkalai, 2004). Synthesizing the five components, Ng, (2012) proposed that digital literacy combines cognition, technological skill and socio-emotional elements. Our research utilizes these five components to aid in understanding the inter-related and nebulous nature of technology implementation in the classroom.
Methods

The participants in this qualitative study are ten elementary classroom teachers in a school district in the Pacific Northwest. This district has a student population of 20,884. According to the Oregon Report card for 2013-2014, 26% of students are English Language Learners, 69 languages are represented, 49% are economically disadvantaged and 14% are students with disabilities.

Teachers in the study are recipients of a “Technology Innovation” grant funded through their district from a bond measure that focused on increasing student achievement through technology implementation. Each teacher applying for the grant was required to articulate a plan for innovative instructional activities utilizing Chromebooks or iPads. Teachers awarded the grant agreed to write a monthly blog post to demonstrate their innovative uses of technology and to reflect on the implementation process. The teachers received the technology at a “Device Kickoff Party,” where they were given a chance to ask questions and get support in an informal setting.

To investigate the process of technology implementation, qualitative data was collected from five sources including a pre-implementation description, teacher surveys, interviews, classroom observations, and teacher narratives from blog postings. The Technology Implementation Questionnaire (TIQ; Wozney, Venkatesh, & Abrami, 2006) was given to collect teachers’ impressions of the usefulness of laptops in instruction and to more fully understand how a teacher’s experience, style, and digital literacy interact to impact computer use in the classroom. The TIQ contains four parts: the teacher’s professional views of computer technology, background and teaching style, experience with computers, and process of integration. Responses were analyzed using a constant comparative approach (Glaser & Strauss,
1967) to discover dominant themes. Constant comparison was used to chunk the data into meaning units. The chunks were coded according to overarching commonalities illustrated in the data. Analysis of the data reported in this study was done using an iterative process of pattern coding (Miles & Huberman, 1994). Coding was done by the researchers to look for themes, patterns, and codes to form a ‘thick description’ (Geertz, 1973).

Classroom observation data was collected from a technology implementation rubric based on Domain 3 of Charlotte Danielson’s Framework for Teaching and Learning (Danielson, 2007). The need to cross-reference self-reported perceptions with observable practice is addressed in this study (Huchison, 2011). The observation focused on technology related instructional competencies.

The primary research questions include:

1. How are laptops used in the classroom to enhance content knowledge?
2. What are the factors that contribute to the successful integration of technology in the classroom?
3. What are the teacher’s perceived barriers that prevent successful integration of technology in the classroom?

Results

Preliminary analysis of teacher survey data show that participating teachers had a belief prior to obtaining the technology grant, that integration of technology is an effective strategy for enhancing student-learning outcomes. 82% of participants reported that they had a strong background using laptops for personal use. However, an even greater number of participating teachers reported the need for more focused professional development in regards to a) which
particular technologies are best suited to specific content areas and b) integrating technology in a manner that adds value to instruction rather than substituting existing resources.

Interview data revealed that the most frequently identified barrier to technology implementation was the lack of time for thoughtful planning. Teachers expressed the need to meet with colleagues and district technology leaders on a regular basis, during the school day, to discuss innovative strategies for improving instructional technological competencies. Analysis of blog narratives showed that this strategy, although helpful in sharing innovations, did not replace the need for face-to-face discussions and peer observations of classroom technological pedagogy.

The second most reported barrier to successful technology implementation was the lack of 1:1 Chromebooks. The need to rotate the students’ use of Chromebooks reportedly created instructional gaps due to the inability to use strategies, such as instant polls, that require all students to be using their device simultaneously. Some teachers reported that the delay in use resulted in a loss of student engagement. An additional drawback was that students did not have the same ownership as they would have with one-to-one use. As Warschauer and Tate (2015) found children were not as careful with the equipment when they weren’t the sole user of that equipment.

The third barrier was lack of sufficient infrastructure to support the technology. In two out of the four buildings, teachers reported connectivity problems in which instructional interruptions were frequent. These connectivity interruptions were so disruptive to the instruction that teachers abandoned the lesson for the week and modified future planned lessons to more traditional methods of laptop use, such as typing final drafts of reports.
Teacher blog entries demonstrated a thoughtful, standards-based implementation of technology in the classroom, without a full understanding of how to integrate technology in order to improve student outcomes. Teachers focused on the organization of the classroom in providing equal opportunity to all students, which included integrated technology use to support and differentiate instruction for various populations within the classroom. Instead of providing open-ended assignments with various entry points, teachers formatted assignments very narrowly. Lesson observations showed that many of the technology-based assignments focused on producing a uniform product rather than encouraging open learning experiences.

Teachers self-reported in many cases that Chromebook use enhanced instruction, although observational data showed that many of the instructional methods simply replaced existing resources. Using the Technology Rubric based on Domain 3 of Charlotte Danielson’s Framework for Teaching and Learning during observations indicated that teachers remain “basic” in most categories (Danielson, 2007). This indicates further need to develop teacher technological competencies. In particular, teachers reported that they very often used technology in their classroom for creative, expressive, and informative purposes. However, observations showed that most teachers used technology to disseminate information and ask low-level questions. While assignments were completed using technology, teachers struggled to create assignments that allowed children to show and apply knowledge beyond the limitations of the teacher’s requirements.

Conclusions

Multiple themes emerged from the data that warrant further discussion. How a teacher implements technology and teaches students to use technology is heavily dependent on the teacher’s personal use of technology. There is a need to provide pragmatic professional
development to deepen teachers’ technological pedagogy to enhance learning outcomes. It is important for teachers to keep the focus on providing quality instruction to help children academically achieve. In order to keep this focus, one needs to focus on the pedagogy of technology and how it is integrated into curriculum to support the learning.

Another discussion point from the data is the teachers’ tendency to focus on using the technology itself with little thought given to how the technology suits the instruction or content. Many skills go into providing students with the best opportunities for learning. A teacher needs to understand content, analyze it for prerequisite knowledge and understand how to apply the best teaching strategies to the content. The correct type of technology for a given subject must be integrated so that the technology enhances the content learning, rather than simply replacing existing resources. There is a danger in technology taking focus away from content and higher order thinking skills being developed. Content and thinking processes need to remain the focus of instruction, while technology is the support in achieving this goal. Our results indicate that it is possible to be proficient in the use of technology on the part of the teacher and student, without the technology enhancing academic sense-making.

An additional discussion point is teachers’ perception of students being more versed in using digital media than they actually were in an academic setting. Because of this assumption, there were missed opportunities for instructional decisions that would have helped students to further their understanding of a topic by using computers. When using the computers for publishing student writing, the students often got frustrated because of the slowness of their typing skills or losing work through not fully understanding how to modify and save documents. This was more prevalent in the younger grades, but could still be seen with older students.
This study investigates the implementation of elementary classroom technology from the teacher’s perspective to understand specific needs in developing a method of technology use that enhances student learning. While teacher self-reported data were analyzed, they were also compared to observational data gathered to inspect possible discrepancies between instructional intent and instructional outcome.
References


www.ode.state.or.us/go/RCMeasures


Title of the submission:
Teaching the Skill of Circumlocution to Future English Teachers in Japan

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Abstract:
I am currently teaching English to teachers-to-be at college level in Japan. Every student taking Methods in Teaching English at my college is required to give a few mock lessons all in English because the new Course of Study set by the Ministry of Education in Japan requires all high school English teachers to conduct their lessons in English only. So as teacher candidates, they need to be trained to be able to provide lessons using English comfortably. Unfortunately, most of the students have very limited productive vocabulary and have trouble saying what they want to say in English during the lessons. As a result, some have even lost confidence in teaching English through English. To help them improve the productive vocabulary is one of the best ways to solve this kind of confidence problem, but vocabulary improvement is no easy task and usually takes a long period of time. That is why they need to find other ways to compensate for the small vocabulary in order to provide lessons in English.

One of the ways I find useful is to use the skill of circumlocution. When they have difficulty in finding the exact word, they can convey their message across by using this communication strategy. Although circumlocution is an effective way to help those with small vocabulary to communicate, many of my students had
never learned the technique before entering college. Thus, I provide them with opportunities to familiarize them to use the skill of circumlocution.

The following is a list of directions I usually give in my lessons on this strategy:

- Use vocabulary you are comfortable to use.
- Try to come up with other ways to convey the message.
- Explain who use it.
- Explain when, where and why it is used.
- Use the preposition “like”
- Use synonyms.
- Use hypernyms, or superordinate words.
- Learn to use post-modifiers such as prepositional phrases, infinitive phrases, participle phrases, and relative clauses.
- Be aware of parts of speech
- Use an English-English dictionary to learn the typical way to describe a certain part of speech

In my presentation, I would like to introduce the ways I teach the skill of circumlocution so that some audience will find them interesting or effective.
1. **Title of submission**

Relationships between Sleep Hygiene and Problem Behaviors in Korean Adolescents

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6. **Abstract**

**Purpose**

This study examined associations among adolescent sleep Hygiene and problem behaviors.

**Methods**

A cross-sectional survey design was used. Participants were 276 adolescents (51.4% female, 54.7 % high school students and mean age of 15.5 years). Sleep hygiene was measured by Adolescent Sleep Hygiene Scale (ASHS) and problem behavior was measured by Korea-Youth Self Report (K-YSR). Data were collected from July to August, 2014 using self-reported questionnaires.

**Results**

The mean score of sleep hygiene among participants was 4.62 out of 6 and the mean T-score of total, externalizing and internalizing problem behaviors were 49.3, 48.1, and 50.1, respectively. Participants were middle school students than high school students, perceived
their sleep time as enough and their sleep quality as good, have no problem behavior during sleep, and have no cafffeinated drink for last a week were more likely to have higher score of sleep hygiene. Sleep hygiene score was associated negatively with externalizing, internalizing, and total problem behaviors.

Conclusion

Sleep impacts on physical growth, behavior, and emotional development of adolescent. This descriptive data support the need for further study of strategies to prevent adolescents’ problem behaviors by improving sleep quality and quantity.

Keywords: adolescents, sleep, problem behaviors
Proceedings Submission

1. **Title of Submission:** Making Use of Digital Tools a Habit in Meeting the Literacy Needs of Common Core State Standards

2. **Paper author:** Marilyn E. Moore, Ed. D.

3. **Affiliation of the author:** National University

4. **Address of author:** 11255 N. Torrey Pines Road, La Jolla, CA 92037

5. **E-mail address of the author:** mmoore@nu.edu

6. **Abstract of Presentation:**

   In this presentation, attendees will understand how to integrate technology when giving students practice in wide reading, when focusing on comprehension, and when giving students practice in collaborative writing about texts.

   Relevant links to online sources and bibliographic references will be included in a handout. References will include but are not limited to the following:


Curriculum of Human Resource Development for Institutional Research in Japan

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Abstract—In Japan, it became difficult to manage universities because of shrinking of the 18-year-old population. Moreover, many universities are expected efficiency, sophistication, and accountability of management for universities. So, the managements of Japanese universities pay attention to Institutional Research (IR for short). However, there are few special human resources who can be in charge of IR. Each of universities works hard to obtain such human resources. Based on this condition, we started “Curriculum of Human Resource Development for Institutional Research” on the second semester of 2013. This curriculum consists of five subjects that each of them has two credits. We have provided the curriculum not only on campus but also outside our university. The curriculum outside our university was provided as the summary of the curriculum on campus. In this paper, we verify the curriculum and clarify the present situations and problems.

I. INTRODUCTION

Japanese universities are required to enhance efforts of Institutional Research (IR for short) in order to cope with change of the environment for management of universities. Then the Japanese government try to promote IR. For example, the university that has established an organization of IR can gain higher subsidy from the government.

IR is the advanced special business that can support decision-making for a university through gathering, storing, analyzing, and providing data from the university. However, it is fact that each of universities is not getting along with IR because there are a small number of human resources for IR.

In Kyushu University, we designed “Curriculum of Human Resource Development for Institutional Research”, and brought it as the subjects for graduate students. Also, we provided it for outsiders of our university. We verify the results of Human Resource Development for IR in this paper. Then, we survey what we should do in the future.

II. THE OUTLINE OF “CURRICULUM OF HUMAN RESOURCE DEVELOPMENT FOR INSTITUTIONAL RESEARCH”

In the Office of Institutional Research where we belong to, we have been gathering and analyzing the data for university evaluation since 2004. Then, we are working for IR from the point of view of effective using a large quantity of these data since 2008.

All teachers who belong to this office have their tenure and namely have to be transferred periodically. So, we feared that the human resources who could work specialized job in IR would go away. Then, we designed “Curriculum of Human Resource Development for Institutional Research” which was consisted of five subjects [1]. Moreover, since the second semester of 2013, these subjects were started as parts of subjects from “KIKAN Education for Graduate Schools”. Here, KIKAN means foundation or key. We also provided the staff of other universities with the summary of the curriculum.

III. HUMAN RESOURCE DEVELOPMENT FOR IR IN KIKAN EDUCATION FOR GRADUATE SCHOOLS

A. Outline of KIKAN Education for Graduate Schools

The contents of “Curriculum of Human Resource Development for Institutional Research” are shown in TABLE I. We composed the curriculum based on the “Information Support Cycle in Institutional Research” shown in Fig. 1. The figure was shown by McLaughlin, G.W, & Howard, R. D [2] Moreover, the relation between information support cycle in institutional research and way of IR function is shown in Fig. 2.

B. Verification of KIKAN Education for Graduate Schools

The number of attendance for this curriculum is shown in TABLE II. These lectures are intended for graduate students in Kyushu University, but the staffs from not only our university
but also other universities can attend them. While a few graduate students attended them, some staffs from other universities attended them. The results of the questionnaire held in second semester of 2013 and first semester of 2014 are shown in Fig. 3. We asked them the degree of satisfaction for each lecture using 5-alternative question which consisted of “Very Good”, “Good”, “Even”, “Bad”, and “Very Bad”. As shown in Fig. 3, almost all attendees were satisfied for our lectures.

Our lectures were held on Saturday, which was a holiday for almost all people. So, it is the fact that the number of attendees is small. Moreover, in Kyushu where is located in west side of Japan, there may be few demands of IR human resources.

IV. HUMAN RESOURCE DEVELOPMENT FOR IR OUTSIDE OUR UNIVERSITY

A. Outline of Curriculum Held Outside

Since 2014, we held the curriculum outside our university to understand the demands of human resource development for IR. Of course, we provided our know-how of IR to the attendees. The targets of this curriculum held outside are staffs or teachers from other universities. We held it 5 times, Kyoto, Tokyo, Kyoto (re-held), Hokkaido, Okayama in Japan.

Our curriculum outside our university, which is held in first two times, consists of follows.

- University management or evaluation and Institutional research: the role of IR from a point of view of university evaluation
- Data aggregation and administration for institutional research: the questionnaire using web and its method
- Data analysis for institutional research: introduction of analyzing method to understand the degree of satisfaction or achievement of study

In last three times, we provided one more lecture including the lectures shown above.

- Management for IR data: method for gathering IR data effectively. showing them, and so on.

B. Verification of the Curriculum Held Outside

The number of attendees is shown in TABLE III. All lectures was full up, except for Hokkaido, in seven days after starting proposal. In the lecture in Hokkaido, the rate for attendance was only 60%.

Kanto (Tokyo) or Kansai (Kyoto and Okayama) are located in center of Japan, so we thought that it was easy for almost all attendees to go to the places. In fact, after deadline of the proposal, many people who would like to attend this curriculum inquired us. It means that our curriculum was attracted. Then the curriculum in Hokkaido had not enough attendees because this place was located in north of Japan and there were a few universities.
are not teachers.

The curriculum as shown in TABLE IV-Q3. It means that the people who are in charge of IR in Japan are staffs, and they are not teachers.

The universities can obtain a subsidy from the Japanese government if they establish IR organization in their universities as shown in TABLE IV-Q2. In Japan, there is the system the people who are in charge of IR in Japan are staffs, and they are not teachers.

D. Results of Questionnaire After Holding Curriculum Outside

We conducted a questionnaire after the curriculum for the attendees of the first two time and the last time. We obtained 80 answers in Fig. 4. Almost all attendees were satisfied with the curriculum, but some of attendees were not satisfied. Problems that each university had were various. So the demands of each university were also various. We think that a part of attendees could not be satisfied with the curriculum. One of our problems in the future is to solve individual demands.

V. Summary

In Fukuoka where is the west part of Japan and has Kyushu University, there were little demands of the Curriculum of Human Resource Development for Institutional Research which was provided in KIKAN Education for Graduate Schools. The people who lived in the distance could not go there to attend the curriculum held inside Kyushu University. The students hardly had demands for IR at least. However, the curriculum should continue because the knowledge of IR becomes to be necessary in the future. Then the curriculum also should be held in the place accessible for the staffs and the teachers from Kyushu University or other universities.

Fortunately, almost all attendees were satisfied with the curriculum which was held outside. We understood that there were various demands. We have to provide the new curriculum corresponded with various demands, kinds of job, and so on. Some of attendees would like to attend the curriculum again. We have to hold the curriculum continuously on KANTO or KANSAI where are the central of Japan.

We have a limit of holding the curriculum outside independently. Then, cooperating with other universities, associations, conferences, and so on, we have to provide the chances for human resources development for IR.

REFERENCES


C. Results of Questionnaire Before Holding Curriculum Outside

Before we held the curriculum outside, we conducted a questionnaire for attendees. In this questionnaire, we ask them why they decided to attend the curriculum, where they were from, and so on. They could cooperate with the questionnaire optionally, but we could 151 answers in 5 lectures. In this section, we describe the results of the questionnaire. The results are shown in TABLE IV.

Many people decided to attend this curriculum for their self-development as shown in TABLE IV-Q1. We thought that they expected to rise their skill of IR in the future.

The greater part of attendees were from private universities as shown in TABLE IV-Q2. In Japan, there is the system the private universities can obtain a subsidy from the Japanese government if they establish IR organization in their universities [3]. They surely were conscious the system.

We also understood that about one hundred staffs attended the curriculum as shown in TABLE IV-Q3. It means that the people who are in charge of IR in Japan are staffs, and they are not teachers.

<table>
<thead>
<tr>
<th>Location</th>
<th>Date</th>
<th>Number of Attendance / Fixed number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kyoto</td>
<td>September 25, 2014</td>
<td>50/50</td>
</tr>
<tr>
<td>Tokyo</td>
<td>September 29, 2014</td>
<td>50/50</td>
</tr>
<tr>
<td>Kyoto</td>
<td>March 4, 2015</td>
<td>30/30</td>
</tr>
<tr>
<td>Hokkaido</td>
<td>March 16, 2015</td>
<td>30/50</td>
</tr>
<tr>
<td>Okayama</td>
<td>July 15, 2015</td>
<td>40/40</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q1. Reason for attendance</th>
<th>Number of answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order from boss</td>
<td>25</td>
</tr>
<tr>
<td>Scientific or research interest</td>
<td>39</td>
</tr>
<tr>
<td>Self-development</td>
<td>87</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q2. Affiliation</th>
<th>Number of answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private University</td>
<td>93</td>
</tr>
<tr>
<td>National University</td>
<td>44</td>
</tr>
<tr>
<td>Public University</td>
<td>8</td>
</tr>
<tr>
<td>Others</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q3. Kind of job</th>
<th>Number of answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff</td>
<td>98</td>
</tr>
<tr>
<td>Teacher</td>
<td>46</td>
</tr>
<tr>
<td>Others</td>
<td>7</td>
</tr>
</tbody>
</table>

TABLE II
Number of Attendance for each lecture

<table>
<thead>
<tr>
<th>Semester</th>
<th>Name of Subject</th>
<th>Number of Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Second Semester of 2013</td>
<td>University management and Institutional research</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Data aggregation and administration for institutional research</td>
<td>8</td>
</tr>
<tr>
<td>First Semester of 2014</td>
<td>Data analysis for institutional research</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>University evaluation and institutional research</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Internship of institutional research</td>
<td>0</td>
</tr>
<tr>
<td>Second Semester of 2014</td>
<td>University management and Institutional research</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Data aggregation and administration for institutional research</td>
<td>7</td>
</tr>
<tr>
<td>First Semester of 2015</td>
<td>Data analysis for institutional research</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>University evaluation and institutional research</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Internship of institutional research</td>
<td>1</td>
</tr>
</tbody>
</table>

TABLE III
Number of Attendance for Curriculum Held Outside

TABLE IV
Questionnaire Before Holding Curriculum Outside
Fig. 3. Questionnaire for KIKAN Education

Fig. 4. Questionnaire for Curriculum Held Outside
DANCING IS NOT TO GET A PLACE ON THE FLOOR BUT TO ENJOY EACH STEP ALONG THE WAY

FEBRUARY 18, 2015 | SUSAN TOLER-CARR | 10 COMMENTS

Written by Susan Toler Carr

Submitted to the HICE for the 2016 Conference

Dancing is Not to Get a Place on the Floor- But to Enjoy Each Step Along the Way

The Problems:
A few people have asked me recently: “Why should I burden myself with the problems afflicting other peoples kids?” Trust me, Darrell and I are holding a heavy load that we bravely carry daily. But, I will ALWAYS be Justin’s mother—which also makes me a Mom. For those of you who know me—I will always instinctively give mothering guidance to others—just as I did for Justin and for my friends—this is my letting me BE!!!!!!!

Over the course of a few days I had the following conversations that have been on my mind and I wanted to share:

Friend #1

I have a friend whose son (was in Justin’s class) is away at college. I asked her: ” How is he doing?” She looked at me in astonishment and told me with gratitude that” I was the ” ONLY” mother /parent in the past 6 months who asked this question.” She said the usual question is: ” WHAT is your son doing?” She said the “Parents want to know his major, grades, and where he falls or fails on the social status on his campus???” She said “They have never been concerned about his wellbeing.” I was shocked…

Friend #2

I congratulated my friend whose child turned down what society deems to the HIGHEST TOP tier college. Instead he chose his passion of study at another great University that had the best academic rigor for his chosen field. “What’s wrong with that I asked?” He told me that his child got chastised by his peers/teachers/other parents for “settling” for what seemingly appears to be the “lesser college.” He also told me, that to date, I was the ”ONLY” parent who congratulated him on his sons acceptance. I was flabbergasted!

Friend #3

When I asked a friend (whose child is a Junior in college) “How she was doing?” She looked at me and calmly said: “ My daughter tried to commit suicide a few months ago… and I am trying everything to save her and to pull her out of this deep dark hole… “Not being a professional—but only a concerned “Mom”, I told her I was glad she was taking her daughters condition seriously and doing EVERY-THING in her power to help. I was saddened.

Friend #4

Another friend told me that her son ( who is a Senior at a top Ivy League in the big city) told her he
needed to get diagnosed as being ADHD so he could take medicine (to survive college) like a lot of his peers. She told him that she did not feel that he had this issue and she did not agree with him taking any medicine under false pretenses—but would support him always for getting over any seemingly impossible hump. He felt better after they talked and was glad that he got it off of his chest and that she listened and provided sound advice. That’s what our job is as Parents. To give sound advice.

Paralympic Star #1

US Paralympic Track Star Blake Leeper recently spoke at the HW Middle School. He told the audience that when he was born, the doctors told his parents that he would be wheelchair bound and that he would NEVER walk—let alone DANCE! His parents thought otherwise and embraced and armed him with the “Can do anything” attitude. He profoundly told the crowd that “People laugh at me because I am different, I laugh at them because they are all the same”. He quoted Dr. Martin Luther King Jr. and said:

“If you can't fly then run, if you can't run then walk, if you can't walk then crawl, but whatever you do you have to keep moving forward.”

I must add don’t forget to DANCE…


Blake Leeper just played in the NBA Celebrity All Star Game. He competed for the RIGHT reasons…


For those fortunate students who have the opportunity to seek their higher education, going to college can be a BIG transition for MOST. Moving to a far away place, sharing a room with a
stranger, being outside of their nucleus and thrust into a college atmosphere with a microcosm sampling of what the real world looks like. College days can be lonely and sometimes scary.

Today, it appears that the most popular motto kids/parents have for the pathway to success is BY ANY MEANS NECESSARY. I do not need to list these in detail because everyone knows what they are. The kids these days have limited time to JUST HAVE FUN! They are dealing with (but not revealing) the major issues at hand that seem to be put on the back burner i.e. stress, failure (in the eyes of their parents/peers), isolation, confusion, depression, mental health issues or even having second thoughts about their choice of college/and or major.

I remember having so much fun at college—as my Dad said “Too much fun at USC!” —when my report card got home before I did and I received my first “C” ever! I can’t say that we were not faced with a few stresses and some failures—but not to the extent of sending us over the edge. We had random parties in our dorm rooms, in the cafeteria or campus halls. We Danced (thanks to Merle showing us the latest steps), we laughed, we talked to each other. We dated and collectively with groups we got together to socialize. I can’t honestly say that there were not any “vices” in the room, but that was not the focus either. When a friend was in need, we helped or directed them accordingly. We did not keep blinders on.

Today, the electronic devices and social media have taken over. They are our blinders. People don’t look at each other, talk, or engage without clutching and frequently checking their phones. Some kids have voiced their sentiments saying they wished their college/high school experience were like the years gone by—less competitive, that their peers would get together to really socialize sans the crutch of having to drink, get drunk or hook-up their way to happiness. They just want to connect and to have fun, and actually DANCE at a party… What happened? Justin loved to dance.
We would ballroom dance in the kitchen. He also spent many an hour teaching his friends how to dance so that they would be ready at the parties! I wish I could dance again with Justin.

I also knew (for the most part) if Justin needed help i.e. emotionally, academically or? Darrel and I did not take him for granted. We would often tell him that his only COMPETITION is with himself.

Today, I found my Dad’s college handbook from the 1950’s. It was a small pocket size book that spelled out how to dress, engage on campus, learn the school songs, and to have respect/assist their fellow peers/faculty/staff and how to seek help. As Freshman, they had to carry the booklet with them wherever they went.
They also gave each student a book on “How to Court” and “How to Fall in love.” So much for the good ole days.

I also found a picture of my Dad with my Mom going to the Junior Prom that was held in college… and the little keepsake booklet they gave out at the dance.

I hope that sooner than later collectively society grabs hold of the real issues that afflict OUR kids—who ARE the future. It is time to listen to them, talk to them and pull them away from their isolation as a
“Wallflower” (a person who has no one to dance with or who feels shy, awkward, or excluded at a party) and take time to dance with them, engage, with them and just “Let them be!

People take heed (me included) OPEN YOUR EYES, Fall in love with your family and friends appreciate your life and those around you. It’s ok to stand out instead of trying to fit in. Life is not always a Party. Daily life should not be so competitive that we become more selfish, lack compassion; empathy and genuine support of most people around us- and it should not definitely be the Last Dance. This is my two cents for the evening.

The Solutions:

Condensing a spate of articles, surveys and research reports will support the statements about how imperative it is to go beyond skirting the surface of student struggles, parent traps and College Daze that are taking control and slaughtering the students in record numbers.

Undue pressures imposed on the students by their parents and schools only to get into a "good" college (for the sake of bragging rights or school statics) can be harmful. In lieu of only striving only for the top scores and top schools, it is time to really evaluate the benefit of looking at a student personality to determine what are the right fit options for higher education. There are over 6000 viable options for attending a 2-year, 4-year or Trade School in lieu of a top tier Household Name College or University.

Data will be collected from surveys presented to current middle school, high school and college students and will determine if these standards or methods used for finding the “right fit” college are beneficial or detrimental. In order to place students in the appropriate higher education institutions we will introduce a way of looking into the personalities of each student by utilizing the work of Kazimierz Dabrowski, a Polish psychiatrist and psychologist (1902-1980), who developed the Theory of Positive Disintegration. Even though he described various overexcitabilities (OE) and primary characteristics of the highly gifted, they can also be used to support the development of students in the average population. Dabrowski identified five areas of intensity-Psychomotor, Sensual, Intellectual, Imaginational, and Emotional. Examples and strategies with plausible solutions will be given that will be the catalyst for brainstorming that can in fact help improve the lives of the students and direct them to soar in healthier environments as they obtain their higher education. If the concepts of Dabrowski’s OE are instituted in the schools counseling services, students can yearn to learn, their real passions can be validated and pursued and they will really feel good about themselves and have a better self worth and in turn will no doubt mitigate the rise in mental health issues that are afflicting the students are a direct result of the struggles that they face.
The school-parent trap dynamics allow (helicopter, snowplow, tiger) parents to unrealistically press for achievement. The “Koala dad” (cuddly, protective, non prodding) style of parenting seems to have been overthrown. The outcome—intellectual bullying and rewarded immoral behaviors perpetuating an atmosphere lacking empathy and compassion for all students who should be valued.

Parents still have the topmost effect on a child’s overall development. However, it is time for the schools and colleges to step up and take a stance on how to mollify the parents from being too attuned, over-invested, and protecting the children from unhappiness. It’s okay for a student to be exposed to some discomfort and letdowns. It has been written that many modern parents seem to focus too obsessively on the success and status of their kids and this has backfired as the kids turn into unprepared adults and make transitions to college and careers unmanageable. They also have the “not my kid” attitude when it comes to facing the mental health issues with kids. Statics from the non-profit Child Trends, the Journal Clinical Psychological Science, American Academy of Pediatrics and real life stories will depict the aftermath of what is happening to student as they breakdown from the pressures.

High School and College mental health systems are dazed from an influx of students with pre-existing/latent mental health markers that bloom as they try achieving supernatural success.

Anxiety and depression have been increasing in tandem with self-esteem. Anxiety is the No. 1 mental health diagnosis on college campuses. New mental health awareness platforms and innovative tools will be presented from the institution of mental health kiosk on campuses, check-ins that support the well-being and success of students. Legislation is also being put in place for colleges so that students fill out a form upon enrolling at an institution to designate what mental health information can be released and to whom. Many colleges have labeled their entering as being “teacups” for being too fragile as they break when things don't go their way.

The mental health of today’s college students continues to be a top-level concern for institutions. Findings from the Center for the Center for Collegiate Mental Health CCMH 2014 Annual Report and the National Alliance on Mental Illness NAMI College Students Speak: A survey Report on Mental Health “The National Alliance on Mental Illness (NAMI) conducted a national survey of college students living with mental health conditions to learn about their experiences in school and the findings will also be discussed.
10 THOUGHTS ON “DANCING IS NOT TO GET A PLACE ON THE FLOOR BUT TO ENJOY EACH STEP ALONG THE WAY”

Kate
MARCH 19, 2015 AT 9:41 PM

You and Darrell are so brave to face losing Justin with dignity and retrospection. So many of us get caught up in the “what” is your child doing at college and not the “how?” “How are you?” is actually a very important question. You’ve made me think about how distorting this question distorts our basic humanity. Thank you for sharing your thoughts. I know you came to them through very deep pain.

Susan Toler-Carr
MARCH 22, 2015 AT 8:23 PM

Kate, the pain is beyond imaginable when the hopes and dreams that Justin had and we had for him vanished in an instance. We are now Justin’s voice. I so wished that we could have worked with you to allow him to soar. He is now soaring in a different manor now.
Profound reflections Susan and so true! God Bless you and the pride and joy of being a great MOM!!

Love you,

Lynn

Brightens my day to see our children dancing in this photo. These were the happiest times of high school for her – right beside Justin. This is an important piece to share – so many of our kids are struggling with trying to achieve at great cost to their emotional well-being. Thank you for sharing your insights and continue to parent the children in your community.

Caroline I agree and please share as you see fit. xox Susan

What you wrote here is so true. I wish more kids these days would focus more on actually interacting with each other for the purpose of enjoyment instead of not interacting or being calculating about it. Your Justin was that interacting for the fun of it type person as is my Alexandria. We did have it good in our day with how we were able to interact with each other for fun and develop lifetime relationships that we still treasure and enjoy. Justin followed in your and Darrell’s footsteps in that way and his potential college peers are really missing out on his contribution. Bless you guys!

Ralph I agree and so glad we are life long friends. xox Susan
Mary martin  
FEBRUARY 19, 2015 AT 7:09 AM

Amen to this! I revel in your thoughts and in Justin’s spirit! I LOVE the pics, but especially those of your Mom and Dad! THOSE were the days as far as “class” and “grace” and “style!” Thank you for sharing with me…I always hold you, Darrell and Justin in my heart every single day. You all float in and out of my mind on a daily basis and while heartbreak has hit you in the most deepest part of you and Darrell and your extended family, you have “grace” to share your insightful thoughts…wisdom and grace…they sure don’t come easy!

xoxo
mare

Noreen  
FEBRUARY 19, 2015 AT 6:36 AM

So true. We want the best for our kids and will do anything to help them along the way. But even with love, support and “Whatever it takes”, to make them happy, they may still can be lost…

Robbie  
FEBRUARY 19, 2015 AT 5:24 AM

I think this is your best one yet. Magnificent.
A Study on the effective utilization of the physical tools
convergence and evolution of stage make-up

Barng Kee-Jung*, Kim Jin-Seo
Professor, Dept. of Beauty Health Management Daejeon University*,
Director, Interactive 3D Research Section, SW. Content Research Laboratory, ETRI
Seoul, Korea.

I. Introduction
This study is a research on the tools you use to stage makeup. Stage makeup needs a creative fusion education to youth education and professional career. Training shall be conducted as a creative fusion science and the arts and arts education. To do so is that the use of any tools and the media is very important. Many methods have been developed to take advantage of technology, discovering its potential value. Therefore, this study is to use three-dimensional simulation software to make use of high-tech tools as physical. To take advantage of this program to the convergence of physical education evolved to utilize effective tools in makeup design.

II. Research Methods
Analysis unit of the present study is the group. Elementary School Students in Daejeon 21 people, 40 people middle school students, high school students studied 48 people. Targeting a total of 106 people was conducted make-up artist professional training stage. Research methods aimed at students and vocational training, two hours of research and data collection
on September 1, 2015, October 30, 2015. Choose your character and theme, and the work was made into the use of physical tools to analog and digital devices. The stage was dressed to represent, taking into account the age and subject, as physical tools of paper, pencils, etc. were to be represented using analog tools and digital tools. In this study, I was study use program the Electronics and Telecommunications Research Institute developed this is a three-dimensional facial avatar simulation program, which is available should you wish to use this tool. Results announcement for the evolution of the physical tools through the fusing expressions share how.

III. Results and Discussion

For the purposes of use and beauty makeup and makeup application, makeup can be divided into. Makeup application can be classified as stage make-up, make-up media, and special make-up. Application of makeup is stage makeup, media makeup, can be classified as special makeup. For the purposes of use and beauty makeup and makeup application, makeup can be divided into. A Visual tool has a variety of color, texture and chemical tools for various kinds of paints, cosmetics and chemical products. Makeup application can be classified as stage make-up, make-up media, and special make-up. Application of makeup is stage makeup, media makeup, can be classified as special makeup. Makeup brush in the brush, the air-brush tool, sponge, computer graphics, and many other materials are needed. Visual media have evolved to increasingly integrate computer graphics (CG), incorporating a variety of fields. art makeup design. In this study, I was study use program the Electronics and Telecommunications Research Institute developed this is a three-dimensional facial avatar simulation program, which is available should you wish to use this tool. In this study, we investigated about the type and evolution of the physical tools. The fusion of a wide variety of devices and the hybrid was developed through utilizing the physical tools, time and economic efficiency, how about suggestions.

IV. Conclusion and Suggestions

In this study we were evaluated for the type and evolution of physical tools. Through the fusion of the composite material with a variety of instruments, stage make-up has been developed that take advantage of
the physical tools. Thus the suggestion is to increase the time and cost of the method efficiency. I believe that evaluations and demonstrations the appropriateness of such a novelty approach for the medium is well worth researching, in order to increase the appeal of the medium. This study was recently under scrutiny in relations to digital simulation and various three-dimensional designs, in terms of how to take advantage of a wide range of tools, and how to apply the findings through media and the dissemination of basic research. This study applies the characteristics of the limited existing stereoscopic three-dimensional and digital simulation programs in order to take advantage of the empirical research, providing a basis to implement this research in a meaningful way.

- References


- corresponding author: Barng Keejung, Tel. +82-42-280-2916, Fax. +82-42-280-2389
E-mail: wp2848@nate.com

- This research is supported by Ministry of Culture, Sports and Tourism(MCST) and Korea Creative Content Agency(KOCCA) in the Culture Technology(CT) Research & Development Program 2015
A Comparison of the Twelve Core Values of Thai people defined by the Head of the National Council for Peace and Order (NCPO) found in Thai private and public university students

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(patariya.n@bu.ac.th)
Bangkok University International College
Bangkok University
Thailand

ABSTRACT

This study aims to examine the twelve core values of Thai people found in Thai university students. The twelve values consist of the following attributes:

1. Upholding the nation, the religions and the Monarchy
2. Being honest, sacrificial and patient with positive attitude for the common good of the public
3. Being grateful to the parents, guardians and teachers
4. Seeking knowledge and education directly and indirectly
5. Treasuring the precious Thai tradition
6. Maintaining moral, integrity, well-wishes upon others as well as being generous and sharing
7. Understanding, learning the true essence of democratic ideals with His Majesty the King as the Head of State
8. Maintaining discipline, respectful of laws and the elderly and seniority
9. Being conscious and mindful of action in line with His Majesty’s the King’s statements
10. Practicing the philosophy of Sufficiency Economy of His Majesty the King. Saving money for time of need. Being moderate with surplus used for sharing or expansion of business while having good immunity
11. Maintaining both physical and mental health and unyielding to the dark force or desires, having sense of shame over guilt and sins in accordance with the religious principles
12. Putting the public and national interest before personal interest.

This study is a descriptive study using content analysis to design a questionnaire to assess behavioral attributes. The questionnaires were distributed to the sample group of 1000 students. They are 500 undergraduate students from private universities (250 students from Bangkok University and 250 students from North Bangkok University) and 500 undergraduate students from public universities. The data was later analyzed by statistical tests using SPSS to compare the results obtained from private university students and public university students. The findings can be used for course development to promote the 12 core values in university level.
Introduction

Scientific developments in every field have been progressing rapidly and seem to be unstoppable causing huge impact on social and cultural changes including values in a society. Particularly in Thai society, technological trends have influenced a wide spread of new cultures passing on both good and bad values to university students. Immediate attention is needed when change in values turns to something inappropriate. At present, Thai society is turning into a face-down society where people keep their eyes on their smart devices all the time. Parents connect with their children via the use of technological devices. Conformity is shown in Thai youth’s behaviors. Thai society is facing serious cultural issues. Good values of Thais are mistaken. Cultural confusion is going on right now and the situation seems to be the most severe in the history of Thailand.

When the National Council for Peace and Order (NCPO) had stepped in to lead the country, a policy to promote the 12 core values was initiated on May 22, 2014 with an intention to revitalize Thai good values and appreciate Thai heritage. This strategic move aims to strengthen the nation and encourage unity among Thai people. The campaign and promotion of the 12 core values focuses on building a strong basis of Thai
youth as they will be the next generation to develop the country in the future.

This gives a rationale for this present study. As a teacher and department administrator, the researcher realized the importance of developing students in this area. The knowledge gained from this study can be applied to any course and activities development to cultivate the 12 core values according to the policy of the National Council for Peace and Order (NCPO) among Thai students.

The objectives of the study:
1. To explore the 12 core values found in university students
2. To compare the 12 core values found in Thai private and public students
3. To propose suggestion for policy planning to university management to promote the 12 core values among university students
Sampling

The study used multi-stage random method to obtain the sampling number. The sampling process was casting lots to obtain 4 samples from private and public universities in Bangkok. The sampling group was 1000 first-year to forth-year students in the academic year of 2015 from private and public universities according to the Yamane’s random sampling table.

Research instruments

The study employed a questionnaire to self-evaluate the 12 core values.

Data collection

1. The researcher submitted a letter to the president of each of the universities and contacted each of the departments to ask for permission to collect the data.
2. Once having received approval, she requested assistance from the universities teachers and staff to distribute the questionnaire copies to students.
3. Some universities allowed the researcher to directly collect the data in classrooms.
4. Once all of the questionnaire copies had been collected, they were checked in terms of completeness. The researcher was able to obtain 825 complete questionnaire
copies. This is equal to 82.5% of all of the questionnaire copies distributed at the beginning.

Data analysis

This study is a comparative study using a questionnaire survey asking the participants to do a self-evaluation on the topic of the 12 values of Thais. The survey was conducted with students in public and private universities. The data was later analyzed using the SPSS/PC to find out mean scores and standard deviation. The results are categorized into 4 parts and presented below:

Part 1: Analysis of students statuses in private and public universities.
Part 2: Analysis of the students attributes based in the 12 core values
Part 3: Examining the differences of the students attributes based on the 12 core values between students in private universities and public universities.
The results are as follows:
Table 1: Mean scores of the students attributes based on the 12 core values from students self-evaluation in private and public universities

<table>
<thead>
<tr>
<th>The twelve core values</th>
<th>Mean scores of each of the universities (( \bar{X} ))</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Private university No. 1</td>
</tr>
<tr>
<td>1. Upholding the nation, the religions and the Monarchy</td>
<td>4.63</td>
</tr>
<tr>
<td>2. Being honest, sacrificial and patient with positive attitude for the common good of the public</td>
<td>4.15</td>
</tr>
<tr>
<td>3. Being grateful to the parents, guardians and teachers</td>
<td>4.63</td>
</tr>
<tr>
<td>4. Seeking knowledge and education directly and</td>
<td>4.16</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>indirectly</td>
<td>4.13</td>
</tr>
<tr>
<td>5. Treasuring the precious Thai tradition</td>
<td>4.30</td>
</tr>
<tr>
<td>6. Maintaining moral, integrity, well-wishes upon others as well as being generous and sharing</td>
<td>4.41</td>
</tr>
<tr>
<td>7. Understanding, learning the true essence of democratic ideals with His Majesty the King as the Head of State</td>
<td>4.41</td>
</tr>
<tr>
<td>8. Maintaining discipline, respectful of laws and the elderly and seniority</td>
<td>4.28</td>
</tr>
<tr>
<td>9. Being conscious and mindful of action in line with His Majesty’s the King’s statements</td>
<td>4.12</td>
</tr>
</tbody>
</table>
10. Practicing the philosophy of Sufficiency Economy of His Majesty the King. Saving money for time of need. Being moderate with surplus used for sharing or expansion of business while having good immunity.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4.41</td>
<td>4.36</td>
<td>4.61</td>
</tr>
</tbody>
</table>

11. Maintaining both physical and mental health and unyielding to the dark force or desires, having sense of shame over guilt and sins in accordance with the religious principles.

12. Putting the public and national interest before personal interest.
Table 2: Data collected from private university no. 1 showing the mean scores (listed from the lowest to the highest) of the 12 values

<table>
<thead>
<tr>
<th>The 12 core values</th>
<th>(x)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11. Maintaining both physical and mental health and unyielding to the dark force or desires, having sense of shame over guilt and sins in accordance with the religious principles</td>
<td>4.12</td>
</tr>
<tr>
<td>5. Treasuring the precious Thai tradition</td>
<td>4.13</td>
</tr>
<tr>
<td>2. Being honest, sacrificial and patient with positive attitude for the common good of the public</td>
<td>4.15</td>
</tr>
</tbody>
</table>

Table 3: Data collected from private university no. 2 showing the mean scores (listed from the lowest to the highest) of the 12 values

<table>
<thead>
<tr>
<th>The 12 core values</th>
<th>(x)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. Practicing the philosophy of Sufficiency Economy of His Majesty the King. Saving money for time of need. Being moderate with surplus used for sharing or expansion of business while having good immunity</td>
<td>4.06</td>
</tr>
<tr>
<td></td>
<td>4.07</td>
</tr>
</tbody>
</table>
4. Seeking knowledge and education directly and indirectly
5. Treasuring the precious Thai tradition

Table 4: Data collected from public university no. 1 showing the mean scores (listed from the lowest to the highest) of the 12 values

<table>
<thead>
<tr>
<th>The 12 core values</th>
<th>(x)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. Practicing the philosophy of Sufficiency Economy of His Majesty the King. Saving money for time of need. Being moderate with surplus used for sharing or expansion of business while having good immunity</td>
<td>4.25</td>
</tr>
<tr>
<td>4. Seeking knowledge and education directly and indirectly</td>
<td>4.29</td>
</tr>
<tr>
<td>5. Treasuring the precious Thai tradition</td>
<td>4.31</td>
</tr>
</tbody>
</table>

Table no. 5 Data collected from public university no. 2 showing the mean scores (listed from the lowest to the highest) of the 12 values
The 12 core values | (\bar{x})
--- | ---
10. Practicing the philosophy of Sufficiency Economy of His Majesty the King. Saving money for time of need. Being moderate with surplus used for sharing or expansion of business while having good immunity | 3.95
4. Seeking knowledge and education directly and indirectly | 4.00
5. Treasuring the precious Thai tradition | 4.01

Discussion and conclusion

According to the research findings, it can be conclude that the mean scores of 11 items out of the 12 core values collected from both of the public university students are higher than the mean scores collected from both of the private university students. The 11 items are listed below:

1. Upholding the nation, the religions and the Monarchy
2. Being honest, sacrificial and patient with positive attitude for the common good of the public
3. Being grateful to the parents, guardians and teachers
4. Seeking knowledge and education directly and indirectly
5. Treasuring the precious Thai tradition
6. Maintaining moral, integrity, well-wishes upon others as well as being generous and sharing
7. Understanding, learning the true essence of democratic ideals with His Majesty the King as the Head of State
9. Being conscious and mindful of action in line with His Majesty's the King's statements
10. Practicing the philosophy of Sufficiency Economy of His Majesty the King, saving money for time of need and being moderate with surplus used for sharing or expansion of business while having good immunity
11. Maintaining both physical and mental health and unyielding to the dark force or desires, having sense of shame over guilt and sins in accordance with the religious principles
12. Putting the public and national interest before personal interest.

The mean scores of 8 items out of the 12 core values collected from both of the private university students are higher than the mean scores collected from both of the public university students

Furthermore, table 2-5 demonstrate consistent information that item no. 10 on the list of the 12 core values about the philosophy of Sufficiency Economy of His Majesty the King to carefully spend money and to be moderate with surplus used for sharing or expansion of business while having good
immunity should be promoted among current university students as a priority because it will lay the most essential economic foundation for the country. It is also interesting to find out that all of the universities show low mean scores for item no. 4 (Seeking knowledge and education directly and indirectly) and item no. 5 (Treasuring the precious Thai tradition) on the 12 core values list. This reveals that these two values need to be worked on and focused. Moreover, only one university show a low mean score for item no. 2 (Being honest, sacrificial and patient with positive attitude for the common good of the public) and 11 (Maintaining both physical and mental health and unyielding to the dark force or desires, having sense of shame over guilt and sins in accordance with the religious principles).

Suggestions

According to the findings, the researcher would like to propose the following suggestions:

The researcher would like to give 3 main suggestions for promoting the 12 core values in universities:

1.1 In terms of policy planning, all universities must have a campaign and policy planning aiming at research for new knowledge about how to cultivate students to be autonomous learners and put emphasis on studies about constructing a good basis of learning since kindergarten. Students should be encouraged to seek for knowledge by themselves. Moreover,
universities should have a clear policy to revitalize Thai culture and preserve Thai traditions. The focus should be put on visible implementation of the university main missions.

1.2 As for curriculum and instruction, universities must improve their instruction to become more integrated and encourage students to be autonomous learners, practice analyzing and do more participatory learning and create their own concepts and ideas. The philosophy of Sufficiency Economy should be included in all of the courses focusing on students’ understanding and ability to apply to their lives. Students should be taught to realize the importance of this philosophy because it can be used as a basis for developing the economy of the country. More free elective courses about ethics, morality and Thai culture should be added into the curriculum.

1.3 Regarding students’ activities, universities must provide more extra-curricular activities gearing toward Thai culture related activities and activities that support the philosophy of Sufficiency Economy. It is recommended to set up a Thai cultural center to provide students knowledge about Thai culture and learn about their roots.

Recommendation for further studies

1. More studies concerning Thai culture and traditions and promoting the
philosophy of Sufficiency Economy among students are recommended.
2. There should be studies conducted with students in each university to examine the students’ values. The findings can be used as a guideline to develop the students in line with the 12 core values.

References


Website

Government of Thailand
www.thaigov.go.th/en

Ministry of Education
http://www.moe.go.th/
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Bangkok University
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Bangkok 10110
Thailand
Email: Patariya.n@bu.ac.th
Tel:  (668) 23503500 Ext 1638
       (668) 18379757
An Analysis of Twelve Values Announced by the Head of National Council for Peace and Order (NCPO) of Students in Badminton Course

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King Mongkut’s University of Technology North Bangkok

ABSTRACT
This research aims to analyze students’ quality who enroll in Badminton course according to twelve values announced by the Head of the National Council for Peace and Order (NCPO) as follow:

1. Adore the nation, religion, and HM the King.
2. Be honest, dedicated, patient, and have a fine ideology for public.
3. Be grateful to parents, guardians, and teachers.
4. Study hard, always.
5. Maintain good Thai customs and traditions.
6. Be ethical, honest, well-intentioned, and generous.
7. Learn and understand the democracy headed under HM the King properly.
8. Be disciplined, obey the laws, and pay respect to elderly people.
9. Be conscious, thoughtful, and make good things by following HM the King’s statement.

10. Live philosophically with the self-sufficiency economy.

11. Set the mind and the body strong, overcome desires, and be afraid of sins as stated in religion.

12. Be dedicated to the public’s and the nation’s benefits rather than one’s own benefits.

This was basically a descriptive research. A questionnaire related to the behavior was prepared to examine the twelve values as stated above. The sample consisted one thousand students of King Mongkut’s University of Technology North Bangkok who were enrolled for Badminton course in second semester of the academic year 2014. The data was analyzed by descriptive statistics along with standard deviations, means and frequency. The outcome of the study will be a model for teaching in order to improve students’ quality implementing the twelve values announced by the Head of the National Council for Peace and Order (NCPO).

**Background of the study and significance of the problem**

The world changes constantly in all aspects: technology, science as well as thoughts and values. As a result, all countries must develop quickly in order to stay competitive. Thailand is also one of the countries in need of development in many areas to catch up with many other nations. With too much
emphasis on climbing the ladder of economic performance and materialistic achievement, preserving Thai culture and Thai values might be neglected and overlooked. What has happened to many Thai youths is that technological progress seems to have taken priority over Thainess. They have forgotten all about the Thai values. Therefore, when the National Council for Peace and Order (NCPO) seized the power to run the country, they have initiated 12 Thai values and has been promoting the 12 values since May 22, 2014. This is considered a start of Thai cultural revitalization heading toward building a stronger nation with harmony and patriotism. The 12 values are listed below:

1. Adore the nation, religion, and HM the King.
2. Be honest, dedicated, patient, and have a fine ideology for public.
3. Be grateful to parents, guardians, and teachers.
4. Study hard, always.
5. Maintain good Thai customs and traditions.
6. Be ethical, honest, well-intentioned, and generous.
7. Learn and understand the democracy headed under HM the King properly.
8. Be disciplined, obey the laws, and pay respect to elderly people.
9. Be conscious, thoughtful, and make good things by following HM the King’s statement.
10. Live philosophically with the self-sufficiency economy.

11. Set the mind and the body strong, overcome desires, and be afraid of sins as stated in religion.

12. Be dedicated to the public’s and the nation’s benefits rather than one’s own benefits.

Office of the Basic Education Commission has ordered all of the school in Thailand to integrate the 12 values into all of their curriculums and to organize activities and contests to put the 12 values into practice. Dr. Kamol Rodklai Secretary-General of the Office of the Basic Education Commission said on November 3, 2014 that all of the schools in Thailand were starting to teach Thai history intensively. The instruction would go beyond content but aim for instilling a sense of Thainess and patriotism in today’s Thai youth.

Gen. Suthat Karchananon, advisor to Assistant Minister for the Ministry of Education also said that it is very crucial to establish the 12 Thai values by starting at schools of which school administrators realize the importance of the need to strengthen the nation and encourage morality, ethics including loyalty to his Majesty the King of Thailand. Therefore, every history course should aim at building trust in the monarchy and cultivating ethics to unite people in the country both in theory and practice.

Realizing the significance of developing students in this particular aspect, the researcher, an instructor of a badminton
course, explored the attributes based on the Twelve Values Announced by the Head of the National Council for Peace and Order (NCPO) of students taking her badminton course with a hope that the findings can be used and applied to development of courses and activities to encourage students to realize the importance of the 12 values of Thais according to the policy of the National Council for Peace and Order (NCPO).

The objectives of the study are listed as follows:

1. To study the attributes of students taking badminton in accordance with the 12 values of Thais.
2. To create an evaluation form to evaluate the students’ attributes based on the 12 values of Thais in the badminton course.
3. To find out how to improve the course implementation to promote the 12 values of Thais.

Scope of the study

1. The participant of this study was 1,167 students taking the badminton course in the 2nd semester of the academic year of 2014.
2. The variables of the study are gender, major, year of study
3. Behaviors relevant to the 12 values of Thais

Methodology and data collection
This study is a descriptive study using a questionnaire survey asking the participants to do a self-evaluation on the topic of the 12 values of Thais. The survey was conducted with 1,167 students taking the badminton course in the 2nd semester of 2014 at King Mongkut's University of Technology North Bangkok. The data was later analyzed using the SPSS to find out the percentage, mean scores, standard deviation. The results are presented below:

**Table 1: Demographic data: gender, age, year of study and department**

<table>
<thead>
<tr>
<th>No.</th>
<th>Personal information</th>
<th>number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.1 male</td>
<td>587</td>
<td>50.3</td>
</tr>
<tr>
<td></td>
<td>1.2 female</td>
<td>580</td>
<td>49.7</td>
</tr>
<tr>
<td>2</td>
<td>Year of study</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.1 First year</td>
<td>1,150</td>
<td>98.5</td>
</tr>
<tr>
<td></td>
<td>2.2 Second year</td>
<td>15</td>
<td>1.3</td>
</tr>
<tr>
<td></td>
<td>2.3 Third year</td>
<td>1</td>
<td>0.1</td>
</tr>
<tr>
<td></td>
<td>2.4 Fourth year</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>2.5 Other year</td>
<td>1</td>
<td>0.1</td>
</tr>
<tr>
<td>3</td>
<td>Department</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.1 Applied Science</td>
<td>387</td>
<td>33.16</td>
</tr>
<tr>
<td></td>
<td>3.2 Industrial Education</td>
<td>105</td>
<td>8.99</td>
</tr>
<tr>
<td></td>
<td>3.3 Industrial Management</td>
<td>54</td>
<td>4.61</td>
</tr>
<tr>
<td></td>
<td>Engineering</td>
<td>Agro-Industry</td>
<td></td>
</tr>
<tr>
<td>--------------------</td>
<td>-------------</td>
<td>---------------</td>
<td></td>
</tr>
<tr>
<td>Technology and Management</td>
<td>428</td>
<td>193</td>
<td></td>
</tr>
<tr>
<td></td>
<td>36.67</td>
<td>16.54</td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Mean scores of the students attributes based on the 12 core values from students self-evaluation

<table>
<thead>
<tr>
<th>The 12 core values</th>
<th>( \bar{x} )</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Upholding the nation, the religions and the Monarchy, which is the key institution</td>
<td>4.6</td>
<td>0.63</td>
</tr>
<tr>
<td>1.1 Adoring the nation, religion, and HM the King</td>
<td>4.71</td>
<td>0.55</td>
</tr>
<tr>
<td>1.2 Admiring a democratic government headed under the king</td>
<td>4.61</td>
<td>0.63</td>
</tr>
<tr>
<td>1.3 Upholding and have faith in his/her religion belief.</td>
<td>4.48</td>
<td>0.72</td>
</tr>
</tbody>
</table>
2. Being honest, sacrificial and patient with positive attitude for the common good of the public
   - 2.1 having no fraudulent trick and bias
   - 2.2 having ability to take control of self and to handle challenges
   - 2.3 Lead life to serve others

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<tr>
<td>4.04</td>
<td>0.81</td>
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<td>4.10</td>
<td>0.81</td>
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<tr>
<td>4.00</td>
<td>0.81</td>
</tr>
<tr>
<td>4.01</td>
<td>0.82</td>
</tr>
</tbody>
</table>

3. Being grateful to the parents, guardians and teachers
   - 3.1 Always being grateful to *the parents*, *guardians and teachers*
   - 3.2 Do not misbehave and cause trouble to parents and guardians and teachers.
   - 3.3 Seek for returning the favor to the parents, guardians and teachers.

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<tbody>
<tr>
<td>4.53</td>
<td>0.66</td>
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<tr>
<td>4.58</td>
<td>0.64</td>
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<tr>
<td>4.45</td>
<td>0.69</td>
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<td>4.53</td>
<td>0.66</td>
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4. Seeking knowledge and education directly and indirectly
   - 4.1 Being hard working
   - 4.2 Being autonomous learners

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<tr>
<td>3.90</td>
<td>0.82</td>
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<tr>
<td>3.88</td>
<td>0.84</td>
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<tr>
<td>3.79</td>
<td>0.83</td>
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<tr>
<td>4.03</td>
<td>0.80</td>
</tr>
</tbody>
</table>
4.3 Always being open-minded to listen to other opinions

<table>
<thead>
<tr>
<th>The 12 core values</th>
<th>̅X</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Treasuring the precious Thai tradition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.1 Having good manners</td>
<td>4.04</td>
<td>0.80</td>
</tr>
<tr>
<td>5.2 Speaking gently and politely without cursing and yelling.</td>
<td>3.84</td>
<td>0.87</td>
</tr>
<tr>
<td>5.3 Maintaining and preserving Thai culture and traditions</td>
<td></td>
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<tr>
<td>6. Maintaining moral, integrity, well-wishes upon others as well as</td>
<td></td>
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</tr>
<tr>
<td>being generous and sharing</td>
<td>4.06</td>
<td>0.79</td>
</tr>
<tr>
<td>6.1 being honest both upfront and behind others’ back</td>
<td>4.05</td>
<td>0.79</td>
</tr>
<tr>
<td>6.2 Being kind and wishing others well</td>
<td>4.12</td>
<td>0.75</td>
</tr>
<tr>
<td>6.3 practicing being a giver</td>
<td>4.00</td>
<td>0.84</td>
</tr>
</tbody>
</table>
7. Understanding, learning the true essence of democratic ideals with His Majesty the King as the Head of State
   7.1 Exercising his/her right while also respecting other people’s right
   7.2 Learning to behave in accordance with democratic practice
   7.3 Behaving well in accordance with the role of the citizen in democracy

| 7.1 | 4.18 | 0.74 |
| 7.2 | 4.21 | 0.72 |
| 7.3 | 4.17 | 0.76 |
| 7.4 | 4.15 | 0.75 |

8. Maintaining discipline, respectful of laws and the elderly and seniority
   8.1 Following rules and regulations in a society
   8.2 Following the law
   8.3 Showing respect to respectful the elderly

| 8.1 | 4.16 | 0.75 |
| 8.2 | 4.11 | 0.75 |
| 8.3 | 4.14 | 0.77 |
| 8.4 | 4.21 | 0.74 |

9. Being conscious and mindful of action in line with His Majesty’s the King’s statements
   9.1 Behaving in line with His Majesty’s the King’s statements
   9.2 be conscious and have a plan for living
   9.3 Showing responsibilities for families and the society

| 9.1 | 4.10 | 0.77 |
| 9.2 | 4.07 | 0.79 |
| 9.3 | 4.06 | 0.77 |
| 9.4 | 4.16 | 0.76 |
## The 12 core values

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<tbody>
<tr>
<td></td>
<td>( \bar{x} )</td>
<td>S.D.</td>
</tr>
<tr>
<td>10. Practicing the philosophy of Sufficiency Economy of His Majesty the King. Saving money for time of need. Being moderate with surplus used for sharing or expansion of business while having good immunity</td>
<td>3.92</td>
<td>0.85</td>
</tr>
<tr>
<td>10.1 Being moderate and spending money carefully</td>
<td>3.90</td>
<td>0.88</td>
</tr>
<tr>
<td>10.2 Choosing a career suitable for knowledge and abilities</td>
<td>4.00</td>
<td>0.78</td>
</tr>
<tr>
<td>10.3 Saving money for time of need</td>
<td>3.87</td>
<td>0.90</td>
</tr>
<tr>
<td>11. Maintaining both physical and mental health and unyielding to the dark force or desires, having sense of shame over guilt and sins in accordance with the religious principles</td>
<td>4.06</td>
<td>0.76</td>
</tr>
<tr>
<td>11.1 Maintaining both physical and mental health when facing challenges</td>
<td>4.04</td>
<td>0.74</td>
</tr>
<tr>
<td>11.2 Leading lives by following his/her religious belief</td>
<td>4.05</td>
<td>0.78</td>
</tr>
<tr>
<td>11.3 Making judgments based on logic and fairness without prejudice</td>
<td>4.07</td>
<td>0.77</td>
</tr>
</tbody>
</table>
and bias

<table>
<thead>
<tr>
<th>12. Putting the public and national interest before personal interest.</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.1 Do not accept a bribe during election</td>
</tr>
<tr>
<td>12.2 Do not misconduct leading to damage to society in general</td>
</tr>
<tr>
<td>12.3 Keeping up on news and sharing opinions under the law</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No.</th>
<th>Item no.</th>
<th>The 12 values (ranking from the highest to the lowest mean score)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Upholding the nation, the religions and the Monarchy, which is the key institution</td>
</tr>
</tbody>
</table>

Conclusion

It can be concluded that the attributes rated very high as the values that the students possess the most are presented (from the highest to the lowest) below:
<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Being grateful to the parents, guardians and teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>12</td>
<td>Putting the public and national interest before personal interest.</td>
</tr>
<tr>
<td>4</td>
<td>7</td>
<td>Understanding, learning the true essence of democratic ideals with His Majesty the King as the Head of State</td>
</tr>
<tr>
<td>5</td>
<td>8</td>
<td>Maintaining discipline, respectful of laws and the elderly and seniority</td>
</tr>
<tr>
<td>6</td>
<td>9</td>
<td>Being conscious and mindful of action in line with His Majesty’s the King’s statements.</td>
</tr>
<tr>
<td>7</td>
<td>11</td>
<td>Maintaining both physical and mental health when facing challenges</td>
</tr>
<tr>
<td>8</td>
<td>6</td>
<td>Maintaining moral, integrity, well-wishes upon others as well as being generous and sharing</td>
</tr>
<tr>
<td>9</td>
<td>2</td>
<td>Being honest, sacrificial and patient with positive attitude for the common good of the public</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>Practicing the philosophy of Sufficiency Economy of His Majesty the King. Saving money for time of need. Being moderate with surplus used for sharing or expansion of business while having good immunity</td>
</tr>
<tr>
<td>11</td>
<td>4</td>
<td>Seeking knowledge and education directly and indirectly</td>
</tr>
<tr>
<td>12</td>
<td>5</td>
<td>Treasuring the precious Thai tradition</td>
</tr>
</tbody>
</table>
The results from Table 3 show that item no. 10 (Practicing the philosophy of Sufficiency Economy of His Majesty the King, saving money for time of need. Being moderate with surplus used for sharing or expansion of business while having good immunity), item no.4 (Seeking knowledge and education directly and indirectly) and item no. 5 (Maintaining discipline, respectful of laws and the elderly and seniority) gained the lowest mean scores. On the contrary, item no. 1 (Upholding the nation, the religions and the Monarchy, which is the key institution), item no. 3 (Being grateful to the parents, guardians and teachers) and item no. 12 (Putting the public and national interest before personal interest) received the highest mean scores. Therefore, it is suggested that emphasis should be put on teaching students to preserve Thai culture and traditions, be an autonomous learner and practice the philosophy of Sufficiency Economy.

Table 4: the mean scores (listed from lowest to the highest) of the 12 values

<table>
<thead>
<tr>
<th>No.</th>
<th>Item no.</th>
<th>The 12 values (ranking from the highest to the lowest mean score)</th>
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<tbody>
<tr>
<td>1</td>
<td>5.2</td>
<td>Speaking gently and politely without cursing and yelling</td>
</tr>
<tr>
<td>2</td>
<td>4.2</td>
<td>Being autonomous learners</td>
</tr>
<tr>
<td></td>
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<tr>
<td>---</td>
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<td>----------------------------------------------------------------</td>
</tr>
<tr>
<td>3</td>
<td>5.3</td>
<td>Maintaining and preserving Thai culture and traditions</td>
</tr>
<tr>
<td>4</td>
<td>10.3</td>
<td>Saving money for time of need</td>
</tr>
<tr>
<td>5</td>
<td>4.1</td>
<td>Being hard working</td>
</tr>
<tr>
<td>6</td>
<td>10.1</td>
<td>Being moderate and spending money carefully</td>
</tr>
<tr>
<td>7</td>
<td>2.2</td>
<td>having ability to take control of self and to handle challenges</td>
</tr>
<tr>
<td>8</td>
<td>6.3</td>
<td>practicing being a giver</td>
</tr>
<tr>
<td>9</td>
<td>10.2</td>
<td>Choosing a career suitable for knowledge and abilities</td>
</tr>
<tr>
<td>10</td>
<td>2.3</td>
<td>Lead life to serve others</td>
</tr>
</tbody>
</table>

The above table illustrates clearly that students taking a badminton course should be encouraged to speak politely and be able to seek knowledge by themselves and realize the importance of preserving Thai culture and learn to save money as indicated in the philosophy of Sufficiency Economy.

**Suggestions:**

Based on the findings, as a badminton teacher, the researcher would like to propose four suggestions as follows:

1. In terms of course implementation, instructors should emphasize on working diligently working by promoting self-studying and suggesting students to review their previous lessons after class. Students can watch badminton international matches on Youtube and other websites and take turns to give
presentations to their classmates every week. Students should also be assigned to practice different moves before and after each class lesson.

2. Emphasis should be given on the badminton playing etiquettes, manners and being polite. Instructor can also teach students to pay respect to people and encourage students to demonstrate Thai greeting (Wai), to smile, say ‘thank you’ or using Thai martial arts to warm up their bodies before playing in order to promote Thai culture. Instructors may consider granting rewards and giving penalty to reinforce positive behaviors and control negative behaviors.

3. Students should be taught how to select proper equipment and maintain their equipment. This is to encourage students to spend money carefully and for the best benefit.

4. In-class activities should be included to teach students about self-conscience and having sportsman spirit. Students should learn to help those who are weaker or less skillful. Instructor can pair students up having the more skillful teach their partners who are less skillful. More teaching and practice on the gentleman spirit, generosity, being a giver and not too much focusing on the result should be integrated into class lessons using role-plays and case-study discussions.

Recommendations

1. For universities
1.1 As for students activities, There should be more activities concerning the 12 values with an emphasis on treasuring Thai culture and traditions and practicing the philosophy of Sufficiency Economy of His Majesty.

1.2 A policy planning and campaigns to promote good manners and speaking politely are needed and implemented seriously with uses of reinforcements.

2. For further studies

2.1 This study was conducted with students taking the badminton course only. A similar study can be conducted with students taking other courses.

2.2 A study examine students values in other aspects can shed some light on developing extra-curricular activities or adjusting instructions.

References


Website

Government of Thailand
www.thaigov.go.th/en

Ministry of Education
http://www.moe.go.th/

Office of National Education Commission
http://www.onec.go.th
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Cultural heritage is the historical fruit and the vestige of the past, and the important property to deliver for the future. It brings diverse values in society, culture and education. Culture cannot be exclusive to the human being and the survival mechanism. Humans’ non-instinctive behavior is culture through the time and space. Time and space in culture give us materials to learn something from the past. Cultural heritage is useful education material for classroom to teach the followings such as the way of living, the way of thinking and way of feeling. Cultural heritage has diverse educational values, and so it deserves to analyze educational program using cultural heritage, especially World Heritage.

To analyze world heritage educations, we researched the world heritage education programs with a search word “world’s cultural heritage (WCH)” in the domestic (Republic of Korea) and the international database website. We analyzed the educational program using WCH based on the following criteria: the whole information of education program, the meaning as World’s Cultural Heritage, and the educational value.

Analysis results show the several characteristics. First, the educational programs of WCH were classified into three categories – the education about World Heritage, the education for World Heritage, and the education through World Heritage. The world heritage educations were mainly developed as the education through World Heritage, more than the education about World Heritage.

Second, the educational programs of WCH were mainly developed in the area of history, culture, and art. A small part of them were developed in the area of science, music, and mathematics. Despite WCH’s high values and applicability in education, the educational programs showed limitations in terms of their lack of comprehensiveness and value-oriented.

There was a slight different utilization of WCH between Korean WCH education and the world-wide WCH education. It means that WCH education could be different in each country’s history, culture, and situation. We need to develop the world heritage education with consideration of the socio-cultural background, the social condition, and the characteristics of World Heritage.

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1 This work was supported by the National Research Foundation of Korea Grant funded by the Korean Government (NRF-2014S1A5B6037290)
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Affiliation of the author: Sinjang elementary school
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E-mail address of the author: ani1052@naver.com
Nationalism and Multiculturalism: 
Unification Education in South Korea Curriculum

Eun-Young. Yoon. 
(Sinjang Elementary School)

Abstract

The division of Korea is primarily political, though the physical separation and isolation of one state does create some notable differences in ideology, culture and language. In this situation, homogenous nationalism has been a vehicle for unification education in South Korea. However, South Korea is quickly becoming a multicultural society, so it is hard to emphasize on “a single nation” in unification education any longer. To respond to this new condition, unification education should be examined and revised. Furthermore, school curriculums should be designed to have a significant impact on students’ perception and image of North Korea and unification even before they have personal contact with North Korean refugees.

Within this context, this paper examines how unification and North Korea are being taught in South Korean classrooms. The analysis of the curriculum and textbooks regarding unification in South Korean elementary schools, this study uses nationalism and multiculturalism as major theoretical frameworks. Within these framework, this study not only critically analyzes the curriculum and textbooks, but also builds a new paradigm of unification education.

Major findings show that there are only four lessons dealing with unification and North Korean refugees in elementary school curriculum. As textbooks are based on emotional approaches like appealing North Korean refugees’ difficulties, it is hard to understand the necessity and objective circumstances of unification. Because unification and a changing Korean society are being taught separately, students have a slight chance to consider a unified Korea. Currently, students have difficulties to acquire a balanced and complicated understanding of North Korea and unification by school curriculum.

Based on these results, the curriculum and textbooks in South Korea should describe unification with North Korea in great depth. Not only North Korean refugees’ difficulties but also North Korean cultures should be taught in the classroom. Thus, it is the first step in unification education;
school curriculum teaches how to make sense of domestic diversities with North Korean refugees. And the balancing between “global citizenship” and “national identity” is needed.
Education for health-care-workers to popularize Animal Assisted Therapy (AAT) in Japan

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Abstract:
This study aims to clarify the issues to popularize Animal Assisted Therapy (AAT) in Japan. In recent years, Animal Assisted Therapy (AAT) starts to gain attention in Japan. However it has been not popularized widely yet. due to hygienic reason in Japan, it is very hard to introduce AAT at general hospitals. Only 5 years ago, the facility dog with a nurse handler was first introduced at one of Children’s hospitals for the first time to launch AAT in Japan, and spread publicly after that. Although it has been almost 5 years since AAT was first introduced in Japan, there are only 3 hospitals to have introduced facility dogs with nurse handlers (two of them are children’s hospitals and the other is a convalescent hospital). From
those results, it cannot be said that, AAT has not become widespread in Japan.

From the result of literature research about the cause of this issue, we found that there were 2 points of causes by culture differences and how people view animals. 1: Not to be established AAT’s system. 2: There is resistance to introduce therapy dogs by lacking of knowledge of health-care-workers. It is important to educate health-care-workers and to cultivate handlers. Further more, it is necessary to demonstrate the scientific effects as well.

Introduction

In 2010, a facility dog with a nurse’ handler was introduce at one of the Children’s hospital for the first time to launch AAT in Japan. And in recent years, Animal Assisted Therapy (AAT) has started to gain attention in Japan, however it has been not spread widely yet. To popularize Animal Assisted Therapy (AAT) in Japan, AAT have to be discussed as historical, systematized and existing actives’ ways to compare with the Western countries and Japan.

Definitions

Animal-Assisted Active (AAA) is purpose of interaction animals and people, to give the emotional stability by interact with animals, it is an activity recreation to improve Quality Of Life. Animal-Assisted Education (AAE) is in Kindergartens and various schools, etc. it is an activity to learn the importance of the relationship and life with others by being interposed animals in education. Animal-Assisted Therapy (AAT) is formally defined as “a goal directed intervention in which an animal that meets specific criteria is an integral part of the treatment process” by Delta Society (Kruger, Trachtenberg, & Serpell, 2004, p .4). AAT is one of the Complementary & Alternative Medicine and has involved specific treatment goals. The notable difference between AAA and AAT is that AAT has scheduled sessions, each session involving specific treatment goals.

Purpose

This study aims to clarify the issues about popularizing Animal Assisted Therapy (AAT) in Japan by overviewing the history, systems and existing activities.
**Method**

To overview the history, systems, effort and existing activities of AAT, and to focus on the difference of culture and outlook of animals in the Western countries and Japan by literature research.

**Results**

**History of AAT**

It has been already described the idea of using animals in the treatment in Greek era. However, the first documented case was in England at York Retreat which is psychiatric hospital to assist animals for patients to treatment. As animals involved in therapeutic settings became more prevalent, scientific medicine was introduced and pushed AAT aside until the late 1960’s when Boris Levinson’s work came about (Allderidge, 1991). Levinson is a psychotherapist and pioneer of AAT incorporated a dog into therapy sessions with clients. The late 1970s and 1980s marked a turning point in the growth of AAT as a credit field (Fine, 2000).

**Types of animals**

The animals to be involved in AAT, a wide variety such as dogs, cats, rabbits, horses, fish, dolphin and so on. Most commonly used is dogs is the most common type of AAT. The interaction between dogs and clients is an important aspect in canine-assisted therapy (Fine, 2000; Thompson, 2009).

**Effort of Animal-Assisted Therapy**

The Effects of AAT are psychological, physical and social. The psychological effects are that people can heal and get relief and also establish their own relationship methodology by touching dogs. The physical effect is emollient and a decrease of blood pressure. Recent interest in AAT and medical value has been gained by a study conducted that found heart attack victims had prolonged life due to owning pets (Urichuk et al., 2003).

A study conducted by Friedmann, Katcher, Thomas, Lynch, and Messent (1983) measured the blood pressure of twenty six children when a dog entered the room. The children did not have contact with the dog but were able to see it. Friedman and colleagues found that the children’s blood pressure decreased when the dog entered the room. The study concluded that the very presence of a dog can decrease anxiety and lower blood pressure (Fine, 2000; Friedman et al., 1983, Pichot et al., 2007).
The social effects are as follows: it has been proved that people who have dogs attend hospital for a decreased amount of time. In Germany, IAHAIO has shown that medical expenses decreased by as much as 750 billion dollars.

**AAT's activities in the U.S.A and Japan**

AAT's activities in Europe, in 1947 Green Chimneys was established as an educational facility. That institution supervises children who have ADHD, was raped, or who has special needs. In that institution physicians and psychiatrists are stationed, and health care providers such as Ns and Pt provide AAT care. Not only in educational facilities but also in prisons, elderly facilities, in home care, hospices, psychiatry, pediatrics and acute stage implementation of AAT.

On the other hand, activity of AAT in Japan is mainly in kindergartens, elderly facilities and hospices, but in 2010 at a child hospital it was the first introduction of AAT for nurses as handlers. And now in the east of Japan AAT activities are spreading at hospital departments of pediatrics, and also in hospices animals have to be stationed. In Japan, there are less opportunities than in Europe.

**The history of canine and human's relationship**

To compare the Western countries and Japan in terms of canine and human history, in the Western countries and Japan as the time varied, canines were used as domestic animals and to be as partners with hunting. However, there was a turning point that made the relations of canines and humans change at the Western countries and Japan.

In the 19th century at the Western countries canines were intended to be pets, and in the 20th century canines were changed from pets to companion animals as means of living life together.

On the other hand, at the end of the 19th century in Japan, people had canines for pets, however over the Meiji era and at the beginning of the Syowa era, a lot of canines were killed because of the wars and spreading Rabies. And now it changed from pets to companion animals. By that historical background, Canine and human relationships happened at different times.

**The difference of AAT system between United States and Japan**

In the United States, there is an organization of AAT called DELTA Pet Partners which is approved by the government. This organization raise handler of Dog for AAT and established a qualification of AAT.

In Japan, there are some organizations which are doing dog therapy individually and no
official qualifying system is existence. As mentioned above, there is not any official qualification system for medical site. In some hospital, there was a nurse who graduated from dog training school and gain personal and private license which some private organization issued. But such school or organization gives individual method or license so that there are not same qualities and required handling ability is totally different. On the other hand, knowledge deficit of medical professionals is the reason why AAT has not been spread in Japan. In fact, not many people know not only effectiveness of AAT but also the word AAT itself. Not a few people in Japanese hospital believe animal such dogs are all dirty so it is hard to get permission to take dogs into the hospital. In order to break the deadlock in current conditions, AAA and AAT as a complementary and alternative medicine should be taught at the university of medical course.

**Discussion**

The late 1970s and 1980s AAT was introduced in the Western countries, though it has started to gain attention in Japan since 2010. Despite dogs as most common animals, there are wide varieties such as dogs, cats, rabbits, horses, fish, and dolphin by AAT in the Western countries. Dongs are the only ones introduced as AAT in Japan. There is a significant difference at AAT filed between the Western countries and Japan as well. Activities of AAT in Japan are mainly in kindergartens, elderly facilities and hospices, and a few activities of AAT have been spreading at pediatrics departments in hospitals since a child hospital had first introduced in 2010. In Japan, there are fewer opportunities than in Europe.

Because of the fewer opportunities of AAT in japan than the Western countries, the history of AAT has not only influenced, the historical background of canine and human’s relationship has also influenced.

The lagging behind in Japan compare with the Western countries, those historical differences about AAT and canine and human’s relationship caused the difference of AAT system between the western countries and Japan as well.

From the result of literature research about the cause of this issue, we found that there were 2 points of causes by culture differences and how people view animals. 1: Not to be established AAT’s system. 2: There is resistance to introduce therapy dogs by lacking of knowledge of health-care-workers. It is important to educate health-care-workers and to cultivate handlers. It is suggested to consider and to study of the effort of Animal-Assisted Therapy in Japan.
**Conclusion**

The main findings are as follows:

1) AAT system hasn’t been established in Japan yet.

2) It’s very hard for medical professionals to accept to introduce dog therapy because of knowledge deficit.

Thus, It is suggested to consider and to study the effort of Animal-Assisted Therapy in Japan. And to provide education of AAT for people who dedicated for medical site and training handler are important to spread AAT in Japan.

**References**


Effect of Brief, Experiential Training in Lectures Using Modified Simulated Blood Vessels; Comparison of nursing students' opinion this year and last year

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Poster session : Abstract

【 Introduction 】
As instructors at a nursing college in Japan, we teach injection methods to second year students. This subject consists of 15 combined lectures and skills training sessions. During the skills training, nursing students listen to teachers’ explanations of the procedure, watch a demonstration, and then practice the procedure using a commercial simulation model. Blood drawing is included in the training, and is one of the skills evaluated before students obtain their degrees. Venipuncture is a difficult technique for beginner students to master, particularly advancing the needle into the vein without penetrating the posterior venous wall. We perceived the need to better prepare students to master blood drawing. Therefore for the past five years we carried out brief experiential training sessions in which students practiced inserting syringe needles into inexpensive transparent straws (4.5 mm in diameter and 180 mm in length) that functioned as simulated blood vessels (fig.1). These sessions took place during the lecture and prior to skills training. We presented some of the results of this program at the 13th Annual HICE. This report describes the effect of brief experiential training using modified materials to simulate blood vessels with overlying skin based on comparison of the opinions of this year’s and last year’s students.

【 Modified simulated blood vessels with overlying skin 】
Last year, 60% of students commented that the surface of the straws used in the training sessions was hard and slippery, which made insertion difficult. A few students requested that simulated skin be added to the straw surface. Therefore, we recently modified the simulated blood vessel by covering each straw with a semitransparent tube made of silicon (fig.2). These tubes were procured from unusable replacement parts used in commercial simulation model. As the tube and the straw had the same outer diameter, the tube was cut along its entire length to make it easier to place it over the straw.

【 Conducting the brief experiential training 】
Students followed the instructions after one of the teachers demonstrated the techniques using the modified simulated blood vessel. The demonstration was recorded with a portable document
camera and the image was projected in real time onto one large screen and four smaller ceiling-suspended liquid crystal displays.

1) Set up the modified simulated blood vessel by covering the straw with the tube.
2) Place the simulated vessel lengthwise on the desk and secure its upper end to the desk with scotch tape.
3) Place the thumb or forefinger of the non-dominant hand on the bottom end of the simulated blood vessel.
4) Insert the syringe needle at a 15-to-30 degree angle with the dominant hand.
5) Lower the angle of the needle a little and then advance the needle through the lumen to half of the needle length.
6) Visually confirm whether the needle has penetrated the simulated vessel.
7) Repeat venipuncture as many times as possible until the end of the training session.
8) Fill out a brief voluntarily, anonymous questionnaire.

【 Results 】
Of the 107 students (99%) who responded this year and the 98 who responded last year (94%), 90% and 80%, respectively, stated that the training session enabled them to visualize performing the venipuncture technique. Compared to last year’s students, a significantly greater proportion of
current-year students responded that they were strongly able to visualize the venipuncture technique \((p=0.021)\). Sixty-one percent of last year’s students stated that they succeeded on the second try, compared to only 41% of current-year students. Compared with last year’s students, students this year had a lower success rate on the first try \((p=0.014)\). Half of this year’s students succeeded after the third attempt. For current-year students there was a significant association between succeeding at the third attempt or beyond the third and those who could visualize the venipuncture \((p=0.010)\). We considered the possibility that brief experiential training did not improve the readiness of this year’s students as much as last year’s. Therefore, we compared percentages of the two groups who achieved the appropriate puncture angle and syringe needle insertion length. Sixty-five percent of this year’s students used the correct puncture angle, and there was no significant difference compared to last year’s students \((76\%)\). However, 74% of current-year students used the correct needle insertion length, compared to 91% last year, which represents a significant decline \((p=0.001)\). This statistical analysis was performed using a chi square test with a level of significance of 5%.

Only 29% of students this year provided their opinions, compared to 70% of students last year. None of the students in this year responded regarding the hardness or slipperiness of the surface of the straws. Most of the opinions centered around two points. First, that there was a limited range of wrist motion while using the syringe because the modified simulated blood vessel lay directly on the desk. Another was that the modified simulated blood vessel was not adequately secured to the desk and was subject to movement during the technique.

【 Conclusions 】
The simulated blood vessel that used a semitransparent silicon tube over a straw in order to simulate skin appears to have helped students visualize the venipuncture process. However, students tended enter the vessel at a higher angle than normal due to the simulated skin. The proportion of this year’s students who used the correct angle was 65%, similar to last year’s. It is possible that not using a transparent straw made it difficult for students to see the length of the needle and to succeed on their first attempt.

However, the ratio of students who could visualize the venipuncture process increased this year over the last, and there was no significant difference in the percentage of students using the correct insertion angle. This suggests that the addition of simulated skin improved students’ experiences. An approach should be devised to enable students to recognize the location of the syringe needle tip in the modified simulated blood vessel. In addition, we think there is room for improvement regarding methods of securing and positioning the modified simulated blood vessel on the desk.
Consideration of support using Areal Feature and SNS (Social Network Service) for nursing-students job-hunting
- Viewpoints of Public Health on community and Authentic Voices -

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**Abstract:** This study aims to find another way of nursing-students’ job-hunting tool by interviewing with small-and-medium-sized hospitals about how to employee enough number of novice nurses, and current situation of nursing-students’ job-hunting tools. Nursing-students mostly use “Internet website of hospitals (17%)”, “career fairs (17%)” as important Information sources for job-hunting. And Internet is one of the most important job-hunting tools. Although small-and-medium-sized hospitals prepare great emphasis to provide great working environment and fulfilling Internet website of the hospital to introduce their hospitals and nursing activities, they still hardly have some questions, requests or comments from nursing-students through emails or blogging comments. Small-and-medium-sized hospitals should be selectable for nursing-students. And it is necessary to build another introducing tool to match those nursing-students and small-and-medium-sized hospitals. We found that small-and-medium-sized hospitals had difficulties to introduce their hospitals, nursing-students had difficulties of job-hunting from varieties of hospitals. Social Network Service can possibly make those difficulties decrease from both sides.

**Background**

According to Japanese Nursing Association in 2012, job opening-to-application ratio was 2.7 per person that had being increased by more than 3 times since 2003. It’s said that this increasing job opening-to-application ratio trend would last until 2025. And it is estimated to be necessary about 2 million nurses in 2025 due to aging population in Japan.

Although the necessity of nurses population, the number of nurses has always been shorted at every hospital and clinic in Japan. Current situation of nursing-students’ job-hunting, they tend to look only at large-sized hospitals such as academic-medical-centers and university-hospitals. The attitude survey of job-hunting for nursing-students in 2011 by SMS co., ltd, nursing-students putting great value of job-hunting tools were “Internet website of hospitals”, “career fairs”, “authentic voices from the nurses working in the hospitals”.

In the point of view of perfect match with nursing-students and their working place, small-and-medium-sized hospitals should be selectable as well.
Purpose

This study aims to find another way of nursing-students’ job-hunting tool by interviewing with small-and-medium-sized hospitals about how to employee enough number of novice nurses, and current situation of nursing-students’ job-hunting tools.

Method

We used a question paper with six categories originally (Demographic, information sources for job-hunting, interesting information of hospitals, utilization situation of Internet, utilization situation of Smart-phone, utilization situation of Social Network service) and investigated a questionnaire. Objects are nursing-students belonging to a nursing school in A prefecture in Japan, 80 in total.

We also interviewed with 2 directors of nursing in 2 small-and-medium-sized hospitals about the difficulties and current situation of how to employee enough number of novice nurses.

Ethical considerations

We got an approval from the ethical committee in Digital Hollywood University, Japan. We explained the purpose of this study, how to collect question papers, method of analysis, and privacy consideration to ensure that it is not possible to identify an individual by an explanation paper.

Results

We collected 80 question papers from a nursing school in A prefecture Japan. Those students were expected to graduate and becoming novice nurses in 6 months time (70 female and 10 male). Information sources for job-hunting were “Internet website of hospitals (17%)”, “career fairs (17%)”, “real experience from nursing practice in the hospitals (16%)”, “authentic voices from the nurses working in the hospitals (15%)” (Figure1). Utilization situation of Internet for job-hunting was more than 60% (Figure2). From the viewpoint of nursing-students, “programs of orientation and education for new nurses employees (19%)”, “Nonworking days per week and number of days on night-shift (19%)”, “nurses and other co-medical workers well-developed relationships (17%)”, “starting salary (17%)” were the most important information for those students to see the Internet website of hospitals. “A sense of fulfillment in nursing (12%)”, “authentic voices from the nurses working in the hospitals (12%)” were also expected to see in the Internet website of hospitals as important information for nursing-students’ job-hunting.
On the other hand, about the difficulties and current situation of how to employee enough number of novice nurses from the interviews with 2 directors of nursing in 2 small-and-medium-sized hospitals, there were many difficulties for collecting enough number of novice nurses since so many large-sized hospitals such as academic-medical-centers and university-hospitals were placed near-by. So those hospitals put great emphasis to provide “childcare facility for nurses’ children”, “dormitories for nurses”, “programs of orientation and education for new nurses employees”, “system of home leave vacation for nurses”, “overseas training system for nurses”. They also put strong emphasis to make individual nursing website linked with the hospital and introduce “features of nursing in the hospital”, and “work environment”, and “blogs of authentic voices from the nurses working in the hospitals” although there are only few Internet websites shown hit numbers and almost no question, request or comment they received from future novice nurses related with nursing-students’ job-hunting by emails. They also prepared internship program for nursing-students, and try to make many chances to introduce their hospitals by visiting many nursing schools, universities, colleges, and career fairs. Surprisingly they paid the traveling expenses of nursing-students coming to the hospitals for entrance exams or employment interviews. One of those 2 directors of nursing told us that this small-and-medium-sized hospital put about 500,000 USD for nurses Recruitment budget per year.

Figure 1: Information sources for nursing-students’ job-hunting
Figure 2: Utilization situation of Internet for job-hunting

Figure 3: Nursing-students expectation in hospitals’ Internet website
From the result of question papers, nursing-students mostly use “Internet website of hospitals (17%)”, “career fairs (17%)” as important Information sources for job-hunting. And Utilization situation of Internet for their job-hunting was more than 60%. According to Ministry of Internal Affairs and Communications in 2011, More than 80% of all population in Japan use Internet. And more than 96% of people between 13 to 29 years old use Internet. Penetration rate of Smart-phone carriers between 10 to 29 years old in Japan is over 70% in 2013 by IDC Japan co., ltd. And the number of Facebook users is more than 22 million in 2013. It’s said that over 50 million people use Social Network Service such as Mixi, Facebook, Twitter and Line in Japan. People between 15 to 19 years old use Social Network Service about 162 minutes/day, people between 20 to 29 years old use Social Network Service about 84 minutes/day in 2013 by Hakuhodo DY holdings. Those spending time of Social Network Service were more than its time of Google searching or watching YouTube. So that, most nursing-students use Internet commonly. And Internet is one of the most important job-hunting tools.

Although small-and-medium-sized hospitals prepare Internet websites of the hospitals and individual nursing Internet website linked with the hospital and introduce “features of nursing in the hospital”, “work environment”, and “blogs of authentic voices from the nurses working in the hospitals”, they still have difficulties of collecting enough number of novice nurses since so many large-sized hospitals such as academic-medical-centers and university-hospitals were placed near-by. They also prepare great emphasis to provide “childcare facility for nurses’ children”, “dormitories for nurses”, “programs of orientation and education for new nurses employees”, “system of home leave vacation for nurses”, “overseas training system for nurses”. Despite the great working environment and fulfilling Internet website of the hospital to introduce their hospitals and nursing activities, they still hardly have some questions, requests or comments from nursing-students through emails or blogging comments.

Small-and-medium-sized hospitals should be selectable for nursing-students. And it is necessary to build another introducing tool to match those nursing-students and small-and-medium-sized hospitals. Social Network Service can be one of the great ideas since nursing-students’ utilization situation of Internet and Social Network Service. Using Social Network Service make it easier for small-and-medium-sized hospitals to put authentic voices from patients on areal feature of Public Health on community which nursing-students expect for a sense of fulfillment in nursing as well.

Moreover, exchanging communication through Social Network Service between one nursing-student and one small-and-medium-sized hospital can not only be one to one communication. Those communications can also share with other many nursing-students. Since nursing-students have already got used to use Social Network Service, Social Network Service can make it easier for nursing-students to
give some questions, requests or comments to hospitals compare with nursing-students emailing with business manner.

**Conclusion**

We found that small-and-medium-sized hospitals had difficulties to introduce their hospitals, nursing-students had difficulties of job-hunting from varieties of hospitals. Social Network Service can possibly make those difficulties decrease from both sides.

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Abstracts

The medical safety theory course is taught to second-year students in the second semester. A method of incorporating digital photos and text was utilized in both individual and group work, as well as in classroom presentations. The purpose of this survey study is to determine the extent that third-year students who have completed their clinical training are able to retain medical safety lessons learned in the medical safety theory course taken over a year earlier.

Title

Nursing Student Medical Safety Education Results: Analysis of Learning Content that is Retained for at Least One Year

Introduction

In 2006, some 9.3% of nursing college graduates in Japan decided to leave their job after becoming a nurse. The primary reason cited for leaving the job was a lack of confidence that their skills and nursing knowledge would be adequate to work in an advanced medical institution, and concern that their inadequacies might result in a serious medical incident. In 2011, the Ministry of Health, Labor and Welfare Ministry and Ministry of Education revised the basic nursing education curriculum, and inaugurated a new course in medical safety theory. By 2012, the turnover rate had fallen to 7.5%, a significant decline of 1.8%. Our nursing school operates in Japan as a three-year college, and students take the medical safety theory course in the second semester of their second year in college.
Through the course, students are first made aware of medical safety issues through lectures and exercises, which are then followed up by practical training that ensures students are well aware of medical safety practices in medical settings so that they won't leave their job after they become a nurse. This combination of lectures, exercises, and training has proved very effective, and has enabled virtually all students to anticipate and avoid risks and hazards before an incident can occur 4).

This study, based on a questionnaire, verifies that students retained the medical safety theory course content even as third-year students after their clinical training was completed, a full year after taking the course. The results presented here are based on responses of 48 student nurses who completed the survey (out of 77 students who were approached to participate in the study, a response rate of 62.3%).

(1) Survey findings revealed that 40 nurses (83%) found the individual MY 5S, BEFORE and AFTER work 3) helpful for assessing the safety of medical settings by learning how to promote a safe environment around the student at school. (5S stands for seiri (sort), seiton (systematize), seisou (sweep), seiketsu (standardize), and shitsuke (self-discipline).)

(2) Survey findings also revealed that 40 nurses (83%) found the Hazard Prediction Training (KYT) group work helpful for improving risk prediction abilities. (KYT stands for kiken yochi toreningu, or hazard prediction training.)

(3) It was also found that 36 nurses (75%) found the individual Hazard Situation (Near-Miss or Close-Call Incidents) Observation Report work helpful for improving student risk awareness observation abilities during training.

(4) Finally, all 48 nurses (100%) who participated in the survey agreed that they were quite capable of caring for their patients while remaining conscious and aware of medical safety concerns during their clinical training.

The findings clearly demonstrated that at least 75% of the nursing students still retain a solid awareness of medical safety issues even as third-year students who have completed their clinical training, well over a year after taking the medical safety theory course. It is thus apparent that the nursing students continue to retain the lessons learned regarding medical safety.

Research Objectives

The medical safety theory course is taught to second-year students in the second semester. A method of incorporating digital photos and text was utilized in both individual and group work, as well as in classroom presentations. The purpose of this survey study is to determine the extent that third-year students who have completed
their clinical training are able to retain medical safety lessons learned in the medical safety theory course taken over a year earlier.

**Research Methods**

2. Subjects: Third year nursing college students, 48 students out of 77 students responded to solicitations (62.3% response rate).
4. Ethical considerations: Survey was conducted with the full consent of Aichi Kiwami College of Nursing Research Ethics Committee.
5. Analytical method: Simple tabulation of questionnaire findings.

**Keywords**

5S, KYT, near-miss incident, medical safety aware nursing

**Results**

1. **Was the individual MY 5S, BEFORE and AFTER work helpful during clinical training to assess safety of medical settings by learning how to create a safe environment around you at school?**

   1) In response to this question, 40 nurses out of 48 (83%) answered that the individual work was "very helpful," "somewhat helpful," or "helpful." One year ago, 52 nursing students out of 65 (80%) gave similar responses to this question.

   ![Graph](image)

   “Did the method of incorporating digital photos and text stimulate your interest?”
2) The subjects described their improved abilities as follows:

(1) Became aware of the ward environment, how things are laid out and arranged.
(2) Realized that assistance goes more smoothly depending on how the environment is set up.
(3) Started to think of medical settings as safety environments.
(4) Try to adapt hospital rooms to patient preferences.
(5) Exercises were helpful when creating environments.
(6) Try to create environments that are easy to use, both actually and for patients.
(7) When I straighten up environments around patient beds, I try to eliminate clutter and organize electrical cords.
(8) I was able to prevent patient falls by organizing the environment better.
(9) The exercise proved helpful when organizing the environment during training.
(10) Keep things neat and tidy when organizing the environment.
(11) Created environment to make patients' bedsides neat and well-organized to reduce potential risks of accidents.
(12) If you put things in their proper place, you know where they are.
(13) Made conscious effort to keep the nurse's station desk and locker neat, and hospital cart well-organized.
(14) Now I notice if tables in the ward are dirty.
(15) Record were often illegible, so I made an effort to keep records neat and well-organized.
(16) Since I have started keeping things neat and organized, I don't lose things so often.
(17) I learned to keep things neat and well-organized.
(18) Detected a hazardous situation, so took extra precautions.
(19) Became keenly aware of places I think are hazardous or risky.
(20) Always be concerned as to whether there are hazards or risks.
(21) A disorganized locker is unsafe, so I organized locker; this reduced risk and made it more convenient.
(22) During training, it's better to keep your locker tidy and storage locker in the ward neat and risk-free.
(23) Mopped up wet floors.
(24) There used to be a trash-can in front of the door to the evacuation area; I realized this was dangerous, and moved the can to the corner.
(25) Noticed risk factor of patients falling, so took steps to ensure that doesn't happen.
(26) Made sure bed rails were firmly in place, so patients wouldn't fall.

These responses can be divided into the following four categories:
(1) Helps when organizing environments: 11
(2) Keep things neat and well-organized on a routine basis: 10
(3) Learned to spot potential hazards: 7
(4) Prevent slips and falls: 3

2. Was *Hazard Prediction Training* (KYT) group work helpful for improving your risk prediction abilities during clinical training?

1) In response to this question, 40 out of 48 nurses (83%) answered that the group work was "very helpful," "somewhat helpful," or "helpful." One year ago, 64 nursing students out of 65 (98%) gave similar responses to this question.

2) Subjects described their improved abilities as follows:

(1) Learned to detect hazardous places/situations.
(2) Hazardous hospital room situations on my mind after the group work session, so naturally looked for hazards in hospital rooms during training.
(3) Became easier to predict hazardous places/situations.
(4) Considering hazardous situations, became adept at determining if schemes would work or not.
(5) Became aware that the exit at the gate was dangerous, so slowed down when entering/exiting (when getting together after training).
(6) Now able to predict situations I used to think were hazardous.
(7) Tried to become more aware of situations dealt with by the group.
(8) Group work helpful by improving awareness about safety around patient beds.
(9) Became keenly aware of potential risks after the hazard prediction class.
(10) Ability to predict risks would make environments safer.
(11) Noticed a decline in nurse calls.
(12) Now able to pursue training with constant care around patients' beds.
(13) Gave more thought to patients falling.
(14) Having raised "falling risk" as a nursing issue, we should consider hazard prediction in the nursing-care plan.
(15) Became aware of tangled intravenous lines and risk of falls around patient beds.

These responses can be divided into the following three categories:

1) Predicting hazardous locations or situations: 6
2) Safety awareness around patients' beds: 6
3) Anticipating falls: 3

3. Was the individual Hazard Situation (Near-Miss or Close-Call Incidents) Observation Report work helpful for improving your risk awareness observation abilities during training?

1) In response to this question, 36 out of 48 nurses (75%) answered that the individual work was "very helpful," "somewhat helpful," or "helpful." One year ago, 61 nursing students out of 65 (93%) gave similar responses to this question.

2) Subjects described their improved abilities as follows:

(1) Developed ability to immediately sense hazard or risk during training.
(2) Developed heightened awareness of hazard or risk even under normal circumstances.
(3) Noticed things in the patient environment that could pose a hazard or risk.
(4) Able to look back on hazardous or risky situations.
(5) Developed ability to observe, look back on what I learned during training about identifying hazards.
(6) When looking at ward or hospital room environment, now have my own perspective as to whether hazards are present.
(7) Seeing potential risk, I proceed with caution.
(8) I slow down and recheck things as I go through a room, and this has had good results.
(9) In some situations the number of nurse calls has declined.
(10) Developed ability to focus and pay attention.
(11) With wheelchairs scattered around elder wards, increased risk of patients bumping into them.
(12) Maintain awareness during training.
(13) Create environment tailored to scope of patient activities.

These responses can be divided into the following three categories:

(1) Sense dangerous places or situations: 7
(2) Increased awareness: 7
(3) Create environment tailored to scope of activities: 1

4. Are you able to care for your patients while remaining aware of medical safety concerns during clinical training?

1) In response to this question, all 48 nurses (100%) stated that they were "very aware," "somewhat aware," or "aware" of medical safety concerns. One year ago, 62 nursing students out of 65 (95%) responded similarly, but one year ago this question was not included among the question items.

2) There are no situations described as very aware.

Conclusions

1. The number of nurses finding the MY 5S, BEFORE and AFTER work helpful increased by 3% over last year, thus indicating that the medical safety theory course
is quite helpful for students. The subjects offered 31 descriptions of situations where this work proved helpful, and these descriptions can be divided into the following four categories: "useful when organizing environments: 11," "keep things neat and well-organized on a routine basis: 10," "learn to spot potential hazards: 7," "prevent slips and falls: 3."

2. The number of nurses finding the Hazard Prediction Training (KYT) group work helpful decreased by 15% since last year. However, 40 nurses (83%) endorse this training, so I believe it will continue. The participants offered 15 descriptions of situations where this work was helpful, and these descriptions can be divided into the following three categories: "predicting hazardous locations or situations: 6," "safety awareness around patients' beds: 6," and "anticipating falls: 3."

3. The number of nurses finding the Hazard Situation (Near-Miss or Close-Call Incidents) Observation Report work helpful decreased by 18% since last year. Note, however, that 36 nurses (75%) endorse this work, so I think it will probably continue. The subjects offered 15 descriptions of situations where this exercise was helpful, and these descriptions can be divided into the following three categories: "Notice something that could become hazardous: 7," "increased awareness: 7," and "create environment tailored to scope of patient activities: 1."

4. Finally, all 48 nurses agreed with the statement that they were "quite capable of caring for their patients while remaining aware of medical safety concerns during their clinical training," for an increase of 5%. The participants offered no descriptions of awareness situations (either last year or this year) regarding this statement.

It is apparent that the nursing students, even in the second semester of their third year in college, still retain much of what they learned from the various exercises in the medical safety theory course over a year ago: MY 5S, BEFORE and AFTER individual work, Hazard Prediction Training (KYT) group work, Hazard Situation (Near-Miss or Close-Call Incidents) Observation Report individual work, and the ability to care for patients while remaining keenly aware of medical safety concerns during their clinical training. The course exercises taught to second-year students during the second semester—(i) photographing and analyzing 5S situations as individual work, (ii) tackling KYT situations as group work by photographing, analyzing, and discussing situations in class, (iii) developing awareness of hazardous situations in medical sites while undergoing clinical training, and so on—were clearly very helpful to the nurses a whole year after they took the course. This suggests that the nurses will continue to draw upon the descriptions of beneficial situations and awareness they learned as they
deal with patients and users in the course of their clinical training.

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Consciousness Research of Teachers for Technology Education of Japanese Junior High Schools about 3D-CAD and 3D-Printer

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1. Introduction

The past few years, 3D-Printers are expected to be utilized as teaching materials because the price became down. Therefore, a training about 3D-CAD and 3D printer for teachers of technology education was implemented in August, 2015 and 13 teachers of supervisor level participated from each prefecture in Japan.

In the training, DesignSpark Mechanical were used as a free 3D-CAD software because of its high functionality, being free of charge and Japanese notation. Though most participants use 3D-CAD for the first time, they were able to master it to some extent through the training of approximately five hours. Furthermore, they worked on the design of original flowerpots and produced them using 3D printer.

According to the questionnaire result after the training, they had an extremely strong interest for use of 3D-CAD but they thought that introducing 3D printers into a class were difficult because the price of 3D printer is expensive for school and the time required for production is very long.

2. Summary of training

The contents of the training are technical intern training about 3D-CAD(4.5 hours), design of the original flowerpot as an exercise(1 hour), start of output with the 3D printer(0.5 hours) and discussion about introduction 3D-CAD and 3D printer to the class of the school. The contents of the technical intern training about 3D-CAD are as follows.

- Explanation of various tools included in 3D-CAD
- Three-dimensional drawing by turn
- Correction of the shape by stopgap
- Exercise of concrete drawings(Engine Parts, Mug cup, Bolt)
- Free curve, mirror, extension of straight line, pattern
- Sweep
- Basics of three-dimensional drawing
- Assembling of parts
- Drawing and transformation of spherical part
- Dividing method of parts
- Movement of sketching plane

3. Consciousness Research

Before and after the training, the consciousness research about 3D-CAD and 3D-Printer were carried out for participants. The items in the research are as follows.

(Q.1) Have you used 3D-CAD? When is it?
(Q.2) Are you interested in 3D printer?
(Q.3) Have you used 3D printer?
(Q.4) What do you want to make with 3D printer?
(Q.5) If you will let a junior high school students design and produce anything, what are they? Why?
(Q.6) Do you want to take in 3D-CAD and 3D printer for a technology class of the junior high school?

What kind of contents do you want to teach?

Before the training, 31% of participants have experience of 3D-CAD, 100% interested in 3D printer, 0% have experience of 3D printer, 62% want to take in 3D-CAD and 69% want to take in 3D printer for the class of the junior high school.
Improving Interpersonal Relationship Skills in University Students:
Development and Evaluation of a Program Combining Techniques from Emotional Education,
Assertion Training, and Project Adventure

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I. Problem and Aim

According to a report from Japan’s Ministry of Education, Culture, Sports, Science and Technology
1, an increasing number of university students are unable to get along well with other people, and the number of students
who refuse to go to school, take breaks from school, or drop out is on the rise. As a way to address these students’
problems, more universities are establishing specialized facilities for student counseling, such as counselor
positions, student guidance rooms, and counseling rooms (Ministry of Education
2).

Ishikuma3 proposes three stages of psychological assistance service. The first assistance service is intended for
all young students. According to Kondo4, the first assistance service contains facilitative assistance and
preventative assistance. Facilitative assistance is a service that supports the development of basic skills (for
example, interpersonal relationship skills, study skills, and problem-coping skills) necessary for tackling
developmental and educational issues that children face during their student lives. In other words, it is a service that
actively assists in the development of students’ personal resources or the skills young students need to tackle issues
and to cope with problems. The second service is preventative assistance intended for students who have greater
assistance needs and is based on the idea of trying not to let the problems grow so large that they interfere with the
children’s development (Japan Association of Educational Psychology5). The third assistance service targets
students who have very serious assistance needs (special students).

If we apply the thinking behind these three stages of psychological and educational assistance services to
university students, we could say that student guidance through counselors, which takes place at most universities
today, equates to the second or third assistance services. However, there are very few cases of facilitative assistance
services that aim to develop specific skills such as interpersonal relationship skills and problem-coping skills in
Japanese universities.

This study aimed to create a program that fosters university students’ social skills. Thereafter, the study intended
to implement the program in a university and investigate its effect on the students.
II. Methods

1. Program Implementation Methods

1) Implementation Form

The program was implemented through 15 lectures on “Human Relations” from a university’s Humanities and Liberal Arts department.

2) Implementation Subjects

126 university students, ranging from first-year to fourth-year students, at X University in Japan’s Kanto region, participated in the class.

2. Program Development

1) Program Goals

The goal of the program was to improve interpersonal relationship skills in university students. The program created was composed of three elements: emotion, behavior, and recognition (Figure 1). I devised a step-by-step process to study the three elements of emotion, behavior, and recognition to improve interpersonal relationship skills. This was based on the belief that, to be effective, skills (behavior) training was not enough. Therefore, it was necessary to acquire the ability to understand personal emotions through emotional education (emotions) and then acquire skills to appropriately express emotions using assertion training methods (behavior) while simultaneously learning about perceptions that hinder self-expression, which revolve around irrational beliefs (recognition). It was hypothesized that the stages a person must progress through until the material learned can be applied in everyday settings are knowledge (stage of knowing)→experience (stage of thinking and trying to apply knowledge to oneself)→integration (stage of integrating while utilizing the necessary knowledge for problem solving)→application and practice (stage of actively using these in everyday settings). The knowledge and experience stages were formed with on-campus lectures and exercises while the integration stage was formed with off-campus experiential learning through the Project Adventure (hereafter, PA) (Figure 1).

![Figure 1. Program Composition](image-url)
2) Program Content

Table 1 shows the details of the 15 lectures. Lectures 1 through 11 were held in classrooms at the university. Lectures 2 through 11 each included exercises (experiential) such as role playing, worksheets related to the lectures (knowledge), and lecture content. Each lecture was 90 minutes. Lectures 12 through 14 conducted the PA off-campus at an outside facility. The PA was a three-hour, half-day course. Lecture 15 was held at the classroom on-campus and comprised of wrapping-up and reviewed the entire course.

Table 1. Details of the 15 Lectures

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Lecture Content</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture 1</td>
<td>Orientation: Course Objectives</td>
<td></td>
</tr>
<tr>
<td>Lecture 2</td>
<td>Basic Theory of Interpersonal Communication: Know Yourself/Wanting to Treat Human Relations with Importance</td>
<td>Emotion</td>
</tr>
<tr>
<td>Lecture 3</td>
<td>Self-Expression (1) Assertion Theory I: Knowing Three Types of Self-expression</td>
<td>Recognition</td>
</tr>
<tr>
<td>Lecture 4</td>
<td>Self-Expression (2) Assertion Theory II: Why is Self-expression Difficult?</td>
<td>Recognition</td>
</tr>
<tr>
<td>Lecture 5</td>
<td>Self-Expression (3) Assertion Practice I: Connecting Emotions and Words (Gradations of Emotions)</td>
<td>Emotion</td>
</tr>
<tr>
<td>Lecture 6</td>
<td>Self-Expression (4) Assertion Practice II: Connecting Emotions and Words (Emotion Map)</td>
<td>Emotion</td>
</tr>
<tr>
<td>Lecture 7</td>
<td>Self-Expression (5) Assertion Practice III: Skills to Express Emotions (I-statements)</td>
<td>Behavior</td>
</tr>
<tr>
<td>Lecture 8</td>
<td>Self-Understanding (1) Irrational Beliefs That Affect Human Relations Theory I: Knowing the Right to Assertion</td>
<td>Recognition</td>
</tr>
<tr>
<td>Lecture 9</td>
<td>Self-Understanding (2) Irrational Beliefs That Affect Human Relations Theory II: Knowing Irrational Beliefs</td>
<td>Recognition</td>
</tr>
<tr>
<td>Lecture 10</td>
<td>Self-Understanding (3) Irrational Beliefs That Affect Human Relations Theory Practice: Change Your Way of Thinking</td>
<td>Recognition</td>
</tr>
<tr>
<td>Lecture 11</td>
<td>Exercise: Prior Learning and Preparation for Training Communication Skills to Help Everyday Conversation</td>
<td>Behavior</td>
</tr>
<tr>
<td>Lecture 12</td>
<td>Practical: Project Adventure</td>
<td>Integrated</td>
</tr>
<tr>
<td>Lecture 13</td>
<td>Practical: Project Adventure</td>
<td>Integrated</td>
</tr>
<tr>
<td>Lecture 14</td>
<td></td>
<td>Integrated</td>
</tr>
<tr>
<td>Lecture 15</td>
<td>Summarize Group Work: Discuss Awareness of Personal Human Relations</td>
<td>Integrated</td>
</tr>
</tbody>
</table>

3. Measurement

1) Emotional Intelligence/Social Skills

To investigate the program’s effect, I obtained responses for a social skills scale and an emotional intelligence scale before and after the program implementation. To assess social skills, I used Kikuchi’s social skills scale KiSS-18 (18 items, 6 scales: elementary skills, advanced skills, emotion processing skills, skills to replace aggression, skills to handle stress, and planning skills). For emotional intelligence, I used Toyota and Yamamoto’s emotional intelligence scale.
Japanese version of the emotional intelligence scale WLEIS (16 items, 4 subscales: emotional regulation, emotional evaluation of self, emotional evaluation of others, and use of emotions).

2) Connecting the PA with Class Content
To investigate how students connected the learned content from Lecture 2 to Lecture 11 with their experience in the PA practical learning, I conducted the following survey after the completion of the PA. Students were presented with the 21 keywords shown in Table 2 that clearly indicated the learned content from the lectures, along with simple explanations. They were instructed to “Please choose three keywords for which you feel there has been a related event or situation during your practical learning (PA).”

3) Connecting Class Content with Everyday Life
To investigate how students connected learned content from lectures to their everyday lives, I presented the keywords and explanations in Table 2, as in the previous survey, after the completion of Lecture 15. They were instructed to “Please choose three keywords learned in class that you feel are helpful in everyday life and that interested you.”

Table 2. Lecture Content: 21 Keywords

<table>
<thead>
<tr>
<th>Keywords</th>
<th>Category</th>
<th>Explanation</th>
<th>Lecture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information and emotional exchange</td>
<td>Emotion</td>
<td>The most important feeling is “wanting to talk.” If you try to have a conversation without feelings, it becomes simply an exchange of information, and it becomes difficult to understand what you really want to say. It’s better if you can have an exchange of feelings.</td>
<td>Lecture 2</td>
</tr>
<tr>
<td>Assertive self-expression</td>
<td>Recognition</td>
<td>There are three types of self-expression: A) nonassertive (yourself○ / your partner×), B) aggressive (yourself× / your partner○), and C) assertive (yourself○ / your partner○). Assertive self-expression is self-expression that honors both yourself and your partner.</td>
<td>Lecture 3 Lecture 4</td>
</tr>
</tbody>
</table>
| Three components of understanding emotions    | Emotion        | I Question: What kind of feeling?  
II Direction: To whom is it directed? In response to what?  
III Amount: How strong is it?  
If you understand emotions through these three components, they become easier to organize and easier to understand. | Lecture 5 |
<p>| Sympathy and empathy                          | Emotion        | To someone who says “My stomach hurts, that’s why I feel terrible…” | Lecture 5 |</p>
<table>
<thead>
<tr>
<th></th>
<th>Understanding one’s emotions</th>
<th>Emotion</th>
<th>A reason self-expression is difficult is because one does not understand his/her own feelings. The Gradations of Emotions and Emotion Map was a teaching material aimed at self-understanding of one’s emotions. Clearly understanding one’s own feelings is the first step toward skilled communication.</th>
<th>Lecture 5 Lecture 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>I-messages and you-messages</td>
<td>Behavior</td>
<td>An I-message is a way of expressing feelings by making one’s self the subject, as in “I feel …” or “I think ….” It is an expression skill for skillfully relating one’s emotions. A you-message is an expression that makes the other (you) the subject, as in “You are ….” It is easy to feel blamed and unpleasant when you hear this type of statement.</td>
<td>Lecture 8</td>
</tr>
<tr>
<td>7</td>
<td>Assertion right I: The right to be respected</td>
<td>Recognition</td>
<td>“I have the right to be respected by anyone and to be treated as important.”</td>
<td>Lecture 9</td>
</tr>
<tr>
<td>8</td>
<td>Assertion right II: The right to choose one’s own behavior</td>
<td>Recognition</td>
<td>“I have the right to choose my own behavior, such as whether to meet the expectations of others, and to express this behavior and take responsibility for the results.”</td>
<td>Lecture 9</td>
</tr>
<tr>
<td>9</td>
<td>Assertion right III: The right to make a mistake and take responsibility for it</td>
<td>Recognition</td>
<td>“I have the right to make a mistake and take responsibility for it.” ⇒It is important to create the opportunity for atonement regarding human failures, and you can have confidence precisely because you have the right to fail.</td>
<td>Lecture 9</td>
</tr>
<tr>
<td>10</td>
<td>Assertion right IV: The right to get what one pays for</td>
<td>Recognition</td>
<td>“I have the right to get what I pay for.” For example: If you are paying the medical fee, it is okay to tell the doctor your requests and ask what you want.</td>
<td>Lecture 9</td>
</tr>
<tr>
<td>11</td>
<td>Assertion right V: The right to not</td>
<td>Recognition</td>
<td>“I have the right to not assert myself.” ⇒It is okay to choose at your own risk whether to</td>
<td>Lecture 9</td>
</tr>
<tr>
<td></td>
<td>assert oneself</td>
<td>assert yourself or not.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 12 | How are emotions produced? | Recognition | × A (event)→C (emotion)  
○ A (event)→B (How do you perceive it?)→C (emotion)  
Situations and events do not directly produce emotions, but emotions are caused depending on how you perceived the event. |
| 13 | Irrational beliefs a.  
People have to be liked by everyone and always be accepted. | Recognition | How can I change these beliefs?  
“It is nice to be liked by people, but I won’t always be liked by everyone, and I definitely do not have to be liked.” |
| 14 | Irrational beliefs b.  
People should be perfect and cannot fail. | Recognition | How can I change these beliefs?  
“Try to do the things that I do anyway the best I can.” |
| 15 | Irrational beliefs c.  
It is the end of the world if things don’t go as expected. | Recognition | How can I change these beliefs?  
“Search for a way to improve the situation.” |
| 16 | Irrational beliefs d.  
It is not good to hurt others. Therefore, people who hurt others should be held responsible. | Recognition | How can I change these beliefs?  
If I have hurt someone, “How can I repair it?”  
If I have been hurt, “Tell them gently.” |
| 17 | Irrational beliefs e.  
When fear arises in response to danger, one becomes anxious and is unable to do anything | Recognition | How can I change these beliefs?  
Before thinking “It’s hopeless,” think “I’ll manage somehow.” |
| 18 | Try to open oneself up | Recognition | It is difficult to become close to people without letting them know about yourself. Let people know about your thoughts and feelings, even a little at a time is acceptable. |
### 4. Ethical Considerations

I explained to the participants that responding to the scales was not mandatory. In addition, written consent was obtained for the data to be aggregated and presented in a form that does not identify individuals.

### III. Results

1) **Emotional Intelligence/Social Skills**

Paired *t*-tests for the social skills and emotional intelligence subscales were conducted (Table 3, Table 4). For all subscales, there was a significant difference in average scores and post-implementation scores showed improvement over pre-implementation scores.
Table 3. Social skills scale (KiSS-18), average scores (standard deviation), and t-test results and effect size

<table>
<thead>
<tr>
<th></th>
<th>Before Implementation (n = 126)</th>
<th>After Implementation (n = 126)</th>
<th>t-value</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>September 2014</td>
<td>January 2015</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary skills</td>
<td>9.53 (2.37)</td>
<td>10.55 (2.12)</td>
<td>6.25 ***</td>
<td>.45</td>
</tr>
<tr>
<td>Advanced skills</td>
<td>10.37 (1.79)</td>
<td>10.98 (1.93)</td>
<td>4.15 ***</td>
<td>.33</td>
</tr>
<tr>
<td>Emotional Processing skills</td>
<td>9.40 (1.90)</td>
<td>10.14 (1.81)</td>
<td>5.19 ***</td>
<td>.40</td>
</tr>
<tr>
<td>Aggression-replacement skills</td>
<td>9.40 (1.77)</td>
<td>9.89 (1.88)</td>
<td>2.89 **</td>
<td>.27</td>
</tr>
<tr>
<td>Stress-handling skills</td>
<td>10.08 (1.88)</td>
<td>10.47 (1.93)</td>
<td>2.24 *</td>
<td>.21</td>
</tr>
<tr>
<td>Planning skills</td>
<td>10.36 (2.20)</td>
<td>10.85 (2.12)</td>
<td>3.29 **</td>
<td>.23</td>
</tr>
</tbody>
</table>

Values in brackets show standard deviation; the score range for all was 3–15. *p<.05, **p<.01, ***p<.001

Table 4. Emotional intelligence scale (Japanese version WLEIS), average values (standard deviation), and t-test results and effect size

<table>
<thead>
<tr>
<th></th>
<th>Before Implementation (n = 126)</th>
<th>After Implementation (n = 126)</th>
<th>t-value</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>September 2014</td>
<td>January 2015</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional regulation</td>
<td>17.32 (4.10)</td>
<td>18.79 (3.73)</td>
<td>5.35 ***</td>
<td>.38</td>
</tr>
<tr>
<td>Emotional evaluation of self</td>
<td>19.71 (3.49)</td>
<td>21.19 (3.36)</td>
<td>5.91 ***</td>
<td>.43</td>
</tr>
<tr>
<td>Emotional evaluation of others</td>
<td>19.07 (3.72)</td>
<td>20.88 (7.38)</td>
<td>2.87 **</td>
<td>.31</td>
</tr>
<tr>
<td>Use of emotions</td>
<td>16.28 (4.81)</td>
<td>17.43 (4.62)</td>
<td>4.19 ***</td>
<td>.24</td>
</tr>
</tbody>
</table>

Values in brackets show standard deviation, the score range for all was 4–28. *p<.05, **p<.01, ***p<.001

2) Connecting PA and Class Content

Figure 2 shows the aggregated survey results from our investigation on how the students were connecting content learned in class to experiences in the practical learning PA.
Figure 2. Keywords that were likely associated with events and situations during the PA (multiple responses)

a) 1–21 show the 21 keywords from Table 2.

b) The bar graph colors show categories: red (emotion), green (behavior), and blue (recognition).

The recognition category “18. Try to open oneself up” received the greatest number of nominations, followed by the recognition category “14. Irrational beliefs b. People should expect perfection and never fail”; the emotion category “1. Exchanging not just information but also feelings”; and the behavior category “19. Try to provide added ("bonus") information”; and “21. Become a better listener.” Meanwhile, the following categories each received less than three responses: recognition categories “13. Irrational beliefs a. People have to be liked by everyone and always be accepted,” “10. Assertion right IV: The right to get what one pays for,” “12. How are emotions produced?” and “16. Irrational beliefs d. It’s not good to hurt others. Therefore, people who hurt others should be held responsible”; and the emotion category “3. Three components of understanding emotions.”

3) Connecting Class Content to Everyday Life

Figure 3 shows the aggregated results from the survey investigating how learned content from lectures was connected to everyday life.

Similarly, for the PA results, the recognition category “18. Try to open oneself up” received the most responses. Next were the behavior categories “21. Become a better listener,” “20. Open questions and closed questions,” and “6. I-messages and you-messages,” followed by the emotion categories “4. Sympathy and empathy” and “1. Exchanging not just information but also feelings.” Meanwhile, the emotion categories “9. Assertion right III: The right to make a mistake and take responsibility for it,” “17. Irrational beliefs e. When fear arises in response to danger, one becomes anxious and is unable to do anything,” “10. Assertion right IV: The right to get what one pays for,” and “16. Irrational beliefs d. It’s not good to hurt others. Therefore, people who hurt others should be held
responsible” each received less than five responses.

Figure 3. Keywords that were felt to be helpful in everyday life and that students gained interest in (multiple responses)

a) 1–21 show the keywords from Table 2.

b) The bar graph colors show categories: red (emotion), green (behavior), and blue (recognition).

IV. Discussion

The \( t \)-test results confirmed that post-implementation scores for both social skills and emotional intelligence were higher than pre-implementation scores. Therefore, I found that the development and implementation of this program had a certain level of effect on university students’ interpersonal relationship skills.

The investigation on the connection between the PA and class content showed many responses for keywords pertaining to all three elements (emotion, behavior, and recognition) learned in class that students felt related to events and situations in the experiential learning. This suggested that the PA fulfilled a role in the integration stage, in which the students integrate learning while utilizing necessary knowledge for problem solving, as was intended during the program’s creation. However, it was found that some content was difficult to connect to the PA activities.

Similar to the PA results, the investigation on the connection between class content and everyday life showed that all three elements (emotion, behavior, and recognition) learned in class were helpful in everyday life. This suggested that it is possible to connect content learned in class to application and practice in everyday life (stage of active use in everyday settings) through knowledge (stage of knowing), the experience of exercises in lectures (stage of thinking and trying to apply knowledge to oneself), and integration through the PA (stage of integrating while utilizing necessary knowledge for problem solving). However, I also found that within the recognition categories, some content is difficult to connect to everyday life. In the future, I aim to perform more specific investigations on the factors that raise social skills and emotional intelligence and use these as foundational data for program improvement.
【References】


<table>
<thead>
<tr>
<th>Title of the submission</th>
<th>Implementing Story Maps for Elementary School EFL Learners</th>
</tr>
</thead>
<tbody>
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<td>Name of the author</td>
<td>Pei-Yi Wei</td>
</tr>
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</table>
Implementing Story Maps for Elementary School EFL Learners

Pei-Yi Wei

ABSTRACT

The proposal will examine the effect of story maps implementation on the reading comprehension of elementary school students in Taiwan. The research questions of this study are presented as follows: (1) Will implementation of story maps enhance EFL students’ reading comprehension as assessed by recall? (2) How do EFL students make progress on the products of story maps over time? The participants will be about sixty elementary school students in Hsinchu City. Prior to the treatment session, all participants will complete a pretest first. For the treatment weeks, the experimental group (n=30) will receive instruction of story maps, including Story Elements and Story Mountain designed by the researcher. For the control group (n=30), instead of story maps, the researcher will ask questions about the story. After the treatment, all the participants will be given the posttest and a questionnaire. ANOVA was used to examine whether the training of story maps enhance EFL students’ reading comprehension. In order to see if there is any improvement in the product of story maps over time, the participants’ worksheets of story maps will be compared. Additionally, the researcher will do the triangulation through comparing the results of analysis with the participants’ questionnaire.
Purpose of the study

The purpose of this proposal is to examine the effect of story maps implementation on the comprehension of elementary school students in Taiwan.

Theoretical framework

Reading comprehension

Reading comprehension is defined as an interaction between readers’ linguistic competence and experience and writer’s idea through a text (Phuakpong, 2013). The general definition of reading comprehension is the interpretation of the information in the text. As for the essential of comprehension, it is readers’ ability to mentally interconnect different events in the text and form a coherent representation of what the text is about. (Kendeou et al., 2007) Reading comprehension involves higher level language skills and lower level language skills. Higher level language skills involve the integration of information across sentences and ideas in a text including inference and integration, comprehension monitoring, and knowledge about text structure. These skills are important for comprehension because they help the reader to construct an integrated and coherent model of a text’s meaning. However, young children’s reading comprehension is strongly predicted by other lower level language skills, such as word reading accuracy and verbal and semantic skills (Cain, Oakhill & Bryant, 2004).

Story Maps

The term “story schema” is defined as an idealized internal representation of the parts of a story and the relationships among those parts (Mandler, & Johnson, 1977). A formal device for capturing the important properties of a story schema is “story grammar” (Graesser, Golding, & Long, 1991, p. 179). Many researchers (Mandler & Johnson, 1977; Rumelhart,
1980; Stein & Glenn, 1979; Thorndyke, 1977) have conducted empirical research on story grammars and found that story grammars are not only good descriptions of a class of narratives but also effective predictors of comprehension (Fitzgerald, 1989, 1992; Graesser et al., 1991). Various story grammar structures, outlines, or graphic representations such as story maps can be used to facilitate students' development of story schema and promote their reading comprehension (Baumann & Bergeron, 1993).

Story mapping is a visual-spatial representation of key information in narrative text. Story maps can direct students’ attention to relevant elements of stories through specific structure (Boulineau, Fore, Hagan-Burke, & Burke, 2004). Readers can use story maps before reading, while reading and after reading (Boulineau, Fore, Hagan-Burke & Burke, 2004). Before reading a passage, story maps can help readers elicit prior knowledge and record relevant information about a topic. The use of story maps serves as guidance for readers to record important information while reading and provides a way to review after reading.

Story-mapping procedures have been used, modified, studied, and evaluated with readers with different grade levels (Beck & McKoewen, 1981). Story maps have been utilized to increase readers’ reading comprehension through prompting them to recognize story elements such as character, setting, and problem (Dimino, Taylor, & Gersten, 1995); organizing the sequence of the story (Pearson, 1985); and making connections between story components (Pearson, 1982).

**Research questions**

The research questions of this study are presented as follows: (1) Will implementation of story maps enhance EFL students’ reading comprehension as assessed by recall? (2) How do EFL students make progress on the product of story maps over time?
Method

Participants

The participants will be two classes of sixth graders in an elementary school in Hsinchu city. Class A which includes about 30 students will be the experimental group. Class B which contains about 30 students will be the control group. All of them have accepted formal English learning since they were in the third year of elementary school.

Instruments

Reading materials. The main reading materials will be the following eight picture books: The Very Hungry Caterpillar, A Bit Lost, A Mother for Choco, The Pig’s picnic, The Smartest giant in The Town, Farmer Duck, The Mixed-Up Chameleon, and A Good Day (Appendix A). There are three main reasons why the researcher chooses them: (1) interesting plot which can grasp the participants’ attention, (2) repeated sentences which can facilitate the participants’ understanding of the story, and the most important one (3) clear structure which is suitable to design story maps.

Story maps. Two kinds of story maps designed by the researcher are used in this study: Story Elements and Story Mountain. Story Elements contain four main elements in the story, including character, setting, problem, and solution. Story Mountain is a visual display of story structure in the shape of mountain. It can make readers recognize important events (beginning, climax, and ending) and supporting details in the story.

Study design and procedure

This research will be conducted for 18 weeks. For the Week 1, all the participants will take the pretest. The treatment weeks (Week 2 ~Week 17) include 8 cycles, each containing two session-weeks, during which one book will be covered. Both groups will undergoing the same activities which include reading instruction and reviewing the story in each cycle,
except the following differences. For the first session of each cycle, the experimental group will have Story Elements. In the second session, they do the Story Mountain. As for the control group, instead of Story Elements, the teacher will ask questions about the elements in the story in the first session. In the second session, the teacher will ask questions about the more detail plots of the story. For the Week 18, all the participants will be given the posttest and a questionnaire.

<table>
<thead>
<tr>
<th>Week</th>
<th>Class A (Experimental group)</th>
<th>Class B (Control group)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pretest</td>
<td>Pretest</td>
</tr>
<tr>
<td>2</td>
<td>Story(1): Reading instruction + story elements</td>
<td>Story(1): Reading instruction + Qs</td>
</tr>
<tr>
<td>3</td>
<td>Story(1): Review + story mountain</td>
<td>Story(1): Review + Qs</td>
</tr>
<tr>
<td>4</td>
<td>Story(2): Reading instruction + story elements</td>
<td>Story(2): Reading instruction + Qs</td>
</tr>
<tr>
<td>5</td>
<td>Story(2): Review + story mountain</td>
<td>Story(2): Review + Qs</td>
</tr>
<tr>
<td>6</td>
<td>Story(3): Reading instruction + story elements</td>
<td>Story(3): Reading instruction + Qs</td>
</tr>
<tr>
<td>7</td>
<td>Story(3): Review + story mountain</td>
<td>Story(3): Review + Qs</td>
</tr>
<tr>
<td>8</td>
<td>Story(4): Reading instruction + story elements</td>
<td>Story(4): Reading instruction + Qs</td>
</tr>
<tr>
<td>9</td>
<td>Story(4): Review + story mountain</td>
<td>Story(4): Review + Qs</td>
</tr>
<tr>
<td>10</td>
<td>Story(5): Reading instruction + story elements</td>
<td>Story(5): Reading instruction + Qs</td>
</tr>
<tr>
<td>11</td>
<td>Story(5): Review + story mountain</td>
<td>Story(5): Review + Qs</td>
</tr>
<tr>
<td>12</td>
<td>Story(6): Reading instruction + story elements</td>
<td>Story(6): Reading instruction + Qs</td>
</tr>
<tr>
<td>13</td>
<td>Story(6): Review + story mountain</td>
<td>Story(6): Review + Qs</td>
</tr>
<tr>
<td>14</td>
<td>Story(7): Reading instruction + story elements</td>
<td>Story(7): Reading instruction + Qs</td>
</tr>
<tr>
<td>15</td>
<td>Story(7): Review + story mountain</td>
<td>Story(7): Review + Qs</td>
</tr>
<tr>
<td>16</td>
<td>Story(8): Reading instruction + story elements</td>
<td>Story(8): Reading instruction + Qs</td>
</tr>
<tr>
<td>17</td>
<td>Story(8): Review + story mountain</td>
<td>Story(8): Review + Qs</td>
</tr>
<tr>
<td>18</td>
<td>Posttest + Questionnaire</td>
<td>Posttest + Questionnaire</td>
</tr>
</tbody>
</table>

*Common Procedure across Two Groups*

For the procedure of the reading instruction for the first week of each cycle, the teacher will use picture books as materials and 1) tell the story to the students. In order to make the
participants more familiar with the vocabulary in the story, the teacher will 2) teach the words with word cards and visual aids, followed by 3) word activities including matching game, word-search and word-cross. After the participants learn the vocabulary, the teacher will 4) give story script and do the read aloud.

Since not all participants in Class A known the concept of story maps before, the researcher would like to make them do the story maps from group discussion to individual work in order to provide the scaffolding for them. From Week 2 to Week 5, the participants will collaborate with their group members and complete the story maps [Appendix B]. From Week 6 to Week 9, they will do the story maps individually. From Week 10 to Week 13, they will do the story maps with some hints individually [Appendix C]. From Week 14 to Week 17, they will do the story maps with no hints individually [Appendix D]. Additionally, the participants in Class A will take the class reflections in certain four weeks (Week 5, 9, 13, 17).

**Data Collection**

The data include results of participants’ pretests and posttests from both groups, and Experimental Groups’ worksheets of story maps, class reflections and questionnaires.

*Pretest and posttest.* In order to see if E Group participants make progress on reading
comprehension after the treatment, both groups are asked to take the pretest/posttest before/after the treatment. In both pretest and posttest, they have to read a picture book and do the recall (in English or Chinese).

Class reflections. Because the participants may not be familiar with the story maps, the researcher would like to know their E Group students opinions of it. If the participants have any learning problem, E Group students can also write them down in the reflections. [Appendix E]

Questionnaire. In order to obtain qualitative data, a questionnaire is designed to help the researcher understand the participants’ feelings of story maps. The researcher would like to know if the participants can understand the elements in the story from story element. Additionally, the researcher wants to see if they can understand the structure of the story and find the important events (beginning, climax and ending) through Story Mountain. [Appendix F]

Data Scoring

To score the recall data (pretest and posttest), two raters will read the story and point out the important events and supporting details. Then, two raters will check the participants’ recall data and count the points they get. One important event counts two points and one supporting detail count one point.

Data Analysis

Quantitative analysis. The researcher will compare the posttests of Class A & B, with pretest scores covariated, using ANCOVA analysis and see if the training of story maps enhance EFL students’ reading comprehension. The results of analysis can be used to answer the first research question.

Qualitative analysis. The data resource will mainly from the worksheets of the story maps
and the questionnaire. The researcher will compare the participants’ worksheets of story maps (Week 2 to Week 17) in order to see if there is any improvement in the product of story maps over time. Additionally, the researcher can do the triangulation through comparing the results of analysis with the participants’ questionnaire. This analysis can be used to answer the second research question.


## Appendix A

<table>
<thead>
<tr>
<th>Story (1): The Very Hungry Caterpillar</th>
<th>egg, caterpillar, cocoon, butterfly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Story (2): A Bit Lost</td>
<td>bear, rabbit, frog, bird</td>
</tr>
<tr>
<td>Story (3): A Mother for Choco</td>
<td>giraffe, penguin, walrus, wings, cheeks, feet</td>
</tr>
<tr>
<td>Story (4): The Pig’s picnic</td>
<td>lion, fox, zebra, hair, tail, stripes</td>
</tr>
<tr>
<td>Story (5): The Smartest giant in The Town</td>
<td>shirt, tie, belt, pants, socks, shoes</td>
</tr>
<tr>
<td>Story (6): Farmer Duck</td>
<td>duck, farmer, sheep, cow, hen</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------------------------------</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Story (7): The Mixed-Up Chameleon</th>
<th>chameleon, polar bear, flamingo, fox, fish, deer, turtle</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Story (8): A Good Day</th>
<th>Bird, dog, squirrel, fox</th>
</tr>
</thead>
</table>
### Appendix B

**Story elements**

<table>
<thead>
<tr>
<th>Character</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>🐦, 🦁, 🦜, 🐻</td>
<td></td>
</tr>
<tr>
<td>🐧, 🦊, 🦝</td>
<td></td>
</tr>
</tbody>
</table>

**Problem**

Choco wants to find his ______

**Solution**

_______ can be Choco’s mother.

---

**Story Mountain**

Look at the pictures and answer the questions.

1. What is Choco’s problem?
   
2. Mrs.____ can’t be Choco’s mother
   because ______________________

3. Mrs.____ can’t be Choco’s mother
   because ______________________

4. Mrs.____ can’t be Choco’s mother
   because ______________________

5. Why does Choco cry?
   
6. Mrs.____ could be Choco’s mother
   because she can ____________

7. What happened at the end of the story?

---
Appendix C

Story elements

Character

Setting

Problem

Solution

Book: 

Class: 

Name: 

------

Story Mountain

Look at the pictures and write down the plot of the story.

1. What is Choco's problem?

2. 

3. 

4. 

5. Why does Choco cry?

6. 

7. What happened at the end of the story?
Appendix D

Book: ________________

Class: ________

Name: ________

Character                      Setting

Problem                      Solution

Write down the plot of the story.

1.  

2.  

3.  

4.  

5.  

6.  

7.  

5.
課堂反思

在這幾次的英文故事課中……
1. 我有專心在上課。
   □非常同意 □同意 □還好 □不同意 □非常不同意
2. 我能聽懂老師說的英文故事。
   □非常同意 □同意 □還好 □不同意 □非常不同意
3. 我能參與課堂中的英文單字練習遊戲。
   □非常同意 □同意 □還好 □不同意 □非常不同意
4. 我能和老師一起閱讀故事文本。
   □非常同意 □同意 □還好 □不同意 □非常不同意
5. 我能和組員合作，完成故事元素圖(Story elements)。
   □非常同意 □同意 □還好 □不同意 □非常不同意
6. 我能和組員合作，完成故事山峰圖(Story mountain)。
   □非常同意 □同意 □還好 □不同意 □非常不同意
7. 我能和組員合作，完成故事大意(Story summary)。
   □非常同意 □同意 □還好 □不同意 □非常不同意
8. 我喜歡哪些課堂活動？為什麼？(可複選)
   □說故事 __________________________________________
   □單字練習遊戲 ______________________________________
   □閱讀故事文本 _______________________________________
   □故事元素圖(Story elements)學習單 ______________________
   □故事山峰圖(Story mountain)學習單 _____________________
   □故事大意(Story summary)學習單 _______________________
9. 哪些課堂活動對我來說有點困難？為什麼？(可複選)
   □說故事 __________________________________________
   □單字練習遊戲 ______________________________________
   □閱讀故事文本 _______________________________________
   □故事元素圖(Story elements)學習單 ______________________
   □故事山峰圖(Story mountain)學習單 _____________________
   □故事大意(Story summary)學習單 _______________________
10. 我還有一些話想對老師說……
     _____________________________________________________
問卷

1. 這學期的英文故事課，我有專心在上課。
   □ 非常同意 □ 同意 □ 還好 □ 不同意 □ 非常不同意

2. 我認為故事元素圖(Story elements)可以幫助我理解故事元素。
   □ 非常同意 □ 同意 □ 還好 □ 不同意 □ 非常不同意

3. 我認為故事山頂圖(Story mountain)可以幫助我理解故事結構和發生順序。
   □ 非常同意 □ 同意 □ 還好 □ 不同意 □ 非常不同意

4. 我學會找出故事的開頭(beginning)、轉折點(turning point)和結尾(ending)。
   □ 非常同意 □ 同意 □ 還好 □ 不同意 □ 非常不同意

5. 我可以獨立完成故事元素圖(Story elements)。
   □ 非常同意 □ 同意 □ 還好 □ 不同意 □ 非常不同意

6. 我可以獨立完成故事山頂圖(Story mountain)，找出故事的開頭(beginning)、轉折點(turning point)和結尾(ending)。
   □ 非常同意 □ 同意 □ 還好 □ 不同意 □ 非常不同意
Touching the Future:
A Model Science Courses for Pre-service Teachers

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Abstract
In our work with students preparing to become K-12 teachers, we at the California Polytechnic University, Pomona have developed and, now present a science course that provides the state, and the nation, with a model of professional development for teachers in science. Our new course is constructivist, and uses hands-on, learner-centered activities so that students experience and more deeply learn important principles. Several types of evaluations have been conducted over time, looking at both affective and cognitive domains. The results reveal that students show increased learning, as well as increased interest in, and comfort with, science. The course offers innovations that can be transferred to other university settings, and allows enhancements with new technologies. Here we will Share the development, conduct, and evaluation of a model science course for pre-service teachers grounded in science education reform efforts.
Introduction:
We believe that by creating good science teachers we are indeed, “Touching the Future”. In our work with “students preparing to become K-12 teachers”, we at Cal Poly Pomona University have developed and, now present, a science course that provides the state, and the nation, with a model of professional development for teachers in science. The Cal Poly Pomona work has allowed us to create the first course in the undergraduate science program at Cal Poly Pomona to use an approach truly in tune with the national science reform efforts. Our new Chemical Sciences course uses hands-on, learner-centered activities so that students experience science, and therefore more deeply learn important chemical principles.

In the book “College Pathways To the Science Education Standards” (2001 NSTA press: The Role for Higher Education) the point is made that teaching science to “non-science” majors is extremely important work.

“These are the people who will guide the future of society’s endeavors, and they will base their decisions on their understanding of science and technology and its impact in their lives.
Of the non-majors we teach, there may be no more important group than those preparing to become K-12 teachers. These students will carry the primary message of science understanding to society. It is particularly important that they experience good and varied models of science instruction, rather than just lectures, verification-type laboratories, and textbook assignments that typify most college science courses.”

With the award of a National Science Foundation grant, and a grant from NASA, we put together a course development team, to transform our traditional non-majors course into a course design for pre-service teachers.

"The strongest programs result from collaborations among teachers, developers (such as university faculty science education coordinators and teachers), and other stakeholders”

National Science Education Standards

Our Cal Poly course development team consisted of two mentor teachers, two Cal Poly Pomona graduates who were fourth year teachers, two Cal Poly Students of Education, the two full time Cal Poly Faculty who led Chemical Sciences course, and the chair of the Teacher Education Program. The development team met twice a month over a period of four months in designing and planning this course.
Our new “Chemical Sciences” course is based on the fundamental belief that the most effective learning occurs through inquiry based, learner-centered, and constructivist investigations. Our team developed the learning experiences that provide students with a solid base of knowledge and understanding. Those experiences are also models of teaching and learning from which our students may draw upon when they assume their roles as facilitators in the K-8 science classroom. Through this course our prospective K-8 teachers are not only competent in content, but are also comfortable with teaching science.

Our project began with three important goals:
1. To increase the chemical knowledge base of pre-service teachers, using hands-on, learner-centered, inquiry based, reflective pedagogies.
2. To provide experiences that enable the students to become life long learners of science.
3. To provide undergraduates with experiences in elementary schools by having them conduct activities as part of an after school science club for children. There is agreement that school experiences with children make better teachers.

The New Course Description
Traditionally the Chemical Sciences course was taught as a lecture and a separate laboratory. The course included topics from atomic structure to drugs and medicines. In the course, the entire class of about 50 students met in a "lecture room" twice a week for an hour and fifteen minutes. The class was divided into two "lab" sessions, which met once a week for three hours (from 4:00-7:00 p.m.) The only scheduling change made to accommodate our new course design was to schedule our lab time one hour earlier (3:00-6:00 p.m. to accommodate after-school visits to area elementary schools). The new course contained all the same topics. As a result of discussions and planning our Cal Poly Pomona team modified the Chemical Sciences course to include the following innovations.

I. Science clubs at local elementary schools to involve college students with elementary school children; there are 2-4 schools and up to 200 elementary children involved each year.

II. The total integration of "lecture" and laboratory" to assure best use of time and relevance of activities.

III. A new textbook approach that is investigative and activity based to model teaching and stimulate higher-level learning.
IV. **Papers on people in science** so that our pre-service teachers have an appreciation of the human dimension of science, and have models to share with children.

V. **Directed inquiry laboratory activities** to have students experience science investigations.

VI. **Collaborative test taking** to promote the view that sharing and talking enhance learning, and that fellow students are sources of information and support.

VII. **Speakers** to offer some real-life examples of professional chemists and elementary science teaching.

VIII. **Weekly journal entries (blue books)** so that students can share insights and questions with the instructors and get regular feedback.

IX. **Team teaching** which provides students with more than one outlook and approach to teaching and chemistry.

Below is a more detailed description of each component.

I. **Science clubs:**

“I enjoyed the Science club requirement, before this I really had no idea what it would be like to be in a classroom…. I learned a lot about myself.”

Student Comment*

To enhance students’ learning and to give them a taste of teaching children, our students were asked to share their science learning with children at local elementary and middle schools. Two of their laboratory periods required them to go into a school and share science with kids there.

After-school science clubs were established at four elementary schools in the first quarter, each with about 25 students. The program was so successful and popular that a fifth school asked to be involved and was included in the second quarter. The after school science clubs were set up to be at nearly the same time as our scheduled 3:00 p.m. lab. The clubs met after school for one hour for four weeks (one school made it five weeks by setting up a visit to our university). The site teacher did all the school site coordination and management of the club, and monitored our students. Our students worked in teams to share activities with ten to fifteen kids. One pair of students from our course was assigned at each school as coordinators. They organized the Cal Poly Pomona student groups for
site visits and they were present at each of the after school science clubs to provide additional support whenever needed. The coordinators appreciated the opportunity to be able to observe the variety of activities done in the science clubs.

Activities done by elementary school kids in the science clubs were chosen, as much as possible, to reflect and enhance the Chemical Sciences course material. Therefore, many of our students took science club activities from the Wonder Science book. Each pair of students prepared activities including the teaching methods and materials. The activities done ranged from making rain sticks to studying the properties of water using games.

During the first quarter some clubs were held on days other than those scheduled for our class. These were not continued because of low student participation.

In an end-of-course survey, more students indicated “science clubs” as “the best part of the course” than any of the other components.

The schools and the site teachers were all very excited about the science clubs. One site teacher said, “This has been a wonderful experience for our students. They look forward to it with delight.”

II. The total integration of "lecture" and "laboratory"

At least part of the designated lecture time was used having the students carry out chemistry activities which illustrated, reinforced, or brought into question some basic chemical concepts. These types of activities were traditionally done only during the “lab” time. For example, students prepared slime the first week of class as a way of investigating some of the properties of liquids and solids. They then took the slime home for further study. Students learned about acids and bases and the pH scale through the analysis of household materials using purple cabbage juice. They also carried out chemical tests for carbohydrates and proteins on foods. Students also prepared ice cream where they learned about the relationship between energy and changes of state. Students used molecular models to learn about the three dimensional aspects of simple molecules, about isomers in organic chemistry, and about polymerization reactions.

The lab time, with its smaller groups, was sometimes used for instructional dialog, for presentations of the people paper poster, for discussions of chemical
issues related to the environment or the public policy, and finally for school club visits.

The integration of lecture and laboratory has enabled us to model the important and necessary connection between chemical content knowledge and its practical applications. The inclusion of discussions, presentations, and school site visits as part of the laboratory also reinforces the idea that chemistry is more than just chemical facts. This integration is also an effective way for professors to model the active learning pedagogies that pre-service elementary teachers can use when they go into the classroom.

III. **A new textbook approach**

*The Wonder Science book will be a great resource. The Wonder Science book will be extremely useful in the classroom.... Valuable resources*

Student comment*

We believed that the text should not only be a source of basic chemical facts but also provide real life practical applications of these principles. For this reason we chose the Wonder Science book published by the American Chemical Society and the Usborne Chemical Dictionary as texts for the course. The Wonder Science book is a collection of science activities for adults to share with kids. It is a resource that students value and retain after the course is over. The dictionary was chosen because it provides quick, straightforward answers to student questions. We also developed supplemental handouts and worksheets for many of the topics for added reinforcement throughout the course.

Weekly homework assignments were made from the Wonder Science text. This ensured that students made the connection between abstract chemical concepts and their physical manifestations in the real world. These assignments also reinforced the idea that chemistry is accessible to all. Often times these assignments were focal points for discussions in the class.

IV. **Papers on people in science**

*I think the people paper was on of my favorite assignments ... It is important for us to learn about the contributions of minorities and women, especially living in Southern California, which is culturally diverse. The people paper is a great way to form a connection with chemists and to discover why some people enjoy chemistry.*

Student comment*

Science is the human activity of discovery. Stories and information about people, events, and ideas bring science to life for teachers and students. Students were
given a list of chemists to choose from for the paper and they were encouraged to work with partners on the people paper and presentation. Students’ papers were bound into a booklet so they will be able to use these as a resource when they get into the classroom. The papers were indexed according to both gender and ethnicity. Of the 28 people profiled in the one quarter, 13 were women and 12 were minorities. Likewise in another quarter, of the 27 people profiled, 13 were women and 9 were minorities. The production of the booklet by the class enabled the students to realize that they could successfully collaborate to develop curricular material. The booklets will be put on the web site.

V. Directed inquiry laboratory activities

*I liked that we were able to find things out for ourselves. They helped bring chemistry to a “real life” level. Fun and Interesting!!!*

Student comment*

The laboratory activities were framed in a real life scenario to stimulate investigation and collaborative problem solving. They were planned to give students experiences with chemistry and to illustrate concepts. For example students learned about heat and chemical reactions through the following:

<table>
<thead>
<tr>
<th>Energy Content of Nuts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your company is interested in using <strong>Biomass as</strong> an alternative to fossil fuels for the production of electricity and heat. They realize that fossil fuels are non-renewable resources and cannot be depended upon through the next century. Your group is asked to find which nut provides the most energy per pound. Cost is also a consideration as well as availability.</td>
</tr>
</tbody>
</table>

VI. Collaborative test taking

*I like being able to take the tests individually and then as a group. This helps us to see things we may have missed the first time and be able to make up for the mistakes. This testing method reinforces the fact that you must be a strong individual, but you must also be a team player. They allow for us to talk about our answer and with discussion I believe comes better understanding.*

Student comment*

Testing is best when it is also teaching. In addition to the performance assessments provided by student science club work, paper presentations, laboratory work and reports, and home assignments, we gave written content exams. The exams were designed to be done individually then immediately followed by the same exam done as part of a group. The students were allowed to form groups of 4-5 as they wished. The final grade for the exam was the average of the individual and group grades. This meant that the exams were half as long as the traditional class period exam.
We found that students recognized the testing as a valuable learning experience. While the grade generally went up as a result of the group exam, the final grade on the exam for over 70 percent of the students was increased by less than 10 percentage points. Additionally, we as instructors could see areas of strengths and weaknesses in the class’ learning.

VII. **Speakers**

*I especially enjoyed and learned a lot from the guess speaker…He really helped bring organic chemistry to life…He was so enthusiastic about what he was talking about that I think it made everybody else eager to learn more …He could answer any question anybody threw at him. (Student comment)*

Contact with real scientists and teachers is a valued part of our course. We used the science club site teachers as visitors to show how science is presented and shared with kids. We also had scientists visit and make presentations and answer questions. Four visitors use almost 10% of the "lecture time".

VIII. **Weekly journal entries (blue books)**

*Gave me a chance to reflect on what we had gone over during the week. If there was something I didn’t understand I could just write a question. I found this very convenient. It helped me realize what I did learn. I appreciate the comments you make in response to my question and statements. It is helpful and insightful. (Student comment)*

Weekly blue books provided an avenue for individual discourse between the student and instructors. Students were encouraged to ask questions and to express their feelings and ideas about the class and/or its content. Students were asked to grade and comment on their overall performance each week in order to introduce them to reflective, self-evaluation practices which will be important in their teaching.

The weekly blue books also provided the instructors with feedback on the effectiveness of our teaching and so helped us to improve and refine the course as the quarter progressed. These journals were not graded.

IX. **Team Teaching**

*With two teachers you can answer more questions and we can get different perspectives. This I believe really prevent the lectures from ever being boring and keeps the class moving at a remarkably quickened pace while not overwhelming. (Student comment)*

Team teaching was not originally planned as part of the course design. However, both instructors wanted to see how the new pedagogy would unfold, so they
both ended up in class most of the time. At the end of the course some students commented that team teaching was “the best part” of the course.

The activity based teaching invited team teaching. The instructors met before class to outline our teaching plans and to review where they were. It was found that team teaching requires good coordination and was time demanding but was rewarding because that instructors learned from each other. This course has been successfully team-taught by two science faculty, a science and an education faculty, a faculty member and a graduate student, and a faculty member and an undergraduate science major.

**Evaluation**

We conducted several different types of evaluations as we developed and presented the course. These included:

- Pre and post attitude survey
- Pre and post strategies survey
- Comparison of Chemical Sciences students with General Chemistry students
- Pre and post content exam
- Final exam comparison with traditional class.

The results of these assessments are presented here looking at both affective and cognitive domains.

**Affective Evaluations**

I. **Survey Results on Attitudes toward science and teaching.**

Part of becoming a "lifelong learner” of science (goal#2) is the development of an appreciation for science and a curiosity about it. Our attitude survey results indicate that this course is successful at improving, and indeed developing, a positive attitude about science.

The attitude survey shows a full point increase in response to questions like:

(a full point increase is equivalent to moving from “agree” to “strongly agree” or moving from “neutral” to “agree” in regards to the statement.)

- I feel confident that I can teach concepts related to chemistry to K-6 students. (1.07) Question #9
- I know how to conduct a science investigation. (1.43) Question #16
- I know nothing about chemistry. (-1.17) Question #44
- I understand some key concepts related to chemistry. (1.02) Question #50
There was over a .50 increase in questions:

- I would like to take more science. #32
- I enjoy talking to scientists. #33
- I feel I understand the science involved in most current issues. #34
- I enjoy reading articles about science in a newspaper or magazine. #35
- I see myself as a scientist. #46

These data certainly support our belief that we are developing in our students an appreciation of chemistry that may lead to “life-long learning”.

II. We also conducted a Strategies Survey, which addressed collaborative learning issues. That survey indicated that there was some improvement, but no major increases (over a change of 0.50).

III. In an attitude survey taken by both the Chemical Sciences and first quarter General Chemistry (Chem 121) students, our results showed:

In regards to understanding, visualizing, and applying concepts in chemistry, our Chemical Sciences students showed significant increases, while the General Chemistry students showed little change.

It is interesting to note that General Chemistry students showed a significant decrease in the their perception of the “importance of performing laboratory experiments”. However, the view of the Chemical Sciences students toward the importance of laboratory did not change or may have improved slightly.

<table>
<thead>
<tr>
<th>Confidence in my ability to:</th>
<th>Chemical Sciences</th>
<th>Gen CollegeChem</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Winter pre-post</td>
<td>Spring pre-post</td>
</tr>
<tr>
<td>Understand key concepts in chemistry</td>
<td>2.25-1.67</td>
<td>2.25-1.80</td>
</tr>
<tr>
<td>Visualize key concepts in chemistry</td>
<td>2.36-1.80</td>
<td>2.36-1.78</td>
</tr>
<tr>
<td>Apply knowledge too real world</td>
<td>2.27-1.17</td>
<td>2.29-1.59</td>
</tr>
<tr>
<td>Perform lab experiments</td>
<td>2.02-1.69</td>
<td></td>
</tr>
<tr>
<td>The Importance of Performing lab experiments</td>
<td>.85-.78</td>
<td>.84-.82</td>
</tr>
</tbody>
</table>

(scale from 1 – 5 with 1 = strongly agree and 5 = strongly disagree)
Cognitive Evaluation

We believe the affective evaluation showed that this course increases enthusiasm for both science and teaching. The following evaluations were carried out to determine whether the valued content was still learned.

I. Pre/Post Test Results
The pre/post test consisted of 31 multiple-choice questions taken from the traditional course final exam and used as a representative sample of the valued content.

The results indicate no decrease in content learning.

<table>
<thead>
<tr>
<th></th>
<th>Winter quarter*</th>
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<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
<td></td>
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<tr>
<td>Scores greater than 20</td>
<td>2</td>
<td>26</td>
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<tr>
<td>Scores less than 15</td>
<td>28</td>
<td>9</td>
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<tr>
<td>Scores less than 10</td>
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<td>Spring quarter</td>
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<td>Scores greater than 20</td>
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<tr>
<td>Scores less than 15</td>
<td>37</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Scores less than 10</td>
<td>17</td>
<td>0</td>
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</tbody>
</table>

*The number of students in the class was exactly the same.

Final Exam Comparisons with Traditional Class.
Another measure of content learning was obtained by comparison of the performance of our students in the new course to those in the traditional course. The complete traditional course exam could not be given because the format did not fit the new course. Instead, eight questions from the traditional final were included in the new course final exam. A trained student using the same rubric independently graded the questions.
In the first quarter we found that the new course students did better on the essay questions requiring thinking and expression. Those items are given below.

Changes given are changes from the traditional course compared to the new course.

1. Which of the following elements most closely behaves chemically like chlorine?
   a) potassium  b) argon  c) fluorine  d) magnesium  e) oxygen
   **Change from 3.33 to 3.15 out of 4.00**

2. The molecular weight (mass of one mole) of carbon dioxide, CO₂ is
   a) 5  b) 10  c) 17  d) 44  e) 52
   **Change from 3.70 to 3.84 out of 4.00**

3. If the half-life of iodine-131 is 11 days, how much of a 100 gram sample will be left after 55 days?
   a) none  b) a trace amount  c) about 3  d) 12.5  e) 25.0
   **Change from 3.10 to 2.77 out of 4.00**

4. What is the basic difference between chemical reactions and nuclear reactions?
   **Change from 2.50 to 3.08 out of 4.00**

5. Draw a picture of a carbon atom.
   **Change from 5.37 to 5.56**

6. Why do chemicals react? Why, for example, does Na react with Cl to make NaCl?
   **Change from 4.50 to 5.06 out of 6.00**
   **Change from 22 to 39 people making the max 6/6**
   **Change from 16 to 7 people making 3/6 or below**

7. What are the four molecules of Life?
   **Change from 3.96 to 3.56 out of 4.00**

8. Name two scientists who made contributions to the area of chemistry and describe their contributions.
   **Change from 5.46 to 5.88 out of 6.00**
   **Change from 10 people making below 5 to only 2**
   **Change from 43/53 to 48/52 people making 6/6**

**Observation Skills Comparison of Chemical Sciences and Gen Chem Students**

Students were given an exercise in experimentation and observation having to do with a sucker dissolving in water. Surprisingly, our Chemical Sciences students showed overall better observation skills than third quarter General Chemistry (Chem 123) Students. They reported in greater percentages those items deemed important by the instructor.
After ten years of practice:

We continue to see success in this course over the years. We are constantly making updates and enhancements as will be outlined below.

In 2009 Our Cal Poly course was part of a new study funded by the National Science Foundation, entitled National Study of Education in Undergraduate Science (NSEUS). That study was evaluating the impact of the redesigned professional development programs that targeted making reforms in science courses for pre-service teachers nation wide. Our Cal Poly course was one of these courses. The National Study of Education in Undergraduate Science evaluation included pre- and post-testing of students, classroom observations in the Cal Poly course, and a comparison with other science courses. In addition, interviews were conducted with the faculty members teaching these courses, and student focus groups involving 5-6 students from each course. Long-term impacts were assessed by observation of three elementary classes taught by teachers who had completed the Cal Poly course, as well as three comparison teachers who did not take that course. In addition to the observations, there were interviews with several current and former students to ascertain their thoughts about the impact that his course had on their science content knowledge and attitudes toward science teaching.

The results of that study found that while many students indicated that they were fearful of science, chemistry especially, before taking this course, after taking the class they felt very confident in their ability to understand science concepts and to teach them to others. In the observations of the performance of the teachers produced, it could be seen in their classrooms that they were teaching in ways that promoted their own students’ growth and learning.

Indeed, our course has been so successful that over the more than ten years since its implementation:

- Our Cal Poly course was offered as a model at six NASA science education national conferences
- We received funding to conducted a two-day workshop for California State University science faculty who teach pre-service teachers to share the course. Twenty-one faculty members from 11 CSU campuses participated that two-day University Faculty Science Teaching workshop.
- We received a grant from NASA to offer mini-grants to CSU faculty to encourage redesign of their courses.
• We produced a publication about the course and its impacts in the Journal of Chemical Education.
• We have made more than 20 presentations over the past ten years about the course.
• We received a grant to offer a workshop (with mini grants) for Community Colleges. Faculty teams from seven community colleges in southern California eight community colleges received mini-grants.
• We received a grant to develop and conduct an after-school academy for middle school.

Updates and Enhancements
Over the years there have been enhancements to the course. Because we have an extensive collection of reports on minorities and women in science, they have been placed on a website. Now student assignments are use these people resources as a basis for making a science lesson learning center, which they share in class. The midterm exam is now an activity-based project which students present to the class. The class assignments like power-point presentations of interesting things about interesting elements and common compounds, first were placed on a CD, which all class members received at the end of class. With increased use of technology, all assignment are now placed on a class Facebook page so that reports on drugs and medicines, information on polymers and materials, games and projects from midterms are all available as resources, to our students as they move into their teaching careers. The after-school science club activity has expanded to include our students’ involvement in annual judging of projects in elementary school science fair and discussions of the science and the work of the elementary school children. These course enhancements and modifications show that this course is not only effective, but also adaptable.
Abstract. One of the important objectives in science education is for students to understand what the nature of science is. The National reform document, Science for All Americans (AAAS, 1990) emphasizes the importance of the nature of science in guiding science educators in accurately portraying science to students. Therefore, it is important that textbook materials convey an accurate conception of the nature of science. This study employs a content analysis to examine the chapters from first-grade, second-grade, third-grade, fourth-grade, and fifth-grade elementary school science textbooks with regard to the four aspects of the nature of science: (a) science as a body of knowledge, (b) science as a way of investigating, (c) science as a way of thinking, and (d) the interaction of science, technology, and society (Chiappetta, Fillman, & Sethna, 2004). Intercoder reliability was determined by calculating Cohen’s kappa (Cohen, 1960). Kappa values were determined among three coders who independently analyzed the science content from the chapters of the elementary science textbooks. The percentages of the nature of science categories found in each of the elementary science textbooks are examined and reported for each of 20 textbooks.
According to survey findings requested by the California Commission on the Status of Women and the California Department of Veterans Affairs (Blanton & Foster, 2012), women veterans face issues with navigating higher education. The purpose of this panel discussion is to explore the stories of the learning experiences of four women veterans who transitioned into a graduate school as one means to understand how their military culture affects their academic persistence and self-efficacy as scholars and societal contributors.

Questions for the panel discussion are:

1. What are the transitional learning experiences of women veteran graduate students?

2. What are the motivational and social needs of transitioning women veterans?

3. What recommendations do women veteran graduate students make to improve services to women veterans returning to the collegiate environment?

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Abstract

WOMEN VETERANS AND HIGHER EDUCATION: TRANSITIONAL LEARNING EXPERIENCES, SELF-EFFICACY, AND UNSPOKEN NEEDS

Transitioning out of the military may be stress-free for some women veterans; however, according to survey findings requested by the California Commission on the Status of Women and the California Department of Veterans Affairs (Blanton & Foster, 2012), women veterans face issues with navigating higher education and re-entering domestic society.

The purpose of this panel session is to gather stories of the learning experiences of four women veterans who transitioned into a graduate school as one means to understand how their military culture affects their academic persistence and self-efficacy as scholars and societal contributors.

The panel discussion provides a voice for four female veterans who are prepared to describe their separate learning experiences as military veterans enrolled as graduate students. Each panel member is asked to encapsulate her military to civilian transitioning experiences, awareness of self-efficacy, and needs for academic support and student services. Responding to the needs of women who transition from military-to-academic life has the potential to provide for a more relevant veteran-friendly campus.
14th Annual Hawaii International Conference Education 2016
Honolulu, HI
January 3 through January 6, 2016

CONFERENCE PROCEEDINGS

Bridging Common Ground: University Sponsored Projects Building Capacity for Teachers and Administrators of English Learners

Symposium Abstract: This symposium panel session featuring five groups of presenters will convene scholars, researchers and educators to present a review of teacher and administrator professional development of university sponsored projects funded through U.S. Department of Education. The scope of each panel presentation reflects stances of culturally and linguistically responsive teaching. Common issues, concerns and program features will be discussed intended to foster critical competencies needed in schools to support overall EL students’ academic success.

Conference Symposium Session Titles and Presenters

Perspectives on ESL Professional Development: Mainstream teachers conflicting perspectives on what’s really important and (not) important when teaching ELs

Anthony J. Trifiro, Ph.D.
Arizona State University

Making a Difference: Expanding the role of language and culture in content area classrooms

Dawn Lambson, Ph.D.
Arizona State University

Preparing for a Cultural Shift: Integrating STEM, Literacy, and Language to Prepare All Teachers to Teach English Language Learners

Margarita Jimenez-Silva, Ed.D.
Arizona State University

Jaclyn Hernandez, Ph.D. (Non-presenting author)
Arizona State University

Malissa Thibault
Arizona State University
Introduction

This symposium session seeks to highlight the work of universities across the U.S. that support school districts and schools through professional development programs designed to support preservice and inservice teachers and administrators. The projects discussed are federally funded programs intending to elevate teachers’ and administrator competencies through a sustainable platform of education and/or professional development. Overall, each program addresses building capacity through culturally and linguistically responsive practices.

Often times, state language policy shifts initiate a university sponsored professional development initiative as a sponsored project. Academic Content Combined with English in Secondary Schools is sponsored project (2008-12) which implemented an ESL professional development program for mainstream teachers in any subject area for one urban school district in Arizona. The project intended to bolster teachers’ knowledge, skills and dispositions in response to state policy changes and to build a cadre of mainstream teachers with dual ESL and single subject qualification.

Professional development for mainstream STEM and English teachers intended to expand upon teachers’ knowledge and affirming dispositions through an ESL framework while supporting changes to practice are the aims of Teaching English Learners Academic Content. This Arizona project, which is the sister project of ACCESS, utilizes a course framework that seeks to blend key ESL foundational and methods practices as well as teacher inquiry through coaching as a means to facilitate participants’ shifts in practice.

Through preservice education designed to create a shift in teacher preparation education, Preparing for a Cultural Shift: Integrating STEM, Literacy and Language to Prepare All Teachers to Teach English Language Learners, the presenters overview the systemic curricular changes to preservice education efforts as means to prepare all teacher candidates to teach ELs. This paper presents innovative program changes in teacher preparation and ELLs.

Culturally Sustaining Pedagogy through Teacher Action Research is a program in Alaska that utilizes an 18 credit ESL program similar to the ACCESS project. In order to facilitate the process of shifts in teaching practices, the project utilizes a model of reflective teaching and
various forms of teacher action research in support of bolstering teachers’ practices to reflect culturally and linguistically relevant teaching.

The goals and results of professional development for administrators and auxiliary staff who support ELs in schools are presented in the paper *Introducing PK-12 administrators and auxiliary staff to the world of English Learner: Findings from an intensive summer academy*. The presentation highlights changes in perceptions and its impact on shifting their operating paradigm for supporting ELs through a long term summer academy in Illinois.

Each of the panel members address issues, concerns, and opportunities within their respective programs serving teachers and administrators who are in the daily trenches working to shape the academic futures of multicultural and multilingual learners in diverse settings throughout the U.S.

**Panel Presentations**

The following is an overview of each panel presentation.

**Perspectives on ESL Professional Development: Mainstream teachers conflicting perspectives on what's really important and (not) important when teaching ELs**

*Anthony J. Trifiro, Ph.D. – Arizona State University*

The Arizona context of restricted language policy shifted significantly instruction and the use of students’ first language in Arizona classrooms. Through Prop 203, instruction in Arizona schools became English only. The Arizona state mandated policy includes the implementation of Sheltered English Immersion (SEI) (A.R.S § 15-756.01) requiring all teachers to hold an SEI endorsement. For many teachers and school districts meeting the minimum state requirements for SEI become a top priority.

Moving beyond the immediacy of teachers obtaining an SEI endorsement, the Arizona context of restricted language policy raises the question of whether meeting the minimum basic requirement is indeed sufficient. Arias(2012) posits that Arizona’s restricted language of English only in classrooms places a spotlight on teacher preparation and professional development for teachers of ELs. While many school districts and vendors provide SEI curriculum for teachers, such programs simply address state curricular objectives without considering the complex instructional needs of mainstream ELs (Arias, 2012, Markos & Arias, 2014). The narrow focus of PD SEI programs coupled with a lack of multicultural/lingual general emphasis in teacher preparation prior to the state’s implementation of English-only instruction and SEI, effectively undermined many teachers’ readiness to teach in an English only environment. The capacity gap created through lack of preparation versus what is needed to teach ELs is bridged through teacher learning that provides knowledge, skills and understanding of EL students which in turn bolsters student academic success (Arias; de Jong, Arias, & Sanchez, 2010). ACCESS’s project goals intended to remedy the capacity gap for one school district. The research study sought to learn “what do teachers consider important relative to teaching English learners after completing an 18 credit ESL endorsement program” as understanding would lead to addressing instruction through participants' perspectives and understanding (Sandberg & Pinnington, 2009).
The paper presents findings of an 2011 research study of four ESL teacher professional development (PD) cohorts participating in a university partnership sponsored project that provides the educational professional development preparation through graduate level ESL endorsement coursework. *Academic Content Combined with English in Secondary Schools* (ACCESS) (2008-2013) provided secondary mainstream teachers in a major urban southwest metropolitan school district with a cohort-based professional development program intended to extend their knowledge, skills and understanding of teaching English learners. The participating district stakeholders in cooperation with university members formed early on in the development of the NPD grant. The university and school district partnership sought to support the project goals which aligned clearly in developing a future cadre of mainstream teachers who are dual ESL endorsed and certified in a subject area. Through university and district participation as stakeholders, collaborating with a single purpose, projects such as ACCESS are able to support teacher development for teaching of ELs in the Arizona restricted language context (Garcia, Arias, Harris-Murri, & Serna, 2009). All cohort members are from one of the largest urban high school district in the southwest with a majority of Hispanic students who are first language speakers of Spanish and are primarily of lowered social economic status (SES).

The paper utilizes knowledge-for-practice Cochran-Smith & Lytle (1999) as its theoretical perspective underlying the notion of building upon teachers’ previous knowledge and skills. The study’s research question relies heavily on the research of culturally responsive teaching (Villegas & Lucas 2002) and linguistically responsive teaching (Lucas & Villegas, 2010) and the theoretical understanding of cultural responsive teaching. Desimone, Porter, Garet and Yoon (2002) support the nature and quality of the ACCESS program in that consistent, high quality professional development can lead to sustained changes (p. 105). Professional development (PD) that supports teacher learning relative to linguistic and cultural sensitivity to EL students must reflect content and activities tied to teachers’ classroom practices.

In providing meaningful and equitable education for EL students, teacher PD must include a broader understanding of cultural norms, values and school expectations. The sponsored project’s curriculum utilized readings and activities that reflect culturally and linguistically responsive teaching. The convergent model of six core areas were linked together with activities that fostered a robust understanding in core courses such as: language minority education, instructional strategies for ELs at the secondary level, assessments for EL learners, bi-literacy in mainstream classrooms, survey of second language acquisition and bilingualism, and parents and communities. The ACCESS curriculum provided ample opportunities for cohort teachers to consider the sociocultural and the broader contexts of learning/schooling, and teacher advocacy for EL students (Faltis & Coulter, 2008; Lucas, Villegas & Freedson-Gonzales, 2008; Walker, Shafer, Liams, 2004, Villegas & Lucas; Walqui, 2008). Teachers understanding the sociocultural dimension of schooling relative to EL students success in academic settings, requires teachers to have knowledge and skills that go beyond “just good teaching” (de Jong & Harper, 2005).

The study utilizes a mixed method qualitative approach. A constant comparative method (Strauss & Corbin, 1994) is used as means to develop relative themes. The case of four cohorts in ACCESS, (n=88), includes only participants who completed all the 18 credits of coursework and met the educational requirements for a full ESL endorsement. Partial program completers were not included in the study. The primary data source is a post participant likert and free response survey of teacher respondents, (n=42) which is triangulated with pre/post program
evaluation surveys (n=64) for the entire program as well as post program interviews of some cohort members.

The study’s findings revealed three overall orientations by participants. The three orientations are: Knowledge of first language and culture, skills for building English and teaching content and perceptions of ELs academic success. The study reveals teachers’ perceptions about their EL students demonstrating the need to build background and connect with EL students’ community and culture. However, the data presents conflicting teacher understanding and perspectives with respect to the role of language, English only versus English plus while instructing in English based on the SEI mandate, the fairness of Arizona language policy and the ELD model, and the role of culture and fostering connections to community. Overall, many post participant responses suggested a greater need for advocacy from participating teachers to non-participating teachers and administrators.

The study’s significance suggest that professional development program models intended to build capacity using an ESL endorsement curriculum must align closely with school district goals for teachers, administrators and the diverse student populations of multicultural and multilingual English learners. Through robust convergent curriculum, participants are able to draw upon and build an awareness of their EL students connecting culture, language and community supporting pedagogical practices that are culturally and linguistically grounded.

Making a Difference: Expanding the role of language and culture in content area classrooms Dawn Lambson, Ph.D. – Arizona State University

In the state of Arizona in 2014, approximately 7% or 70,000 of the 1,000,000 students in K-12 schools were identified as Limited English Proficient. Of the English learners (ELs) enrolled in high schools that year, only 20% graduated within four years (Arizona Department of Education State Report Card, 2015). By comparison, the next lower group “students with disabilities”, had a graduation rate of 63%. Although all teachers in the state are required to take classes and be certified in Structured English Immersion (SEI), the state’s mandated English language development model, few teachers feel confident and capable of meeting the growing need of teaching English learners in mainstream classrooms.

From a professional development perspective, there is a great need to provide teachers and administrators responsible for the achievement of ELs with knowledge, skills, and experiences that can translate into effective and appropriate classroom practices for helping ELs succeed.

Teaching English Learners Academic Content (TELAC), a grant-funded project through the U.S. Department of Education/Office of English Language Acquisition (OELA), was established in 2012 to support middle and high school STEM and English teachers of ELs in a large urban area in Arizona. Much of the programmatic features of TELAC are built upon the programs’ previous project ACCESS. The TELAC program is designed to build upon and expand teachers’ understandings of the language and learning needs of ELs in mainstream STEM (science, technology, engineering, math) and English/Language Arts classrooms. The aim of the program is to build and refine mainstream teachers’ dispositions, attitudes, understandings and teaching practices in support of students from diverse cultural and linguistic backgrounds.

Villegas and Lucas (2002) and Lucas, Villegas and Freedson-Gonzalez (2008) outline key components of a culturally and linguistically responsive approach for preparing teachers of
English learners. They state that culturally and linguistically responsive teachers must have a combination of affirming dispositions for students from diverse backgrounds, crucial knowledge of appropriate and effective teaching practices for ELLs including a knowledge of how language develops, and the skill to design learning activities that build on and honor who students are and what they know and bring to the classroom.

The TELAC Program was designed to incorporate many of these components in its effort to increase capacity of mainstream STEM and English teachers in the state. The program builds foundational knowledge and understanding of teaching strategies for supporting English learners through six credit hours of graduate course work at a local university. Participants also take three additional credits of practicum in which teachers receive one-on-one coaching as they work to apply their learning within their own mainstream classroom context. In the practicum course, teachers take up their own inquiry to investigate aspects of their teaching practice and understand how these impact their English learners. Through ongoing observation, data gathering, and analysis of student work and their teaching practice, teachers gather data to help them make intentional refinements and modifications designed to support student learning and growth.

Using an “embodied understanding of practice” framework proposed by Dall’Alba and Sandberg (2006), this study focuses on teachers’ “understanding of and in professional practice”, rather than on an accumulated set of skills, which allows for examining the embodied understanding of how teachers’ practices were shaped and refined by their experiences in the program.

The study uses an interpretive qualitative approach (Erickson, 1985) to understand, from teachers’ perspectives, how participation in the program impacted their learning and development. Data for the study were collected from participants’ portfolio assessments and class artifacts and analyzed to understand how, according to teachers’ reports, their participation in the program’s learning activities helped support the teachers to develop and refine their teaching practices making them more culturally and linguistically responsive to the needs of their ELL students.

Findings from the study show that teachers report growth in the following areas: (1) understanding the teaching of English learners; (2) knowing the English learners in their classrooms; (2) understanding the role of language and culture in learning; (3) focusing on language use and development in their content teaching; and (4) making substantive changes to their practice as a way to better meet the language and learning needs of their ELL learners.

Through course experiences and learning, teachers reported a deeper understanding of what it means to teach English learners. One teacher reported that an important result of her participation in the program was developing an “understanding that ELLs are a diverse group of learners and [that] the schooling students have received before coming into my classroom greatly impacts their current abilities and readiness for a content area classroom.”

Many teachers also reported a new or deeper understanding of the role of language and culture in learning. These reports included understanding of both oral and written language development as well as teachers describing a new perspective and value for learning about and building on students’ funds of knowledge. In particular, some teachers reported an understanding of how use of students’ first language in the classroom could benefit student learning and success.
Some teachers identified a need to provide greater access to language use through scaffolding oral language with sentence frames and vocabulary study. Others described trying out new ways of promoting social interaction in the classroom as a means for increasing opportunities for students to speak more and develop their academic English. Overall, a majority of teachers reported that focusing on language in their classrooms was a significant area of growth.

Along with a greater focus on supporting students’ language development and use, a majority of the teacher participants reported making substantive changes to their practice as a way to better meet the language and learning needs of their ELL learners. Refinements to practice included changing expectations for ELL speaking and engagement in class, using scaffolding to make language more comprehensible and accessible to ELL learners, creating safer and more comfortable environments for ELLs, and implementing a variety of teaching strategies to support ELL student understanding, engagement, and learning.

Through the TELAC Program, the teachers were provided opportunities to build foundational knowledge of ELL education as well as practical knowledge through classroom-based course assignments, teacher inquiry and support through individual coaching. As a result of participation in the program, mainstream content area teachers acknowledge substantive growth and development in dispositions, knowledge, and skills in teaching their English language learners, and are becoming more linguistically and culturally sensitive and responsive to the needs of their English learners.

**Preparing for a Cultural Shift: Integrating STEM, Literacy, and Language to Prepare All Teachers to Teach English Language Learners**

*Margarita Jimenez-Silva, Ed.D., Jaclyn Hernandez, Ph.D and Malissa Thibault – Arizona State University*

Through the generous support of a Teacher Quality Partnership grant from the U.S. Department of Education, the Mary Lou Fulton Teachers College (MLFTC) at Arizona State University has set forth four goals to prepare elementary teachers on content-based second language acquisition. These goals include (1) reforming PreK-8th grade teacher preparation to address the need for highly qualified general and special education teachers for ELLs; (2) redesigning math and science methods courses to include instructional strategies that promote language and literacy development; (3) redesigning course signature assignments to use problem-based learning (PBL) pedagogy and design principles supporting teacher candidates’ application of knowledge and skills in “real world” classrooms; and (4) integrating and understanding evidence-based practices and scientifically-validated research for teaching and learning of ELLs, including data-driven decisions to improve differentiated instruction.

MLFTC is one of the largest teacher preparation programs in the country, graduating approximately 1,500 new teachers each year. An additional 600 teachers in 20 partner school districts will be supported by this grant. In meeting this goal, we have begun planning for induction programs for graduates alongside mentors in their teaching sites. Due to the multifaceted approach of this project, we have numerous stakeholders that are critical to the success of our program. These stakeholders include college-level administrators, faculty, and support staff that interact directly with pre-service and in-service teachers. District personnel are also essential partners in this endeavor if the larger culture of how we engage with ELLs is to change.
In the first year of implementing the iTeach ELLs grant, considerable time has been spent establishing relationships and building trust among various key stakeholders. Several opportunities to dialogue about the goals of the grant have been offered. In focus groups of content-area faculty, site coordinators, and other key stakeholders, participants have felt comfortable expressing concerns. Through surveys, key stakeholders have had opportunities to provide input regarding the major concepts related to ELLs and PBL that are being addressed through the grant. By being sensitive to the needs and concerns of our major stakeholders, as well as tapping into the wealth that they bring to the table, we are establishing a strong foundation for the work that needs to be done for improving how we meet the needs of ELLs. Without the support of key stakeholders, systemic change will not take place. Too often with grant-funded projects, innovations disappear once funding has ceased. In order for our model of preparing teachers to work with ELLs to be sustainable, a cultural shift needs to take place and bringing in major stakeholders to working alongside us is key to that shift.

In the current iTeach program at ASU, pre-service teachers are required to complete a student teaching year-long residency. While completing the residency, they complete the final year of their coursework at an assigned school site. Instructors teach the required university courses at the school site in an evening during the week and most of the school day on Friday. A site coordinator is assigned to each school site and cohort of students. The students are placed in cohorts by their pre-service teaching program, for example, elementary education. The site coordinator is critical to the success of the students during the year-long residency and along with teaching courses, the site coordinator is responsible for student teaching observations and evaluations. Because the site coordinators have such an impact on what occurs in the year-long residency, within a few months of the grant being awarded, several key meetings took place between the grant investigators and site coordinators. The grant investigators introduced the grant goals to the site coordinators and feedback was solicited regarding the problem-based pedagogy aspect as well as the focus on ELLs. One of the main challenges that the site coordinators identified was working within the pedagogical structures already in place in the schools where student teachers are placed. They suggested that grant investigators and instructional coaches working with the grant meet with administrators at various governance meetings to discuss how we could work together to better meet the needs of students, especially ELLs. In addition, throughout the first summer of the grant, grant investigators met regularly with site coordinators to plan implementation of the grant.

In moving forward with the goals of redesigning math and science courses to include PBL pedagogy and infusing instructional strategies that promote language and literacy development, Program Enhancement Teams (PET) were formed to develop and pilot lessons in math and science methods courses during the spring semester following the grant award. PET teams met to discuss the grant goals and lead instructors, which included tenured and clinical faculty, developed a common lesson plan. Working with grant investigators and coaches, shared their experiences with other faculty across the college regarding their work on the teams. Many discussions took place regarding the definition of PBL and the role of instructional strategies for developing English language skills in math and science. Furthermore, faculty with expertise working with ELLs were brought alongside faculty with expertise in math and science methodology courses to further refine tools that will be used in subsequent semesters. Furthermore, during the first faculty meeting of the semester, the grant investigators and coaches were given time during the meeting to introduce all faculty to the grant goals and the grant team led the faculty through a PBL experience as well as invited faculty to future PET meetings.
Plans are underway to engage other stakeholders - school administrators, mentor teachers, and support staff - in discussions about the grant goals and implementation. The ultimate goal of the grant is to address and help close the achievement gap for English language learners in Arizona, especially in math and science content areas. Through curriculum reform and a PBL pedagogical approach, MLFTC can prepare the next generation of teachers to better meet the academic and linguistic needs of ELLs. However, before that can happen at a college-level and in order for that change to be sustainable, a cultural shift has to occur redefining how all key stakeholders need to work together to better address the needs of ELLs. Throughout the life of the grant, the grant team will continue to meet with stakeholders to address challenges that arise as well as celebrate achievements as they come.

Culturally Sustaining Pedagogy through Teacher Action Research

Cathy Coulter and Irasema Ortega – University of Alaska Anchorage

Project LEAP (Language, Equity, and Academic Performance) is a grant funded by the Department of Education’s Office of English Language Acquisition (OELA). Project LEAP focuses on staff development for teachers with high numbers of English language learners and Alaska Native students. This 18-credit graduate certificate program results in in-service teachers obtaining an ESL endorsement on their Alaska teaching certificate. More, it provides the training necessary to support culturally sustaining pedagogy (Paris, 2012) and academic performance for ELLs in some of the nation’s most diverse schools (Anchorage Daily News Dispatch, March, 2015).

During this program, participants enroll in coursework designed to increase their knowledge of current concepts and research-based practices related to culturally sustaining language and literacy development, particularly within STEAM-related content areas. The first semester of the program is dedicated to create a common understanding of current, research-based sociocultural practices. The second semester brings participants from across the state of Alaska together to work side-by-side on curricular projects of their own design, revising practices to better address the needs of English language learners. Then, along with a class on policy, law, and advocacy, participants move into their identity as scholar-practitioners as they begin to focus on researching their own classroom practice.

There are two integral components to project LEAP: a) teacher action research projects in which teachers engage in inquiry about their own practice; and b) Critical analysis and design of STEAM curriculum. These two components are supported by an intensive summer course in which all students from around the state come to collaborate on projects that include revising their existing curricula (and practices) in order to better meet the needs of ELLs in their classrooms. During the third semester of the program teachers evaluate science and math curriculum and infuse it with pedagogical aspects that address the needs of ELLs. Students subsequently engage in research about their revised teaching approaches. They also engage deeply in existing literature about teaching and learning with ELLs.

This study focuses on what happens when in-service teachers engage in teacher action research on their own practice, focusing on shifts in instructional approaches and whether or not they move toward more culturally sustaining practice. Data collected include qualitative sources
consisting of field observations of teachers in their classrooms, interviews, reflections, surveys, and student artifacts. Quantitative data includes WIDA assessment data and additional state and district assessments.

Preliminary results indicate that while teachers initially engage in substantive changes in teaching approaches they continue to need support beyond the scope of the graduate certificate program. Scripted curricular programs are difficult to work around in creating a classroom environment that is inclusive of different language and learning needs (as well as particular aspects of teacher strengths and style). Therefore, time to work with other teachers across the state and to engage in classroom curricular revisions was found to be very beneficial. Engaging in research on their own teaching resulted in tangible changes to practice. As a result of these findings, Project LEAP is adding professional development coursework designed to encourage ongoing cross-cohort Professional Learning Communities (PLCs) whose focus will include ongoing professional development and the creation of teacher leaders who can engage their respective districts in staff development trainings. These PLCs will allow Project LEAP community members to continue their contribution to the experiences of ELLs throughout the state.

Another important aspect of this project relates to the impact the project has had on subsequent teacher roles in their school and district (which the formalized PLCs will support). For instance, several teachers who completed project LEAP during the 2014 academic year decided to participate in a STEAM kit project sponsored by the largest district in the State and funded by the National Science Foundation. Their input and expertise gained during the STEAM Methods course was crucial to their contribution to this large project and had an impact on thousands of students. Other teachers from the 2015 cohort have volunteered to pilot the STEAM kits in their classrooms. Yet another participant from the second cohort accepted a position at a district-level curriculum committee as an expert on ELL issues. These are just a few examples. Overall, the preliminary findings on this project indicate that through the experience and expertise gained through their participation in class and small discussion and the curriculum evaluation and teacher action research project the participants built their capacity to address issues related to addressing the needs of ELLs in their classroom, school and district levels. Standardized assessments reflect academic growth of students in participants’ classrooms. Continued research is needed to assess long-term outcomes of this program.

Introducing PK-12 administrators and Auxiliary staff to the world of the English Learner: Findings from an intensive summer academy  

James Cohen – Northern Illinois University

There has been a call by professional organizations (i.e. American Educational Research Association, National Association of School Psychologists, American Psychological Association, and Association for Supervision and Curriculum Development) to increase the number of school personnel professionals, especially school leaders to be more familiar and sensitive to the needs of English Learners (ELs). According to Hamayan & Freeman-Field (2012) attention must be paid by school administrators to the increased numbers of immigrants and difficulties that immigrants face in schools. Zacarian (2011) states that in order “to advocate for the best program and to support their teachers, school leaders need to understand their EL populations very well from a cultural and linguistic perspective…that they come from diverse backgrounds, and have varying degrees of school readiness” (pgs 9-10). These calls are in response to the vast majority of teachers, and therefore administrators, not having any experiences or training in working with ELs (Hollins & Guzman, 2005, Hamayan & Field-Freeman, 2012).
To this end, as part of Project DREAMS (Development of Reading, ESL, eArly childhood, Mathematics, Science), funded through OELA/NPD/U.S. Department of Education, we created a four-day, 32 hour intensive summer academy specifically for PK-Administrators and auxiliary staff to introduce them to the world of the EL. Topics such as the following are discussed: 1) State and federal laws pertaining to ELs, 2) Second language acquisition, cultural awareness, and implications on interactions with ELs; and, 3) Best practices from the various professional fields (nursing, counseling, etc.). After the summer academy, the participants return in late October to present what they learned in the academy and how they have infused this new knowledge into their daily routines. We then follow this up with an interview a few months later to see 'where they are' in regards to the content they had acquired in the academy.

Coupling exit surveys and participant PowerPoint presentations in fall with an hour-long follow-up interview in spring, not only are we collecting data, but we are essentially insisting the participants not forget what they learned and make them accountable for changing the status quo. This following –up with them forces the participants to continue to think about the content they learned in the summer academy and make them continuously reconsider and rethink and reflect on the ideas that were presented.

In my presentation, I will report on the paradigmatic shifts that the participants experienced and the effects this ‘shifting’ affected both their actions and beliefs regarding ELs in their schools. For example, many of the participants began their summer academy experience with very little to no knowledge of ELs. They understood that ELs were causing their test scores in their respective schools to be lower, and came to the academy to learn what they can do about it. These participants often viewed ELs from a deficit paradigm, meaning they viewed them as problems in their schools, students who they had to deal with instead of students from whom they can learn and had a tremendous funds of knowledge. Other participants arrived with a general knowledge of ELs, but clearly wanted to deepen their understanding. They were typically on the hypothetical fence between deficit and strengths paradigm, frequently going back and forth throughout the academy. Then there was a third group of individuals who already had a good deal of understanding of ELs. They understood that ELs were causing their test scores in their schools to be lower, and came to the academy to learn what they can do about it. These participants often viewed ELs from a deficit paradigm, meaning they viewed them as problems in their schools, students who they had to deal with instead of students from whom they can learn and had a tremendous funds of knowledge. Other participants arrived with a general knowledge of ELs, but clearly wanted to deepen their understanding. They were typically on the hypothetical fence between deficit and strengths paradigm, frequently going back and forth throughout the academy. Then there was a third group of individuals who already had a good deal of understanding of ELs, already viewed ELs and other culturally and linguistically diverse students from a strengths model, but went to the academy to simply learn more about ELs and the latest research available. For them, this academy rejuvenated them into why they went into education in the first place, and provided them an opportunity to network with other colleagues in similar positions (administrators and auxiliary staff) as they are. In fact, one principal ultimately hired a social worker, a co-participant she met in the summer academy.

Some direct actions that were taken as a result of the academy are quite impressive. One superintendent not only required that all of her principals and assistant principals attend the summer academy, but they as a group have now converted their school district from an ESL pull-out program to a maintenance (late exit) bilingual program with the intention of eventually creating a dual language program. A school nurse broke down and cried when she gave her presentation in October, indicating she never knew that she was discriminating against her “brown” students. And yet, another participant, a school psychologist, has become “an advocate (force) to deal with” in her district, according to a colleague. To top it off, two curriculum coordinators from one district have begun asking the question before asking any other question, “how is this decision going to affect the ELs in our district?” according to the bilingual director of that district.

Although these are only a few of the results of the summer academy that will be shared with the participants of the conference presentation, they will also leave having a greater understanding
of what constitutes solid professional development as a whole, but specifically for administrators and auxiliary staff.

Discussion

The panelist as a group represent the combined efforts of five projects whose primary goal is to bridge the capacity gap for teachers and administrators through professional development and preservice education. In light of the fact that graduation rates are significantly lowered for ELs, often by more than one third less (Ballantyne, et al, 2008), the professional development programs presented while directly support teachers and administrators, influence EL student outcomes in many ways.

The development of a sponsored project requires broader considerations of project goals and objectives that directly impact each program’s curricular development on top of recruitment, retention, location, duration, and results. Oftentimes, building flexibility becomes a key factor in a project’s effectiveness that mitigates the natural tension of project goals and what can be realized (2015 HIC Conference on OELA/NPD Grantees’ Issues of Requirements, Recruitment, Retention, Results and Reality). However, each project has a curricular foundation that links to the notions of bilingual education and English as a second language education. In building a professional development program for teachers and administrators of English learners, the programmatic structures are intended to support and augment participants’ previous learning and often times serve as an opportunity to reframe factual understanding and realign dispositional misconceptions. All of this yields to a greater understanding of the broader social context, developing a sociocultural consciousness, (Villegas & Lucas) and expanding participants’ knowledge and understanding relative to the connections that join EL students’ language, language identity, community, culture, bilingualism and second language learning (Faltis & Coulter; Lucas & Villegas, Lucas, Villegas, Freedson-Gonzalez). All of these achieved by developing appropriate learning activities that are coherent to participants’ individual classroom, school context and facilitate active engagement (Garet, Desimone, Birman & Yoon, 2001).

Each of the papers presented in this panel reflect broad key notions that are relative to teacher and administrator learning and can be summarized.

ACCESS, underscores the need that robust ESL education for mainstream teachers strongly influences teachers’ understanding and perceptions of advocacy and connections to EL students’ language and culture. Teachers shifts in perceptions and development of a sociocultural consciousness and broader connections to language and culture are noted.

TELAC, a continuation of the ACCESS program in 2012, provided the refinements needed in ACCESS, by building capacity beyond course work but through guided teacher inquiry and coaching as a means to make substantive changes to practice. Bridging culturally and linguistically responsive teaching practices is supported through the process.

Project LEAP builds capacity by supporting mindfulness through research and establishing communities of teachers who can continue to grow and support one another. Also, tangible STEAM-related curricula writing within districts is a great way to influence classroom practice in a way that benefits ELLs through networking that is not directly related to our grant program.
ITeachELLs is a program designed to be a catalyst for change in teacher preparation and underscores the notion that instrumental change, presented as dynamic shift in teacher preparation, requires many stakeholders who share a common vision. ITeachELLs recognizes that all key stakeholders need to work together to help close the achievement gap for English language learners. University faculty, administrators, support staff, district partners, and mentor teachers can effectively collaborate to support preservice teachers to use project-based learning to provide access to STEM content to ELLs.

Project Dreams reinforces that there are key characteristics that yield to successful and impactful professional development. Project Dreams underscores the need to have professional development to have a longer duration, the minimum of 32+ hours to create any recognizable paradigm shift. However, continual follow-up is also important to maintain their energy and provide an opportunity for the participants to fully internalize the messages taught in the PD. In addition, participants’ must share an “interest convergence” as in an effective and productive ways of convincing participants such as there is truth behind the notion that both bilingual education and bilingualism are both beneficial to students.

Significance
Regardless of the intended results of these programs, the larger benefit of these project is the EL students and communities each program serves. Consider the multiplier effect of change of bridging teachers’ and administrators’ knowledge, competency and affirming perceptions around the notions of culturally and linguistically responsive teaching. How many students do teachers and administrators interface every day? While it is difficult to measure how each of these interactions might be different and attribute these changes directly to participation in any one of these sponsored projects individually, however each of these grant projects bridge the common ground that exist among teachers, administrators, EL students, and their communities.

Conference Symposium Session and Presenters Full Contact Information

Perspectives on ESL Professional Development: Mainstream teachers conflicting perspectives on what's really important and (not) important when teaching ELs

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Making a Difference: Expanding the role of language and culture in content area classrooms

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Preparing for a Cultural Shift: Integrating STEM, Literacy, and Language to Prepare All Teachers to Teach English Language Learners

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Culturally Sustaining Pedagogy through Teacher Action Research

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Introducing PK-12 administrators and Auxiliary staff to the world of the English Learner: Findings from an intensive summer academy

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Conference Proceeding References:

Arizona Revised Statutes, Title 15, Article 3.1, § 15-756.01 (2000).


Immigrant Students, Refugee Students and English Leaners. Yearbook of the National Society for the Study of Education. NY: Teachers College Press.


Cognitive Coaching: Mediating teachers’ practice changes to support English Learners

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The paper presentation is a in-progress study of two cohorts enrolled in a university partnership professional development sponsored project intended to support STEM and English teachers. The program curriculum provided to participants meets the requisite knowledge, skills and practicum requirements leading to an approved state ESL provisional endorsement. While at face value, the program meets state endorsement requirements, the program’s curriculum is aligned closely to culturally and linguistically responsive teaching (Villegas & Lucas, 2002; Lucas and Villegas, 2010).

The paper addresses the role of cognitive coaching for in-service middle and high school (K6-12) (n=37) teachers participating in a two semester academic program that intertwines bolstering existing knowledge of sheltered instruction through a two semester program of building foundational and methods knowledge. Participants also complete a two semester practicum focusing on teaching practices using sheltered instruction for English learners (ELs). The program model’s two semester practicum
focusing on transforming teaching practices through reflective inquiry on practice,
integrates cognitive coaching to foster teachers’ reflection on practice throughout the
program. This is achieved through coaching conversations with specific coaching
prompts and reflective post activities to support thinking for the purpose of transforming
practices.

The urban K6-12 teachers participating in the sponsored project are from multiple
southwest school districts in a large metropolitan area in the southwest. The vast
majority of participants are K9-12 from one large urban high school district. Teachers in
this program find themselves struggling with many sociocultural, language, cultural and
economic issues reflecting urban districts and schools with diverse demographics.
While the majority of students are of Hispanic origin, there are many students that come
from diverse refugee populations from east Asia and Africa. More than 70% of the
student population are speakers of a language other than English (LOTE) and primarily
have lowered social economic status (SES) and greater majority are on free and
reduced lunch.

All teachers in this restricted language state are required to participate in a Structured
English Immersion (SEI) training (A.R.S § 15-756.01). The implication of this state
mandate is that schools with highly diverse multicultural and multilingual student
populations are instructing in English only as only English is the medium of instruction.
While the SEI full endorsement is set at 90 seat hours, the training has many different
foci including discrete language study. The SEI curriculum also minimizes instruction
concerning language acquisition, the role of first language, cultural and community connections but placing high emphasis on instructional strategies (Markos & Arias, 2014). A practicum, that connects content knowledge with instruction however is not required for the SEI full endorsement. As a result, teachers receive a focused strategies instruction, minimized English as a second language (ESL) instruction and lack of understanding of key principles (Markos) to integrate it completely.

Arias (2012), posits that teacher preparation that simply meets state SEI instruction requirements inadequately prepares teachers to fully address the challenges of a very diverse multilingual and multicultural mainstreamed students. Many English language development students (ELD) are earning math or science general education credits and are placed in mainstreamed general education classrooms. Additionally, the 2013-15 marked significant changes for the majority of math teachers leading to curricular district roll-out focusing on the implementation of Common Core in first and second year mathematics at the high school level added literacy for ELD students to master without obtaining fully English proficient (FEP) status. For those students who continue to retain the EL label as long term EL (LTELs) (Faltis & Arias, 2007) and who characteristically have strong oral productive language while simultaneously lacking grade level reading, writing and solid academic literacy for successful school completion, these students also struggle in mainstreamed SEI classrooms.

In-service professional development is needed to bridge this knowledge and skills gap, particularly at the secondary level as graduation rates for ELLs are 30-40% lower than
non-ELs (Ballantyne, Sanderman, & Levy, 2008). Along with scarce and or absent connections to any or robust multicultural focus in university teacher preparation programs (Menken & Antunez, 2001, Gandara & Maxwell-Jolly, 2006) the teacher capacity gap widens when placed in situational context of urban schools described in this study.

However, professional development not only requires linking teacher learning to culturally and linguistically responsive teaching practices, but must also requires coherent linkage to teachers’ classroom context (Garett, Porter, Desimone, Birman & Yoon, 2001) if reform or transformational teaching practices are intended as a desired outcome. It is through the lens of reflective practice and cognitive coaching, that acts as the supporting structure and bridges the thinking process of teachers. Coaching on reflections to practices, reviewing observational data provided by coaches, as well as planning for new teaching practices are opportunities for dynamic changes to classroom practices. Therefore, cognitive coaching acts as the converging process linking the various parts of the professional development program (e.g. course work, teacher inquiry and practice) as a means to foment changes to practice.

**Theoretical connections to English Learners and teaching practices**

Participating teachers embarked on a year-long practicum in addition to course work focusing on bridging existing practices and reaching towards practices that reflect culturally and linguistically responsive teaching (Villegas & Lucas, 2002; Lucas & Villegas, 2010). According to de Jong and Harper (2005), teachers that engage in
practices that foster opportunities to provide feedback as well as monitor language and bilingual development, enact practices that support ELs’ academic school success (de Jong & Harper, 2005). Many of the participants addressed aspects of pedagogy that reflected on some of the key eight components of Sheltered Instructional Observational Protocol (SIOP) (Echevarría, Vogt & Short, 2010). Batt (2010) reiterates the importance of the role of the cognitive coach who serves as a mediator supporting teachers through reflecting on practice, planning on practice and enacting on changes to practice (Bratt, 2010, p.999).

The paper utilizes the theoretical frames of Embodied Understanding of Practice, Dall’Alba & Sanberg (2006) and culturally and linguistically responsive teaching, (Villegas & Lucas, 2002; Lucas & Greenburg, 2008; Lucas & Villegas, 2010) for the purposes of addressing reflective teaching practices. The works of researchers Costa & Garmston (1999) as well as Ellison & Hayes (2003, 2010) provide the foundational theoretical understanding of cognitive coaching as a means to mediate teachers’ thinking of teaching practices, reflection, and planning.

Cognitive coaching relies on a fundamental premise that as the coach supports the thinking process through structured conversations, teachers are encouraged to reflect, plan and problem solve instructional problems. The cognitive coaching process conversations that occur between cognitive coach and teacher inherently serves as the structure for the coaching interaction. As a result, the interaction between cognitive coach and teacher serves as the opportunity for the teacher to begin thinking differently
and more often than not, serving as a catalyst in bolstering teachers’ reflection and analysis on their individual learning.

Overall, the coaching conversation acts as a supporting structure or scaffold. Since teacher learning relative to transforming practice is not a linear process, then the coaching conversation often requires a scaffold, a coaching conversation processes (Ellison & Hayes, 2009, p. 81) for reflection, planning and implementation of teachers’ goals. The paper addresses the research questions: What do teachers learn about their own teaching practices through the process of cognitive coaching? How does cognitive coaching support the reflective process for transforming teachers thinking about their own teaching practices?

**Data and analytic method**

The study addresses teacher development of the case of two separate cohorts (2013-14) and (2014-15) on transforming practices for in-service teachers that includes cognitive coaching as part of their practicum experience. All participants (n= 37) had previously completed the minimum state requirements for an SEI endorsement and the vast majority had instructed their subject areas between five and nine years. Participants were primarily STEM and English teachers with in subject areas such as math (n=17), English/language arts/reading (n=16), and science (n=3). The majority of participants are K9-12 (n=32) and middle school K6-8 (n=5). The qualitative study utilizes a constant comparative method (Strauss & Corbin, 1994) and includes data
sources such as pre/post surveys, reflections, and coaching conversations. The paper utilizes excerpts of coaching conversations and includes data on cognitive coaching conversational flows utilized with teachers for purposes of clarification and illustration of findings.

**Preliminary Findings**

Through focused attention on shifting teaching practices to reflect culturally and linguistically responsive teaching, participants had opportunities to reflect on practice and be coached through a teaching reflecting model which includes reflecting, planning, enacting, analyzing and then selecting how to transform teaching practices. Teachers also worked on special projects in their classrooms which required reflecting on pedagogical problems and thinking about different ways to solve or perhaps reinvent a new way of teaching.

Preliminary findings suggest that when comparing cohort participants’ experiences and overall process, some participants selected topics that closely related to planned activities in class while others took many more steps within the inquiry. Many teachers enacted projects that involved “stretch” in their teaching styles. While both reflection and planning coaching conversations were used, remarkably the conversations supported some teachers to move beyond where they intended to safely stay.

*Using Coaching to clarify a teacher’s role*
When one math teacher embarked on different ways of looking at the literacy component of teaching first year algebra, the coaching conversations centered around learning about his interpretations of academic language and reconciling within his thinking the differences of academic vocabulary as a teacher and how his students would use vocabulary.

Through coaching the teacher reflected on and opted to plan for utilizing different teaching methods to develop language of his EL students. It was through his trial and error and later through reflective coaching conversations did a clear path of developing literacy emerge. In a reflective conversation, the teacher was asked to discuss his writing strategy implemented to help students complete departmental assessments that require explaining algebra math concepts. While he could not name the content literacy strategy, he could reflect and personalize how the activities he implemented did in fact support his students which were "ways to write and explain ideas easily, to the point, and in a common sense way that anyone could understand". When asked if he considered himself a math teacher who teaches his students writing, he reiterated that he teaches his students to use language that expresses academic concepts.

*Using coaching to enact new changes – planning for implementation*

Overall, the majority looked at different elements of SIOP and selected areas that were areas of concern primarily or areas where they could personally strengthen. Teachers’ direction and degree or level of shifting practices ideas changed as their own unique
sense of efficacy increased. For some, coaching conversations were the opportunity to allow them to explore ideas, plan and enact them. The inquiry coupled with coaching conversations supported the directions and degree teachers directed their practice changes.

Through cognitive coaching process maps, participants were able to reflect on their inquiry process, reflect on their implementation and also consider ways to plan, enact, and critique their instruction suggesting enhanced agency relative to EL instruction in their content area. Teachers’ survey comments and other artifacts demonstrated and increased awareness of their own perceived abilities relative to sheltered instruction. Cognitive coaching supports teacher efficacy and awareness of teaching practices. While teachers reflect considerably on their learning, coaching conversations revealed that not only did teachers develop a greater sense of efficacy when teaching ELs, but also developed increased consciousness of their own teaching style, personal limitations that acted as barriers to their own development. Having achieved this sense of their teaching, provides opportunities for further changes to practice through renewal (Costa, pp 13-15).

**Scholarly Significance**

The implementation of cognitive coaching as part of a practicum or as a mediating structure for teachers in a professional development program promotes reflective thought, planning and implementation of practice. Often times professional development
lacks the structure to facilitate changes. In PD programs designed to foster culturally and linguistically responsive teaching practices, cognitive coaching conversations enable teachers to more aptly implement sheltered instructional strategies.

References


Arizona Revised Statutes, Title 15, Article 3.1, § 15-756.01 (2000).


Title: Creating A Positive Learning Environment That Supports The Anxious Child's Transformation from Stuck To Thriving

Topic Area: Elementary Education

Presentation Format: Paper Session

Description:
This presentation will provide educators with tried and true classroom activities that support self-regulation and empower the anxious child to thrive in a safe learning environment.

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Students who struggle academically are often suspected of having learning disabilities by their parents and teachers. Have you noticed an increase in anxiety amongst young students? Could anxiety issues rather than a learning disability be the source of poor academic performance?

The complex nature of our society challenges educators to create a safe and nurturing environment that fosters student self care and a love for learning. In this presentation, I will review anxiety symptoms observed in the classroom and provide tried and true arts based tools that promote student self-regulation. I will highlight how these tools transform anxiety into confidence and create an engaging environment for all students to learn.
1. [Title of the submission]
Practice of ICT-based remote exchange nutrition education for high-school students with “The Game of Healthy Life - Travels of Body Weight”

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6. [Abstract]

[Aim]
This study aims to examine the effects of three-year nutrition education for high school students that is conducted through distance communication with ICT with the objective of “preventing life style diseases during a lifetime.” The theme of the first year is “to understand the concept of amount,” more specifically, “understanding the energy amount necessary for oneself a day and the appropriate amount of staple food.”

[Subject and Methodology]
The subjects of the study were Private High School N in SI Prefecture and Private High School U in SA Prefecture. Quasi-experimental design was structured setting up an intervention group and a control group in each class. The following activities were conducted in the course of the study: preliminary research in July (measurement of body composition, ex-ante questionnaire, Food Frequency Questionnaire, and Food Mapping), distance learning for the three schools (University E, High School N, and High School U were connected each other via Skype) in October, group work with the KJ method in November, a distance communication class in December, and ex-post research in March.

[Results]
The preliminary research revealed that it was necessary to promote the boys’ understanding about the appropriate intake amount of grains, snacks and lipid and that the girls generally had negative perceptions about eating. The distance learning was conducted with the theme of “Knowing about one’s own body: how to interpret the measurement results.” The boys generally had the perception that their own body shape and composition were appropriate compared to the girls. The group work consisted of the task of considering “a title and a catch phrase for a game of life.” The students shared their ideas with the KJ method and submitted them using tablets.
More than 80% of the student participants from both schools voluntarily responded that the distance education was a good opportunity for them to think about their future health. Those students who had high expectations and motivations for the distance communication class responded that they enjoyed the class and that they felt as if they were taking the class with the partner school.

The weight and knowledge about energy intake of the students in the intervention group increased in a statistically significant manner after the activities. The Nutrition Education contributed to raising their knowledge level. The girls have problems about the “rhythm (irregular meals, eating between meals and midnight snacks)” of eating behaviors, which are closely related to their “desire to be thin,” “stress,” and “confidence in self management of dietary habits.” On the other hand, the boys have problems about the “ways of eating (eating fast, eating while doing something else, and unbalanced diet),” which are correlated with their “self esteem feeling.”

[Conclusion]
It is necessary to conduct nutrition education about eating between meals and midnight snacks for the girls from next year, while it is indispensable to provide nutrition education about eating fast and eating while playing games with a smartphone for the boys.

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Abstract:

For those new to teaching in Christian colleges and universities, there is often a learning curve involved with faith and learning integration. Even if faculty members are experienced in teaching, research, and their discipline, becoming competent and finding meaningful ways to bring faith into the classroom can take considerable effort and practice. Complicating matters is a lack of consensus about what constitutes faith-learning integration. The purpose of this qualitative paper presentation is to detail perspectives on faith integration found in the literature, to examine methods that might be used in various helping disciplines, and to provide insight into the lived experience of one faculty member (the author) as she learned to find an authentic means of weaving faith discourse and reflection into her own classroom.
Title: Instrument Development for Measuring Pre-service and Inservice Teachers’ Self-Efficacy in STEM (Science, Technology, Engineering, and Mathematics)

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Topic: Teacher Education

Presentation Format: Paper Session

Description:

In this session, researchers will discuss the processes involved in the development and validation of an instrument to assess pre-service and in-service teachers’ self-efficacy in teaching mathematics and science, and the utilization of technology and engineering practices in the classroom. The results of the study provide evidence that the instrument is adequate. Future research is needed to continue the validation of this instrument on a larger sample of preservice and inservice teachers.
Abstract:

The purpose of this pilot study was the development and validation of an instrument, the Teaching Self-Efficacy – Science, Technology, Engineering, and Mathematics (TSE-STEM), to assess pre-service and in-service teachers’ self-efficacy in teaching mathematics and science, and the utilization of technology for instructional purposes and engineering design and practices in the classroom. Self-efficacy, as defined by Bandura (1977), was the theoretical framework for the development of the instrument. To do this, we identified five factors to represent various aspects of self-efficacy (pedagogical content knowledge, instruction, student engagement, classroom management, and outcome expectancy) through the literature review and generated items to fit with the constructs. A panel of five university faculty experienced in PK-16 education settings and in the STEM field served as experts to review the instrument for content validity. A 25-item instrument, utilizing a 5-point Likert scale (strongly disagree, disagree, uncertain, agree, strongly agree) was created and administered. Fifty-nine participants completed the survey.

The teacher self-efficacy instruments considered in the study included the Science Teaching Efficacy Belief Instrument (STEBI), (Riggs & Enochs, 1990); Math Teaching Efficacy Belief Instrument (MTEBI), (Enochs, Smith, & Huinker, 2000); the Teachers’ Sense of Efficacy Scale (TSES), (Tschannen-Moran & Woolfolk Hoy, 2001); a technology survey, Teacher’s Technology Self-Efficacy Tool (Farah, 2011) and an engineering instrument, Teaching Engineering Self-Efficacy Scale (TESS) (Yoon, Evans, & Strobel, 2012).

An exploratory factor analysis (EFA) was conducted to investigate underlying factor structures of the instrument and to identify extraneous items that do not fit into any of the factors. Findings from this pilot study indicate the reliability of the instrument is adequate; however, a larger sample size is needed to further validate the reliability and validity of the instrument. In Phase II of this research study, the researchers will further validate the reliability of the instrument. In addition, findings from the Phase II study may inform teacher preparation practices, inform professional development needs of pre-service teachers and in-service teachers, transform STEM learning for teachers, provide strategies for STEM education improvement, and inform administrative support for teaching effectiveness.
Eliminating the Racial Predictability of Student Academic Achievement through Non-Evaluative Teacher Feedback

Educational Measurement and Evaluation

Workshop

This workshop will train attendees on a data driven, researched based, non-evaluative teacher feedback program adapted from New Zealand for K-12 schools in the United States with the goal of effectively supporting the academic success of students of color. The feedback program allows teachers to reflect on their own racial backgrounds and the impact of racial stereotypes on their worldviews so they will become empowered to grow in their teaching and learning.

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ABSTRACT: Eliminating the Racial Predictability of Student Academic Achievement through Non-Evaluative Teacher Feedback

“High help environments, especially when accompanied by high perfectionism, elicited better behavior and greater academic engagement in classrooms of all racial compositions, but appeared substantially more important for classrooms where three-quarters or more of the students were students of color. Hence, combining cheerful helpfulness with pressure for producing correct answers is an antiracist strategy for raising achievement and narrowing achievement gaps” (Ferguson 78).

“One effective intervention is to continue to provide critical feedback but to accompany it with an explicit, two-step message: a reference to high performance standards and a personal assurance of students’ capacity to reach those standards. In our research we found that African American college students trusted critical feedback as much as their European American peers when that feedback was motivated by (1) an explicit statement on the part of the teacher that the critical nature of the feedback was motivated by high performance standards…; and by (2) an equally explicit statement that the student in question has the capacity to reach those standards… when given critical feedback in this manner, African-American students were even slightly more motivated to revise their essays than were European American students” (Cohen 83).

Research Objectives: Through studying how this innovative teacher feedback program supports students of colors in academic environments, we know that the program is successful when it meets five key goals:

Goal 1--Holistic Community Education
- supports the whole student, academically and socio-emotionally
- fosters interdisciplinary collaboration among teachers. The positive connections and collaboration among faculty will enhance the overall school environment.

Goal 2--Equity
- provides concrete, researched based coaching on best practices for educating students of color
- allows teachers to continue their courageous conversations about race with faculty members
- places students of color at the forefront as our indicators of progress in successfully educating all students

Goal 3-- Supportive Learning Environment
- creates positive and strong relationships between students and teachers
- refocuses learning conversations to academic conversations versus behavior conversations

Goal 4 --Transformational Teaching and Learning
- allows teachers to learn from each other in safe spaces
- uses research based practices to improve teaching and learning
- grants teachers the capacity to create and monitor their own professional goals that are supported by the teacher coach
- uses data and graphs to monitor progress throughout the year

Goal 5-- Transformational Leadership
- provides data and qualitative feedback on what professional development teachers want and need in the classroom

**Proposal**

On the New Zealand Ministry of Education website, there is a quotation by Basil Bernstein that reads, “The culture of the child cannot enter the classroom until it has entered the consciousness of the teacher.” Research supports that if teachers are able to reflect on their own racial backgrounds and the impact of racial stereotypes on their worldviews, they will become empowered to grow in their teaching and learning. Our students will come and go in four years, but our teachers will stay for decades. Therefore, in order to change school culture and to improve student success, we must impact adult learning. Because as teachers we are all in different places in our learning and understanding, the coaching and teacher cohort model helps support teachers where they are in their teaching for equity journeys.

Through this program, teachers will:
- receive comprehensive, non-evaluative feedback on their teaching that is both data driven and research based with the goal of using best practices for teaching students of color.
- form interdisciplinary teams of teachers to support their learning and growth.
- use the feedback as a gateway to learning about other current best practices for teaching, such as restorative justice/peace circles, executive functioning, and socio-emotional learning.

**What does the program entail?**

The program is inspired by Jessica Stovall’s 2014 Fulbright Distinguished Award in Teaching grant to New Zealand. Some schools in the country have created a researched based and data driven teacher feedback program that has made significant decreases in the racial predictability in student academic achievement between Maori and White students in New Zealand. For example, a case study was completed by Jessica Stovall at a school in Wellington, New Zealand, where students went from 24% meeting national standards to 75% meeting the standards in just one year—and the only change was utilizing the teacher feedback program to change teacher mindsets about the types of learning conversations going on in their classrooms.

This program has since been adapted by Jessica Stovall, who teaches English at Oak Park River Forest High School and is currently writing a book about successful mindsets for educating students of color, and Patrick J. Hansen-Schmitt, a Harvard Graduate School Alumnus and Assistant Principal at Hawthorne Scholastic Academy, the highest ranked non-selective elementary school in Chicago Public Schools. The adaptation has included research to ensure that the feedback program fits the U.S. context and racial demographics, as well as across age levels. Both Jessica and Patrick will pilot this teacher feedback during the 2015-2016 school year—Patrick in K-8th grade, and Jessica in 9-12.

The workshop at the Hawaii International Conference on Education will provide the background on the teacher feedback, as well as provide training on how administrators, teacher education leaders, and teachers can utilize this new program in their schools and universities.

The implementers of the teacher feedback program are critical friends in the reflective practice of this program, and this program is due to its non-evaluative. Instead, it uses an effective data driven tool as a catalyst for teachers to transform their classrooms.
The Pa Harakeke Program
This program is a part of New Zealand’s Ministry of Education’s initiative to raise Māori student achievement. The case study school possessed similar racial demographics percentage breakdowns as Oak Park and River Forest High School and Hawthorn Scholastic Academy (40% Māori, 10% Pasifika, and 50% white) and only 24% of students met the National standards two years ago. However, after using this program after just one year, 75% of students met the standards the next year. This year, the school’s goal is 80% meeting national university readiness standards.

The program involves four teachers that form a cohort. Each member chooses three target students, usually students of color (if applicable). The trained teacher coach in a non-evaluative role goes into each teacher’s classroom at least once a quarter and completes a 30 minute observation. This observation provides only quantitative data; there are no subjective elements. Essentially, every 20-30 seconds, the teacher coach will observe and mark the engagement (and type of engagement) for the four target students of color as well as two achieving white students (as controls). The teacher coach will also note what the teacher is doing at the time of that students’ observation of engagement. The teacher coach can note for co-construction, positive or negative behavior feedback, positive or negative behavior feedforward, positive or negative feedforward academic feedback, positive or negative feedback academic, prior learning/prior experiences, monitoring, and instruction.

The program facilitator will also mark where the teacher stands in the classroom at ten different points in the 30 minute observation. The teacher will then receive his or her data of the overall percentage of engagement for each of the five students. The teacher will also receive an in-depth analysis of the types of learning conversations going on the classroom, and the percentage of positive to negative comments, the percentages of whole class, small group, and individual student conversations.

Connections to Culturally Relevant Teaching and Learning Pillar
After receiving all of this data, the teacher and the teacher coach will sit down and discuss the results. Studies show that minority students succeed best from positive feedforward behavior/academic and co-construction, rather than negative behavior feedback (which is often what students of color receive, causing students of color to internalize that they are “bad” or “dumb” students and/or that their teachers do not like them. Both of these issues create major barriers to academic success). The teacher coach and teacher will reflect together on the engagement percentages and set goals for the next observation.

Each quarter, the cohort of four teachers will meet and discuss their data with the teacher coach present to facilitate. They will help each other by providing feedback, support, advice, and sounding boards. They will come up with group goals that are inspired by strategies, interactions, relationships, positioning, and experiences. The goals are made in partnership for an overall objective of creating more equitable classrooms. Each quarter they will assess how they are doing on their collective goals and can elect to observe each other in their practice as a catalyst for positive growth.

The data is only for the teacher and his or her cohort of teachers for their own personal growth as it is non-evaluative. The teacher coach will provide general recommendations for professional development as trends and themes arise.

New Zealand’s reaction to this program:
“…Pa Harakeke has enabled me to gather real world data on how I teach. It has helped me to see the patterns of movement I use, the students I focus on, and the success or failure of the strategies I use. As a result of my reflection on this data I have been able to shift my practice towards more pedagogically sound ground, away from simply instruction and towards a style of teaching which better engages those students who often fall through the cracks. I have much fewer instances of off-task behavior, my students appreciate the way I teach them, and my Māori and Pasifika students want to attend my classes. Students know that they will be pushed to do their best, given feed forward that helps them to take next steps, and be respected and appreciated during their time in the class.

“Pa Harakeke is not designed as an oversight tool to beat down on hard-working teachers. It is a helpful, refreshing look at my classroom and my practice.”

Sources
1. Title: Surfing the Banzai Pipeline of Accreditation: Assessing Institutional Learning Outcomes (Submission ID Number 683)

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3. Abstract

   Workshop

   Just like surfing, accreditation at any level can be an intimidating process. How well an institution aligns its Institutional Learning Objectives (ILOs) to “Core Competencies,” and assesses its performance are major focal points for the college and university accreditation agencies. Developing the process and methods to assess ILOs can be a formidable task because institutions should create methods and assessment rubrics that are best tailored to the individual needs and goals of the institution. Just standing up, or getting started, is difficult without models to help you through the process. The ideas presented in this workshop will help faculty members at universities charged with these kinds of responsibilities to position themselves to assess institutional learning outcomes and ride the wave of accreditation. This task is frequently delegated to committees made up of faculty who do not have excessive training in the area of university or department accreditation. In addition, these faculty members are often already trying to establish or maintain their own research agenda. The daunting process to establish a university-wide research project that requires the participation and buy in from a significant portion of faculty at a university can seem arduous and might suffocate other work faculty members are trying to accomplish. The purpose of this workshop is to share the process and methods developed at one university to assess institutional learning outcomes and help other faculty and administrators searching for a helpful model to avoid a wipeout.
Title: Using Student Orientation to School Data with Art Therapy and Designed Interventions to Support Students

October 17, 2015

Topic areas: Academic advising and counseling; Educational measurement and evaluation; Other areas - Student engagement.

Presentation format: Paper session

Presentation description: Rocky View Schools has implemented routine assessment of student engagement with school. Student Orientation to School Questionnaire (SOS-Q) results identified Grade Six and Nine students at a middle and a high school who were disengaging from school. In response, a Success in Schools and the Cochrane Healing Arts Time (CHAT) Room were implemented in 2014-15. We detail how SOS-Q data has been applied with specifically designed interventions to re-engage students.

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Using Student Orientation to School Data with Art Therapy and Designed Interventions to Support Students

Introduction

Rocky View Schools (RVS), located in Alberta, Canada has been actively researching student engagement for the past four years using the Student Orientation to School Questionnaire (SOS-Q). The SOS-Q uses a Likert type five point scale from strongly agree to strongly disagree, to measure individual student responses to the following constructs: peer relationships, safe and caring school, internal resilience, external resilience and self confidence in grades 4-12. At the middle and high school grades additional constructs are measured including: extra-curricular activities, utility of school and, if a student works in a part-time job, work-school integration and handling work-school pressures are also measured. See the SOS-Q Program Manual at [http://www.rockyview.ab.ca/jurisdiction/research/sos-q](http://www.rockyview.ab.ca/jurisdiction/research/sos-q) for comprehensive information on the SOS-Q.

Results from the SOS-Q are used by school administrators to identify and work with students who may be at risk of disengaging from their socio-emotional connectivity to school. In one high school the results for grade 9 students in 2014 indicated that a variety of students were at risk of disengaging from school due to academic and social alienation and a lack of confidence and control. In response to this identified need, one intervention developed is the Cochrane Healing Arts Time (CHAT) Room. Guided by a caring professional, the CHAT room has led students experiencing anxiety, physical, sensory, cognitive, social or other stressors through art therapy to experience a process of self-exploration and resolution. This process has helped students learn to express themselves and ultimately enables them to be more productive and successful within an educational setting.

In a middle school the staff has adapted a Success in Schools (SIS) plan format to work with students identified as at risk on the SOSQ. The advantage of using and adapting the SIS format is:

a) it uses the student's voice to articulate what he/she needs to succeed
b) it engages parents
c) it identifies a plan of supports to move forward
d) the plan can be reviewed after several months or in the following school year to look for progress.

The staff has adapted the Success in schools format to reflect the SOS-Q categories (safe and caring, resiliency, peers etc.) for the plan portion of this intervention strategy that is focused on Grade 6 students. The intervention team initially consisted of Grade 6 teachers (3 English, and 3 French Immersion) the administration and the Child Development Advisor. This team worked with students who appeared 'in the red zone' (more than two standard deviations below the mean) on the SOS-Q. The SOS-Q is usually administered in the winter of the student's Grade 6 year at this school. Within this approach to student supports, the classroom teacher has an initial meeting with a student in the red zone and develops the adapted Success in School plan based on the SOS-Q data categories. After the initial meeting, the teacher, student, parent, admin and CDA meet to review and further develop the plan and monitor progress over time. At Ecole Airdrie Middle School, the follow up has now followed to the Grade 7 year. A description of the follow up findings is found in the ‘case studies’ portion of this paper.

By supporting students through the use of Success in Schools model or the Healing Arts within a Universal Learning Environment (that ensure each learning experience is designed to be accessible to all learners), these initiatives have empowered students to develop their self-esteem, confidence, advocacy, resilience, efficacy, peer relationships, and 21st century competencies.

**Context**

There are many educational benefits of using the arts to facilitate student learning. According to Spier (2010) qualitative and quantitative data supports the hypothesis that art therapy programs in schools can improve students self-concept, social roles, understanding of peer groups and involvement in school experiences. Students who participated in this study showed a “…greater increase in scores on the Developing Self-Reliance subscale, which suggests that group members may be able to cope better with peer pressure” (Spier, 2010, p. 81).

Healy’s work on art therapy suggests this work is an emerging field that holds much promise. Healy (cited in Nelson, 2010, p.67) has concluded, “We do not always have the answers; however, we are and will continue to be a program shaped and molded by the students we
serve like clay waiting to respond to the needs presented, always fluid, always flexible, hospitable, welcoming, and safe.”

On her website at The Prairie Institute of Expressive Arts Therapy, Richardson (2015) has observed that “Immersion into the healing arts offers a fresh perspective, increased potential for change, insight and a deeper connection to self and others.” Additionally, in her study of the potential relationships between art education and art therapy, Black (2011) explored comprehensive impacts of art therapy within education contexts, especially as applied to students with special needs. She concluded that, “Having a basic understanding of some of the principles of art therapy... would allow art educators to see their practice in a different way, and to better understand the nature of development and creativity, thereby providing additional strategies for teachers and allowing them to successfully and optimally teach to a wide variety of learners” (Black, 2011, p.102).

The Success in School (SIS)Plan framework was developed by the Alberta Ministry of Education premised on the recognition that educational achievement results for student who are at risk lag behind those for the general student population. For example, significantly more children and youth in care drop out of school, do poorly on achievement tests, fall farther behind in school as they get older, and are less likely to graduate from high school. The staff at Ecole Airdrie Middle Schools have adapted the SIS plan to ensure supports available at the local level work together with the student, their caregivers and other appropriate partners to share information and engage in joint decision-making to plan for and support school success for students who are at risk of disengaging from school.

Action research within Rocky View Schools is demonstrating that a positive school climate can reduce absenteeism, suspensions, substance abuse and bullying, stress and anxiety, while increasing student achievement, engagement, motivation and psychological well-being. The CHAT Room and Success in Schools initiatives are targeting four key components of school culture related to students’ affective experience:

1. flexible, adaptable, student-centered learning spaces and experiences,
2. safe and caring learning communities that nurture positive social learning and interactions,
3. ongoing support, mentoring, instruction and coaching, and
4. coordinated wrap-around community services.
The design of both projects is predicated on Social Emotional Learning, including self-awareness, self-management, social awareness, relationship skills, and responsible decision-making (see http://www.rockyview.ab.ca/21stC/learning/social Emotional).

**Prototypes for a new vision for Learning Support**

Implementation of the CHAT room at Cochrane High School and the Success in Schools intervention model at Ecole Airdrie Middle School have provided opportunities for co-teaching, research, parent and community involvement and importantly, peer mentorship. The referral process at both schools involves the identification of students with multiple risk factors and the completion of a referral form.

At the high school students may be referred by the school administration, guidance department, learning support or Learning Centre staff, or by parents. Students who score below average on the SOS-Q constructs or on the total SOS-Q scale score are interviewed to discuss whether their SOS-Q result indicates a need for support, including the option of the CHAT Room. Additional supports may be accessed within the broader community, including:

- Art Community - The Paint Box, Cochrane Art Club
- Native Community - Healing Arts/Cultural Connection
- Work Experience Opportunities - Local School Partnership
- Guest Artists
- Medical/Mental Health Collaboration
- Rotary Club

An exciting benefit of art therapy is the fit with five of the main, curricular-based drivers of 21st Century learning (see http://www.rockyview.ab.ca/21stC/supporting). A focus on Creativity and Innovation; Social, Cultural, Global and Environmental Responsibility; Communication; Lifelong Learning and Personal Management; and Collaborative Leadership helps students in a Universal Learning Environment to reinforce their well-being and achieve their goals. Through the use of the arts, learners are given the opportunity to use flexible instructional materials, techniques, and strategies that are adaptive and innovative. This creative process will ultimately empower them to take an active role in their learning while acquiring 21st Century competencies.
Case Examples

Some examples of underlying theory and case work being provided in the CHAT Room or the Success in Schools intervention model are discussed next.

1. High school students experiencing anxiety may find it difficult to express their emotions and learning needs. Communicating with peers and teachers is challenging when you are faced with the everyday stressors of school. The regular classroom setting, combined with the academic expectations of high school, often trigger anxiety for many students. The CHAT Room has provided a calm, welcoming space for students with anxiety issues to explore and uncover personal challenges that may be holding them back from reaching their full potential. Using the arts to communicate can be a much easier way for students to demonstrate understanding and promote wellness and growth.

2. The CHAT Room has provided a space for all students, from all social groups, to work together. To have a space such as this in a large high school is important. Cochrane High is already a school that demonstrates inclusion. Previous collaboration between teachers and students has given everyone the opportunity to work together and observe a variety of learning styles. The CHAT Room however, is a unique space that allows for this collaboration to extend beyond classroom assignments and social interaction between classes. Students who work in this room build relationships in a different way. When the stressors of regular classroom work and expectations are removed, students work and communicate differently. They are also exposed to peers and interactions with others that they may have never had before. Acceptance of other people’s skills, personalities and past experiences grows. Any student, from any grade can access the CHAT Room. Mixing age, skill set and past experience allows students the opportunity to build meaningful relationships in a safe environment. Using the arts and the art making process, ultimately gives students the opportunity to build social skills and improve social interactions.

3. One of the most important outcomes of using the arts to facilitate learning and communication can benefit non-verbal students. As we know, understanding cannot always be expressed in words. The arts provide these non-verbal students the
opportunity to demonstrate their knowledge and feelings in a different format. Accessing the CHAT Room and participating in the healing arts activities is providing these students with the opportunity to communicate through the arts. In addition, the possibility of working collaboratively with other teachers is exciting. This collaboration between the CHAT Room teacher and the subject teachers benefits everyone. The learners experience success in a universal learning environment and are given the chance to demonstrate their knowledge through the guided activities and practices of the CHAT Room.

4. There are so many different styles of art. The variety of materials, tools and techniques involved allows students with physical challenges to develop their skills. The CHAT Room provides these students with an inclusive universal learning environment to explore their abilities in a safe and exciting way. The arts are unique in the sense that there is truly no “wrong” in the art making process. Any student with any skill set, can benefit from participating in the creative process.

5. Ecole Airdrie Middle School is following individual students identified in the ‘red zone’ (two or more standard deviations below the mean on the SOS-Q) in Grade 6 as they move into their Grade 7 year. This follow-up includes meeting with the student to review the personal voice slide show from the previous year, discussing what aspects are the same or have changed this year. Similar meetings are held with the parents and the new teachers of these students as strategies to support the student’s emotional development are documented in the planning form. In the follow up, parents expressed sincere gratitude that the school had invested the time and care in this process. Teachers and other staff were often surprised at the way students were able to articulate what they needed to change in the school environment, and there was a genuine commitment to implementing the plan to assist the student.

6. The value of following the success in schools type plan is becoming apparent. In one case, the student had undergone a program change in her Grade 6 year, and had felt considerable stress during the first year of the change. As she reviewed her slide presentation a year later, she actively commented on how she
was feeling last year, and added several details. Throughout her follow up interview, she commented on how things were now different for her at school and in general. In her second year in her new program, she reports feeling much more at ease. She likes her class and the supports to her learning; she values a friendship she has formed. This student is now serving on the school’s peer support team where students offer friendship and support to other students.

7. In working with another student, it became clear that there was a dissonance between how the student viewed himself, how the staff observed this child, and how the parent understood the child’s needs. For example, the student stated that he had lots of friends, whereas the staff observed that this child is often alone. This lead to including in his plan, continued work on friendships with the school counselor. The SOS-Q process and the patient follow-up led the school to look deeper into a child’s issues and carefully plan for supports.

**Evidence of success**

Student outcomes are being monitored with the SOS-Q especially in relation to: improved self-confidence, decreases in anxiety, improved peer relationships, sense of a safe and caring environment including a connection to a caring adult figure, and internal and external resilience. Additional measures will include attendance and school achievement marks as well as qualitative observations relative to student’s overall self-advocacy, coping strategies and academic readiness. (These and associated student outcomes data will be reported in the final paper to be presented at the Hawaii International Conference on Education in January 2016).

**Conclusion**

The CHAT Room based on the emerging field of Art Therapy and the Success in Schools intervention model are promising examples of intervention supports for students who are at-risk of disengaging from school. Although the current study is delimited to a middle and high school setting, similar interventions could be implemented in any school. Responding to student’s affective experience of school and associated socio-emotional needs is a relatively recent and rapidly developing area (Christenson, Reschly and Willie, 2013). The on-going action research
in Rocky View Schools based on the Student Orientation to School Questionnaire (SOS-Q) provides rich data to inform a range of student supports, the CHAT Room and Success in Schools model being only two. For more examples, please refer to the SOS-Q Program Manual, pp. 14-22 at http://www.rockyview.ab.ca/jurisdiction/research/sos-q. An additional resource on Art Therapy is the Canadian Art Therapy Association at www.canadianarttherapy.org and more information on Success in Schools model is available at http://education.alberta.ca/admin/supportingstudent/collaboration/ppf/
References


Education Practices for Early Identification of Communication Concerns in Young Children

Topic Area: Special Education

Description of Presentation: This study was completed to gain an understanding of the identification and referral practices of educators in the identification of communication delays for very young children. The coordinators of a Midwestern home visiting program, who provide screening and developmental surveillance to young children and their families, were surveyed regarding the procedures used in their programs to identify communication delays. Responses indicated three primary themes as important for the early identification of communication delays.

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Abstract

Communication delays in infants and toddlers are significantly under-identified, prohibiting early intervention for many children and their families who might benefit from services. Recognizing communication delays early in life is critical for appropriate brain development to allow children to reach their potential. Researchers have sought to identify earlier and more accurate predictors of language development. There is a need for special educators to have sensitive methods to assist in the early detection of communication delays.

A Midwestern state recognizes the need for early detection of development disabilities and has developed home visiting program for screening and developmental surveillance of young children. This program consists of educators who conduct home visits at regular intervals to provide developmental surveillance and screening for any child in the state aged birth to three years. This study was completed to gain an understanding of the identification practices of educators in the area of communication delays for very young children. The coordinators of a Midwestern home visiting program who provide screening and developmental surveillance to young children and their families were surveyed regarding the procedures used in their programs to identify communication delays.

Analysis of the responses indicated three primary themes as important for the early identification of communication delays: experience and knowledge is essential, an understanding of typical development is paramount, and tracking observations is important. Understanding the key themes will potentially provide for an earlier and more accurate method to identify young children with communication delays. Recognizing communication delays early in life is critical in order for children to access early intervention and reach their potential.
Introduction

It is estimated that developmental disabilities affect 12 to 17 percent of children in the United States (Boyle, Decoufle, & Yeargin-Allsopp, 1994; Glascoe & Shapiro, 2005; Palfrey, Singer, Walker, & Butler, 1987). It is well documented that developmental delays are not diagnosed soon enough. Many studies document the under-identification of young children with developmental delay (Drotar, 2004; Flanagan & Nuallain, 2001; Glascoe & Dworkin, 2005; Hamilton, 2006; Harrison & McLeod, 2010; Lock, Shapiro, Ross, & Capute, 1986; Palfrey et al.1987; Shevell, Majnemer, Rosenbaum, & Abrahamowicz, 2001; Sices, Feudtner, McLaughlin, Drotar, & Williams, 2003).

This literature cites several factors that contribute to difficulty with the early identification of developmental delays in young children. For instance, there is no “gold standard” for developmental screening for children less than three years of age (Nelson, Nygren, Walker, & Panoscha, 2006; Rydz, Shevell, Majnemer, Oskoui, 2005). Another factor is the significant variability in existing developmental surveillance and screening practice (Harrison & McLeod, 2010; Nelson et al., 2006; Sices, Feudtner, McLaughlin, Drotar, & Williams, 2004). Furthermore, the literature states that physicians use a formal screening tool less than half of the time when screening young children’s development (Frankenburg, Dodds, Archer, Shapiro, & Bresnick, 1992b).

Communication delays in particular are not identified soon enough. According to the American Speech-Language Hearing Association (1993), approximately 15 to 25 percent of young children have some type of communication disorder. Less than 30 percent of children with communication delays are identified by the time they enter kindergarten, however (Palfrey et al., 1987; Tomblin, Records, Buckwalter, Zhang, Smith, & O:Brien 1997; Sices, 2007). This lack of identification indicates that many children with communication delays are not receiving services prior to school age.

A number of factors contribute to later identification of young children with communication delays. First, many professionals believe that language begins around 12 months of age with the first words (Hess, Dohrman, & Huneck, 1997; Sices, 2007). Many language precursors have been identified that occur prior to the emergence of first words, for example, number of consonants, eye gaze and joint attention. These precursors are not widely understood by the general public or professionals outside of the field of communication sciences and disorders.

Second, criteria have not been established for distinguishing typical from delayed language development for children less than three years of age. The criterion most often used to decide if a child’s language is showing a delay is the number of words and word combinations that the child uses (Paul, 1996). Because of the large variation in vocabulary development, this criterion is not meaningful for children less than 24 months of age. At 18 months the average vocabulary is 100 words, with a standard deviation of 111, and the average vocabulary at 24 months is 300 words, with a standard deviation of 175 (Fenson et al.,1993).

Third, formal screening tools are of limited use. Their sensitivity and specificity have a broad range (Nelson et al., 2006) depending on the age of the child (22% to 97% for sensitivity, 66% to 97% for specificity). Research has found that this test only detects 30% of young
children with language impairments (Glascoe, Byrne, Ashford, Johnson, Chang, & Strickland, 1992; Hamilton, 2006).

Statement of the Problem

It is well documented that the identification of communication delays is challenging for children less than three years of age. Waiting until a child misses a major milestone such as talking may result in late recognition of a delay. An understanding of the practices of educators/practitioners in identifying communication delays of young may lead to the earlier identification of a greater number of young children with communication delays.

Purpose

The purpose of this study was to gain an understanding of the identification practices of educators/practitioners in the identification of communication delays for very young children in a birth to three developmental surveillance and screening program.

Research Question

The following research question was addressed by this study using descriptive data collected from interviewing coordinators of a developmental surveillance/screening program for children birth to three years of age: What are the identification practices that educators/practitioners use to identify children under three with a potential communication delay?

Methods

Participants

The participants included each of the eight regional coordinators of a Midwestern home visiting developmental surveillance/screening program.

Survey Method

The eight coordinators across the Midwestern state were contacted by phone. Each coordinator was asked a set of survey questions to determine the specific practices that were used in their developmental surveillance/screening program to identify children birth to three with potential communication delays. The survey questions consisted of eight questions addressing the identification and referral practices used to identify potential communication delay.

Data collection

Semi-structured, one-on-one telephone interviews were the main means of collecting data for this study. The questions addressed in the interview included: types of screening tools used, age screenings performed, procedures for completing the developmental screening/surveillance, specific behaviors that may alert educators to a communication delay, steps that follow a “suspect” communication delay and thoughts regarding the adequacy of procedures for identifying communication delays.
Data Analysis

Initial interviews were conducted by telephone and lasted approximately one hour. The researcher took notes during the interview. These notes were then used for initial coding purposes. After the initial coding was completed, and the notes were re-read several times, a new file was created and the transcripts were re-coded and collapsed from 64 to 40 codes. The constant comparative method (Glaser & Strauss, 1967) of data analysis was used to make comparisons and create categories at each step of the analysis, (Charmaz, 2006; Creswell, 2013). Three categories emerged from the data.

Results

In addition to using formal screening tools, three categories around practices related to developmental surveillance emerged from the data. These categories included: the experience and knowledge of the educator is essential in providing effective developmental surveillance, an educator’s understanding of typical development is paramount in providing effective developmental surveillance, and an educator’s skills in progress monitoring to track observations is important so that young children with possible communication delays can be identified as early as possible.

Category 1

Category 1 included responses around the importance of the educators having experience with young children and knowledge of development so that they can draw on those experiences to make decisions about communication development. This included educators having a “gut” feeling that this child is developing differently than expected, experience to understand the layering of indicators that place children at a higher risk for delay and an understanding of the interplay of all areas of development. The coordinators comments reflected they felt that there is a link between accurate and informed observations and an educators experience with young children. Many of the coordinators discussed that accuracy of clinical judgment is related to the amount of experience an educator has working with young children. Several responses included comments that as educators had more experience that their clinical judgement increased in accuracy and subsequently children were identified at an earlier age.

Category 2

Category 2 included responses around educators having a strong foundation of typical development in order to make decisions about a young child’s communication skills. Each of the coordinators stressed the importance of knowing all of the milestones in each of the area so that educators know right away when something has deviated from the typical range. Across regions, coordinators commented that the thought that there may be a link to child with lower fine motor skills and a possible communication delay. This was felt to be more important in the area of communication delay because the milestones for children birth to one are not understood as well for those with less knowledge and skills in early development

Category 3

Category 3 included responses around the importance of educators tracking observations over time so that they can make decisions about child’s early communication skills. The
coordinators stressed the importance of providing developmental surveillance/ and screening services on regular intervals, especially to the youngest children, so that developmental observations can be compared and contrasted across visits. The coordinators also indicated the importance of the use of checklists so that there is a formal way to track observations in addition to using a formal screening tool.

**Summary**

In addition to screening, the majority of the practices reported as important in identification of probable communication delays were based on developmental surveillance practices. Yet, there is little information in the literature that empirically addresses what those specific surveillance activities should be in relation to communication. The coordinators surveyed reported that the most important developmental surveillance activities for early identification of communication are the following:

1. The experience of the educator is especially important because less is known about specific milestones in the first year of life in the area of communication as compared to other areas of development.
2. An understanding of typical development is important, especially the specific early communication skills.
3. Tracking observations over time of early communication skills to improve early identification.

**Recommendations**

The results of the current study indicate a need for future research on the early detection of children with communication delays with a specific focus on developmental surveillance activities. Following are the recommendations:

1. What specific skills do “experienced” educators/practitioners have that contribute to an early identification of children with probably communication delay?
2. What are the early communication indicators that place a child at risk for communication delay?
3. More information is needed on detailed communication milestones, especially prior to first words.
4. What are the age intervals that are most important to provide screening and developmental surveillance?


Taking a Step to Identify How to Create and Develop
a Professional Learning Community in School

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Abstract

This study intends to identify the key factors in creating and sustaining a school-based professional learning community through a case study of a South Korean high school. Data were gathered through classroom observations, analyzing questionnaire, minutes of PLC meetings and a comparative record of students accepted into selective universities from 2011 through 2013. Nineteen participants, including 16 teachers, the principal, the assistant principal, and a leader from city department of education who assisted the school reform process completed the questionnaire. The study provides a detailed description of the case study school, including challenges that faced the school, five main characteristics of PLC initiative of it, its bottom-up reform process, efforts to share their experiences with other schools, sharing the core value and putting that into practice, shared leadership and teacher empowerment, and regular sessions to share classroom practices (PLC meeting). The study indicates that empowering teacher leaders with principal’s leadership staying in creating supportive conditions, securing designated time for PLC meetings, creating PLC in each grade level, and building trust and respect that ensure teachers that they would never be criticized in PLC meetings are favorable factors and conditions for creating and sustaining a school-based teacher professional learning community.

Keywords: professional learning community, creation, grade level, shared leadership, trust, empowerment
Professional learning communities (PLCs) have been believed to offer an effective infrastructure for addressing many types of challenges that face schools, such as teacher isolation, difficult interaction with colleagues, and challenging students (Morrisey, 2000). And it is also well documented that PLCs contribute to schools becoming better places where teaching improves and student learning increases (Darling-Hammond, 2010; Hord, 2009; Louis & Marks, 1998; Newmann & Wehlage, 1995; Thiessen & Anderson, 1999).

Hord (1997) identified five dimensions that successful professional learning communities hold; supportive and shared leadership, shared value and vision, collective learning and application of learning, supportive conditions, and shared personal practice, for which research show a surprising level of agreement (Bolam, McMahon, Stoll, Thomas, & Wallace, 2005; DuFour, DuFour, & Eaker, 2008; Kelly & Cherkowski, 2015; Morrisey, 2000; Owen, 2014; Stoll, Bolam, McMahon, Wallace, & Thomas, 2006). But, how these characteristics of professional communities can be created, developed, and sustained are still not so clear, and little has been written about (Cowan, 2009; Hord, 1998; McLaughlin & Talbert, 2006; Morrisey, 2000). This study intends to take a small step in figuring out some key factors on how to create and develop a professional learning community in school through a case study on a Korean public high school which has been transformed from a low-performing urban school that served predominantly underprivileged, low-achieving students into an exemplary professional learning community with enhanced student achievement and higher student acceptance rate to selective universities.

As we know both from research and experience, finding actual cases of schools of mature communities of teacher reflection and inquiry is not easy (Hord, 1998; McLaughlin & Talbert, 2006). And many schools in South Korea which externally manifested PLC also gave up their
reform efforts in a few months failing in gaining sincere cooperation and participation from their teachers. Transforming a school into a place of continuous inquiry is never an easy project, because it takes not only structural changes, but also cultural changes including a fundamental shift in the habits of mind of teachers. Change of teachers’ mind is essential, because it is the individual teachers that actually attend the PLC meetings, reflect on their teaching practice, change pedagogy, and eventually accomplish school reform. When mandated, teachers can still act as if they all agree and they already share values and common beliefs, but in reality they stick with their old patterns in, what is called, a pseudocommunity (Grossman, Wineburg, & Woolworth, 2001). So, reform initiatives and teacher participation would be more favorable to be operated on voluntary basis in order for a reform process to be authentic and sustainable. It is whether teachers can find shared personal practice to be really helpful in improving their teaching skills and student learning, and whether they find themselves enjoying being in PLC meetings, not being forced to “be there” anyway that determine the success and failure of a given school reform initiative. If forced, they can pretend to confer and cooperate with each other, but they would never be able to grow as teachers who readily adjust their instructions to meet student needs, and the sustainability of school reform initiatives in those schools would be hard to be guaranteed, scratching the surface all the time. From this point of view, this study intends to hear from the teachers, principal, assistant principal, and a leader from city department of education, and learn from them on what is the most important infrastructure, what is the ideal unit for implementation of PLCs, who they think the key leader is, what are key factors in PLC meetings, and what encouraged them to move on during their school reform process.

Research Questions and Methodology
The study intends to answer the following questions:

1. What are the essential infrastructure, preparation and social organization in a school which intends to create a professional learning community for the first time?

2. What is the ideal unit in implementing PLC in schools? Is it school-wide, grade-level, or subject-level?

3. What are the biggest encouraging factors that help teachers to overcome the implementation problems, and continue the reform process?

4. Which level of leader is the most influential, and what kind of leadership is the most effective in creating and implementing PLC in school?

5. What are the essential factors in PLC meetings, and “how often” is ideal for teachers in helping them grow without making them feel tired?

Data for the study were collected between 2011 and 2015 through classroom observations, analyzing questionnaire, minutes of PLC meetings and comparative record of students accepted into selective universities in South Korea from 2011 to 2013. The author of the study was both participant and researcher. The study draws on survey data from 19 people including 16 teachers who taught at Taegu High School from 2011 through 2013, and three administers including the principal, assistant principal at the period, and a leader from Taegu City Department of Education who assisted the transformation process of the case study school for the 3 year period. The teachers and administrators were asked to complete a questionnaire to discover how the PLC in their school could be created, implemented, and sustained during the 3 year period. The 19 questions for teachers, and 16 questions for administrators were across four dimensions of
preparation, implementation, leadership, and PLC meeting. The response rate of the questionnaire was 90.48% (19 out of 21).

Challenges That Faced the Case Study School

Morrissey (2000) identified five core issues that adversely affect school improvement efforts. The case study school used to be a typical place that had all of the five core issues before the implementation of PLC initiative in 2011; organizational structure, focus of improvement work, personal and social dynamics, contextual influences, and leadership.

1. A school for underprivileged students

The case study school was a typical school that serves predominantly underprivileged students whose parents’ socioeconomic status is low. The students gained much less on achievement tests than those from other schools in the district, producing only 4-5 students getting admitted to selective universities each year out of around 400 graduates. One of the main reasons why parents did not want their kids to be assigned here was the overall classroom atmosphere caused by many disruptive students. Due to recently launched tracking system in high schools in South Korea, those who were not eligible for entering those schools for “smart kids” were not motivated at all during classes. In some classrooms in the case study school, more than half of the students were sleeping while teachers were instructing, and they would not listen to teachers’ directions.
2. Antipathy against sharing personal practice

There has long existed a very unique antipathy against classroom observation and subsequent meetings among teachers in almost all levels of Korean schools. In such meetings, participants would take turns to make comments on the teacher’s instruction, mainly criticizing the instructor’s teaching practice, which would be extremely embarrassing to the person who opened the classroom. This made opening classroom and sharing one’s teaching practice the last thing teachers would want to do during their teaching career, which is unfortunate for all. This traditional judgmental structure seems to be closely tied to authoritarian leadership of principals who feel free to open the classroom doors and reprimand teachers even in front of students, which is far from an image of a principal who is ready to empower teachers or share the leadership, as well as a torchbearer of school improvement efforts.

3. Work conditions for teachers

Most high school students in South Korea stay at school until 9 or up to 11 at night depending on schools, and keep studying, which entails many teachers’ overwork for the sake of supervising the students. This is a part of dark side of those excellent achievement scores of Korean students in international assessments in recent years. And unlike such countries as Belgium, Finland, France, Italy, the Russian Federation and Slovenia, where teachers are not required to spend time on non-teaching activities (OECD, 2011), Korean teachers are required to handle many administrative tasks even after their work hours, which also makes it extremely hard for teachers to concentrate on preparing and teaching. In this situation, it was also extremely
difficult for teachers in the case study school to secure time designated solely for sharing personal teaching practice.

4. **Low self-efficacy of teachers under authoritarian leadership**

Type of principal leadership is believed to directly influence the effectiveness and motivation of teachers. According to a survey, Korean teachers showed the lowest self-efficacy among the countries surveyed, being ranked 23rd out of 23 countries (OECD, 2009). Things were not much different in the case study school before the implementation of PLC initiative. Though the teachers had weekly meetings every Monday morning, they were busy writing down the directions and announcements from principal rather than discuss or share ideas with colleagues. Opportunities to suggest and share ideas were rare, and those efforts were often ignored by administrators, which resulted in low morale and self-efficacy among teachers. Former principals showed little to no instructional leadership, but showed strong characteristics of bureaucratic management that emphasizes finishing administrative tasks on time and reporting to the higher authorities. They were not so much vigilant about disruptive student behaviors in classroom, and taking care of those students was the responsibility of individual teachers. Because teachers were struggling with both disruptive students in classroom and with overwhelming amount of administrative tasks which often kept them late at night at school, they were neither ready, nor willing to launch any school reform efforts.

**Main Characteristics of Professional Learning Community in the Case Study School**
In this section of the study, 5 characteristics that PLC initiative of the case study school had will be discussed. This school shares many aspects of Hord’s (1997) 5 dimensions of typical PLC schools, but it also has two unique features: (1) bottom-up reform initiative; and (2) efforts to share their experiences with other schools in the district.

1. **Bottom-up reform initiative**

External influences often have negative, rather than positive effects on school improvement by imposing unreasonable tasks or regulations, and/or rapid change in different policies (Newmann & Wehlage, 1995; Spears & Oliver, 1996). And many of school reform efforts have been top-down process (Spears & Oliver, 1996), including many school reform initiatives with PLC process in mind. A common picture is that state or district department of education, and/or principal, and/or regional university take the initiative and offer necessary funds and professional development for teachers, expecting teachers’ participation and cooperation. Part of the uniqueness of the reform procedure in the case study school was that it began from the bottom; the initiative was taken by core group teachers, and the air spread into colleagues in the school and into other schools in the district, finally resulting in affecting the city department of education to set PLC implementation in other schools in the city as one of their main policies in the following year. In other words, in 2012 school year, city department of education assigned special budget and provided support measures for those schools which wanted to introduce PLC initiative having focus on student learning. Before the 2011 school year began, the core group teachers in the case study school suggested to the principal that they need to have an interactive workshop to share the core value of enhancing high-quality student learning through creation of
PLC in their school. The principal readily accepted the suggestion, appropriated necessary budget, and assigned the core group teachers to a same grade level. During the interactive workshop held right before the school year began, they shared their wish to collaborate in sharing instructional practices, and secured agreement on that from the rest of the teachers who belonged to the same grade level. Right after the kickoff of the 2011 school year, they began to observe classrooms of one another, had weekly PLC meetings to share personal practice and reflect on their instruction, and tried to figure out the causes of enhanced or impeded student learning. The movement continued in 2012 and 2013 school year, causing school-wide professional learning community to become possible including the other two grade-level teachers.

2. **Efforts to share their experiences with other schools in the district**

Their bottom-up commitment for school reform was not limited to implementing a successful learning community in their own school. From the 2012 school year which was their second year of reform initiative, they regularly opened their classrooms of all subjects to teachers from other schools and leaders of city department of education. They also demonstrated their PLC meetings for the audience to observe their collegial conversations. Their PLC meetings comprised of reflection on the causes of enhanced or impeded student learning without any fault-findings or direct advice for other teachers’ instructional practice were totally different from what those teachers from other schools had experienced before, and positively affected them. The core group teachers were also often invited as guest speakers to speak in professional developments and workshops in other schools that wanted to launch PLC initiatives. Teachers in the case study school even made a visit to Japan in 2012 in order to observe classes, and share professionalism
and classroom practices with Japanese teachers in successful learning community schools in Hiroshima and Okayama, Japan. On their trip to Japan, they invited teachers from other schools and a leader from city department of education for the purpose of sharing their experiences and disseminating the value of teacher collaboration and inquiry.

3. Sharing the core value and putting that into practice

The case study school was one of the typical schools where teachers would glance at the cover of the curriculum book when asked to tell the core value of their school which nobody would remember otherwise. Their priority was to finish the overwhelming amount of administrative tasks on time and report to higher authorities, rather than enhance student learning. In the 2011 school year, which was the first year of launching PLC initiative, teachers and the principal worked collaboratively to set up a new slogan as their core value: Learn Together, Grow Together, Taegu High School Learning Community. Not only did the principal emphasize the new slogan by repeatedly articulating it whenever possible; in professional development, weekly staff meetings, and parents conferences, but he also carried it out into practice in order not to let it forgotten as rhetoric. He appropriated fund from city department of education, and employed 4 additional administrative assistants in order for them to take over much of the administrative tasks which had belonged to teachers before. He also pulled together 12 teachers in the same grade level into a large office to increase teacher proximity, so they can have more opportunities to confer with their colleagues for the purposes of sharing personal practice and enhancing student learning. With all these supports from the principal, the teachers who had
already taken the initiative to launch the school reform, could be more empowered to collaborate with each other for learning and growing together.

4. **Shared leadership and empowerment**

The principal renovated his office from a place with luxurious sofa and coffee table into a conference room with a table for 16 people to be seated around. He also installed a projector on the ceiling with a built-in screen made of glass board on one side of his office wall on which the image from computers could be projected and letters could be written with markers at the same time. That change turned out to be very useful for collaborative works. The 14 heads of the departments had a weekly meeting in principal’s office, and they could share their ideas more effectively through this technological support. This also made it much easier for teachers to bring a flash drive and share their ideas to improve their instructional practices. Believing that empowering staff is the very starting point of creating collaborative culture, the principal made three small schools in his school by informally calling the heads of the three grade levels *principal of each grade*. He was short on rhetoric and long on resolute empowering. He valued the leadership of heads of each grade level who were in charge of running the PLC meetings by appropriating necessary budget and staffing the teachers each head wanted to work with. He accepted the suggestion from grade level heads that all the teachers in the same grade level need to be gathered in one office, and gathered them in a big office with individual desks and a meeting table. Also, taking the suggestions of the grade level heads, the principal allowed teachers to teach same students for three years until they receive diploma. Teachers said teaching same students for three years was extremely helpful in preparing the students for early decision for colleges that had more than 3,000 types of matriculation assessment which required teachers
to fully understand individual students in order to advise them better and write best recommendation letters.

5. Regular sessions to share classroom practices among faculty (PLC meeting)

As supported by research (Morrissey, 2000; Oliver, Chen, Huffman, & Wang, 2015), the issue of setting aside appropriate time for sharing classroom practice was a central issue for teachers in the case study school, too. In the first year of their reform effort, there was no fixed period of time for PLC meetings, and they had gathered after school was over. From the second year, however, they rescheduled the school time, and set aside 90 minutes on every Thursday afternoon with administrative support from the principal. Each grade level appointed a teacher who is solely in charge of making schedule for classroom observations, reminding PLC meetings of the day to teachers, and keeping minutes of every PLC meeting. Though it was very fortunate for the teachers to secure a special time for reflecting on and improving instructional practice, more important was to make sure that all the participants come to believe in collaborative learning and self-reflection through the PLC meetings. For achieving the purpose, the core group teachers thought that the top priority would be to make sure all the teachers share their everyday classroom activities without any decoration on it. The tendency to show off something new to others is believed to have originated from critical and fault-finding culture in classroom observation and subsequent meetings in Korea from long ago. In the same sense, giving direct advice to other teachers was technically forbidden until all the teachers in PLC meeting could feel comfortable in sharing both success and failure. Instead, they were advised simply to say what they had observed and what they had learned through observation until enough collegiality
was formed among the participants. After a while, they could freely give and take feedbacks from others, ask questions to learn from others, and share failure as well as success.

Visiting and observing other teachers’ classroom was very limited on the first year of PLC implementation in Taegu High School, as in other schools (Hord, 1998; MetLife, 2009). It was partly because they could hardly find time to, and partly because they were not fully confident in the effectiveness of PLC meetings. But as the teachers increasingly glean useful information from classroom observations and PLC meetings, they could put their priority in attending them. From the second year, they began to videotape all the demonstrated classes which were offered almost every week by different teachers. At the same time, they decided to turn the camera toward students instead of teachers, with a bigger focus on how students learn, not on how teachers teach.

Findings: How to Create and Sustain PLC

There always exists some disparity between what the research says and school’s ability to put that into practice (Morrissey, 2000). Schools might have implementation problems and obstacles because teachers and administrators can face and struggle with many unexpected difficulties in their school reform efforts. This study intends to figure out some key factors in preparing and implementing PLC initiative through the voices of teachers and administrators who experienced all the stages of developing a school into PLC.

1. Preparation
When asked to list necessary overall infrastructure in order of priority for a school that decided to launch a professional learning community, the teachers in the case study school and the administrators in unison put “teacher leaders” on top of their list, followed by teachers ready to devote themselves to school reform. Interestingly enough, both the teachers and administrators put financial and administrative support from city department of education at the last among the 4 options. They also thought having leader teachers is more urgent and necessary than having a principal who well understands the PLC process when initiating PLC movement in school.

To the question of the very first step in launching PLC provided it were a month before a new school year begins, teachers said core group meeting should be the most urgent and important, with opportunities of being given a lecture by some brought-in guest speaker at the last on their list. Teachers said building a new structure of its own is more important than just being told what to do.

When asked to say what the most important structural condition for launching PLC initiative in their school was, they put securing a designated time for PLC meetings on the very top of their list. In high schools in Korea, normal school hour ends around 4 in the afternoon, but supplementary classes follow for about two hours, followed by self-study session until 9 or up to 11 at night. Not only do students get tired from this overwhelming study load, but also teachers can hardly find time to plan lessons and talk about students and their learning with colleagues. The core group teachers in the case study school suggested to the principal that they need to secure a designated time for PLC meeting in place of two supplementary classes on Thursday afternoon, and the principal accepted it, which led to securing 90 minutes every week. Teachers regarded increased teacher proximity as the second most important structural factor of their school’s success. Teachers used to spread out in many different offices even though all the
classes and administrative works were done around each grade level. The principal pulled together the 12 teachers who taught the same grade level into one office that had individual teacher desks and a table for meeting. This increased teacher proximity and they were more easily able to build relationships of trust and respect, and share their practice through PLC meetings.

When asked to say what the most important social organization that the teachers need to share or the principal need to show before launching PLC initiative was, most teachers (87.5%) said it was building trust and respect with one another about the fact that they would never be blamed or criticized in PLC meeting. As stated above, this seems to originate from the old tradition in Korea that teachers used to be criticized by principals and colleagues in meetings after classroom observation. In the same sense, the vast majority of teachers said the last thing a principal would do before launching PLC initiative is showing his/her persistent will of implementing PLC with any difficulties. They also said the number one cause of failing in implementing PLC initiatives in other schools in their district was principal’s pushing forward without securing staff’s agreement and understanding of goals and process of PLC.

About the necessary systematic support for PLC to be created, many teachers said the size of each class they teach needs to be reduced. In average Korean high schools in urban areas, teachers teach 35 to 45 students in one class and 400 to 600 for a grade. Moreover, unlike American high schools where a teacher has three to four classes of which he/she is exclusively in charge about teaching and assessments, three to four Korean high school teachers teaching same subject share those responsibilities on several hundred students, and rotate the classes they teach, which make it extremely difficult for them to understand each individual student’s strengths and weaknesses. In this situation, not only teachers cannot have discretionary decision-making power
in their own teaching and assessments, but also it is extremely difficult for them to get to know each student in a school year.

2. Implementation

Teachers were asked about which unit would be the most appropriate in launching PLC, what was the encouraging factor to make them go ahead in the face of difficulties during the reform process, and what was the main difference between their PLC initiatives and other reform initiatives they had experienced before.

75% of teachers thought each grade level would be more appropriate unit in implementing PLC than subject level or school-wide reform. They thought grade level would be the most appropriate in that most of teaching and administrative practices are done around grade level, which makes the collegiality among teachers in it stronger than any other unit. They also thought they were able to observe individual student’s learning in different subjects, which let them better understand their learning styles and strategies.

It was found the biggest encouraging factor that helped teachers overcome implementation problems and move forward was the change of students who used to sleep or did not pay attention to classroom activities before. Private after work meetings with colleagues and enhanced self-efficacy coming from teacher empowerment by principal followed, but the administrative and financial support from city department of education was favored by none of the teachers as the encouraging factor for them.
To the question of what was the main difference between PLC initiative in their school and other school reform movements in the past, 87.5% of teachers and all of the three administrators said that it was the fact that PLC movement in their school was the one from the bottom, not from up somewhere. Considering the purpose of sharing leadership and creating supportive conditions in PLC schools is to let teachers voluntarily share personal practice and apply the learning to their teaching practices, the fact that their reform initiative began with three core teachers and spread upward seems to meaningfully contribute to implementing culture of collaboration and inquiry in their school.

3. Leadership

Asked about the most effective type of principal leadership in PLC implementation, the vast majority of teachers said it was the one who readily shares his/her leadership and is sensitive to teachers’ needs. The teachers and administrators were also asked to say who would be the most influential leaders in school in the creation and development of collaborative culture and teacher inquiry. Most teachers (87%) said it was the head of each grade level, whereas administrators regarded both head of grade level and principal had equal importance. Teachers believed staffing prepared teacher leaders in each grade and increasing teacher proximity was the most helpful support done by principal, rather than his direct exertion of omnipotent leadership.

4. PLC meeting
When asked about the key factors in achieving sustainability of PLC meetings, most teachers said building trust and respect with colleagues was the most important, followed by the readiness to receive feedback and learn from others. About the most appropriate frequency of PLC meetings, having weekly and biweekly meeting got about the same support from the teachers and administrators, with just two teachers said once a month would be appropriate.

The concept of teacher-professionalism has been widely accepted, and enhancing self-efficacy of teachers is one of the key factors of it. A teacher who is not allowed to participate in decision-making process at school, or is not given the discretionary power to use his/her practical knowledge acquired from their own reflection and collaborative dialogue with colleagues on their teaching practice cannot be said to be a professional. The core group teachers in the case study school thought enhancing teachers’ interaction in a more formalized structure was the first thing to do for enhancing professionalism. So, with the support of principal, schedules were arranged to allow a designated time of 90 minutes every Thursday afternoon solely for PLC meetings. Unlike the prevalent PLC practice where other teachers and instructional coaches at the meeting offer solutions and advice (Pirtle & Tobia, 2014), teachers in the case study school made it a rule not to give solution or advice to other teachers’ instructional challenges, let alone criticizing them. Instead, they were expected to simply share what they observed and felt in the course of classroom observation. As expected, teachers, at first, just scratched the surface for a while in PLC meetings. But once some teachers shared instructional challenges rather than success, other teachers began to feel safer, and could gradually share their own classroom challenges without fear of being criticized. They went on to talk about strategies to adjust their instructions to meet student needs and engage students in learning, including discussing how to create worksheets which go beyond the simple fill-in-the-blank type into the ones that effectively
stimulate collaborative conversation and higher-order thinking process in the small groups. In order to enhance opportunities of reflecting on what they talked in previous PLC meetings, they assigned a teacher the role of typing all the conversation during each PLC meeting into documents, and sent the minute files to colleagues through school intranet network. The teachers went beyond talking about personal classroom practices, and moved on to amending curriculum to best fit students’ needs in applying for early decision college matriculation, to assessment improvement, and effective counseling skills on college readiness.

**Discussion and Conclusion**

There could be no one-size-fits-all guide or strategy in establishing a professional learning community in school. Just as each individual teacher needs to find instructional methods that best fit him/her, so each individual school will need to find adequate strategies that best fit them, which will lead them into community of continuous inquiry. However, this study intended to take a step and shed some light on the question of *how* we can guide a school in creating and sustaining a school-based learning community, where both teachers grow as professionals and students learn as effective learners.

The finding regarding the first research question reveals that teachers and administrators thought they needed teacher leaders as an overall prerequisite in launching PLC initiative in school. About the very first step in launching PLC one month before a new school year begins, teachers said the core group teachers’ meeting would have the priority. They also said securing a designated time for PLC meeting was the most necessary structural condition for launching PLC initiative. As for the most important social organization that teachers need to share before
launching PLC initiative, the vast majority of teachers said it was building trust and respect with one another about the fact that they would never be blamed or criticized in PLC meeting.

When it comes to the ideal unit of PLC implementation, which is related to the second research question, teachers thought each grade level has more advantage than any other unit in school, such as subject level or even whole school unit, because teachers in the same grade are more likely to have stronger collegial relationships with one another, and they can get better pictures about students’ learning strategies in different subject classes than they can with colleagues with same subjects.

The finding on the third research question indicates that teachers believed the change of disruptive or unmotivated students was the biggest encouraging factor for them to overcome the implementation issues and keep moving on to build a learning community in their school.

As for leadership dimension, which is related to the fourth research question of the study, the head of each grade level was regarded as the most influential leaders who could contribute to creating, implementing, and sustaining PLC initiative than (assistant) principal, head of subject level, or external facilitators such as personnel from city department of education. Teachers believed that principal’s leadership could be the most effective when it stays in creating supportive conditions such as staffing prepared leaders in place and being sensitive to teachers’ needs, rather than become omnipotent or authoritarian principals.

The finding on the fifth research question about the development of PLC meetings reveals that teachers thought building trust and respect with colleagues was the most important factor, followed by the readiness to receive feedback and learn from others. Having weekly or biweekly PLC meeting was supported by teachers on about the same percentage. Teachers
thought they needed to feel free from showing “something” to others, and must share their ordinary practice with others for the practice of classroom observation to be well settled down.

It might be difficult to generalize the study findings to other schools of different levels and cultures, because the study was conducted about PLC implementation of a Korean public high school. But the significance of the study results will contribute to shedding some light on the key factors of preparing, launching, and sustaining PLC in school, and on the necessary infrastructures including physical and social organization. It is expected that principals, teachers, and external facilitators would be able to get insights from the awareness of the teachers who experienced an actual process of preparing, launching, implementing, and sustaining a learning community in their school.

The teachers in the case study school suggested that there should never be pressure from outside in implementing PLC initiative. PLC can never be the goal of a school reform initiative, but is a supporting structure (Morrissey, 2000) that enables the staff to voluntarily collaborate with each other and focus on enhanced student learning. The initiative to transform a school into a professional learning community requires a fundamental shift in teachers’ habits of mind and change in the professional culture of the school. That would also need a lot of time, patience, and cooperation from many people. But the initiatives to create caring communities where teachers and students learn and grow should never be ceased as long as fresh evidences that they enhance the effectiveness of schools and help our kids learn continue to show up.
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Evaluation of the educational effectiveness in a new clinical nursing knowledge acquisition system

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**Abstract:** In Japan, many kinds of medical information systems have been implemented in clinical practice, such as those using electronic medical charts. It is necessary for nurses to learn the operating procedures of computerized patient file management systems as part of their own works. Moreover, along with the re-examination of medical fees for the Japanese health care system, which are predominantly covered by the Japanese National Health Insurance, inpatient management and other related fees are being newly created. As a result, there is great need for record keeping. Thus, in addition to basic nursing records, nurses’ daily record keeping involves keeping new records and studying their required definitions. One of these new records is called “nursing care needs,” a concept newly introduced as part of the health care fee revision of 2008. In the present study, we constructed a support system for evaluating nursing care needs and investigated the effectiveness of the nursing care needs education on nurses. Nine people participated in the present study and used our support system to evaluate the nursing care needs of model cases. The results of the study indicated that in a single model case, the time spent entering the nursing care needs evaluation was shortened, and the academic performance of the evaluations significantly improved when our system was used (p<0.05). The nursing care needs evaluation support function included in our system allows the evaluation of nursing care needs of patients and facilitates the definition of the evaluation items to be displayed on the input screen. Thus, our system may have decreased the input times owing to two reasons. Firstly, definitions are displayed and referenced in our system while entering the nursing care needs evaluation. Secondly, when filling out the nursing care needs evaluation, support functions were only used in cases where there was confusion about the evaluation. We suspect that the increased evaluation performance despite the decrease in required input time was a result of the knowledge regarding the evaluation of nursing care needs that the nurses gained with our system. Therefore, the authors believe that the nursing care needs and evaluation field display function is an effective educational tool to facilitate the knowledge acquisition regarding nursing care needs.

**BACKGROUND**

The systemization of medical information has been progressing actively in Japan, ever since the e-Japan strategy was launched in 2001. Such systemization encompasses the development and installation of electronic patient record systems in the medical field. Furthermore, multiple medical information
systems, in addition to electronic patient records, have been introduced in medical sites. Therefore, as practitioners of the medical profession, nurses are required to learn about the operation of electronic patient records as part of their nursing tasks. In addition, in conjunction to the revision made to the medical service payment system, an inpatient management fee was newly introduced in the Japanese medical system, which centers on the medical treatment covered by the Japanese National Health Insurance. Nurses are often asked to maintain the records associated with the new fee system. Therefore, in addition to maintaining nursing records, nurses are expected to maintain daily records, which require them to first learn the definitions of the terminologies used in the new records. As such, in addition to nursing duties involving providing assistance for daily medical care and livelihood support, nurses are required to perform their duties while learning many new materials, including the newly introduced medical information system (i.e., electronic patient records) and various records related to the hospitals’ profit.

The concept of nursing care needs level is one such item that was newly added in the revision made to the medical service payment system in the 2008 fiscal year. With reference to the evaluation of the nursing care needs level, Tanaka stated, “the training of the evaluator will become a prerequisite when introducing the nursing care needs level”\(^1\). Evaluator training requires practice, and therefore, the introduction of the new evaluation system will require an adequate preparation period. Furthermore, continuous learning is required in order to perform an accurate evaluation. Such learning may encompass training based on the evaluation index and the scope of learning opportunities\(^2\).

Therefore, in the present study, a system was developed to support the accurate evaluation of the nursing care needs level, in order to examine the educational effects of nursing care needs level assessment on nurses.

**PURPOSE**

To clarify the educational effects of the nursing care needs level assessment on nurses using a nursing care needs level evaluation assistance system.

**Method**

Nurses who consented to participation in the study were asked to use the system. The nurses were then asked to evaluate the nursing care needs level of 5 model cases set by the researchers, and enter the results. The SPSS Statistics Version 21 software was used for the analysis.
Analysis method

1) Data input time
The time required for the nurses to look through each of the model cases set by the researchers, to evaluate the nursing care needs level, and to complete entering the details was measured.

2) The nursing care needs level evaluated
The data of the nursing care needs level entered by the subjects in the system was extracted, and the concordance rate with the model answer was calculated for each case. The calculated concordance rate was treated as a nursing care needs level evaluation score, and significance differences in the changes in the scores were examined.

RESULTS

1) Background data of the research subjects
In total, 9 nurses consented to participate in this study. They had no prior experience in evaluating the nursing care needs level. The mean years of experience the nurses had in using computers was 7.56±5.09.

2) Nursing care needs level evaluation and data input time

The time it took to evaluate the nursing care needs level of the model cases and to enter it into the system was the longest for Case 1, with the time tending to be shorter thereafter. Nurse 8 took the longest, for Case 1, which was 24 minutes and 26 seconds, with the shortest duration being for Case 5,
by Nurse 3 (2 minutes and 30 seconds). Many nurses evaluated the nursing care needs level for Case 1 only after looking through all the information provided. However, as they conducted more evaluations, the number of nurses who simultaneously analyzed the case information as well as evaluated and entered the nursing care needs level increased.

3) The nursing needs evaluation scores

The mean nursing care needs level entered in the system was 86.90±8.558 (highest: 100, lowest: 72.41). A Mann-Whitney’s U-test between the score of the first case and those of the second and fifth cases revealed a significant increase in the nursing care needs score (p<0.05).

![Figure 2 Trends in the nursing care needs evaluation score entered by the nurses](image)

**DISCUSSIONS**

The nursing care needs level evaluation assistance system displays the nursing care needs levels and the definitions of the evaluation items on the screen. The duration for evaluating the nursing care needs level of the model case and entering the data into the system became shorter from the second case because the subjects may have required additional time to carefully read the definitions displayed in the system and understand them while evaluating the nursing care needs level for the first case. The nurses that consented to participate in this study did not have any prior knowledge on nursing care needs level assessment. Therefore, all the nurses took time to read the definitions of the nursing care needs levels and understand them, consequently requiring them to spend more time for evaluating the nursing care needs level, and entering the data for the first case. On the other hand, from the second case onward, nurses
simultaneously evaluated and entered the nursing care needs level as they analyzed the case. This suggested that the system facilitated the understanding of the definitions of nursing levels.

Furthermore, though there was a reduction in the time required for evaluating and entering the nursing care needs level, there was a significant increase in the nursing care needs score. This indicates that the reduction in time was not a result of being familiarized with the operation of the system but was the effect of nurses’ understanding of the definitions of the nursing care needs levels. Conditions that promote this kind of knowledge acquisition are: 1) Understanding the meaning of the material, 2) organizing knowledge, and 3) actively participating in the learning activities\(^3\). Nurses using this system to evaluate the nursing care needs level of model cases are believed to have assisted learning by organizing their newly acquired knowledge on nursing care needs level and relating it to their previously acquired knowledge related to nursing. This led to the reduction of the evaluation and entry time of the nursing care needs level and an increase in the nursing care needs score. This result suggests that the system function of assisting nursing care needs level evaluation had an educational effect as it helped nurses acquire knowledge regarding the nursing care needs levels.

However, there was a decline in the nursing care needs level evaluation scores for the 4th case, and only 5 cases exhibited a 100% accuracy rate. Therefore, we need to examine the factors that led to the score decline and the lack of accuracy, in order to identify systems that allow more effective knowledge acquisition.

**CONCLUSION**

1) This system exhibited educational effectiveness because the nurses were able to attain new knowledge regarding the nursing care needs levels.

2) The nursing care needs scores decreased in some cases. As such, systems for attaining more effective educational effects need to be examined.

**References**


Entrepreneurism Immersion creates Self Actualization in Primary Education: Partnering with an Accelerator

Williamson R and Forth KE.

Abstract

Background: Entrepreneurism is increasingly popular in middle and high school curricula, reflecting the general trend of increasing entrepreneurship in business; yet, exposure to entrepreneurship in elementary education is minimal. In contrast, immersion techniques are commonly used in elementary schools, although they are typically used for language acquisition. Partnerships between schools and external resources are also commonly used to enhance primary learning, for example, topic appropriate school trips and outreach events. Enhancing learning opportunities that lead children to self-actualization is paramount when preparing children for a successful future by helping learners reach and realize their full potential and foster a desire to become high achievers and transfer new, lifelong skills.

Purpose: Teachers at the British International School of Houston and business professionals from the Texas Medical Center accelerator (TMCx) partnered for an eight week immersive innovation curriculum. The purpose was to teach the children entrepreneurial skills and knowledge that would allow them to become autonomous inventors, accumulating in a pitch and showcase of their invention at TMCx in front of a panel of executive judges.

Intervention: Individuals, including teachers, were supported by the accelerator to become self-regulated, independent learners. Eighty children formed ‘start-up’ companies in teams of two to four. Techniques and expertise developed by the TMCx business professionals assisted the children in learning the iterative process of invention and commercialization.

These included: customer interviews, customer led solutions, team brainstorming, research about competitors and realistic operating features, and iterating their ideas based on all of those inputs. The children invented marketable health care solutions and created endpoint outcomes of a display model, executive summary and showcase display as well as a team pitch presentation.

Conclusion: Collaboration, motivation and immersion techniques played a fundamental part in developing perseverance and change in perspective amongst the eighty children involved. The process of becoming young inventors and experts in their invention provided opportunity for the children to experience, understand and embrace failure, and also experience and foster ownership, ambition, challenge team work and individual accountability. A dramatic change in mindset and a significant rise in academic progress was observed, as well as a desire to use and apply new skills in other subject areas. The partnership allowed children to use their intuition, previous knowledge, newly acquired knowledge and creativity to reach self-actualization.
While an entrepreneurism curriculum can be challenging for young children, the impact and rewards of exposing such a curriculum at a young age can be broad, ranging from achieving critical thinking to exposing girls to equality before they perceive external limitations. This partnership between a primary school and an accelerator created an innovative way of facilitating a deeper understanding of a new concept and achieved self-actualization through entrepreneurism immersion in the primary classroom.


Introduction

In primary education, immersion is a tool commonly used with language education, but is rarely used in science, technology or entrepreneurism for periods longer than a week. Entrepreneurism in particular is dramatically increasing in the general global population. The US has over 412 accelerators, and there are approximately 60 startup programmers operating across the UK (Telefonica UK, 2014). Accelerators are by definition immersion techniques with intensive learning for adult entrepreneurs to accelerate the progress of their startup companies and increase success rates (Cohen & Hochberg, 2014).

High school and middle school curricula are starting to reflect the trend towards entrepreneurism, including app writing challenges, pitch competitions, and hack sessions. However, entrepreneurial skills are rarely taught in primary school as a separate subject (European Commission Education, 2012), and if so, usually in a limited capacity, such as, operating a lemonade stand, which focuses on the financial aspects of an enterprise. Entrepreneurial skills that stretch beyond financial management include: creativity and creation, critical thinking skills, research, following an iterative process, resilience, and communicating ideas through persuasive written and verbal communication.

All of these key learning areas are transferable and fundamental for primary age development if children are to become self-actualized. Self-actualization is the expression of one’s full potential and a desire for self-fulfillment (Maslow, 1954). Children’s intrinsic motivation and mindset are critical as to whether children self-actualize (Burleson, 2005).

An individual’s mindset can be classified as either a growth or a fixed mindset and is greatly influenced by the individual’s reaction to failure (Dweck, 2006). Individuals with a fixed mindset strive to prove themselves and believe that ability is a direct measure of their potential, not something that can be developed or changed. People with this mindset interpret failure as a lack of ability and prefer to avoid challenge rather than risk failure, and often give up easily, become defensive, lack effort, ignore negative feedback and are threatened by success (Dweck, 2006). The growth mindset, on the other hand, is based on the belief that basic qualities can be cultivated through effort and can be developed provided individuals invest effort or study (Dweck, 2006). People that possess the growth mindset display opposing tendencies to the fixed mindset; they embrace challenge, show persistence when failing, see effort as a route to mastering skills, learn from criticism and learn from success (Dweck, 2006). Given that the child’s mindset is critical for achieving self-actualization it is useful to assess a child throughout a curriculum on these qualities.

The International Primary Curriculum is a curriculum that operates with discrete periods of immersion learning through three to eight week topics. As the International Primary Curriculum takes a thematic approach, the children aim towards mastery of skills in the foundation subjects through immersion of subject matter. “Inventions that changed the world” is an innovation topic introduced to children aged 7 years to 11 years of age. An eight week
innovation topic affords the opportunity of 7 to 8 year old pupils to be immersed in innovation learning through exploring, researching, trying, and questioning their experiences and knowledge through planned learning outcomes. This paper described how a partnership with an external innovation accelerator and their professionals, provided greater depth to the children’s learning opportunities and their learning outcomes to achieve self-actualization learning.

**Methods**

The primary teaching staff of the British International School of Houston, Texas, partnered with a startup accelerator, the Texas Medical Center Accelerator (TMCx), to provide children aged 7 to 8 with a defined version of the International Primary Curriculum related to science and mathematics. Eighty children divided across a four form Year group, led initially by four teachers participated in the adapted curriculum.

The learning spanned 8 weeks with an overall goal of inventing, as a team, a healthcare solution followed by a presentation of the work in a project showcase and a pitch event in the final week. Together, the business professionals and teachers collaborated to define a new curriculum. Table 1 lists revised and adapted objectives created to maximize the teaching of entrepreneurial skills through a rigorous and challenging curriculum.

<table>
<thead>
<tr>
<th>Existing objectives</th>
<th>Revised objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>• To be able to design a product to meet a specific need</td>
<td>• To be able to ‘pivot’ ideas as opposed to ‘improving’ ideas</td>
</tr>
<tr>
<td>• To be able to make usable plans</td>
<td>• To be able to iterate skills and ideas in a variety of contexts</td>
</tr>
<tr>
<td>• To be able to make and use labeled sketches as designs</td>
<td>• To be able to collaborate as a ‘company’ and amalgamate ideas</td>
</tr>
<tr>
<td>• To be able to use simple tools and equipment with some accuracy</td>
<td>• To be able to effectively research specific healthcare products and the science behind them</td>
</tr>
<tr>
<td>• To be able to identify and implement improvements to their designs and products</td>
<td>• To learn about the problems associated with health and healthcare</td>
</tr>
<tr>
<td>• To be able to identify the ways in which products in everyday use meet specific requirements</td>
<td>• To be able to investigate health related issues and existing solutions</td>
</tr>
<tr>
<td>• To target a specific audience through exploratory questions</td>
<td>• To target a specific audience through exploratory questions</td>
</tr>
<tr>
<td>• To find out about the uses of a variety of materials and how these are chosen for specific uses on the basis of their simple properties</td>
<td>• To be able to pitch inventions with confidence</td>
</tr>
</tbody>
</table>

Teachers were responsible for the children’s learning in their classroom while a variety of business personnel from the Accelerator Team supplemented the process. These included:

1. A current inventor in the startup who visited weekly, sharing insights into how to achieve the next step in the invention process.
2. An executive leader of the accelerator who created an ambitious and inspirational meaning to their work.
3. A team of 10 business analysts to critique work at the communication phase.
A critical goal across teachers and accelerator personnel was to create a growth environment that would promote self-regulation through application and experience. Children and staff were trained to understand the new objectives in which they were expected to work and staff were supported so that they could yield control to the children.

The structure immersed the children in the topic, allowing them to develop and master challenging entrepreneurial skills through the embedded formative assessment and expertise, see Table 2.

<table>
<thead>
<tr>
<th>Teacher and entrepreneur</th>
<th>Where the learner is going</th>
<th>Where the learner is now</th>
<th>How to get there</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Clarifying, sharing and understanding learning intentions and success criteria</td>
<td>Engineering effective discussions, tasks and activities that elicit evidence of learning</td>
<td>Providing feedback that moves learning forward</td>
</tr>
<tr>
<td>Peer</td>
<td>Activating students as learning resources for one another</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learner</td>
<td>Activating students as owners of their own learning</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Five “key strategies” of formative assessment (Leahy et al., 2005)

During the first day, teams were formed consisting of no more than 5 children; teachers intervened only where necessary, with subtle consideration given to academic ability. The children were reminded of the International Primary Curriculum learning goals and how they relate to entrepreneurism. These included: communication, resilience, adaptability, cooperation, morality, respect, enquiry, and thoughtfulness. The learning journey from the entry point to the exit point was split into four phases, each phase building on the previous phase’s achievements giving the immersion program a definable structure.

**Phase 1-Challenge and Entry Point**
Prior to the partnership, children were questioned by teachers about inventions and healthcare solutions. Health related solutions were chosen for this particular partnership as the partnering accelerator was the TMCx, which specializes in life science and healthcare innovations. The definition of an accelerator was taught by scribing the differences between the Texas Medical Center (TMC) and its accelerator; a new concept to both children and staff.

After clarifying the partnership, the children were set the challenge of identifying a healthcare problem and inventing a solution. Children sketched anatomically correct human bodies before identifying health problems that were related to individual parts.

**Phase 2-Accelerator Intervention**
A current entrepreneur from the TMCx was introduced to the children during the second week of the topic. Weekly visits were used to introduce specific techniques and skillful questioning was used at an appropriate level of challenge aimed at accelerating the children’s thinking. Effective, frequent communication ensured the next necessary teaching points and entrepreneurial lessons from the external visitors were appropriate to the learning. Clear learning intentions were shared with the children in a variety of forms, including questions and statements, before each weekly visit. Weekly session themes included: interviewing, shaping ideas, and communicating ideas. The entrepreneur taught the children specific skills and concepts around these themes. The entrepreneur presented the concept of shaping their ideas using an iterative process during the first visit, see Figure 1.

Figure 1. The iterative process for shaping an idea.

The children were led through the iterative process via a series of open and closed questions displayed on an interactive whiteboard. Existing inventions were introduced and visual prompts identified the innovation behind two commonly used items: the plaster and the water bottle case. The entrepreneur identified the problem, and demonstrated the process required to arrive at a solution. The process of shaping an idea was tangibly demonstrated by manipulating a malleable piece of playdough from a ball into a person. Forming each limb and the head was analogous to the response of each probing question, which shaped and created the final form. The 80 children involved in the demonstration were encouraged to refer to these prompts throughout the hour long session.

The children understood that the process was a cycle and that non-viable solutions would result in a pivot; a term introduced by the entrepreneur meaning ‘change strategic direction’. Classes were allotted time with the entrepreneur to iterate the process until they felt confident enough
to apply the process independently. Visual prompts, such as questions, were replicated in each classroom to consolidate learning.

During the second week, a research technique, based on the ‘Lean Start Up’ (Ries, 2011) and LaunchPad method (LaunchPad) was used. Critical thinking techniques, via a deep-dive questioning strategy, encouraged the children to think about their invention from a number of different perspectives. All of the children involved were required to interview “customers” in their inventive process. Year 6 at the school was used, although any school year would be valuable. The children composed 10 exploratory questions. The interview session lasted 40 minutes and specific invention ideas were not mentioned or discussed. Children conducted their interviews in a productive, serious manner. Their choices for recording the answers included, a journal, paper later organized into a folder, or directly onto their initial draft. Teacher’s modeled analyzing data during a daily session prior to the analysis. Results were analyzed by the children and required them to think critically about continually modifying preconceived ideas and suiting the needs of a consumer.

Teams delegated mini tasks and used findings of their research as feedback. Research techniques used included: effectiveness of materials, the impact an illness can have on lifestyle, healing time, the healthcare problem, competitors, and gaining more knowledge and understanding of the area. The children were taught to research by using search engines and reference books in the school library.

A visit from a C-level executive from TMC who was also a successful entrepreneur was used to set the scene for phase 3. His 90 minute visit added gravitas to the experience by explaining his success, providing valuable tips and raising the profile of the final pitch. During the visit, incentives were added such as pitching to a panel of expert judges from esteemed Universities, leading healthcare executives and business analysts. The executive asked questions about each team’s invention and raised the importance of being able to communicate their invention as an entrepreneur. He gave equal importance to each team and gave honest feedback about the inventions.

**Phase 3-Communicating the invention**
A pitch and showcase with a display and model were created with the goals of communicating their invention and its development in a concise manner.

**Visual Communication**
Children used their final design to make a model of a prototype. The children were shown how current entrepreneurs showcased their inventions on current television shows such as UK based Dragon’s Den and USA based Shark Tank. Children followed their design brief and specification for a period that spanned over 2 weeks. Some of the teams made lists and gathered required materials, while other teams assigned ‘resource monitor’ roles to members of the team. These roles appeared to be fluid and changed daily without disruption or disagreement. Teams were allotted 2 hours a day for model making and could decide when
and how they would like to use their 2 hours. For example, some teams worked on the verbal communication aspect discussed below, whilst others made models or started their tri boards.

**Verbal Communication**
The teams wrote a 2 minute pitch that involved every member of the team. The pitches were written against a set of success criteria class, and equal participation was required. The criteria included:

- I can state my team’s opinion by making strong points
- I can use a new line when a new member of my team is speaking
- I can back up my opinion with evidence of consumer needs
- I can use statistics as evidence
- I can use conjunctions such as therefore, furthermore, although, to add extra information
- I can use exciting vocabulary to make the judges want to invest in our invention
- I will include a convincing conclusion

Team members individually wrote their pitch in the form of a play script before valuing aspects of each other’s ideas and filtering any unnecessary statements to collaborate their ideas into a final draft. The teams used previously taught proof reading and editing skills to add further justified edits. Teachers proofread finished drafts.

A series of practice and feedback sessions occurred to help the children refine their pitches. The entrepreneur gave individual feedback to each team relating to pace, body language, pitch content and relevance. Eight business analysts from TMCx and 2 local University accelerators (Rice University and the University of Houston) came to the school for 2 hours. This helped with pitching and questioning techniques as well as providing the children with the opportunity to practice in front of many different, unfamiliar people. Analysts were assigned to specific teams so that on the final pitching day, they could help put the children at ease.

The external pitch feedback sessions with the entrepreneur and TMCx business analysts facilitated direction and confidence as they helped teams to refine their pitches and strategically plan action for public speaking. Feedback followed the following structure:

1) Clarifying the team’s intentions.
2) Valuing aspects of the pitch that worked really well.
3) Stating any concerns and need for improvement.
4) Suggesting ways of making improvements to pitch content, body language, inclusion of statistics, interaction with the audience, ability to answer questions about their invention and techniques for improving confidence.

Individuals were assigned to different companies to provide expert guidance relating to pitch content, relevance and performance. The accelerator organized a rotational pitch practice
carousel. One team pitched, another team acted as the audience and the final team acted upon feedback in order to polish their pitch before repeating the process. The children were impeccably behaved, engaged and self-regulated. Teachers monitored, observed and learnt strategic planning techniques from the accelerator, so that they could repeat techniques prior to the main event.

Additional pitch practice included the children pitching in different locations to different objects such as flowers, teddies, TV, mirrors, walls and benches. A competition was set up for the most ‘extreme’ pitch. Children sent videos and pictures into school as evidence of them practicing their pitch in different ways. These included swimming pools, trampolines, video blogs, visits, practice to family pets and zip lines. This technique was used to practice the pitch in variable settings so the new environment in phase 4 would still feel comfortable. It was also used to instill confidence in the children, develop their ability to memorize a script and deliver their pitch effectively.

Written communication
Tri boards were made to display the 8 week learning journey so that information could be shared without explanation. A generic list of criteria for the tri boards was agreed upon as a guide. The list included: technology, photographs, final design, executive summary, pivoting. The children were provided with an example of an executive summary written by the entrepreneur from the accelerator before writing their own. The short document communicated their invention through explanations of the main features and benefits of their invention as well as information about their team. As well as displaying the executive summary, hypothetical investor questions were prepared to enable teams to summarize their inventions in a concise manner, allowing them to rapidly acquaint people with their invention.

Phase 4-The Main Event.
A pitch and showcase event with esteemed judges from the TMC and local businesses occurred at the TMCx building in Houston on June 23rd 2015. Parents and other distinguished guests attended with an audience of over 200 people. Each team pitched their invention on stage to the judges. The pitches were 2 minutes long and therefore had to be both convincing and powerful in a succinct manner. The judges asked 1 or 2 questions to the team on stage after the pitch. Teams also showcased their inventions with a display and model on their own display table situated around the auditorium. Name badges for each child and team names on each table set the scene for a grand event rich in gravitas as they described and demonstrated their inventions to passersby. Teams were judged on pitch and showcase presentations as part of a set of criteria. Trophies for specific entrepreneurial categories were awarded: Most Innovative, Quickest to Market, Best Pitch, Best Prototype, Biggest impact. The executive presented medals to every child to celebrate commitment, dedication and effort. A celebratory private lunch with the accelerator executives and staff was provided as well as goody bags containing personalized memorabilia from TMCx.
Impact

Phase 1
Written responses that elicited prior knowledge varied, they lacked understanding of the topic and all had a common theme. The majority mentioned a specific inventor, a specific invention or an opinion about inventions. While sketching and mind mapping as a team, the children discussed what they deemed to be the best solution and were able to arrive at an end point in less than 60 minutes. The outcomes of the initial designs were cartoon-like and included various parts of machinery such as drills, robotic arms or buttons. Sketches consisted of multiple buttons and gadgets that were robotic in appearance. A number of the teams labeled their designs, but labels mostly referred to generic materials such as plastic, wood and metal or devices such as buttons, handles and helmets. Captions on the initial designs were vague, provided little explanation and predominantly referred to individual parts without comments about their function. Solutions that were produced as a result were impractical, over complicated and unrealistic. When asked to set some personal, team goals, many children set individual goals often unrelated to the topic, these included “trying their best”, “helping one another”, “making writing neat”, “listening” and “designing the best invention”, with little consideration given to costing, solutions that already exist, marketability or working as a company.

Challenges. Conversations observed during Phase 1 consisted of children discussing with one other child or talking in parallel to each other.

Obstacles. Generally, children had not recognized their own strengths to contribute to the project.

Criticism. Many of the initial inventions were mechanical, although the children had a limited understanding of what the mechanisms were or how they worked. When questioned, basic responses included children stating how the metal or mechanical part would fix the problem through movement. When critiqued, the children were polite, but expressed a strong desire to submit their first design as a final solution and saw no scope for improvement. Conversations lacked knowledge about health care. Assumptions and misconceptions made by the children regarding specific illness and individuals refused to take accountability for their chosen solution. Many children lacked independence and sought an adult to reassure and question them before questioning members of their own team.

Success. The majority of children exhibited frustration during this initial stage and struggled to negotiate with each other. Many conversations were competitive, in the first person and egotistical. When questioned by teachers about their first ideas, the children fought to be heard; which resulted in children failing to respect each other’s opinions. Children became deflated and displayed this in different ways; some children withdrew from team discussion, refused to participate, cried and made many negative comments. Individuals displaying these behaviors rarely participated in discussion with other individuals and refused to initiate
discussion. Many of the teams sketched individual drafts of their ideas and did not work collaboratively. As a consequence disagreements surfaced between individuals.

**Phase 2 - The iterative process**

At the beginning of this phase the children were talking about their inventions in a vague context with little entrepreneurial terminology, knowledge or understanding. Many teams gave generic answers referring to people as a whole rather than individuals experiencing specific health problems. The children were able to answer closed questions such as ‘What is it?’ with ease, but challenges were encountered when responding to open questions in the context of inventions. This was addressed through consolidating and reinforcing the iterative process.

Captions and labels continued to lack depth and minimal consideration was being given to materials. Two weeks later, they were no longer using generic terminology, instead accurate scientific phrases were used to communicate between individuals. For example, in one team the children were discussing the central nervous system, the function of nerves and motor control. In comparison to early designs, the children now talked about properties of materials, the cost of material, suitable mechanisms and whether or not their research focused on their specific problem.

**Challenges.** Thinking was challenged through discussion about how their invention could have an impact on the world. Some teams deliberated over how they could modify their ideas when they had multiple ideas on the paper. Teams interacted simultaneously and then decided to merge their ideas into a third draft. The iterative process was providing the framework for subdued children began to take an active role in contributing ideas. Resilience was resonating throughout the teams as they supported each other through assistance towards their end goal. Rather than becoming frustrated by the concept of pivoting, they were observing and questioning aspects of their learning. Failure was embraced socially and academically as they confronted the challenge.

**Obstacles.** The majority of children established how they could use interview responses to improve their invention and many pivoted. Discussion centered on the impracticalities of how their initial ideas took place in many of the teams. A number of the children became angry, deflated and defensive about reverting back to the start of the process. Similar behaviors seen in Phase 1 presented themselves while others embraced change by adding to their previous sketches or starting over again. Many of the designs were highly focused on consumer needs, but further research into design detail was needed for progression.

**Effort.** Children showed initiative by pairing with their peers, translating language, creating visual pictures, modifying initial designs and requesting adult guidance. Teachers explained terminology before progressing with their interviews. Children were iterating the process independently by using techniques such as splitting from the team and then rejoining to share their knowledge. As many healthcare solutions already existed for their chosen problem,
children found the need to investigate illness further. The children established early a lack of knowledge about the cause and its effect of illness on the self and the physical human body. Every child was motivated, showed increased persistence when carrying out their task and was fully engaged in their research.

Criticism. The children questioned each other as well as the entrepreneur about their inventions. Eagerness and intrinsic motivation were expressed by inviting the entrepreneur to see their first drafts. Teams took ownership of their ideas. Initial ideas were modified and most teams generated an abundance of independent ideas. They then began to learn cooperatively to amalgamate their ideas. Withdrawal behavior was replaced by individual children taking an active role in suggesting ways to merge ideas. A larger percentage of the children involved were beginning to respond to and act upon feedback immediately. They were receptive and immediately accepted advice from an expert. Teachers witnessed children debating over new terminology such as the comparison between invention and innovation. Rather than arguing, becoming frustrated and competitive, children arrived at the solution by enquiry. Although support was needed when shaping ideas, the children made criticisms of their initial ideas and identified a need for improvement. They identified next steps in a positive manner and implemented taught skills by drafting and re-drafting solutions.

Success. The children began to collaborate and converse in the second and third person when improving their initial thought processes by pivoting. They accepted advice from other teams and valued other perspectives. Children that had refused to cooperate or listen to ideas were equally participating in discussion about how to pivot. Some of the more confident, natural leaders in the teams delegated roles by identifying strengths and weaknesses within the team while working hard to find success. Children collaboratively mind mapped physical effects related to their invention and their idea was furthered by considering the social and emotional impact of illness on the human body.

The majority of children used effective strategies to set achievable goals for their teams. The children were less competitive, motivated and managed their time effectively. Members were aware that every team member needed to persist in order for the whole team to succeed. Ideas were enhanced by evaluating their own work as well as self-monitoring progress at a sensible pace. Some of the children became overwhelmed with the amount of existing healthcare solutions, however, most children realized how competitive the market is and were driven to not only improve existing solutions, but improve them in an efficient, organized manner. Various resources were brought from the home setting, as well as being created by their self-initiated research.

Children praised each other’s progress and made suggestions for improving elements of their invention. The potential of using elements from existing solutions was considered and suggestions were made about how to produce more effective designs.
The pace of the teams’ progress varied as each team shaped their ideas. Some teams finalized designs while other teams encountered logistical difficulties. Teams welcomed the idea of taking risks to overcome these difficulties by preparing ways of moving forward. They supported each other through the process and encouraged each other consistently. The children began to take pride and ownership of their inventions and mind mapped other possible solutions independently. During the final stages of Phase 2, most of the teams were working cooperatively and recognized the potential of themselves, others and their designs. Specific teams were able to talk with confidence and could answer questions succinctly.

Examples of team specific learning:

1. During week 4, through self-regulated research, one of the teams discovered that their invention already existed. Instead of displaying negative behavior, the children showed resilience and agreed upon a solution to their new problem. Two members of the team immediately thought back to the iterative model, and used the skill of iteration. Consequently, after four weeks the team was independently using entrepreneurial techniques.

2. A team that had invented a mask to prevent nose bleeds discussed the benefits of using synthetic polymers inside the mask. They used the current vocabulary, but also gave a definition of the words by directing peers and teachers to the original research source. When further questioned, team members confidently demonstrated their new learning by cutting open a baby’s nappy (diaper). They were able to disseminate new knowledge to a wider audience.

3. A team of children that had developed a mobile to monitor a baby’s health had daily conversations about equations and combinations, whilst another team discussed the spatial slider mechanism used to retract wheels in an airplane. They were overcoming obstacles without becoming frustrated and negotiating by applying and understanding an extensive new vocabulary. They were fully immersed in their learning. The children had employed the techniques introduced by the accelerator and they understood, fully, the ambitious aim of producing high quality innovative solutions.

Phase 3

When mind mapping success criteria with the intention of writing an investor pitch, it was evident that the children’s ideas were inhibited by their experiences with marketing media. Children were shown clips of current entrepreneurial television programs and quickly began to focus on the financial aspect of entrepreneurship. Initial discussions were heavily focused on how much revenue their invention would generate. The entrepreneur intervened at this point and used a strategy that modeled how to pitch the unique features of innovation, the impact the invention would have on the world, the statistics behind the research, the amount of market research involved in the iterative process and the effectiveness of the company.
**Challenges.** Even though the children were faced with challenges when creating models, they regulated actions towards the end goal by referencing previous briefs, setbacks, drafts and research. Many teams used their design brief to identify their key aims by underlining key words.

**Obstacles.** A trial and error approach was taken when using various materials. Many of the teams discussed materials that would be suitable for the model, considering mechanisms that marketable products require. When parts of their models appeared to be defective, teams worked as a production line using iterative strategies in a self-regulated manner.

The pitches could be assessed against the success criteria previously agreed upon, however, the pitches represented commercial advertisements and a huge proportion of the children lacked confidence and language capability when speaking in front of an audience. Accountability fell upon the children with better proficiency in English, children who could confidently talk in a new context, children who could engage their audience with appropriate body language and children that speak in a suitable tone of voice.

**Effort.** Initiative was taken to create a working prototype and, unlike behaviors seen during Phase 1, children worked with impetus and dedication. Quiet, focused teams discussed strategies that would enable them to improve their pitching skills. Interestingly, the team of children that had been given the most praise during the executive visit, lacked effort and were less accepting of feedback. They listened, were polite, but made minimal improvements to their final pitch.

**Criticism.** Traits of withdrawal reappeared in the less confident children. They rounded their shoulders, were distracted by the responses of others and became upset. The children compared themselves to the more confident speakers. When the more confident speakers presented in front of the class, less confident children either became uninterested, fixated on the confidence of other children or commented about other children’s superiority.

**Success.** Children showed compassion and empathy and did not let failure define them. The iterative process needed to be followed regularly and children directed each other to overcome barriers. For example, a team inventing a baby monitor was hindered by factors such as the weight and angle of the toys suspended from the frame of their model. The team took the initiative to destroy the first attempt and start again. The destruction of their model was undertaken in a positive, productive manner. They worked cooperatively and collaboratively to improve and they had evidently learnt from previous mistakes.

Teachers observed the children muttering to themselves during independent time, standing and talking to rubbish bins, walls and doors. One teacher observed that she walked past the children’s bathroom at playtime and could hear a child practicing to the mirror. Other children were present; however, the child was unconcerned. More importantly, the child could be heard speaking with confidence and correct intonation from the corridor. The children were choosing
to practice their pitches independently with dedication, shown via self-initiated, regulated practice.

**Phase 4**

The final event was an impressive display of 7 and 8 year old’s inventions and communication. None of the 22 teams faltered and they performed at their best during the pitches and for the judge’s questions. Most importantly, the children experienced sense of success because of their achievements and experiences. They were amazed at what they had produced and their ability to present confidently. They also understood the value of specialist support and challenge in this whole process. The end of this specific TMCx journey occurred June 2015 but the continuation of their lifelong learning journey continues using these new found skills and knowledge.

**Conclusion**

The immersion of entrepreneurism in primary education through a partnership with an accelerator maximized learning and growth. The final display and work achieved reached a level far beyond their years, and critical thinking, failure resilience, self-regulation, and team cooperation were all dramatically improved for all children. This is in stark contrast to the asymmetry in performance between the top and bottom 10 percent of pupils (Wiliam, 2007), and also the asymmetry witnessed at the beginning of the curriculum. Excelling beyond age group expectations can be viewed within the self-actualization context as more of the children’s potential was realized through this curriculum. The two key features of the curriculum: immersion and partnership with an accelerator, were critical for this success.

The immersion training fostered ownership of the project for the children and enabled deeper thought and analysis as they worked through long, uninterrupted learning periods without additional learning obligations. The immersive environment also meant there was little opportunity for challenge or obstacle avoidance, accelerating the process of facing failure.

The partnership with the accelerator provided external accountability for the children. However, it was the expert teaching the accelerator provided that proved invaluable for guiding the children as they experienced inevitable failures and provided a role model for how the consequences of failure can be minimal or minimized (Shank & Neaman, 2001). An innovation accelerator is well versed in challenges, obstacles and the skills necessary to persevere through failure. These are the daily struggles of entrepreneurs. An entrepreneurism curriculum, where children invent their own solutions in an iterative manner, provides the environment of repeated failures, consequently, resilience to failure is indirectly learned and self-actualization is facilitated.

Indeed, the resilience to failure was a dramatic observation of the children in the present curriculum. The children’s mindset can be further broken into Dweck’s mindsets throughout the phases of the curriculum. Traits of the two mindsets, fixed and growth, heavily influenced
the children’s journey towards self-actualization during the immersion curriculum. Traits of a fixed mindset were apparent in many of the children in phase 1 and early phase 2, see Figure 2. Challenges were avoided with lack of participation and ownership, obstacles were viewed as failure, competitiveness and negative responses to feedback were common.

In contrast, more children than anticipated displayed traits of a growth mindset by phase 4. By phases 2-4, the children were independent and happily talked about feeling self-motivated; they were self-regulated (Butler and Winne 1995), and were able to monitor, direct, and regulate actions towards the end goal by acquiring knowledge, expertise, and self-improvement (Paris & Paris 2001). The majority of children were embracing challenge and viewed failure as an opportunity to learn, a part of the iterative process.

Another critical part of Dweck’s mindset model is how failure is managed in the context of others. Throughout Phase 1 and 2, team dynamics changed. In the initial stages it was apparent that some children were addressing self-esteem issues, whilst others were consolidating trust and friendships within the team. By the end of Phase 3, the children displayed deep friendship bonds and positive interdependence (Johnson, Johnson & Holubec, 1998). Many of the children gave empathetic responses when others found things challenging. They praised the process strategies that their peers were using and iterated learning from failure. Compassion had developed in the vast majority of the teams. Conversations in the first person shifted to the second and third person, and children saw value in their collaborative efforts. Children were feeling accepted by their peers and through self-evaluation, had a sense of academic affirmation.

Overall, those with the growth mindset found success in doing their best, in learning and improving (Dweck, 2008). Challenges were embraced, collaboration and feedback was sought and ownership was strong. With the right mindset and the right teaching the children realized their potential (Dweck, 2008). In fact, the curriculum also influenced the teaching staff as their
assessment were also in terms of growth. A fixed assessment was not possible within this
curriculum and thereby, automatically encouraged teachers to implement the growth learning
concept (Vygotsky, 1978). As a result the children experienced a dynamic and beneficial
learning environment where at each point of the child’s learning the teacher had to make
an instant assessment, which then led to the next learning point for the child. That in turn led
to the next creative solution to the problem and still more learning. Communication between
the accelerator point and teachers was critical for maximizing this effect and the subsequent
learning.

Together, the partnership and immersive techniques created a powerful, tailored curriculum
that empowered the children to be experts of their invention. It positioned the children as
enquirers, developing entrepreneurial expertise. They were entrepreneurs, learning in a
purposeful context through trialing methods that would lead them to success (Donaldson,
1979). What was evident however, was the children’s uninhibited creativity, flare and passion
for the topic. Through immersive curriculum in partnership with an accelerator the spirit of
entrepreneurship can be instilled from an early age, helping children reach a growth mindset to
achieve self-actualization.

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Still Standing: Documenting the History of the Bilingual/ESL Teacher Preparation Program at Arizona State University


**Topic Area.** ESL/TESL and Teacher Education

**Presentation format.** Paper Session

**Description.** This presentation will share a portion of a larger project currently documenting the history of the Bilingual Education (BLE) and English as a Second Language (ESL) teacher education program at Arizona State University from its inception in the 1980’s to its current form. Using interview data of founders of the program as well as archival materials, we will share our findings through a digital timeline that is being used to archive the program’s history.

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**Introduction**

As a nation it is crucial that a high quality public education is provided for English language learners (ELLs) in schools. Students whose primary language is not English have been a part of the education landscape in the U.S. since the nation's earliest days (Crawford, 2004; Duran, 2008; Jimenez, Garcia, & Pearson, 1995; Lee & Luykx, 2005; Vaughn et al., 2006). Although American teachers have always had ELLs in their classrooms (even though students were not always labeled as such), the population of ELLs in schools has been increasing steadily
for the last three decades (Shin & Kominski, 2010). From 1994 to 2010, the percentage of ELLs in the U.S. grew over 63% and has grown steadily since then (National Clearinghouse for English Language Acquisition, 2011). Overall, the population of non-English speaking people also has increased. According to recent census data, nearly 40 million people, or 13% of the total population, are foreign born and nearly 20% of the U.S. population report that they do not speak English well (Shin & Kominski, 2010). These data have important implications for schools and, consequently, for teacher education programs that prepare teachers who will meet the needs of this growing population of students and their families. At present, one in four children in the U.S. come from immigrant families and speaks a language other than English when they go home (Mather, 2009). This number is projected to increase to one in three by 2060 (U.S. Census Bureau, 2012). Roughly half of the nation’s language minority student population is in the process of learning the English language and, therefore, considered as ELLs.

The U.S. Department of Education (2014) has identified shortages in Arizona of teachers with endorsements in English as a second language (ESL) or bilingual education (BLE). This is of great concern. Currently, Arizona teachers may pursue specialized endorsements in bilingual education, teaching English as a second language, or structured English immersion (SEI). Arizona State University's Mary Lou Fulton Teachers College (MLFTC) is one of the largest teacher preparation programs in the country and is the largest preparation program in the state, graduating approximately 1,500 new teachers each year. It is situated in a state where ELLs are among those with the poorest achievement outcomes (CDF, 2013; Annie E. Casey Foundation, 2013; U.S. Department of Education, 2014). Currently, MLFTC graduates only 25 to 28 teachers per year-with BLE/ESL endorsements, representing less than 2% of our annual graduates.
The Current BLE/ESL Teacher Preparation Program

The BLE/ESL teacher preparation program in MLFTC at Arizona State University leads to a K-8 teaching credential plus a BLE or ESL endorsement from the state. The program includes 30 credit hours of English language education coursework in foundations and methods of teaching English learners in addition to coursework common to all teacher preparation programs at the college. To fulfill the state’s requirements, the coursework includes the following:

- 3 credit hours of foundations of instruction for non-English-language-background students
- 3 hours of ESL methods
- 3 hours of teaching reading and writing to limited-English-proficient students
- 3 hours of assessment of limited-English-proficient students
- 3 hours of linguistics
- 3 hours of courses dealing with school, community, and family culture and parental involvement in programs of instruction for non-English-language-background students

Students also take 15 credit hours of field experience and student teaching in ESL or Bilingual classrooms. Beyond the teacher preparation coursework, students receiving an ESL endorsement take 6 credit hours of a foreign language, while those receiving a BLE endorsement must pass a state language proficiency exam.

In the past twenty years, MLFTC at Arizona State University has seen numerous reorganizations and consolidations that have affected teacher education programs differently. This presentation will share a portion of a larger project that is currently documenting the history of the Bilingual Education (BLE) and English as a Second Language (ESL) teacher education program at MLFTC from its inception in the 1980’s to its current form. Due to the various transitions, there is a dearth of archival materials documenting the establishment of the BLE/ESL
program and the various programmatic decisions and program implementation that have shaped the program’s current structures. Through the use of focus group and individual interview data of founders of the program as well as an analysis of archival materials, the history of the program is being systematically documented. In this conference proceeding, we lay the foundation for understanding of where the program stands today. In subsequent writings, we will document the history of the program using a variety of artifacts and interview data. Despite Arizona’s controversial English-only policies regarding the education of English language learners, the BLE/ESL teacher preparation program at Arizona State University is still standing and continues to contribute significantly to the preparation of teachers in Arizona.

Providing a Context

Prior to 2009, Arizona State University (ASU) maintained three schools/colleges of education: the College of Education (later named Mary Lou Fulton College of Education) at the Tempe campus, the College of Teacher Education and Leadership (CTEL) on the West campus, and the School of Educational Innovation and Teacher Preparation on the Polytechnic campus. A major reorganization of the education programs at ASU occurred in May of 2009. As this point, the Mary Lou Fulton College of Education, which was ASU's original College of Education, became the Mary Lou Fulton Institute and Graduate School of Education. This new school focused exclusively on graduate-level programs and research. All teacher preparation degree programs (including all undergraduate education programs) were consolidated into the College of Teacher Education and Leadership (CTEL). A year later, in May 2010, these remaining two education colleges were merged into the Mary Lou Fulton Teachers College, which now administers all graduate and undergraduate. We have begun documenting this history using a timeline and through digital storymapping that will be shared with participants at the conference.
Positionality

The concept of positionality first emerged from the geographical sciences (Sack, 1974), and it has had many reiterations. Positionality as it relates to the politics of knowledge construction was later developed (England, 1994; Rose, 1997). McDowell (1992) wrote that researchers must especially take account of their own position in relation to the research participants and research setting. More specifically, the reconstructing of insider/outsider status in terms of one’s positionality in respect of education, class, race, gender, culture and other factors, offer us better tools for understanding the dynamics of researching within and across one’s culture (England, 1994; Merriam et al., 2001; Rose, 1997). As Lave & Wenger (1991) note, positionality allows for a narrative placement for researcher objectivity and subjectivity whereby the researcher is situated within the many aspects of perspective and positionality. This often serves to inform a research study rather than to invalidate it as biased or contaminated by personal perspectives and social or political viewpoints (Merriam et al., 2001).

As researchers, it is important to acknowledge our own positionality in the research reported in this proceeding paper. Dr. Margarita Jimenez-Silva joined faculty at ASU in 2005. She was originally hired by the College of Teacher Leadership and at the West Campus. Her involvement with the BLE/ESL program was very limited until 2010 when she invited to work with colleagues across the other colleges and inform the BLE/ESL program. After receiving tenure in 2012, she began to teach in the program and became program coordinator. She has continued in this role to the present time.

Dr. Dawn Lambson became a full time faculty at ASU in 2007 and was predominantly hired to teach literacy/biliteracy courses in the BLE/ESL (MLMC at the time) program. She did her doctoral studies in Language and Literacy with an emphasis on Reading and ESL at ASU.
where she studied and worked as a teaching and research assistant with senior faculty who had established the program several years before. In 2009, Dr. Lambson became program coordinator for the BLE/ESL program, assuming the position just prior to the time when all three colleges of education at ASU were reorganized under one administration. She held the position until 2011. During that time, the program went through several name changes and multiple transitions as the college worked to consolidate and revise all of the teacher certification program and revise program major maps.

**History of BLE/ESL**

**Beginnings**

In our efforts to document the history of the BLE/ESL, we contacted various faculty members that had been instrumental in the BLE/ESL program as far back as we could recall. We are in the process of transcribing data from several faculty who worked in the program in the 1980s. This data will be shared in the full paper and presentation at the conference.

**From the Reorganization in 2009 to 2011**

With the reorganization of Arizona State University’s Colleges of Education in 2009, the BLE programs at all three campuses were combined. At the time, the Multilingual Multicultural (MLMC) Program on Tempe campus was the most robust of the three. The program at ASU Polytechnique Campus was very small and almost nonexistent as a separate program. Similarly, the program at ASU West Campus, while more organized and distinct than at Poly Campus, was somewhat integrated into the regular elementary education program with students taking many of their courses with regular education students. At Tempe, the program, was distinct and separate. While smaller than other teacher certification programs in student enrollment, the MLMC Program was recognized as an independent teacher certification program in the college, mainly
as a result of faculty investment and the strong support it had received from senior faculty for a number of years.

At the time of the reorganization, the program in Tempe had a new coordinator, Dr. Dawn Lambson, who had just recently assumed the position. Dr. Lambson held the position as coordinator for two years during which time the program went through a number of significant changes.

**Faculty Role and Support**

The reorganization of the colleges of education led to an upheaval in the ranks of faculty across the three colleges. Many senior faculty, unhappy with the changes taking place, ended up leaving the college or retiring, bringing about a change in the dynamics and role that faculty played in the BLE Program. Whereas before the reorganization, there was a core group of course instructors, junior faculty, and senior faculty, including the interim dean of the college in Tempe, who met in monthly program meetings to make decision about student enrollment, course offerings, curriculum, recruitment, etc., this group changed considerably. While a core of people continued to meet monthly to discuss the program, the aim of the meetings turned more to disseminating information about the changes being implemented than about the program itself, its vision and direction. Meetings were now held virtually to include faculty from across the campuses, and much of the work of the meetings revolved around ensuring that faculty on all campuses were up to speed on program changes being determined not by the group itself, but by a select task force given the job of reorganizing the program and creating a new major map outlining courses and program requirements for the degree.

**Role of the Coordinator**

Another change during this time affecting faculty, students, and the program itself was that the
hiring of course instructors became a shared task between administration at the division level and the program coordinator. Whereas in the past, the program coordinator was responsible for staffing all courses offered by the program, under the new system, the coordinator’s role was more consultative, often leading to situations where some instructors teaching ESL or BLE courses did not have strong theoretical background or quality teaching experience in ESL or BLE education. Additionally, there was little agency by the coordinator to select instructors who shared the same vision and commitment to English learner education.

**Student Enrollment:**

In the year prior to the reorganization, the number of students enrolled in the program had declined considerably. Previously, the program had two cohorts of new students each year, one in fall with 25 to 30 new students, and a smaller cohort in spring with 18 to 22 students. The drop in enrollment in the MLMC program during this time was thought to be related to the political climate of the state in recent years. In 2000, a state initiative, Proposition 203, was passed, restricting English learners to English-only classrooms. The state further adopted Structured English Immersion as the mandated program for educating English learners in 2007 and required that all educators in the state have 90 seat hours (6 credit hours) of SEI training leading to an SEI endorsement for all teachers. While teachers working with English learners before Prop 203 generally had a full English as a Second Language (ESL) or Bilingual Education (BLE) endorsement (18 credit hours of coursework), teachers now needed only the 6 hours of SEI to be considered qualified by the state to teach English learners. Moreover, it was found that some school principals were only concerned that perspective teachers have the mandated 6 hours of SEI training and even rejected more qualified teachers who had an ESL endorsement if they did not also have the SEI endorsement. In this dismissive climate, there was much
confusion and misunderstanding about the value and need for teachers to have a full ESL or BLE endorsement. Recruiting students for the program became more aggressive and extensive and required meeting with college faculty and student services staff to “educate” them about the program, its aims, and requirements. We also engaged former and current students to recruit, having them visit classrooms in the college to talk about the program and their experiences in it.

To Be Continued

In the full paper, we will provide an update to the history of the BLE/ESL program that we have been gathering. Artifacts, a digital storymap, and a digital timeline are being constructed to share that story. At the present time, there is no systematically documented story of the program and as faculty members retire, the institutional history of the program is being lost. This attempt to document the history of the BLE/ESL program will help ensure that the original vision and goals of the program will remain true.

References


1. Title of the Submission:
*Outsourcing Technology and Support in Higher Education from a Transaction Cost Economics Perspective*, The Case Study of Western Global University

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Abstract:

In Education, where monetary gain is not the main motivation, large amounts of technologies and services are provided and used, but how institution administrators decide to acquire those products and services is in question. The risk of making the wrong decision can literally cost students their education. Williamson’s (1973) Transaction Cost Economics (TCE) provides a framework for these decisions. This study used TCE as the lens to analyze the buy or make decision of Western Global University (WGU) for the college’s learning management system (LMS). The study followed along WGU’s evaluation process of the current LMS and two other products/vendors. Through interviews, observations and document analysis, this study analyzed factors within this process via four guiding research questions. Themes were developed to address those questions providing more research for higher education administrators to make better-informed LMS outsourcing decisions. The literature suggests that while sourcing is occurring across education, strategic approaches are still infrequent. In WGU’s case, deciding as a team, time, and both peer acceptance and product difference were assessed as contributors to final outsourcing decisions. Considerations such as functionality, organizational resources, support, product reliability, user experience, relationships and organizational mission were major factors being weighed by various stakeholders. Vendor and institutional values were revealed to be more similar than different, with the priority being on the experience of the faculty with the product and service. However, many questions remain due to the unique nature LMSs and Educational Technology play at institutions versus other Information Technologies.
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6. Abstract:
Educating the future STEM workforce is key. Increasing numbers of graduates from STEM majors are struggling with seeking job opportunities, though well trained in their technical fields, having been prepared for research or teaching. These students need more opportunities to enhance their education directly connected to STEM business and industry, and educational institutions need help aligning these areas with students’ subject interests. Since 1997, Keck Graduate Institute (KGI) has been developing innovative graduate programs in several different curricular areas in Applied Life Sciences. KGI was an early innovator in creating a Professional Science Masters (PSM) degree. For example, the curriculum in Master of Bioscience (MBS) at KGI complements professional skills and experiential component courses with basic STEM contents. Students participate in an internship and in an extensive industry Team Master’s Project (TMP) as their final group project, which requires collaborative work with potential employers. This PSM curriculum laid the groundwork for additional STEM education around the country. A Corporate
Advisory Council supports KGI’s successful PSM program, as business, industry, and public agencies seek highly-skilled, well-trained STEM graduates who can contribute immediately to the workplace, and educational leaders are seeking ways to inspire higher quality students to not only attend their programs but also succeed professionally immediately after graduating. In this presentation, we would share our efforts and student outcomes from reshaping Science education to prepare future generations of leaders in the life science fields. Similar approaches would be useful at the undergraduate level or in other areas such as teacher education programs as well where employers are requiring more relevant and immediately applicable training and preparation to the jobs for which they are hiring. Teacher Education in particular is a great example, where credential students who concurrently are seeking Master’s level education both seek specific courses of studies in their areas of interest, such as art, history, science or math, but also require immediately usable skills in the classroom, not just for teaching and learning, but also classroom management, curricular development, academic administration, counseling, and so on, emblematic of a PSM degree, combing specific academic subjects with work preparation. Our presentation will discuss the specific case study of PSM and KGI, but the lessons learned are applicable across disciplines and are in fact the direction of undergraduate, graduate and doctoral-level education today and looking into the future.
Building a Lego EV3 Snake to Improve the STEM Education of 12th Graders in Panama

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Abstract

The project consisted on building a Lego EV3 Snake to learn mathematical concepts that students learned in traditional classes. A cohort of fifteen students from 12th grade worked with Lego EV3 kits. The use of Lego Mindstorms EV3 did not only allow students to assemble mechanical parts, but also control robot’s movements through the use of Matlab and Simulink. Students developed experiments to control the speed of the snake to slither on a trajectory that contained curves. This allowed them to collect data from distance, time and velocity. At the end, students participated in a competition where their snakes slithered on a curvy path and attacked a target. A marker was placed at the top of the snake head to mark the bullseye on a dart board. The competition consisted of two stages: first, students programmed their snakes to slither in the fastest time possible. Second, the snake that hit the center of the bullseye obtained the highest point. All the collected data regarding distance, time and velocity was analyzed by using mathematical concepts that students learned in 12th grade. Additionally, all the students developed a poster and prepared for a presentation that encompasses the experiments performed in the program and the concepts they learned from the team leaders. The program was held during the two week period October 5th – 16th, 2015 from 2:00 pm to 5:00 pm. Meetings were held at the Technological University of Panama in David, Chiriqui. The meetings were twice per week, 3 hours per day for a total of 12 hours – after the students terminated their regular school days. The program was an after school program. Travel arrangements were made to transport the students from their schools to the Technological University of Panama. The expected outcomes were divided into: (1) the intellectual merit and (2) the broader impact. In intellectual merit, not many studies are conducted on this specific topic; therefore, this study contributed to develop new tools and methodologies, support future dissertation research, enable Arizona State University to be one of the leading research centers in interdisciplinary fields and international collaboration. For broader impact, this project provided a most efficient method to improve the quality of education in developing countries. This brought the possibility to develop new applications that seeks to improve the learning process of mathematics, physics and engineering concepts. This program directly benefited fifteen participants from 12th grade from three different high schools in the David school district: Colegio San Francisco de Asis, Instituto David and Colegio San Agustin. Additionally, this project promoted interest among the younger generation concerning engineering, especially within the Hispanic population which represents a minority in the engineering field.
1 Introduction

The project consisted on building a Lego EV3 Snake to learn mathematical concepts that students learn in traditional classes [6], [8]. A cohort of twenty students from 12th grade worked with the Lego EV3 kits. This Lego EV3 snake was used to showcase robotic prototypes at the DiscoverE Day and the Night of the Open Door at Arizona State University. It attracted a myriad of people, especially little kids. These activities sought after to promote the engineering fields among young students.

The use of Lego Mindstorms EV3 did not only allow students to assemble mechanical parts, but also control robot’s movements through the use of Matlab and Simulink [5]. Students developed experiments to control the speed of the snake to slither on a trajectory that contained curves. This allowed them to collect data from distance, time and velocity. At the end, students participated in a competition where their snakes slithered on a curvy path and attacked a target. A marker was placed at the top of the snake head to mark the bullseye on a dart board. The competition consisted of two stages: first, students programed their snakes to slither in the fastest time possible. Secondly, the snake that hit the center of the bullseye obtained the highest point. All the collected data regarding distance, time and velocity were analyzed by using mathematical concepts that students learned in 12th grade.

Additionally, all the students developed a poster and prepared for a presentation that encompassed the experiments performed in the program and the concepts they learned from the team leaders. We sought to develop an integral program where students not only learned mathematical and engineering concepts, but also develop presentation skills before an audience.

2 Achieved Goals

The emphasis of the proposed engineering enrichment outreach program was engineering, but STEM was given a high priority. Given this, the paramount goals of the proposed outreach program were met and are described as follows:

1. We captured the imaginations of targeted high school program participants by providing the students with a solid understanding of exciting engineering grand challenges and career opportunities, engineering methodologies and hands-on engineering design projects.
2. We showed program participants how to become actively involved in the ongoing and forthcoming engineering revolution.
3. We empowered program participants with some fundamental perspective, skills and tools to motivate them, focus their passion and help them get started toward a career in engineering.
4. We encouraged current and future undergraduate and graduate as well as professionals to become IEEE members in Latin America.

3 Objectives

The completed objectives were achieved and are listed here as follows:

1. We demonstrated the utility of new empowered engineering outreach materials and techniques for high school students everywhere – particularly in Latin America.
2. We demonstrated a program that can be sustained and scaled up across Panama and Latin America.
3. We empowered program participants with skills and tools that enabled them to immediately participate in the ongoing robotics revolution.
4. We demonstrated the importance of school work, academic success, using projects/internships to discover one’s technical passions and participating in professional organizations such as the Micro Air Vehicle Club, Society of Hispanic Professional Engineers (SHPE), and IEEE to promote continued professional development.

4 Dates and Location

The program was held during a two week period of October 5-16, 2015 from 2:00 pm to 5:00 pm. Meetings were held at the Technological University of Panama in David, Chiriqui. The meetings were held twice per week, 3 hours per day for a total of 12 hours – after the students have terminated their regular school days. The proposed program was an after school program. Travel arrangements were made to transport the students from their schools to the Technological University of Panama.

5 Expected Outcomes

We divided the expected research outcomes and outputs in two sections: (1) the intellectual merit and (2) the broader impact.

5.1 Intellectual Merit

Not many studies are conducted on this specific topic; therefore, this study contributed to develop new tools and methodologies, support future dissertation research, enabled Arizona State University to be leading research center in interdisciplinary fields and international collaboration [2], [3] [4].

5.2 Broader Impact

This project provided an efficient method to improve the quality of education in developing countries. This brought the possibility to develop new applications that sought to improve the learning process of mathematics, physics and engineering concepts [9], [11]. This program directly benefited 15 participants from 12th grade from three different high schools in the David school district: Colegio San Francisco de Asis, Colegio Beatriz Miranda de Cabal and Colegio San Agustín. Additionally, this project promoted interest among the younger generation concerning engineering, especially within the Hispanic population which represents a minority in the engineering field [7].

6 Methodology

The program was divided into four sessions of three hours each session. Each participating high school brought five-12th grade student to develop all the activities. Each participating school conformed a different group during the program. All the sessions described the general objective, an overview of the activity, the standards addressed and the major accomplishments, conclusions and future work. All the sessions involved a hands-on approach to reinforce the mathematical concepts learned in traditional classes. A survey was applied before the start of the first session and at the end of the fourth session to measure the students’ perception about Science, Technology, Mathematics and Engineering. Additionally, students were asked to respond questions regarding the use of Simulink and mathematical concepts such as: plotting data, obtaining the equation of a straight line and calculating the probability of an event. A full description of the developed sessions are provided in sections [7] through [10].
7 Session 1 - Building a Lego EV3 Snake

The overall objective of this activity was to build a Lego-based EV3 snake robot. This introduced robotic concepts with a hands-on approach to learning with Lego EV3 kits to twelve graders to be able to understand their functions and capabilities [10].

7.1 Overview of Activity and Approaches Taken

The main goal of this activity was to understand what the Lego EV3 kits were, what can be built and programmed with these devices. Students built a Lego EV3 Snake as provided in the building instructions. This configuration used mechanical Lego parts, three servomotors and an infrared sensor. Through the use of Lego brick students learned how to program the Lego EV3 Snake, so that different tasks could be developed. They learned the basic components that can be connected to the Lego brick such as different sensors and motors to perform different applications in robotics.

Student used an instruction manual to build the Lego EV3 Snake shown in Fig. 1. The instructions were given step by step to provide a clear understanding of how the pieces had to be put together. Also, the manual included figures that indicated where each motor had to be connected to be consistent with the program developed in Simulink. In this session students finished constructing their Lego Snakes to have it ready for the following session when the programming skills were needed.

![Lego EV3 Snake](image)

*Figure 1: Lego EV3 Snake*

7.2 Major Developments, Accomplishments, Conclusions and Future Work

Students learned how to integrate Lego pieces together in order to build a Lego EV3 Snake. Moreover, they verified the correct connection of motors to ensure a proper functioning of the robot. Additionally, they learned the capabilities of the Lego EV3 kits together with Matlab/Simulink. This information was used to control a mobile robot in sessions 2 and 3.

As a future work, we would like to develop other configurations that may allow us to cover more mathematical concepts.
8 Session 2 - Studying algebraic functions with a Lego EV3 Snake

The overall objective of this activity was learning how to program a robot to study a linear algebraic function by calculating the velocity of the Lego EV3 Snake.

8.1 Overview of Activity and Approaches Taken

Students used Simulink to control the Lego EV3 Snake. The wheels of the mobile robot were attached to two motors and were be used to control the robot’s direction.

Some of the standards addressed in this activity included: 1) Domain and co-domain of a function, 2) How to plot in a two dimensional space, 3) Linear algebraic equation, and 4) Equation of a straight line. Students used the following materials: Lego EV3 kit, Wifi nano adapter, USB cable, computer, notebook, pencil, eraser, stopwatch, measuring tape along with the software Matlab and Simulink.

The approach followed by students was to:

1. Build a Simulink model in Fig. 2

2. Measure the diameter “D” of the wheel attached to motor B and introduce this value in the Simulink model.

3. Download the Simulink model on the Lego brick through the Wifi nano adapter.

4. Complete a table increasing the gain value in the Simulink model by 10 units in the power of motor B. This is the domain of the function.

5. Measure the distance traveled at each value with a measuring tape and compare it to the results given by the Scope.

6. Calculate velocity at each step. This will be co-domain of the function.

7. Plot the velocity as a function of the power applied to the snake’s motor.

8. Find the equation of the straight line. (e.g. y=mx+b). Determine the value of the slope “m” and the interception with the y-axis “b”.

9. Determine the maximum, minimum, average and range for the velocity of the Lego Snake.

![Simulink model to control the velocity of the Lego Snake EV3](image)

8.2 Major Developments, Accomplishments, Conclusions and Future Work

Students learned how to program the Lego brick to determine the velocity of the robot. In addition, they plotted the velocity of the Lego Snake and found the equation of a straight line. As future work will involve the use of accelerometers to obtain quadratic functions.
9 Session 3 - Probability of an event

The overall objective of this activity was to study and determine the probability of an event. The standards that were addressed were 1) concept of probability; 2) probability tree diagram.

9.1 Overview of Activity and Approaches Taken

Students used the following materials: Lego EV3 kit, Wifi nano adapter, USB cable, computer, poster paper, markers, Matlab and Simulink. The students used the Lego EV3 to calculate velocity and obtain the equation of a straight line using domain and co-domain concepts.

The approaches that were taken are listed here:

1. Glued a marker on the head of a Lego snake.

2. Placed the body of the Lego EV3 Snake at a distance of 10, 12 and 15 cm, respectively from the bullseye.

3. Applied a power of 20 units for 1 second to the motor and connected to port D. This motor controls the head of the snake.

4. Repeated the experiment ten times at each distance. Counted the number of times that the marker hit each ring. The probability of each event would be determined by dividing the number of times the marker hit each ring over the total number of times.

5. Drew a probability tree diagram based on the results.

6. Used the information given in sessions 2 and 3 to program the robot for the competition.

7. Started preparing the poster for final presentations. A template of the poster was provided in the attachments.

![Figure 3: Probability Tree Diagram of the Snake Hitting Different Rings at the Bullseye](image)

9.2 Major Developments, Accomplishments, Conclusions and Future Work

Students learned how to determine the probability of an event. In addition, they drew a probability tree diagram based on their results. Future work involves the use of an ultrasonic sensor to determine the distance from the head to the bullseye for more accurate reading of the sensor information.
10 Session 4 - Competition and poster Presentation of Completed Work

The overall objective of this activity was to apply the concepts learned in the previous sessions to win the competition. Additionally, students presented their results in a poster in front of students, teachers, professors and their family members.

10.1 Overview of Activity and Approaches Taken

The approaches that were taken are listed here:

1. Tested their Lego EV3 Snake prior the competition.
2. Participated in the competition where the winner whose Lego Snake went through the path in the shortest time and hit the center of the bullseye.
3. Presented their posters in front of an interdisciplinary audience.

Some of the standards addressed in this activity included: 1) Domain and co-domain of a function, 2) Domain and co-domain of a function, 3) Linear algebraic equation, and 4) Equation of a straight line.

Students used the following materials: Lego EV3 kit, Wifi nano adapter, USB cable, computer, Matlab and Simulink.

The students participated in a competition where the Lego EV3 Snake would go through the path shown in Fig. 4 in the shortest time. At the end, the marker placed on the head of the Lego Snake should hit the center of the bullseye. Additionally, students presented their finalized work that encompassed the design and programming of the Lego EV3 Snake. This was important because the students gained understanding on what factors impacted the performance of designing and testing robotic prototypes.

![Figure 4: Path for the Competition](image)

10.2 Major Developments, Accomplishments, Conclusions and Future Work

Students successfully used a hands-on approach to learn different mathematical concepts taught in 12th grade. They applied those concepts to participate in a competition to drive their Lego Snakes through a path with obstacles. At the end of the program, students presented a poster with all the concepts learned in this outreach program. Future work will involve the use of different sensors and configurations to perform more complicated tasks with robots.
11 Results and Discussion

A survey was applied at the beginning and the end of the outreach program. Although we evaluated several ideas about Science, Technology, Engineering and Mathematics (STEM), some of the responses did not significantly change over the two-week period. Some of them included questions such as majors’ interest among students. This result was consistent with what we could expect from a program that does not last longer than two weeks. However, we would like to highlight some of the significant results that we obtained from the outreach program. For example, when students were asked if they knew how to use Simulink, they increased from 27% to 86% as shown in Fig. 5. Many of them had never used Simulink until the program since this is a program that is usually taught at high level college courses.

![I know how to use Simulink](image)

Figure 5: I know how to use Simulink

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Additionally, students developed experiments to combine the use of a Lego-Snake with mathematical concepts that they learn at 12th grade. When they were asked if they knew how to plot data, they increased from 47% at the beginning of the program to 79% at the end of the program. This shows that the collected data of velocity had a great impact to be able to plot two-dimensional data.

Moreover, students used the velocity data collected from their Lego-Snakes to determine the equation of a straight line. At the beginning of the program 60% of the students knew how to perform this calculation. However, when we finished the program 86% of the students learned how to determine this equation which represents an increase of 26%.

Finally, students performed a repetitive task using a marker located on the top of the snake’s head and a bullseye. They placed the snake at three different distances from the board and tried to hit it ten times. This allowed them to calculate the probability of hitting each of the rings of the bullseye at each specific
distance. Initially 53% of students said that they knew how to calculate the probability of an event; however, this number increased to 71% at the end of the program.

Based on the data collected from the probability event, students were able to draw a probability of a tree diagram. At the beginning, only 27% of students knew how to draw it while 79% of students reported that they learned how to represent a probability of a tree diagram at the end of the program.

12 Conclusion

The results of this study show that the use of a Lego EV3 Snake is beneficial to improve the education in Science, Technology, Education and Mathematics (STEM) of 12th graders in Panama. During the two-weeks program, students demonstrated that their knowledge in mathematical concepts improved by using innovative tools. Some of these concepts involved the use of Simulink, how to graph data, how to obtain the equation of a straight line and calculation of the probability of an event and how to draw tree diagrams. This does not only allow students to improve their high school education, but also makes it attractive by using non-traditional methods to teach math and engineering courses. However, it is important to mention that not all the mathematical concepts learned in 12th grade could not be covered in this program. Therefore, a future work will involved the use of more sensors and different robot configurations to tackle more advanced terms.

13 Acknowledgments

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References


Abstract

In this study the author investigated 228 preservice teachers’ experiences with a global learning wiki project in an undergraduate educational technology course at a large Midwestern University in the US. The project connected students around the world on a wiki site, participants and their overseas partners posting questions about topics of interest to them and responding to one another’s questions on the site. They collaboratively developed a wiki website filled with information, images, and videos that helped their overseas partners learn about the education practices, school structures, and cultures of their home countries.

Research Objectives

The purpose of the study was to help the instructor understand what students enrolled in the Educational Technology course thought about the global learning project, what they learned, and how they used technology in the project.

Participants

Participants were a total of 228 preservice teachers enrolled in the Educational Technology course from across the disciplines during three semesters volunteered and signed the consent form for this study. In fall 2012 semester 78 students enrolled; in spring 2013 semester, 86; and in fall 2013 semester, 64. Most of them were in their second or third year of study.

Methodology

Participants were asked to complete an online survey with multiple-choice questions and open-ended questions about their learning experience at the end of the project. The multiple-choice questions were used to measure participants’ attitudes toward this project. The open-ended questions provided insight into participants’ learning experience.
Results

Results of the study show that participants were satisfied with the global learning wiki project and the learning outcomes. They not only gained more knowledge about other cultures and became more comfortable working with people in different cultures but were also interested in incorporating global components into their own classrooms one day. However, their responses were mixed about the professional benefits and enhancement of their technology skills. The use of wikis in the project demonstrated a great way to collaborate and work with educators and students in other countries when synchronous face-to-face communication is not feasible.
Title of the Submission
Empowered to Persist: The Impact of “Project Empowerment” on Retaining Black Males in College (Submission ID# 718)

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Abstract

Project Empowerment (pseudonym) is a student support organization in the Office of Multicultural Affairs at a large predominantly White Southern university. The purpose of the organization is to enhance retention among its undergraduate minority male members. This paper examines how being a member of Project Empowerment fosters the academic persistence of two Black male members. A qualitative research approach was employed to examine the factors that participants perceived as critical to their persistence. Overall findings show that active participation in Project Empowerment enhances how Black males persist in college. The findings implicate the need for more ethnic-based organizations for Black male at other predominantly White campuses, and for colleges and universities to encourage early Black male participation in these organizations. Tinto’s (1975) student integration model was useful in framing how student engagement in the campus community is critical to persistence.
Background

More than half of all students who matriculate into a baccalaureate program depart their institutions prematurely (Museus & Quaye, 2009). Among all student groups, there is widespread concern about the early departure of Black males enrolled at these institutions. According to Kimbrough and Harper (2006), only one-third of Black males had earned a bachelor’s degree in 2000. Data from the U.S. Department of Education (2009) show lower graduation rates for these students, compared to their gender and ethnic counterparts. Low graduation rates demonstrate a critical need for higher education institutions to implement practices that promote a culture of high degree attainment among Black males. Given how past policies have led to increased access and enrollment of Black males in higher education (Strayhorn, 2008), there is great potential for higher education to enact policies that address the problem of low degree attainment among Black males. This potential for improving Black male retention was the catalyst for this study, which explored how a campus-based organization enhances retention among its undergraduate Black male members.

Purpose of Study

There is little research information on how campus-based organizations can enhance Black male retention. As such, research inquiries are needed that bridge the gap between what we already understand about retaining Black male students, and what we must know for improving their retention and graduation outcomes (Tinto, 2005). The purpose of this study was to examine the factors of persistence for Black males involved in Project Empowerment (pseudonym), a student support organization designed to enhance retention among its student members. The term persistence in this study was conceptualized as a student’s desire and wherewithal to remain in college from matriculation to degree attainment (Seidman, 2005). The term also embodies the personal efforts that students make to engage with the academic and social realms of their institutions through graduation (Astin, 1993; Bailey, Jenkins, & Leinback, 2005). To achieve the study’s purpose, this research sought to answer these two questions:

- What factors do undergraduate Black male members of Project Empowerment perceive as critical to their persistence toward a bachelor’s degree?
- How do the program components of Project Empowerment help to promote the retention of Black males?
These two questions were developed in anticipation that the findings from this study could be used by higher education institutions in their effort to develop and sustain a campus-based organization; with a primary intent to facilitate retention among Black males. I begin this paper with an overview of Tinto’s (1975) student integration model, followed by a brief review of the literature on how student organizations shape student retention in higher education. The paper then summarizes the methods, discusses the emerged findings, and concludes with implications of the study on higher education.

**Student Integration Model**

This study employed Tinto’s (1975) student integration model as its framework. On the whole, the model illustrates the confluence of background, commitments, and integration that compel persistence or departure decisions. It posits that students who actively engage with the academic and social realms of college are more likely to persist. Per the model, most essential to persistence are elements related to academic readiness, integration, and background characteristics.

**Academic Readiness**

Academic readiness makes a difference in the trajectories of college students (Strayhorn, 2008). Students who perform well in rigorous high school curriculum are deemed academically prepared and more likely to persist in college. Adelman (1999) noted that class ranking and grade point average also are positively associated with undergraduate persistence. In exploring the factors of persistence among 229 first-year undergraduate Black males, Schwartz and Washington (2002) found that high school rank was the strongest in predicting degree attainment beyond matriculation. In light of rank and grade point average being instrumental to persistence, an interesting finding was that high achieving Black male high school students were 8 times more likely to persist in college than low achieving Black males. Seemingly, experiencing a strong curriculum in high school may offset any inherent disadvantages that Black males may have entering college (Strayhorn, 2008). However, for Black males entering college with little or no exposure to robust curricula, there are opportunities for engagement in Summer Bridge, federally funded TRIO programs, or other intervention initiatives designed to strengthen the pathways toward graduation (Swail & Perna, 2002).
Integration

Notwithstanding academic readiness, elemental to Tinto’s (1975) theoretical model is the notion of academic and social integration. Braxton and Hirschy (2005) said that “academic and social integration [is what] influences a student’s subsequent commitments to the institution and to the goal of college graduation” (p. 67). The basis for academic integration is that through interaction with the institution, students acquire knowledge, and possess the wherewithal to form positive relationships with faculty and other members from their academic department. Harper and Quaye (2009) noted that students “who are actively engaged in educationally purposeful activities, both inside and outside the classroom, are more likely than are their disengaged peers to persist through graduation” (p. 4).

On the other hand, persistence through degree attainment centers on a student’s ability to identify and socially “integrate” with the social structures of the academic system (Braxton & Hirschy, 2005; Pascarella & Terenzini, 2005). Supposedly, social integration occurs through faculty and peer interactions, and through involvement in intellectual and social activities (Stage & Hossler, 2000). For Black males, early and continued engagement into the fabric of campus life is significant to their persistence (Pascarella & Terenzini, 2005). For these students, involvement in campus activities and maintaining networks “provide the social and cultural capital necessary to succeed on a predominantly White or historically Black campus” (Strayhorn, 2008, p. 80). As such, ensuring sustained levels of involvement and networking with faculty and peers can stimulate Black males to successfully negotiate their educational environments and persist toward a college degree.

Background Characteristics

Tinto’s (1975) student integration model also accounts for how student background (i.e., gender, race, parental education, socioeconomic status, etc.) influences persistence. For instance, Black students are less likely than White students to persist toward degree completion (Leppel, 2002). The proportion of males earning a college degree within six years is lower than for females (U.S. Department of Education, 2009). First-generation students are less likely to complete college compared to peers “whose parents possess a bachelor’s degree” (Gupton, Castelo-Rodriguez, Martinez, & Quintanar, 2009, p. 248). And for low-income students, financial barriers limit the extent to which they can engage in campus activities. These students are usually working to cover the cost of financial aid not awarded to them; thus losing valuable
opportunities to sustain purposeful engagement in the higher education community. As such, lower levels of engagement decreases the probability of persisting toward a college degree (Gupton et al., 2009). In the end, background factors shape a student’s initial commitment to attending and remaining in college. Students with high levels of commitment to their education are more likely to integrate successfully into the academic and social systems of their institution; thereby positively affecting their trajectories in college (Braxton, 2000).

**Student Organizations**

According to Kuk and Manning (2010), campus-based student organizations serve as the gateway for enhancing persistence toward graduation. Harper and Quaye (2009), Pascarella and Terenzini (2005), and Tinto (1993) all have also cited degree attainment as an outcome for students involved in campus-based organizations. Padilla, Trevino, Gonzalez, and Trevino (1997) realized utility for minority students who participate in ethnic-based organizations. Not only do these organizations promote persistence, but they allow minority students to “retain and nurture a sense of ethnic identity on campus” (p. 134). They pointed out that having a strong sense of ethnic identity helps minority students to bridge the cultural gap between their home environments and the milieus of their predominantly White campuses. While the findings from Padilla et al. (1997) support the merit of minority student involvement in ethnic-based organizations, they fail to highlight the usefulness of these organizations specifically for Black males. Therefore, research is needed that examines the utility of ethnic-based student organizations in enhancing Black male retention (Guiffrida & Douthit, 2010).

Black male participation in student organizations is relatively low on both Historically Black Colleges and Predominantly White campuses. Harper and Wolley (2002) noted that in lieu of participating in organizational activities that may promote persistence, Black males are more likely to “assert proficiency in activities that create ostensibly more masculine reputations” (p. 194). These activities often center on sports, video games, obtaining material possessions, pursuing relationships with women, and engaging informally with other Black males. There has been poor strategic institutional effort to invite and encourage student organizational participation among Black males (Harper & Wolley, 2002). The lack of effort has resulted in Black males from being connected to these organizations. Consequently, and to a certain degree, poor institutional effort perpetuates the continuation of low retention and graduation among Black males. Colleges and universities must increase their efforts to engage Black males in
student organizations as to counter low retention outcomes. This endeavor is especially important at predominantly White institutions, where Black males tend to socially integrate through formal organizations; by which the members of these organizations are characteristically Black (Tinto, 1993).

**Methodology**

In this study, I employed a qualitative case study approach to understand how Project Empowerment enhances the retention of its undergraduate Black male members. This research approach was suitable for this study because it allows the researcher to provide an "in-depth description and analysis of a bounded system" (Merriam, 2009, p. 40). Qualitative research itself allows participants to create data using their own voices. In the end, this results in a meaningful understanding of the examined phenomenon (Marshall & Rossman, 1989). The research took place at a large public Southern University. The participants are undergraduate student members of Project Empowerment, an organization developed to enhance the retention of African American men. Following negotiations for access with the Associate Dean of Multicultural Affairs and the student president, I attended Project Empowerment mass meetings as a way to recruit participants. Initially, four students Black males were identified for the study, but only two students committed. Those two students were assigned the pseudonyms of “Mike” (20-years-old) and “Jordan” (25-years-old).

I conducted semi-structured interviews with each participant on two separate days. These interviews gave me the opportunity to elicit and examine the participants’ perspectives on factors they perceived as critical to their own persistence toward graduation (Bhattacharya, 2007). The interview structure offered flexibility for me to probe for details, and for the participants to go deeper in their responses. Both interviews were slightly over an hour, were digitally recorded, and were transcribed verbatim for analysis. Within a month after the initial interviews, I met with each participant again to check the accuracy of information given in the first interview. Coding was the technique that I used to analyze the interview data. The coding process allowed me to make notations next to pieces of data that I perceived as relevant to the study (Merriam, 2009). The notations then allowed me to construct patterns among the data. In the end, the data collected were analyzed in relation to the research questions.
Findings

The findings from this study revealed three broad themes, each characterizing factors that the participants perceived were critical to their persistence and degree attainment. They were: (1) college preparedness, (2) social connections and relationships, and (3) growth through student organizational commitment.

Theme 1: College Preparedness

Mike and Jordan attended “good” high schools in their respective hometowns. Although they had different experiences in the way their schools prepared them for college, their accounts reflect the importance of teachers and family members to their college preparedness. Mike attended Catholic school for 12 years, and felt very prepared for college. He never before considered why his parents sent him to Catholic school, nor did he have any insights into the benefits of his private school experience. In hindsight, Mike described the appreciation he had for his high school experience. He said,

Catholic school definitely had an impact on how I studied, the way I was disciplined.

Nothing against the instructors at public schools, but I feel like the instructors at a private school, they really care about the students and what they’re teaching them.

Tinto’s (1975) student integration model reveals how a strong pre-college school experience can positively influence a student’s persistence in college. Notwithstanding his school’s rigorous curriculum, Mike sensed that his teachers cared for his overall academic development and well-being; and he felt a high degree of comfort in his ability to persist and be successful in college.

Jordan felt differently about his high school experience. He believed that the teachers at his large, predominantly White, ranked public high school were disinterested in preparing him for college. He also reported how his counselors did not take a stake in his academic development, nor were they willing to assist him in making the transition to college. He perceived his status as a student-athlete hindered him from receiving much needed academic assistance. He said,

I don’t think I went to a bad school. I’m just saying that I didn’t get any learning from it because I was a sports player. And so they basically let me do what I wanted to do. They definitely could have done a better job preparing me for college. They were just trying to get me out of there.
Jordan’s description may be consistent with the politics of K-12 school systems, whereas school personnel tend to perpetuate Black male exclusion into the postsecondary education pipeline (Strayhorn, 2008). Though Jordan wished he had firmer teachers that supported his learning, he nonetheless remained encouraged, self-determined, and worked relentlessly to graduate from high school. It is quite possible that these attributes functioned to counter the exclusionary tactics that kept Jordan from being adequately prepared for college; and these attributes were likely foundational to his early commitment to matriculate and persist in higher education (Braxton, 2000).

**Theme 2: Social Connections and Relationships**

College and university campuses are the context for social exchanges among students; and serve as open spaces for students to be involved in clubs, organizations, and other activities. Involvement is one way for students to develop relationship with peers and faculty. Both participants perceive these relationships as critical to their persistence and future success. Mike discussed how interaction with peers in a learning community continues to foster his persistence and academic success. He said,

The living learning communities here [at his campus] is a great way for people to branch out and meet people. Academically, if I have trouble getting a concept or if this person gets the concept, then that person can help you to understand the concept.

Mike’s involvement in his learning community is an important factor to his academic success. His “belonging” and perceived satisfaction of the living learning community represents congruency with findings that positively link campus-based supports to student persistence (Patton, Morelon, Whitehead, & Hossler, 2006). Mike also perceived that developing good relationships with faculty and staff is important to his persistence. He stated,

If you have a good relationship with professors and other people in higher spots [vice-presidents and provosts], and you talk to them, they more than likely will help you out in some way…to help you graduate, or to help you obtain a job or internship. I think that brings a settling experience for a college student…especially at a big institution.

Jordan also finds that peer interaction through leadership development activities is significant to his persistence and future success. He is actively involved in a number of campus leadership experiences; and perceives the interactions from these experiences as helpful to him in achieving his goal. He stated, “I want to do as much leadership as I can do…only because I want
to work in a hospital as a social worker.” The statement suggests that Jordan desires the interaction from his leadership experiences to be the conduit of his long-term goal of becoming a medical social worker. Beyond this particular account, Jordan offered a significant statement on leadership that marked a different perspective from this theme. Extraneous data revealed Jordan’s enthusiasm for leadership, evidencing his motivation to succeed. He said,

Leadership is very great on this campus. Leadership involvement is awesome. It's perfect. It's what you want. It's what you need. You know, there's all types of leadership involvement that [city omitted] has in general if you wanna be a leader. I've been in leadership ... freshman mentoring. And there's a lot more opportunities to come.

The level of involvement and networking on the part of both participants is likely to promote their persistence in college. Strayhorn (2008) noted that involvement provides the social and cultural capital that Black males need to succeed on any college campus. Therefore, relationship building and the accumulation of cultural knowledge can serve as the means for Black males to earn a college degree.

Engagement with minority faculty was of particular importance for both participants in their academic experiences. Mike reported having two minority professors during the period of data collection; whom he maintains contact with on a regular basis. He described how the interaction with his minority professors continues to influence his desire to be successful:

You know…when you see [or] associate a minority with a college degree, or any type of higher education experience, it kind of gives you a little signal. They know what they're doing. They have their head on straight. It kind of gives you hope that ok, yeah, this is why I need to finish. They’re at where they’re at [because] they have a college degree.

Jordan also reported regular contact with minority professors, and described how this interaction continues to influence his achievement as a college student:

They just make sure they hear me out. And if I need to do something, they're there to let me know what I should do, what I could do. They let me know really what I need to be on, how I need to think. So I do like…the fact that they’re on me…in a good way.

Making sure I’m doing what I do [to] graduate.

Jordan’s remark suggests that some of his professors are supporting of his academic persistence. This is in relative contrast to Jordan’s high school experience, where his teachers seemingly failed to prepare him to transition into the higher education pipeline. On the whole, both
participants reveal that peer and minority faculty connections support the value of participating in higher education, and earning a degree.

**Theme 3: Growth through Student Organizational Commitment**

The participants in this study view their participation in student organizations as highly important to their academic experience. Many scholars regard student involvement as positively related to persistence and degree attainment (Harper & Quaye, 2009; Pascarella & Terenzini, 2005; Tinto, 1993). Involved college students have opportunities to serve their institution, grow academically, and establish lasting networks. Project Empowerment epitomizes these opportunities, all while promoting Black male retention. Mike and Jordan described how they became involved with Project Empowerment, and how they remain committed to the organization. Mike noted.

When I was in frosh camp [transition program for first year students], they talked about it. I went to the first [Project Empowerment] meeting, paid my membership, and I became involved with the organization. And I did certain things with them. They’ve asked me to work the career fair, and be an ambassador representing the organization. To represent the school or to raise money for [hospital name deleted]. Just different events that Project Empowerment supports.

Jordan said,

I got involved by hearing about it. Seeing posters over the school [Hearing] you should get in Project Empowerment if you trynna get more involved with school. So I seen one of the guys that had been in it for a while, and I let him know that I was interested. He was telling me to come to it. I was telling him that I’ll do it next year when I got my suit game up. So I did exactly what I told him I was gonna do. Jordan reportedly attended meetings regularly after joining, demonstrating an unwavering commitment to Project Empowerment.

Project Empowerment empowers its members and fosters their personal growth. Mike shared how committing to the organization helps him to stay on task and develop as a student: It keeps me on track with everything I have going on while I’m in college. Project Empowerment was founded to help increase the retention rate [of Black males]. The organization helps me keep focused. If I don’t feel like studying, I go to the meeting to
help empower me for the next week or semester. Project Empowerment helps you to become very open and opinionated…and [it] has helped me to mature as a man. Jordan’s participation in the organization’s sponsored men’s conference empowered him to understand the realities of Black men in life and in education. Here is an excerpt of how the conference shaped his thinking:

They had some inspiring people come to speak. They asked, ‘Who do you think, is more people in college or jail?’ And most people would feel like there’s more Black men in jail, but really, it’s more Black men in college. It just gave me a different look…like, don’t listen to folks man. So you go to know who to listen to.

This event not only influenced Jordan to think critically, but it likely inspired him to stay committed to his education.

Intellectual Empowerment Sessions (IES) and the Educational Support Program (ESP) are components of Project Empowerment that foster academic development and success for members. IES purports to improve academic skills through group study. Mike noted that during IES, “everybody will get together and study, [and] help others.” ESP offers free academic assistance and tutoring to current students. Mike and Jordan are generally satisfied with ESP. Mike noted that tutoring “was very beneficial,” while Jordan perceives ESP as helpful in improving his Spanish and writing skills.

**Discussion**

In this study, the participants credited their personal backgrounds, social relations, and membership in Project Empowerment as focal to their persistence. The findings led to several general conclusions around each theme. First, pre-college experiences were perceived as important to college persistence. For example, Mike recognized early how his private school experience prepared him, and influenced his commitment to remain in college. Despite Jordan’s experience of exclusion from the personnel at his high school, he was steadfast and eager to accomplish his goal of graduating from high school. Second, developing relationships with minority faculty was strong in the “social connections and relationships” theme. The participants’ interactions with minority faculty enabled them to stay focused on earning their degree. Mike was inspired to achieve by witnessing the success and position of his minority professors. Jordan felt academically supported by his minority professors, which evidently was in contrast to his high school experiences. Finally, the participants viewed their involvement in
Project Empowerment as significant to their persistence. The components of this ethnic-based student support organization seem to have equipped both participants with the tools and resources to adjust and be successful in their higher education environment.

Implications and Conclusions

The findings from this study suggest several implications. Foremost, higher education institutions must be strategic in involving Black males early in ethnic-based student organizations. Pascarella & Terenzini (2005) contend that Black males who are engaged almost immediately in the social context of campus life are more likely to persist toward graduation. Predominantly White institutions, in particular, must support early organizational involvement by offering an array of ethnic-based venues for its relatively few enrolled Black males (Harper, Carini, Bridges, & Hyak, 2004). Jordan illustrated in this study how his high school failed to prepare him for college. This alludes to the need for higher education institutions to engage at-risk Black males in a program such as Summer Bridge. This program helps vulnerable students transition from high school to college by offering academic classes, mentoring, and relationship building during the summer before their college matriculation. Although program goals vary, the aim is usually to enhance college readiness and improve retention through academic and social enrichment programs (Kezar, 2003-2004). The participants did not report involvement in early intervention programs that would have assisted their transition. However, their acumen for academic achievement is what guided their entry and transition into the college environment.

Data were collected from two participants in this study. Although the information was insightful, a larger sample of Black males involved in Project Empowerment should be studied to explore their perceptions of persistence, and to substantiate the findings from this study. Having more participants potentially diversifies the findings and research literature; which could inform the restructuring of Project Empowerment such that it strengthens the organizational components that lead to improved outcomes. Finally, Project Empowerment and its program components should be routinely evaluated. An ongoing assessment of Project Empowerment could demonstrate sustained effectiveness of organization on retaining Black males. Long-term evidence of positive outcomes might spark other institutions to revise their policies, or implement a program similar to Project Empowerment to address their own problems with retaining Black males.
In conclusion, the fundamental purpose of this research was to examine the factors of persistence for Black males involved in the Project Empowerment student support organization. The participants seemed to have formulated their perceptions of persistence from personal background experiences, relationship building with peers and faculty, and engagement with the institution on several levels. Importantly, the participants are determined to succeed, and continue to demonstrate a steadfast attitude toward achieving their goals. Their active engagement with Project Empowerment illustrates how the organization fosters their persistence toward graduation. In addition, their reflective stories exemplify significant insights about what it takes to navigate successfully their college environments. While these insights were important to the study, the findings and conclusions should be viewed with some caution. This qualitative study was primarily based on the participants' responses; in which these responses best reflect their perceptions of persistence through their own voices. In addition, the study was conducted within a single institutional context and organization. Therefore, any generalization of the findings from this study should be limited to the parameters of Project Empowerment at the focal institution.
References


Comprehensively Integrating Technology within a Magnet High School: A Policy Proposal

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Abstract

This document focuses on integrating technology within the education curriculum of a magnet high school. This integration process is an example of an educational policy change that can be implemented across the U.S. The promise of digital technology in the classroom across the United States has been muddied by its inefficient implementation. Programs to place technology in the classroom have failed in part because these programs or initiatives neglected to take the role of teachers into consideration when developing new technology integration models. This document addresses the systemic issues related to implementation failures and prescribes a process to develop well scoped and reliable technological resources. The document outlines strategies for professional development, technical support and maintenance, and digital technology/learning technology.
Comprehensively Integrating Technology within a Magnet High School: A Policy Proposal

“A transformative shift in education to the personalized, student-focused, lifetime-learning model that the Information Age demands will happen, many scholars say. It’s just a question of when.”

– Marcia Clemmitt, Digital Education, 2013

Introduction

Governmental mandates in 1998 required all American public schools to be connected to the Internet by 2001. Ideally, educators were to integrate technology into lesson plans and instructional strategies, and students would benefit from engaging activities which tapped into their interests bringing about greater learning opportunities, building requisite skills, and increasing test scores.

Unfortunately, integrating technology into public schools was not a great panacea. Schools fully equipped with Internet access and various technologies (desk tops, laptops, tablets, etc.) are still struggling with student engagement, reading levels, math competencies, and the like. And although today’s students may be adept at social media, gaming, and cell phone usage, they are not becoming adept at marketable technological skills. Further, teachers struggle to meet technology integration expectations due to lack of information, lack of training, resistance to change, and fear.

Area

This proposed policy centers on a mid-sized, urban magnet high school in Houston, TX. Ranked in the top 20 amongst 150 area schools by the organization Children at Risk which utilizes available school data to determine how well schools have prepared students and also
listed in the fourth edition of *U.S. News & World Report Best High Schools*, this magnet school has done well educating children in the past, yet has recently begun to experience decline in student behavior, grades, test scores, and employee morale – with a 25% rate of teacher turnover after the 2014-2015 school year.

The campus has over 300 student computers which includes two student computer labs as well as mini-labs of 5 to 10 computers in most English and math classrooms. Problems exist with internet connectivity, broken or outdated hardware, inability to print documents, and school-wide accessibility to the limited number of computer labs.

Each classroom teacher has a dedicated computer for administrative tasks, clerical duties, and curriculum preparation and presentation. Last year, each teacher was issued an iPad. Most either took the iPads home for personal use or locked them in their classroom closets. Although some technology training is provided by the district, it is offered after-school or on Saturdays, which oftentimes is not convenient for teachers. Any educator with school-age children or weekend obligations might find it difficult to attend these professional development sessions. Thus, few campus educators are aware of the myriad of possibilities that technology integration could offer them.

**Thesis**

Programs to place technology into the classroom have failed, in part, because they neglect to train the teacher in how to incorporate the use of technology into the curriculum efficiently. These programs are further hampered as the support and maintenance requirements of the technology seldom make it into the classroom, the school, or even to the school district.

**Professional Development**
One of the major missing elements of K-12 technology integration is teacher training and professional development. Both pre-service and in-service educators must have continual, consistent and relevant training and professional development which focuses on technology integration.

...[R]elevant literature shows that effective professional development related to technology integration: (a) focuses on content (e.g., technology knowledge and skills, technology supported pedagogy knowledge and skills, and technology-related classroom management knowledge and skills), (b) gives teachers opportunities for “hands-on” work, and (c) is highly consistent with teachers’ needs (Hew & Brush, 2007, p. 238).

Communities of Practice

Steps must be taken which allow teachers to become increasingly comfortable utilizing technology which advances curriculum goals and enhances daily lessons. One way to assuage teacher fears and uneasiness regarding working with technology is through a mentorship or buddy program centered on technology integration. “…[T]eachers who learned to integrate technology with a mentor more easily overcame barriers such as finding time to integrate technology, learning to troubleshoot problems with technology, and learning to integrate technology into an actual classroom setting” (Franklin et al., 2001 as cited in Kopcha, 2010, p. 177). Because of the benefits of technology communities of practice, both new and experienced teachers must be required and encouraged to participate.

Technical Support and Maintenance

One of the key components for improving technology integration in our educational system is to better align technology infrastructure with online educational resources which can be utilized in the classroom. For example, teachers require software applications that support
their curriculum, but often the specifics of the software is not taken into consideration when the technology resources are deployed. Thus, creating a software performance problem for teachers because adding software to a saturated network is the fastest way to ensure inconsistent software performance. When this occurs, teachers and students lose faith and interest in online teaching resources.

The resolution to this problem is to develop infrastructure resources with specific software applications and specific performance standards in mind. The best way to support teachers and students going forward is to develop an education portal that considers the teaching tool in the classroom as well as the evolving teaching software applications at the time the infrastructure is designed. This will give teachers an opportunity to identify their application performance requirements as well as their growth strategy so that infrastructure developers can right size networks, servers and routers for optimal performance.

**Framework: Instruction**

Educators cannot simply place Internet-connected computers in the classroom and call it a technology enhancement. Although this approach may work to satisfy the immediate needs of a specific technology mandate, it is doomed for failure. Education experts see the need for change, and new markets continue to emerge.

**Digital Technology/Learning Technology**

From laser discs to CD-ROMs to interactive whiteboards to on-line content and mobile applications, tech. businesses - both small and large - have attempted to provide educational organizations with beneficial learning tools which assist teachers and appeal to students while keeping pace with dynamic technological advances.
According to The New Media Consortium (NMC) Horizon Report: 2015 K-12 Edition, which “…examines emerging technologies for their potential impact on and use in teaching, learning, and creative inquiry in schools,” there are seven categories within educational technology:

1. Consumer technologies: applications and tools that were created for business, personal, or home use which can also be beneficial in educational settings.

2. Digital strategies: these strategies are not technological advancements, rather “…ways of using devices and software to enrich teaching and learning, whether inside or outside the classroom” (p. 34).

3. Enabling technologies: transformative technologies which make existing hardware and software easier to manage or more beneficial.

4. Internet technologies: “…techniques and essential infrastructure that help to make the technologies underlying how we interact with the network more transparent, less obtrusive, and easier to use” (p. 35).

5. Learning technologies: applications, technology, and online resources created specifically for the education sector.

6. Social media technologies: online social networks have permeated all sectors allowing for “…new ideas, tools, and developments coming online constantly” (p. 35).

7. Visualization technologies: ranging from presentation tools and applications to visually analyzing data “[t]hese technologies are a growing cluster of tools and processes for mining large data sets, exploring dynamic processes, and generally making the complex simple” (p. 35).
Virtual (Online) Learning

In recent years, there has been a steady increase in online or virtual offerings for K-12 students. “As of 2010, at least 27 states had at least one entirely full-time, publicly funded online school, including high schools and schools serving pre-kindergarteners through 12th grade” (Clemmitt, 2013, p. 208). Students and their parents may choose to have students work from home taking all of their classes online, or students might complete some classes online during the traditional school day.

Blended Learning

Blended learning combines online learning with traditional face-to-face instruction. Students are able to receive the benefits of self-paced or individualized online instruction along with the guidance and assistance that only a classroom teacher can provide. “In many cases, blended learning paves the way for other approaches — including competency-based models — that enable personalized learning, promote skill mastery, and inform new roles and responsibilities for teachers” (The New Media Consortium [NMC], 2015, p. 16)

Model School Districts

Ultimately, it is up to local school districts and campuses to decide which technological tools, applications, software, and hardware will be most beneficial for state curriculum, classroom instruction, and student needs. And fortunately, there are some districts who are making great strides towards fully integrating technology. In their Annual Review of Policy and Practice, Keeping Pace with K-12 Digital Learning (2014), highlighted seven school districts (Figure 1) of which “…several … are considered among the leading examples of digital learning implementations” (p. 37).
The benefits of integrating technology into primary and secondary schools are numerous and far-reaching. Technology integration benefits all school stakeholders: students, teachers, administration, parents, and community members. Basic technological tools allow teachers to...
efficiently and easily take attendance, calculate and track grades, prepare lesson plans, and communicate with parents and students. Students develop word-processing, communication, presentation, research, and emerging technology skills. And, parents and community members can be assured that graduates are prepared for higher-education and 21st-century employment.

...advocates for 21st-century skills stress the importance of literacy in information and communications technology (ICT) for performing learning skills, such as thinking and problem solving, communicating effectively, and enhancing self-direction and productivity. (National Education Association [NEA], 2008, p. 22)

Thus, when a school or school district lags behind the current technological landscape, those students (along with all the other stakeholders) suffer. According to the National Education Association’s 2008 Survey of America’s Teachers and Support Professionals on Technology in Public Schools and Classrooms, “adequacy of technology in urban schools fell well below that available in suburban schools and, to a large extent, below rural schools as well” (p. 34). K-12 education in America cuts across all demographic and socio-economic lines, and when some children receive sub-standard instruction due to where they live or where they go to school, educational equity for this student population is in jeopardy.

As technology continues to rapidly advance, it is key that all schools and districts diligently work towards full integration of technology.

**Review of Literature**

Empirical data regarding educational technology integration and its effectiveness is emerging yet relatively scarce. There is a plethora of technological choices for districts and
campus – some of which have been researched and tested while others have been theorized or merely thought to be effective. “… [T]here is insufficient empirical support to claim that access to technology has either increased test scores or improved the quality of instruction to enhance student learning” (Inan & Lowther, 2010, p. 137). However, there are numerous plans and theories regarding implementing the integration of technology: overcoming barriers and training teachers.

Barriers to Technology Integration

Once a school or district has mandated increased technology integration, the organization must be cognizant of barriers to the technology plan and develop ways to navigate these barriers. Kopcha (2010) and Hew and Brush (2007) compiled the following barriers:

- Lack of time – most teachers are already pressed for time, and many see learning a new technology as another time consuming task
- Access to resources – not having enough fully functioning computers, and devices; malfunctioning software and/or licensing problems; internet connectivity issues all cause great frustration for teachers
- Attitudes and beliefs – teachers may hold negative beliefs about technology
- Professional Development – many teachers lack the knowledge and skills to use technology within their curriculum, lesson plans, and classrooms
- Culture – school climate and norms may have a negative impact

Hew and Brush (2007) also included the following institutional barriers:

- Leadership – school administration may be unsupportive; teachers want to be a part of the decision-making process (Byrne, 1998; Brown, Finch, MacGregor, & Watson, 2012). “Supportive and shared leadership is the phenomenon when ‘school administrators
participate democratically with teachers sharing power, authority, and decision making” (Hord, 1997 as cited in Brown, Finch, MacGregor, & Watson, 2012). As educational professionals, teachers want to be a part of the solution. “If the top down system of administration is abandoned in favor of policy decided by all the constituent elements of a school community including supervisors, teachers, parents, and students, a more harmonious atmosphere based upon individual responsibility will prevail” (Byrne, 1998).

- Bell schedules – the amount of time within each class period may hinder tech. heavy lessons
- School planning – school may attempt to integrate technology without a strategic plan

**Strategies for Overcoming Barriers**

Hew and Brush (2007) determined five categories for overcoming tech. integration barriers:

1. Develop a shared vision and technology integration plan: developing a shared vision allows educators to imagine and visualize what can be, and the integration plan provides the steps to reach the goal

2. Find ways to accumulate additional resources: creative thinking and creative problem-solving are crucial to overcome this barrier; sharing equipment, fund-raising, and grant writing are a few options

3. Change attitudes and beliefs: providing the vision, plan, and support assists with changing attitudes

4. Conduct professional development: the additional knowledge and skills gained will allow teachers to feel comfortable using technology in their classrooms as well as bolster positive changes in attitudes and beliefs
5. Rethink assessments: school standards are set in an effort to raise test scores and funding is allocated based on improving standards; teachers may use applications or software to easily assess students, and meticulously formatted state test questions can also be presented via technology.

Although the list of strategies is short, the tasks may be daunting to educational professionals. The researchers developed a summary chart (figure 2) to assist with tackling barriers.


<table>
<thead>
<tr>
<th>Barriers</th>
<th>Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Resources</strong></td>
<td></td>
</tr>
<tr>
<td>• Lack of technology</td>
<td>• Introduce technology into one or two subject areas at a time to ensure</td>
</tr>
<tr>
<td></td>
<td>that teachers and students in those areas have adequate technology and</td>
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<tr>
<td></td>
<td>access to technology (Tearle, 2004)</td>
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<tr>
<td></td>
<td>• Create a hybrid technology setup in classrooms that involved cheaper</td>
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<tr>
<td></td>
<td>computer systems. (Sandholtz &amp; Reilly, 2004)</td>
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<tr>
<td></td>
<td>• Use laptops with wireless connections to save building and maintenance</td>
</tr>
<tr>
<td></td>
<td>costs of the computer laboratories (Lowther et al., 2003)</td>
</tr>
<tr>
<td>• Lack of access to technology</td>
<td>• Putting technology into the classrooms rather than in centralized</td>
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<tr>
<td></td>
<td>locations (Becker, 2000)</td>
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<tr>
<td></td>
<td>• Rotate students through the small number of classroom (Sandholtz et al.,</td>
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<tr>
<td></td>
<td>1997)</td>
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<tr>
<td>• Lack of time</td>
<td>• Teachers collaborate to create technology-integrated lesson plans and</td>
</tr>
<tr>
<td></td>
<td>materials (Dexter &amp; Anderson, 2002; Lim &amp; Khine, 2006)</td>
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<tr>
<td></td>
<td>• Reduce class loads for teachers in order to free up some school time</td>
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<td></td>
<td>(Snoeyink &amp; Ertmer, 2001–2002). For example, reduce the overall curriculum</td>
</tr>
<tr>
<td></td>
<td>content (MOE Singapore, 1998)</td>
</tr>
<tr>
<td>• Lack of technical support</td>
<td>• Also include the strategy for time-tabling structure</td>
</tr>
<tr>
<td></td>
<td>• Use student technology helpers (Cuban et al., 2001; Lim et al., 2003)</td>
</tr>
<tr>
<td><strong>Institution</strong></td>
<td></td>
</tr>
<tr>
<td>• Leadership</td>
<td>• Having a shared vision (Rogers, 2000; Sandholtz et al., 1997; Tearle,</td>
</tr>
<tr>
<td></td>
<td>2004; Yuen et al., 2003)</td>
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<tr>
<td>• Time-tabling structure</td>
<td>• Schools change their time-tabling schedule to increase class time to</td>
</tr>
<tr>
<td></td>
<td>double period sessions (Bowman et al., 2001)</td>
</tr>
<tr>
<td>• Lack of technology integration plan</td>
<td>• Having a technology plan (Fishman &amp; Pinkard, 2001; Lawson &amp; Comber, 1999).</td>
</tr>
<tr>
<td></td>
<td>Such a plan should center on teaching and learning, not merely on technology</td>
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<tr>
<td></td>
<td>issues (Rogers, 2000)</td>
</tr>
<tr>
<td><strong>Subject culture</strong></td>
<td>• No strategies currently mentioned in the studies reviewed</td>
</tr>
<tr>
<td><strong>Attitudes/beliefs</strong></td>
<td></td>
</tr>
<tr>
<td>• Facilitating attitudes/beliefs</td>
<td>• Institution support (having vision and plan; providing the necessary</td>
</tr>
<tr>
<td></td>
<td>resources, providing ongoing professional development; encouraging teachers</td>
</tr>
<tr>
<td></td>
<td>(Lawson &amp; Comber, 1999; Sandholtz &amp; Reilly, 2004; Granger et al. 2002; Teo</td>
</tr>
<tr>
<td></td>
<td>&amp; Wei, 2001)</td>
</tr>
<tr>
<td></td>
<td>• Subject culture</td>
</tr>
<tr>
<td></td>
<td>• Assessment (see strategies for assessment below)</td>
</tr>
<tr>
<td></td>
<td>• Professional development (see strategies for professional development</td>
</tr>
<tr>
<td></td>
<td>below)</td>
</tr>
<tr>
<td><strong>Skills</strong></td>
<td></td>
</tr>
<tr>
<td>• Lack of technology skills</td>
<td>• Provide basic technology knowledge/skills training (Mulkeen, 2003;</td>
</tr>
<tr>
<td></td>
<td>Snoeyink &amp; Ertmer (2001–2002)</td>
</tr>
<tr>
<td>• Lack of technology-supported pedagogy</td>
<td>• Ground learning experiences in content-connected technology examples</td>
</tr>
<tr>
<td>skills</td>
<td>(Hughes, 2005). Can be achieved through the use of a buddy system approach</td>
</tr>
<tr>
<td></td>
<td>(Lim &amp; Khine, 2006)</td>
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</tbody>
</table>

Table 1 Summary of strategies to overcome barriers of technology integration
Figure 2. Summary of Strategies to Overcome Barriers

Path Analysis

The barriers and factors which limit technology integration (lack of time, limited resources, attitudes and beliefs, professional development, and culture) are inter-related problems and concepts. Path analysis is one way to analyze the barriers and extrapolate to what extent they inter-relate. “Path analysis is an advance statistical technique for examination of dependent and independent variables to reveal the relative effects of each variable on the other variables in the model” (Inan & Lowther, 2010, p. 139).

Looking at factors and barriers to tech. integration, Inan and Lowther (2010) used the following variable to create the path model:

- Age
- Years of teaching
- Computer proficiency
- Computer availability
- Teacher’s beliefs
- Teacher’s readiness
- Overall support
- Technical support
- Technology integration

Inan and Lowther (2010) found that “the eight variables hypothesized to impact technology integration in the model explained 56.4% of the variance of teacher’s technology integration” (p. 144). Thus, there are also various unexplained reasons as to why educators are reluctant to utilize or embrace technology.
Also, the Inan and Lowther (2010) found three key variables which positively affected technology integration: teachers’ readiness, teachers’ beliefs, and computer availability. “This finding suggests that the higher the value of these variables, the higher the teachers’ technology integration” (p. 145). This information can be valuable both when principals and administrators hire new teachers and when they consider yearly budgets.

**Economic Analysis**

E-Learning and virtual schools environments do not further exacerbate the financial bind schools often find themselves in. When you consider E-Learning, schools can be setup anytime, anyplace offering educators the ability to revise and combine core curriculums and lesson plans seamlessly. Both educators and students benefit from the use of a technology utility that provides digital application resources such as online books, tools for special needs students, and collaboration tools for student and teachers to work together.

The government is allocating funds for technology growth in education in an effort to improve technology resources. However, what we see is that technology is replacing traditional resources more cost effectively. According to the Thomas B. Fordham Institute, schools are finding that by developing individualized learning in digital e-learning labs for students, students use adaptive educational programs to learn reading and math skills schools at a cost savings (Battaglino, Haldeman, & Laurans, 2012). In fact, the Fordham Institute found that traditional school operations models cost approximately $10,000.00 per student per year, using a blended model cost approximately $8900.00 per year per student. The fully virtual model cost approximately $6400.00 per year per student (Battaglino et al., 2012). The financial value proposition is clear—using technology resources is cheaper than traditional education models.
### Figure 2. Cost Bands for Virtual- and Blended-School Models

<table>
<thead>
<tr>
<th>Category</th>
<th>Cost Estimate</th>
<th>Fluctuation</th>
<th>Cost Levers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Virtual Model</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labor (Teachers and Administrators)</td>
<td>$2,600</td>
<td>+/- 15%</td>
<td>Student-teacher ratio</td>
</tr>
<tr>
<td>Content Acquisition</td>
<td>$800</td>
<td>+/- 50%</td>
<td>Teacher salary</td>
</tr>
<tr>
<td>Technology and Infrastructure</td>
<td>$1,200</td>
<td>+/- 25%</td>
<td>Professional-development delivery (virtual or in-person)</td>
</tr>
<tr>
<td>School Operations</td>
<td>$1,000</td>
<td>+/- 20%</td>
<td>Content quality (level of personalization)</td>
</tr>
<tr>
<td>Student Support</td>
<td>$800</td>
<td>+/- 0%</td>
<td>Inclusion of content-management system</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$6,400</td>
<td>$5,100 – $7,700</td>
<td></td>
</tr>
</tbody>
</table>

### Figure 3. Costs of Online Learning

<table>
<thead>
<tr>
<th>Category</th>
<th>Cost Estimate</th>
<th>Fluctuation</th>
<th>Cost Levers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Blended Model</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labor (Teachers and Administrators)</td>
<td>$5,500</td>
<td>+/- 15%</td>
<td>Time spent in computer-facilitated learning</td>
</tr>
<tr>
<td>Content Acquisition</td>
<td>$400</td>
<td>+/- 50%</td>
<td>Human capital during computer-facilitated learning</td>
</tr>
<tr>
<td>Technology and Infrastructure</td>
<td>$500</td>
<td>+/- 20%</td>
<td>Human capital model for the remainder of the day</td>
</tr>
<tr>
<td>School Operations</td>
<td>$1,700</td>
<td>+/- 5%</td>
<td>Content quality (level of personalization)</td>
</tr>
<tr>
<td>Student Support</td>
<td>$800</td>
<td>+/- 0%</td>
<td>Inclusion of content-management system</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$8,900</td>
<td>$7,600 – $10,200</td>
<td></td>
</tr>
</tbody>
</table>

### Figure 4. Costs of Blended Learning
Another major problem facing education’s use of technology resources has been inadequate implementation and mismanagement of infrastructure resources. The computer hardware and software used in schools has not been right-sized to meet the demand of students and educators. Implementation processes (when developed and utilized) have been based on available funding and outdated equipment. Teachers do not use the computers they have today because they do not have software installed that can be used to aid the teaching effort.

Currently, there does not seem to be an effective methodology in place that presents the most benefit to each school at the best value. Schools are not concentrating their efforts together to develop one standard offering as a district. Each school is using the allocation of funding to develop their technology solutions on a case-by-case basis. What is needed is a technology solution that is standardized to meet the needs of all the schools in the district.

The solution is distributive computing model currently used in the private sector to service multiple enterprises using right-sized hardware.

**Implementation**

Implementing change within any organization is always a precarious project. And, it is exceptionally difficult within a school as most teachers and administrators are subject-matter experts who believe they know best. In order to bring all school stakeholders into the process of technology integration will be phased in over two years and include two components: the SPELIT Power Matrix needs assessment and John P. Kotter’s Eight Step Change Model will be utilized.
**SPELIT Power Matrix**

The SPELIT Power Matrix is a model for assessing the needs within an organization. It assesses the social, political, economic, legal, intercultural, and technological issues associated with a problem or organization. The administrative team (principal and assistant principals) will discuss, analyze, and complete the SPELIT needs assessment before moving on to the components of Kotter’s change model. Prominent and possible campus needs and issues are as follows:

*Table 1*

**Campus Technology Needs Assessment**

<table>
<thead>
<tr>
<th>Environmental Element</th>
<th>Anticipated Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social</td>
<td>Teachers may be unwilling to change due to lack of technological knowledge/training or fear.</td>
</tr>
<tr>
<td>Political</td>
<td>There may be factions of educators who reject the new initiative because they were not part of the initial planning process. Others may see the initiative as another short-term change that will be “here today and gone tomorrow.”</td>
</tr>
<tr>
<td>Economic</td>
<td>School budgetary concerns: hardware, software, installation, maintenance, professional development, incentives and rewards</td>
</tr>
<tr>
<td>Legal</td>
<td>The campus’ Acceptable Use Policy may need to be revised.</td>
</tr>
<tr>
<td>Intercultural</td>
<td>There may be problems managing the different school stakeholders and their involvement and interest in comprehensively integrating technology.</td>
</tr>
<tr>
<td>Technological</td>
<td>There are not enough fully-functional and up-to-date computers</td>
</tr>
</tbody>
</table>
for all the teachers, students, and staff who want to use them. The Internet routers and servers may lack the capacity for the increased usage.

Kotter’s Change Model

Figure 5. Kotter’s Eight Step Change Model

The Comprehensive Technology Integration Plan will be phased in over a two year period. Steps one, two, and three (Establishing a Sense of Urgency, Creating a Guiding Coalition, and Developing a Vision and Strategy) will begin the summer before the first school-
year of implementation. The Guiding Coalition must consist of the school principal, curriculum assistant principal, assistant principals, technology specialist, librarian, and department chairs – plus any other concerned, interested teachers willing to volunteer their time during the summer.

Understanding the need for greater student engagement, curriculum and hardware/software re-tooling for 21st century learners, increased teacher morale, increased test score performances, and optimal utilization of campus-wide technological resources, the Guiding Coalition will gather and disaggregate data regarding declining test scores, student discipline statistics, teacher morale, professional development needs, and results from the Texas School Technology and Readiness Chart – which is a survey which measures teachers readiness for and use of technology within the classroom.

The Texas Teacher STaR Chart can assist in the measurement of the impact of state and local efforts to improve student learning through the use of technology as specified in No Child Left Behind, Title II, Part D. It also can identify needs for on-going professional development and raise awareness of research-based instructional goals.

(Texas STaR Chart website, n.d.)

In order to create a sense of urgency, presentations, posters, handouts, and emails will be generated which “… relentlessly bombard employees with information about problems …, potential problems …, [and] potential opportunities” (Kotter, 2012, p. 47). The first round of these communications will be presented to faculty and staff during the beginning of the school year staff development sessions. The Guiding Coalition will be introduced and the school principal will be first to explain the campus’ new focus, vision, and plan. This vision and plan will also have been conceived and fine-tuned during the summer. The vision and plan will encompass all campus stakeholders: administration, teachers, staff, students, and parents.
Involving all stakeholders sets the stage for Kotter’s stage 5 “Empowering Employees for Broad-Based Action.” In order to make positive, effective change within a school, teachers, students, parents, and support staff must have buy-in and feel a part of the process.

“Environmental change demands organizational change. Major internal transformation rarely happens unless many people assist. Yet employees generally won’t help, if they feel relatively powerless. Hence the relevance of empowerment” (Kotter, 2012, p. 105). The school will institute the following campus-wide initiatives:

- Student Technology Advisory Board
- Teacher and staff Technology Communities of Practice
- Parental access to library computers
- Community technology training sessions
- Recognition and awards for teachers who successfully integrate technology into their lessons

Recognition and awards are also a part of Kotter’s sixth step: “Generating Short-Term Wins.” Short-term wins bolster momentum and are evidence that the new initiatives are working. Three elements are important for short-term wins:

1. It is visible; large numbers of people can see for themselves whether the result is real or just hype.
2. It is unambiguous; there can be little argument over the call.
3. It is clearly related to the change effort. (Kotter, 2012, p. 126)

Campus technology integration progress will be celebrated and documented using the following measures:
• Technology Professional Development Bingo (educators will receive prizes for attending certain types and amounts of trainings)
• Tech Triumphs shared in professional learning communities and school-wide
• Tech Recs. (educators, students, and staff can write and post recognition for anyone who is using technology in an innovative and/or interesting way)

Kotter’s stages seven and eight (“Consolidating Gains and Producing More Change” and “Anchoring New Approaches in the Culture”) will be addressed during year two of the implementation plan.

In order to continue producing change, activities that were suggested during year one will become required. Educators (including administration) and staff will be required to complete at least ten hours of technology professional development – which will be tied to end of the year evaluations. And, technology integration into written lesson plans and executed in the classroom will be required with the goal of lessons having a technological component at least twice a week.

Embedding these technological changes into the culture of the campus will be an ongoing endeavor. Campus-wide technology integration will be continually in the forefront of the goals and visions for the campus and will continue to be promoted via staff meetings, staff developments, incentives, and communications. Kotter (2012) explains that changing a culture:

• Comes last, not first
• Depends on results
• Requires a lot of talk
May involve turnover

Makes decisions on succession crucial (p. 166)

With these tenets in mind, the Guiding Coalition must be willing to dialogue with stakeholders, be flexible, and make changes as necessary.

**Conclusion**

Because the landscape of education is constantly changing and evolving, innovation and adaptation must be a hallmark of all educational decisions as well as practices. For example, continued technological advances require a technologically savvy workforce. Innovator and Ashoka Fellow Rafael Alvarez, founded Genesys Works which “… prepares eleventh and twelfth grade students with the technical skills they need to provide value in the corporate workplace, and the opportunity to gain professional experience. Genesys employs the students, assumes the risk, and relieves employers of recruiting, training, placing and supervising the youth” (Rafael Alvarez, 2006). Alvarez is fulfilling a need for job training for low-income and minority youth, inspiring hope for a fruitful life after high school, and providing employers with a technologically trained employees.

The fiscal challenges and additional obstacles associated with the educational system will also require educators to be constantly nimble and innovative. Finally, accountability for all stakeholders is tantamount to success as parents, students, community-members, teachers, and staff must all work together and have a part in the process.

Comprehensively integrating technology into a school or school district is no easy task and requires commitment from all stakeholders. However, the benefits to students, teachers, and
parents far outweigh any negative aspects. As our society continues to become more technologically advanced, we must make sure that our children keep abreast and become educated, well-rounded 21st-century learners.
References


National Education Association. (2008). Access, adequacy, and equity in education technology: Results of a survey of America’s teachers and support professionals on technology in


Title: Mobile technologies enhance learning in a health professional program across two sites

Topic Area: Curriculum, Research and Development

Presentation Format: Paper Session

Description (75 words):

Two cohorts (n=213) of occupational therapy students, across two urban sites, used five types of mobile technologies for learning: (1) LiveBook, an online, interactive platform for case studies, (2) texting or email to consult with experts, (3) goniometer apps, (4) skype for remote clinical supervision, and (5) Wiki for peer support in role emerging fieldwork placements. According to usability surveys (93% response rate) and focus groups, learners thought the technologies enhanced academic performance and learning.

(See page 2 for separate abstract)

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Mobile technologies enhance learning in a health professional program across two sites

Objective: The objective of this study was to examine the usability and benefits of using mobile technologies to enhance learning in a health professional program across two sites.

Methods:

A sample of two cohorts (n=213) of occupational therapy students, across the main campus and a satellite site located 300 KM away, used five types of mobile information communication technologies (ICTs) in course and fieldwork. The five technologies were: (1) LiveBook, an online, interactive platform for case studies, (2) online consultation with expert practitioners, (3) goniometer apps, (4) remote clinical supervision, and (5) Wiki for peer support in role emerging fieldwork placements. Pre and post surveys, and focus were used to examine usability and benefits of the mobile technologies for learning.

Results:

The data was collected during the 2014-2015 academic year. There was a 93% response rate for surveys. Mean age was 24.8 years (SD 9.9 years), percent Female/Male: was 90.6/9.4, and percent of students in site A/site B was 82.5/17.5. According to the students:

1. Mobile ICTs helped them increase their academic performance and learning (78% agree or strongly agree)
2. Mobile ICTS were easy to use, or not complicated (76% agree or strongly agree)
3. Intention to use mobile ICTs was influenced by peers or instructors (38% neutral, 36% agreed)
4. Resources and technical support were available (75% agree or strongly agree)
5. They had a strong intention to use ICTs for learning (72% agree or strongly agree)

Although students had a positive attitude toward using ICTs, there are currently few devices and applications for academic purposes.

Conclusion:

University students in this study were positive about the portability and practicality of using mobile technologies for learning. This is consistent with the literature. As few applications are available, this is an area for curriculum experts to invest resources.
Acknowledgement: This study was funded by a grant from the Teaching and Learning Enhancement Fund at the University of Alberta.
The Efficacy of Modeling Instruction in Chemistry: A Case Study

Topic area: Science Education

Presentation format: paper session, panel session poster session

Abstract:

Modeling Instruction in Chemistry is a constructivist and model-based curriculum that has been utilized in teacher workshops and classrooms for approximately ten years. This curriculum was developed from theory and techniques developed in Modeling Instruction in Physics, a well-established course with proven efficacy in improving student conceptual understanding. However, there has been little empirical research into the efficacy of the Modeling Instruction in Chemistry curriculum. This case study is a first attempt to determine the effect this instructional program has on conceptual development in Chemistry.

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The Efficacy of Modeling Instruction in Chemistry: A Case Study

Abstract
Modeling Instruction in Chemistry is a constructivist and model-based curriculum that has been utilized in teacher workshops and classrooms for approximately ten years. This curriculum was developed from theory and techniques developed in Modeling Instruction in Physics, a well-established course with proven efficacy in improving student conceptual understanding. However, there has been little empirical research into the efficacy of the Modeling Instruction in Chemistry curriculum. This case study is a first attempt to determine the effect this instructional program has on conceptual development in Chemistry.

Introduction
In order to promote deep understanding of concepts, the recent NRC Framework for K-12 Science Education (2012) has recommended a move away from memorization of routine facts towards a focus on learning via engagement in scientific practices. One of the practices highlighted is the use of modeling in science classes. Modeling requires students to develop, refine and use models to explain and predict scientific phenomena thus making sense of the world around them (Next Generation Science Standards, 2013).

Models are idealized representations of the real world that scientists use for various purposes which can include description, explanation, exploration, communication, and prediction (Giere, 2004; Svoboda & Passmore, 2013). Traditionally, in education, the term “models” has been used to describe physical representations of a real life object, for example, a three-dimensional molecular model. However, in scientific practice, such physical representations are thought of as simply one representation of a specific scientific model. Other representations could be an algebraic equation, a verbal description, a graph or picture/diagram. Together all of these representations constitute a scientific model, which represents a mental model of a phenomenon that can be used to describe, explain or make predictions (Buckley, Gobert, Kindfield, Horwitz, Tinker, Gerlits & Willett, 2004; Wells, Hestenes & Swackhamer, 1995). Representations are not just snapshots of a phenomenon but represent causal events, processes or structural features (Buckley et al., 2004). No one representation provides a complete picture of the mental model, but as a dynamic, coherent, interacting set, the different representations can provide a more complete description both of the phenomenon and a person’s mental model (Giere, 2004; Hestenes, 2010). Experts can flexibly switch between these representations, and recognize that multiple representations may be needed during problem solving (Harrison and Treagust, 2000).

Studies have demonstrated that model-based physics curricula, specifically Modeling Instruction in Physics, produces an increase in student content performance and can also help students to develop a more coherent understanding of the topic. Wells, Hestenes and Swackhamer (1995), assessed the effect of Modeling Instruction™ curriculum in physics by examining pre and post test scores on two separate mechanics diagnostics. The students were 11th and 12th grade students from three high school honors classes, one taught by lecture, one by inquiry, and one by Modeling Instruction™. Students in the Modeling Instruction™ course achieved greater gains pre to post than students in either the lecture or inquiry course. Malone (2008) determined in a qualitative analysis of problem-solving that 11th and 12th grade physics students trained via Modeling Instruction™ used a greater variety of problem-solving strategies and displayed more metacognitive solution checking behaviors. Furthermore, these modeling instruction students showed more expert-like knowledge structures than traditionally instructed students and the quality of the knowledge structures produced correlated with Force Concept Inventory (FCI) scores. Therefore, the time spent with multiple representations seems to allow for the development of coherent expert-like models. Coletta, Phillips & Steinert (2007) found that physics students taught with Modeling Instruction™ also demonstrated improved scientific reasoning skills. Not surprisingly 9th
grade students taught physics with Modeling Instruction™ have demonstrated greater conceptual gains (Malone & Reiland, 1993; O’Brien & Thompson, 2009) as well as improved scientific reasoning skills (Schuchardt, Malone, Diehl, Harless, McGinnis & Parr, 2008). Recently, research in the use of models in biology have shown promising results in conceptual gains in the areas of natural selection and heredity (Malone, Schuchardt & Schunn, 2015; Schuchardt & Schunn, in press).

There has been less research on the role of modeling in chemistry instruction. However, those studies that have been conducted suggest that Modeling Instruction in Chemistry should be as effective as its counterpart in physics. Dori and Kaberman (2012) found that students trained with a modeling based computerized curriculum unit demonstrated more flexibility moving between model representations as well as a better understanding of the connection between macro and molecular levels in chemistry than traditional students. There are few yearlong model based curricula that have been proven effective.

Harrison and Treagust (2000) followed one high school student studying chemistry via a model based approach. The student moved from initially describing atoms and molecules using a one dimensional concrete analogical model to multiple representations. The student recognized that each representation described limited aspects of the conceptual model and could that they could be used to make predictions. Harrison and Treagust (2000) make the case that the student moved from a novice modeler who believed in a 1:1 correspondence between models and reality to a more expert modeler who believed models consist of multiple mental representations. However, there was no comparison between this student and a similarly capable student exposed to a non-modeling curriculum.

Dukerich and Royce (2004) developed a full year Modeling Instruction™ in Chemistry curricula that utilizes the same pedagogy as the highly successful Modeling Instruction™ in Physics (Jackson, Dukerich & Hestenes, 2008). Teachers report that students show gains in conceptual understanding using this curriculum. However, studies comparing the efficacy of modeling instruction in chemistry against a comparison group using traditional instruction have not been published or conducted to our knowledge.

**Purpose:**
This study addresses the gap in research on the efficacy of Modeling Instruction in Chemistry. In this case study, chemistry content knowledge gained by students taught with Modeling Instruction will be compared to the gains made by students taught using traditional instruction.

**Research Question:**
*When compared to a more traditional yearlong chemistry program, does a Modeling Instruction in Chemistry yearlong program result in greater gains in students’ conceptual understanding?*

**Method**
*Participants and Classroom Context:* The participants in this case study were academically and socio-economically similar and enrolled in an independent high school in a northwestern state in the United States. This study took place over the course of three years. In the first year of the study the teachers taught their tenth grade chemistry students (119) in a traditional manner. In the next two years the teachers taught their tenth grade students (119 and 133 students, respectively) chemistry utilizing Modeling Instruction™ in Chemistry. All students enrolled in the study had previously taken Algebra I. All of the sophomore chemistry classes were taught by the same teachers in all three years. The modeling chemistry students all took Modeling Instruction™ in Physics class as freshman while the non-modeling chemistry students were enrolled in a traditional biology class. All three chemistry teachers received training in Modeling Instruction after the first year of the study.

During all three years of the study students experienced a homogenous curriculum in their other high school subjects. No changes were made in English, math, history or language courses during the time of the study.
**Instrument:** The chemistry courses’ conceptual outcomes were tested in using Chemistry Concept Inventory (CCI) (Mulford & Robinson, 2002). The CCI is a 22 question multiple-choice inventory whose alternative choices are based on intuitive student beliefs. Mulford & Robinson (2002) report that test’s Chronbach $\alpha$ was 0.704 demonstrating consistency in individual responses thus suggesting students were not responding randomly to the questions.

**Data**

Pretest scores on the CCI were significantly different between non-modeling and modeling chemistry year 1 and year 2 students. To determine if year 1 and year 2 students in modeling could be grouped together, t-tests were conducted on their pretest scores. No significant differences were found ($p<0.126$). Therefore, the two years of modeling instruction were grouped together. On the CCI posttest, modeling students scored significantly higher than non-modeling students taught by the same instructors (Figure 1, $p<0.05$). For non-modeling chemistry students, the posttest average score ($n=105$) was 24%. The modeling chemistry students scored an average of 46%, an almost two-fold difference. However, because pretest scores for modeling and non-modeling chemistry students were significantly different, normalized gains were calculated to control for the differences. Normalized gain, $G$, is defined as the change in average scores divided by the maximum possible increase:

$$G = \frac{(posttest\ score\ % - pretest\ score\ %)}{(100 - posttest\ score\ %)}$$

Nonmodeling chemistry students had a normalized gain of 5 as compared to the modeling students’ normalized gain of 18, a threefold difference. The normalized gains were statistically significant ($p<0.001$).

The calculated Cohen’s D effect size between the modeling and non-modeling cohorts is 1.58.

**Discussion**

This case study of switching from traditional to modeling instruction shows that after receiving modeling instruction, students outscored by almost two-fold students in a prior year who received traditional instruction. This increase in conceptual understanding is unlikely to be due to teacher differences or other changes to the curriculum. The same teachers taught both groups of students. Moreover, there were no other curricula changes in instruction in math, English, or history occurring over the span of this study. However, they begun the chemistry curriculum with one group outscoring the other on the CCI. This may be because the modeling chemistry group had received prior instruction in modeling physics, while the nonmodeling group had one year of traditionally instructed biology. However, this difference did not account for difference in the posttest scores, because when student differences in pretest scores were accounted for by calculating a normalized gain score, modeling chemistry students showed significantly greater gains in conceptual understanding than nonmodeling chemistry students.
**Conclusion**

The data suggests that Modeling Instruction in Chemistry curricula materials allow for greater content gains over traditional chemistry instruction. The data shows a jump in the pretest scores between the non-modeling and the modeling students. This suggests that the modeling cohort may have obtained cognitive and metacognitive skills during their freshman modeling physics class that allowed them to perform at a higher level. The normalized gains and post-test scores were statistically significant thus showing that Modeling Instruction prepares students well for college chemistry. Actually, the modeling students’ average post-test score of 46% compares favorably to college freshman post-test scores of 51% as reported by Mulford & Robinson (2002).

**References**


Title: Role of peer scaffolding in developing preschool children’s multiliteracy practices through the use of iPads

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Abstract: The advancement of technology has impacted the modes, media, and concept of literacy. Mobile devices, including iPads, tablets and smart phones, are embedded in the everyday experiences of many young children. Educators and researchers need to understand the complex and multifaceted relationships between home and school literacy experiences in order to support the development of a literacy curriculum that better acknowledge the changing contexts of children’s literacies. This paper will explore the findings from a four-month qualitative intrinsic case study that examined preschool children’s multiliteracy and technology practices as they engaged in inquiry projects. The study was generally grounded in Vygotsky’s (1978) socio-cultural theory of learning and particular attention was given to the role of adults and more capable peers in scaffolding children’s learning within their zone of proximal development (ZPD). During the period of the study the importance of teacher and peer...
scaffolding emerged as significant themes. Teacher scaffolding techniques supported the children’s use of iPads, which resulted in the children acquiring higher levels of technological skills, and creating multimodal texts at a higher independent level of performance as the puppet and dinosaur inquiry projects progressed. This presentation will focus on instances of peer scaffolding that emerged from the children’s ongoing use of iPads and creation of multimodal texts. These include cooperating (i.e. peer tutoring) with more capable peers as well as cooperation with equally capable peers on literacy tasks that required knowledge and skills to utilize iPads. This study offers parents, teachers, educational researchers and policy makers insights into how young children may be engaged in and scaffolded in their multiliteracy practices prior to formal schooling.

Role of peer scaffolding in developing preschool children’s multiliteracy practices through the use of iPads

This paper presents findings from a qualitative intrinsic case study that examined and described young children’s early multiliteracy practices at a preschool center in a large city in western Canada. The study first identified the different forms of technology and literacy practices that young children participated in within their homes. It then examined the multiliteracy practices that these young children were engaged in in their preschool context, and how these were scaffolded by their teachers and later by more knowledgeable peers. The study was generally grounded in Vygotsky’s (1978) sociocultural theory of learning and particular attention was given to the role of adults and more capable peers in scaffolding children’s learning within their zone of proximal
development (ZPD). Multiliteracy events were also interpreted using Green’s (1988; 2012) three-dimensional view of literacy. The experiences documented occurred over a four-month period in which the children were involved in inquiry projects on puppets and dinosaurs. During the period of study, there was evidence of both teacher and peer scaffolding, as well as independent use of iPads and apps in the classroom. Teacher scaffolding techniques supported the children’s use of iPads, which resulted in the children acquiring higher levels of technological skills, and creating multimodal texts at a higher independent level of performance as the puppet and dinosaur inquiry projects progressed. The focus of this paper is on the instances of peer scaffolding that emerged. These include cooperating (i.e. peer tutoring) with more capable peers, as well as cooperation with equally capable peers on literacy tasks that required knowledge and skills to utilize iPads.

**Digital technology and the changing nature of (early) literacy practices**

Increasingly, young children are entering early childhood education as regular and competent users of multimedia. As a result, their literacy practices are often mediated by information communication technologies (Burnett, 2009; Davidson, 2009; Marsh, 2011; O’Mara & Laidlaw, 2011). New media such as mobile devices (e.g. tablets, iPads, etc.) and smart phones are embedded in the everyday lives of many young children. Preschoolers’ home literacy experiences as a result are now significantly different from experiences prior to the digital era. These background experiences with digital technology help to shape the knowledge that children bring with them to school (Beecher, 2010). If one examines children’s engagement in various
forms of literacy over the last decade, it is clear that involvement in multiliteracy and digital practices has become highly significant. These practices continue to play an important part of young children’s daily lives and informal early literacy learning (Bazalgette, 2010; Burnett, 2009; Davidson, 2009; Marsh, 2011; Merchant, 2009; Yelland, 2011).

Although the advancement of technology has impacted the modes, media, and concept of literacy, unfortunately the need to use and produce multimodal and digital texts tends to be largely unrecognized in early childhood literacy curricula (Carrington, 2008; Levy, 2009; Marsh, 2010, 2011; Merchant, 2005; O’Hara, 2011). Much of current literacy instruction in early learning settings still remains focused on literacy skills of reading and writing of printed texts (Burnett, 2009; Davidson, 2009; Marsh et al., 2005). This approach to literacy today is inadequate and insufficient for young children in the 21st century (Government of Alberta, 2009; Lankshear & Knobel, 2006; Marsh, 2010; Organization for Economic Co-operation and Development, 2010). The impact of new technologies on our daily lives is one of the factors that has motivated policy makers and educators to rethink and reform school curriculum in the province in which the study took place (Government of Alberta, 2009). It is increasingly recognized that children of the 21st century “will need skills associated not only with reading and writing and reckoning, but with creating, deconstructing and generally ‘understanding’ the diverse textual products of the new times” (Rowan & Honan, 2005, p. 198). As a result, in many OECD countries, introduction of 21st century competencies and skills has occurred via general reform initiatives.
As access to technology continues to increase at home and in the community, young children already possess the skills to navigate diverse media and popular culture texts, information technology, smart phones, texting, gaming systems and apps (Rowan & Honan, 2005), even if educators struggle to understand these modes of learning and literacy. Young children, as digital natives, have grown up with these various forms of literacy and are extremely capable and comfortable communicating and making meaning (Yelland, 2008). However, issues arise when formal schooling does not recognize and value the rich multiliteracy experiences of some young children, and they are not provided the opportunities, time and space to develop and extend such literacy experiences. Jones and Beecher (2000) found that the majority of teaching staff interviewed in early childhood education settings do not consider these practices to be relevant to children’s literacy development in the school. This is a situation that clearly needs to change if early years settings are to build effectively upon children’s early learning in the home and incorporate 21st century literacy practices. Educators and researchers need to understand the complex and multifaceted relationship between home and school literacy experiences of contemporary preschoolers to support development of literacy curriculum that better acknowledges the changing contexts of children’s literacies.

Theoretical Framework

This study is grounded in Vygotsky’s (1978) sociocultural historical theory of learning in general and the role of adults and knowledgeable peers in scaffolding children’s learning within their zone of proximal development (ZPD), in particular.
Sociocultural-historical theory of learning, as informed by the work of Vygotsky views knowledge as being actively constructed by learners as a result of their interactions with others in meaningful activities in a sociocultural context; that is, people learn through their active engagement with others, with objects, and with the environment. The sociocultural theory of learning also provided grounding for our understanding of how the use of one particular digital device (i.e. iPad) served as a mediating tool used by the teachers in the program to scaffold children’s multiliteracy experiences. Terms that are significant to the study are defined in the following ways:

Zone of Proximal Development: Vygotsky's (1978) concept of ZPD emphasizes the role of “experts” in guiding a learner using interpersonal interaction to achieve more than they could alone. Often misconstrued as an instructional strategy, the ZPD is defined as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (p. 86). Vygotsky insisted that the ZPD reveals “(a) skills on the edge of emergence, and (b) the limits of the child’s development at this specific time” (in Bodrova & Leong, 2007, p. 43). Vygotsky's concept of the zone of proximal development spawned various instructional applications postulating ways in which more skilled partners assist in learning processes. Among those, scaffolding (Wood, Bruner, & Ross, 1976) is best-known and used in classroom practices.

Scaffolding: Wood, Bruner and Ross (1976) propose that an expert (provides support within the ZPD to enable the novice/the learner to perform or solve a problem at a higher level. The assistance or external support gradually decreases as the learner
becomes more skilled in performing the task and is eventually able to perform it on his/her own. Bodrova and Leong (2007) clarify that “during scaffolding the task itself is not changed, but what the learner initially does is made easier with assistance. As the learner takes more responsibility for the performance of the task, less assistance is provided” (pp. 211-212).

While scaffolding is typically understood to occur during teacher-child/student interactions, in a second language learning context, Storch (2007) stated that scaffolding could also occur in peer interaction, when learners work in smaller groups or pairs. Donato (1994) who explored the notion of “mutual scaffolding” in second language learning showed that intervention among learners can also be as effective as intervention among learners can also be effective as intervention among teacher and students. Smith (2008), in her dissertation on peer scaffolding during musical play in a preschool, found that more capable peers were significant in supporting young children’s growth of musical understanding. There is however a paucity of research on peer scaffolding in the context of learning to use digital technology (i.e. iPad) in a preschool classroom.

**Methodology**

This was a four-month qualitative intrinsic case study (Merriam, 1998; 2009; Stake, 2000) that examined preschool children’s multiliteracy practices in their homes and in class. As the use of iPads in early childhood classrooms in North America increases, we considered this study a case “in all its particularity and ordinariness.” As Stake (2000) elaborated:
I call a study an *intrinsic case study* if it is undertaken because, first and last, the researcher wants better understanding of this particular case. Here, it is not undertaken primarily because the case represents other cases or because it illustrates a particular trait or problem, but because, in all its particularity *and* ordinariness, this case is of interest. (p. 437, italics in original)

The study reported here was a “bounded entity” as it was conducted in one program, taught by the same teachers who introduced a particular digital technology (i.e., iPads) in both the morning and the afternoon class in order to enrich preschool children’s multiliteracy practices over the course of four months. The case allowed the research team to “see” the scaffolding techniques the teachers used as they supported children’s technological skills as well as their abilities to use technology as part of their multiliteracy practices: creating multimodal texts.

**Participants and research site**

There were three participant groups included in this study: children, their parents and teachers. The children attended preschool for three hours either in the morning or the afternoon four days a week. From the preschool group there were twenty-five children out of a total of twenty-eight from the morning and afternoon classes who participated in the study and were observed. Seven children also participated in one-on-one interviews with the purpose of gathering more information regarding their understanding of the types of technology they had access to and how they used it in their homes.
This study also used a multiliteracy questionnaire to gather perspectives from thirteen parents and two teachers regarding their perceptions of the children’s multiliteracy practices that included digital technology. At the end of the classroom data collection, the two teachers also participated in a focus group discussion with the research team to reflect on the findings related to the use of the iPads in the context of their puppet inquiry, and to plan future steps in scaffolding children’s multiliteracy development mediated by the use of digital technology.

Data Collection

The study gathered initial data from parent and teacher questionnaires on the perceptions, abilities and skills that these preschool children already possessed. Parent questionnaires commented on the number and types of technology in the home, and which of these the children were able to independently access, and which of these they were not allowed to use. Similarly, the teachers also completed a questionnaire outlining their perceptions of the children’s use of technology in relation to multiliteracies. Data gathered through parent and teacher questionnaire became important for how the teachers approached the iPad activities and scaffolding based on what they perceived the children’s independent level of use of digital technology to be.

Classroom data were gathered through thorough observations, detailed field notes, interviews with the children, and examining digital artifacts consisting of photographs, videos and transcripts from the puppet and dinosaur inquiries. The two teachers in the classroom also recorded videos and made anecdotal notes on an ongoing basis capturing the multiliteracy events and practices that were occurring.
naturally in the classroom when the research team was not present. Data collection was formally collected over ten half-day classes – five half-day observations for each preschool class (morning and afternoon) over the four months of the study.

The researchers assumed the role of participant observers in the preschool setting. We joined in with games and play activities when invited, but tried not to interfere or disrupt the everyday activities of the classroom. Because the iPads were readily available to the children, photographs and videos were easily captured throughout the puppet and dinosaur inquiries even on days when the research team was not observing. These digital recordings allowed for the opportunity to be revisited and analyzed on an on-going basis.

After the data were analyzed there was a focus group discussion with the teachers to discuss the preliminary findings, and what the next steps for using the iPads in the classroom might be.

Data analysis

Careful close reading of the transcripts and field notes, and reviewing of digital artifacts helped distinguish the strong, significant big ideas that were relevant to the research question from the less significant ones (Vaughn, Schumm, & Sinagub, 1996). Information from the parent and teacher questionnaires, transcripts from interviews, digital videos, and photographs were reviewed multiple times in order to identify preliminary themes or emerging patterns (i.e., interim analysis), categorize the emerged patterns, and note relationships among them that were relevant and helpful to answer the research question.
Through this process, teacher and peer scaffolding emerged as significant big ideas. However, for the purposes of this paper, we will briefly discuss how the teachers scaffolded the children’s iPad use to create multimodal texts, and then focus on the emergence of the peer scaffolding process that occurred later in the student’s inquiry projects. The data collected were analyzed in an ongoing, recursive and nonlinear process. Special attention was given to categories that emerged from the data informed by Vygotsky’s (1978) theory of ZPD, more specifically, the scaffolding techniques used by both the teachers and the children.

Findings

Teacher scaffolding of children's multiliteracy practices

The study findings stress the importance of establishing the level of skills and knowledge the children already have so that the teachers can focus on scaffolding individual children’s multiliteracy practices to their higher level of independent performance. For this particular group of the children, the scaffolding was not about teaching the children how to use an iPad; instead it was to assist them in how to use an iPad with a meaningful purpose for documenting events from their inquiry projects and everyday life in the classroom. As a result the teachers could quickly move from presenting a simple problem of how to turn on the iPad into a more complex problem of how to turn the camera into a video recorder. When the teacher first introduced this concept of recording a video a couple of the children were able to perform this skill at an independent level, however the rest of the children did not know what to do and this would become where scaffolding and support would be provided. During this activity the
teacher also introduced a new concept – a “puppet story video” whereby she recorded her own sock puppet informational video and then with the help of the children who were at that level of independent performance found where to review her video.

Over the next few months the children used of iPads within the context of their puppet inquiry. The iPads provided an additional tool for the children to capture and revisit their puppet shows when their classmates, teachers and parents were not immediately available to watch their show. With the support of their teachers they also were supported in making informational videos about their puppets. After a week of formally introducing how to record videos on the iPad it was observed that many children still needed help with setting the iPad up to record. The children could stop their recordings, and find their videos, but many were still not aware if the video was actually recording. Teacher scaffolding and modeling on how to use the video function became the main focus during the first month of the puppet inquiry. Also by watching and viewing them during the group time at the carpet the teachers also emphasized the importance of children’s digital creations.

Through the formal observations over the next few months, and analyzing the video and photographic data gathered, the following pattern of scaffolding within children’s ZPD emerged: first, the teachers initially were asking the children if they could record what they were doing. At this stage, the teachers made use of continually recording the puppet shows that were occurring during the playtime in the classroom. Second, after a child or a group of children made a video, one of the teachers would watch the video with the child or the group. At this stage, the teachers asked the children not only about how to record but also what to record. Last, but not least, the
teachers encourage independent use of iPads for recording puppet videos by using rich descriptive language during their demonstration in order to make their problem solving process verbally explicit and thus using language as a way of scaffolding children’s own problem solving in regards to digital technology.

In the last month of the study the classes had moved onto a dinosaur inquiry and the analysis of the artifacts created at the beginning of this new inquiry project, demonstrated that the iPads were now being independently used by the children to support their learning. The practice of making the iPads readily available in the classroom continued and there was ongoing evidence that the children were using the iPads more often on their own. The more recent videos made independently by the children required less adult support, and the children had begun to take their own photographs and record videos about what they felt was important for their inquiry into dinosaurs. The teachers were not being called to problem solve iPad issues or asked how to take a video anymore. The children during the observations were also able to change the iPad from photo to the video recording on their own. After recording they would watch the video by themselves or show others what they had recorded.

**Emergence of peer scaffolding**

During our analysis of the video and photographic data gathered there were several examples of small groups of children creating a series of their own informational videos telling their peers and teachers about discovering different types of dinosaurs found in the non-fiction books and cards in the reading area during the last month of the study. The videos recorded by the children ranged from 1 seconds to 40 seconds in
length. There were two video series recorded. The first video series involved two boys, whom we gave pseudonyms Jacob and Calvin, at different times holding up various dinosaur cards and a girl, whom we gave a pseudonym Amie, supporting the videos by narrating about a “new and discoverable” dinosaur discovery. This group of three children recorded twelve successive videos. The second video series involved Amie and another girl, whom we gave a pseudonym Emily, recording two dinosaur book informational videos. In each of these video series Amie took charge with narrating the videos, and was giving directions and support for the other children. In several of the videos Amie would check with the rest of the children if they were ready to start, and a couple times told them to bring their cards or books into the frame. She used prompts like “put it down here” while pointing at the iPad screen. She also checked back with Calvin if he wanted to review the video they had just recorded. Through the filming of these series Amie was cooperating through providing peer tutoring as well as cooperating with equally capable peers on literacy tasks that required knowledge and skills to utilize iPads.

The dinosaur discovery video series started out with Jacob standing silently and holding a dinosaur card up to the iPad. He recorded seven of these videos. Acting as a more capable peer, Amie stepped in on the eighth video and modeled the addition of dialogue and description to what Jacob was doing by saying “he found something … this is cool so please put it on TV.” After these videos Calvin then attempted to record a video of his own while Jacob was out of view. He recorded three videos on his own, and like Jacob he also was standing silently and holding the cards up for the viewer. In the fourth video Amie jumped into the background and told the camera about the picture
that Calvin was holding up. In both of her videos Amie was directing the “production” of the video and deciding the relevant content to be included. In the next two videos Amie continued the idea that this video would be watched again online as evidenced by her comments and prompting for one of the boys in the group to “say hello to the new original TV online, say hello and get this TV on,” and “get this video on and take this video and show it to everyone in town.” The directions she gave imitated the experiences that the class had while viewing their videos on the big screen and using the Internet to research their dinosaur questions. Amie also mirrored her teachers by providing the audience with a description about what the videos were about. In the second video series she introduced Emily to the camera and told the viewer that “this is Emily and she found something about dinosaurs and she wants to record it on the iPad.” During these videos Emily held the book up and let Amie direct the activity.

What makes Amie’s interaction with her peers “scaffolding” rather than “bossing” is the fact that she had a very clear picture in her mind what the final product (i.e. the video) should look like, including its purpose and audience. She guided her peers who appeared to be at different, but lower than her own, stages of their ability to use the iPad independently as a tool for creating multimodal texts. Unlike her teachers, Amie used different scaffolding techniques to help her peers learn the skills required for the production of this type of videos. While she clearly imitated her teachers in following the general sequence of steps in the production and presentation of the videos, she also used different approaches with the peers with whom she was working in order to guide them within their individual ZPD. Her actions demonstrated clearly that the ZPD is a “construction zone” (Newman, Griffin, & Cole, 1989) in which children who only had a
partial understanding of the goal or the means to achieve the goal, can practice under the guidance of a more capable peer, and appropriate the concept of multimodal informational videos. It is not surprising therefore, that a few weeks later the teachers observed that Jacob independently used the iPad to record an answer to his dinosaurs’ inquiry questions that would be shared with the class. He created his own narrative on his own and together with a friend they acted out the answers while another child was video-documenting their performance. These types of multiliteracy events now occur independently because of their teachers’ and more capable peer’s continued scaffolding and support. As the findings have shown many of these children are at a new level of independence regarding their skills to create personally meaningful multimodal texts.

**Conclusion**

This study offers parents, teachers, and educational researchers insights into how young children may be engaged in and scaffolded in their multiliteracy practices prior to formal schooling. Preschool children who have rich digital experiences at home demonstrate that they have great knowledge and preexisting skills. As a result, the preschool environment was able to build on their existing multiliteracy practices and, through both teacher and peer scaffolding, to achieve higher independent level of performance within their ZPD, namely, to create multimedia texts. The study’s findings stress the importance of establishing the level of skills and knowledge the children already have so that the teachers can focus on scaffolding individual children’s multiliteracy practices to their higher level of independent performance. For this particular group of the children, the scaffolding was not about teaching the children how
to use an iPad, instead it was to assist them in how to use an iPad with a meaningful purpose of documenting events from their inquiry project and everyday life in the classroom. As a result, instances of peer scaffolding where able to emerge from the children’s ongoing use of iPads and creation of multimodal texts. These included peer tutoring or cooperating with more capable peers or equally capable peers on literacy tasks that required knowledge and skills to utilize iPads. These are skills that will be beneficial and transferable to other areas of their lives and for their futures.

This classroom-based case study also demonstrated how the use of digital technology can motivate the teachers to move beyond interaction with just print-based texts, and towards greater interaction with technology and multimodal forms of expressions that are individualized and personally meaningful and relevant for their students (Yelland, 2008). Through the puppet inquiry, the children were able to view, use, access, create information and make meaning in a sociocultural relevant context (Freebody & Luke, 1990). However, in order to implement these multiliteracy practices in the classroom, children must have the opportunity to not just make sense of a variety of texts, but also to use their emerging literacy skills to produce and create their own multimodal texts (Yelland, 2008). As demonstrated by the findings even these youngest learners are well on their way to becoming literate participants and members of our contemporary society.

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**Scientists’ Views on the Importance of Science Fair Participation and the Practices of Science**

As concern that the United States is in danger of losing its position as a global leader for STEM innovation continues to grow, it is important to examine how science education enrichment activities can potentially engage students in STEM practices similar to those used by STEM professionals. The *Rising Above the Gathering Storm* (2007) report recommends enlarging the STEM pipeline of students ready to earn post-secondary degrees in STEM fields by expanding opportunities for middle and high school students to conduct inquiry-based research (p. 6).

The main objectives of the study reported below are to examine science fair participation through the lens of STEM professionals who volunteer as science fair judges for a large, county-level, urban science fair and to determine to what extent STEM professionals’ perceptions of science fair participation align with the Science and Engineering Practices outlined in the Next Generation Science Standards (NGSS). Might science fairs possess the potential to complement the NGSS’ call for explicit student engagement in scientific and engineering practices coupled with content (NGSS Lead States, 2013)?

**Background**

Science fairs can take on a wide range of formats ranging from a strictly school-based activity that is a formal part of the curriculum to an informal learning environment that is free-choice and has no connection to the participant’s formal schooling. For the purpose of this study, a science fair is defined as a culminating event in which K-12 students communicate the results of their independent research projects through the use of display boards and face-to-face interviews with STEM professionals volunteering as judges. Students’ science fair research must follow the ethics and safety guidelines set forth by the Intel International Science and Engineering Fair (ISEF). Projects that are demonstrations, book reports, model or kit building, are strongly discouraged (Society for Science and the Public, 2015).

Each year tens of thousands of students participate in science fairs. There is currently a network of 352 science fairs in the U.S. and 110 science fairs internationally that serve as feeder fairs to the Intel ISEF program (Society for Science and the Public, 2015). Yet, despite their widespread popularity, there is a dearth of research on science fairs. We have a rather insufficient understanding about the extent that science fairs impact student engagement in STEM based upon a limited number of published studies having a wide divergence of methodology and focus. For example, Czerniak (1996) investigated relationships between success in a district science fair and self-concept, parental influences, motivation, and anxiety and found that pressure to succeed exerted by parents was related to high ratings from judges. Gifford and Wiygul (1992) and Pyle (1996) found opposing results in regard to the relationship between access to resources and winning prizes. Adamson, Foster, Roark, and Reed (1998) found no gender differences in overall participation or award distribution in a two year study of an elementary school’s science fair. Researchers also report conflicting results in terms of increased understanding of and engagement with STEM, as well as impact on attitudes toward science (Abernathy & Vineyard, 2001; Yasar & Baker, 2003).
Theoretical Framework

Current views on how people learn and move from novice to expert influence this research (Bransford, Brown, & Cocking, 1999). This view suggests, “Instruction that enables students to see models of how experts organize and solve problems may be helpful” (p. 49). Thus, gathering information on STEM professionals’ (the experts) views of which elements of science fair participation are useful for students (the novices) can inform how these activities can be better designed to contribute to STEM learning. Additionally, “[i]dentifying common ground between learners’ practices and practices in the domains of interest may be a productive route to experiences that move learners toward deeper understanding and capability in the domain,” National Research Council, 2009, p. 31).

This study is also guided by the “community of practice” sociocultural perspective put forth by Lave and Wenger (1991). In regard to their notion of legitimate peripheral participation, engagement in the process of conducting science fair research moves participants toward empowerment within their communities of peers. According to Lave and Wenger, “peripherality, when enabled, suggests an opening, a way of gaining access to sources for understanding through growing involvement,” (1991, p. 37). This perspective on engagement suggests that science fairs may open the door to further involvement in STEM practices.

Methods

The study presented here is a segment of a larger, multi-dimensional, research project. The research takes the form of an exploratory, descriptive case study. The case study is useful when attempting to understand contemporary and/or highly contextual topics, over which the researcher has little or no control (Yin, 1994). The unit of analysis for the study reported here is a group of 435 STEM professionals who volunteered to serve as science fair judges between 2012-14. Archival records of the judges’ registration forms provide both qualitative and descriptive quantitative data.

The science fair in this study maintains extensive electronic program records, including judges’ registrations saved as Microsoft Excel spreadsheet files extracted from survey forms hosted on a Surveymonkey.com paid account. The on-line registration form asks judges to complete three optional questions related to their own past science fair participation, as well as their views on the importance of science fair participation for students, and the factors that influenced their own STEM career pursuits. Archival records from the 2012-14 judges were merged into one comprehensive data set. All identifiable, personal information was removed by the science fair committee prior to sharing it with the research team; hence, the study was deemed exempt from IRB review. Preliminary analysis included descriptive statistical calculations and qualitative content analysis performed within Excel (Meyer & Avery, 2009). Advanced qualitative content analysis of the open-ended questions included open coding and constant comparative methods using NVivo software to ensure the formation of an unrestricted array of concepts (Merriam, 2009).

The science fair in this study was founded in 1979 and serves a large, urban city in the mid-Atlantic region of the U.S. The science fair is open to any student attending school and residing within the city limits. Approximately, 800 students register annually. It is co-sponsored by a university, a science museum, the city’s school district and
archdiocese, and is coordinated by a volunteer committee (One of the authors has been a member of the committee for over twenty years.). Students are not required to enter a school-level science fair prior to this competition. However, most students are sponsored by their school’s science teacher. There are two separate fairs, an elementary fair for grades four through six hosted by the museum and a secondary fair for grades seven through twelve hosted by the university. Winners in the grades 7-12 fair advance to the regional fair. Approximately 200 individuals register to serve as volunteer judges each year. Judges participate in a full day of activities, including an orientation, independent review of assigned projects, student interviews, providing written feedback for students, and selecting prize winners.

This paper investigates the following questions:

1) What are science fair judges’ views of why science fair participation is important for students?
2) In what ways are science fair judges’ views of student science fair participation aligned with the NGSS Scientific and Engineering Practices?

Results

The participants, 435 STEM professionals who volunteered to serve as science fair judges between 2012-14, hail from a wide variety of backgrounds. Based upon self report of their place of work or professional affiliation, the greatest number of the judges are employed by a STEM-related business or corporation (21%), followed by colleges/universities (17%), undergraduate and graduate STEM students (11%), government laboratories (10%), K-12 schools (10%), community-based organizations (10%), government agencies or military (10%), hospitals (5%), and informal science education institutions (4%).

A total of 240 (55.2%) judges indicated that they had participated in a school science fair as a K-12 student. Eighteen (4.2%) judges had actually been former participants in the county science fair described in this study. Fifteen (3.4%) judges indicated that they had participated in the regional fair for which the county fair in this study feeds into. Forty-three judges (9.9%) identified other types of science research competitions that they had participated in as youth.

An open-ended question on the judges’ registration form asked, “In your own words, why is it important for students to participate in science fairs?” The database included a total of 384 responses to this question. Six broad categories emerged during the preliminary coding. Responses indicate that the science fair is an important activity for students because it: a) promotes interest in STEM, b) promotes interest in STEM careers, c) provides opportunities for participating in the process of science, d) builds science literacy, e) increases confidence in conducting science research, and f) develops communication skills. Promoting STEM interest is the most prevalent theme amongst the judges. [Judges quotes supporting the above findings were removed due to space limitations.]

In order to answer the second research question, the researchers coded and mapped the judges’ responses to the eight NGSS Science and Engineering Practices (Table 1). With the exception of Practice 2 - Developing and Using Models, the judges’ responses aligned to the remaining Practices. Practice 7 - Engaging in Argument from
Evidence was most frequently mentioned (103 responses). Judges stressed the importance of the components that require students to “construct, use, and/or present an oral and written argument based on data and evidence and make and defend a claim based on evidence…that reflects scientific knowledge and student-generated evidence,” (NGSS Lead States, 2013). Practice 1 - Asking Questions was the next most frequently identified practice (68 responses). One judge stated, “Unlike learning in a classroom, …full quote will appear in full paper.”

Another judge captured several of the practices in a single response, “It provides an opportunity… quote will appear in full paper.” Several judges also expressed concern that traditional school science does not provide adequate opportunities to engage in the scientific process. One of the judges stated, “City students do not … full quote will appear in full paper.”

Discussion/Conclusions

As with all case studies validity is a concern and readers should be cautious in making inferences or generalizing the results to other populations or contexts (Yin, 1994). Additionally, the researchers acknowledge their bias due to their close relationship with the science fair. Despite the limitations of this study, the participants offer important insight into the role of science fairs as a means to achieve increased authentic engagement in STEM. According to the judges, science fairs are a viable learning environment for providing students with the opportunities to engage in science practices, especially the ability to ask their own, authentic, scientific questions. The culminating judging event allows students to showcase their understandings of the STEM practices as well as the content associated with their research projects.

Several participants felt that science fair participation could, in turn, increase access to understanding, and ultimately, sustained STEM participation as either scientifically literate citizens or in a STEM career path. As one judge stated: “I absolutely believe … full quote will appear in full paper.”

In support of their perceptions, the majority of judges in this study had themselves participated in science fairs or competitions. This finding aligns with other studies that have found that doing research during high school is related to long-term engagement with STEM (Roberts & Wassersug, 2009; Subontik, Duschl, & Selmon, 1993).

The results of this study demonstrate the critical need to further investigate other aspects of science fair activity. We must begin to determine which characteristics of science fairs best support the implementation of the NGSS. In the meantime, researchers may wish to encourage practitioners to evaluate existing science fair activities to determine to what extent science and engineering practices are supported through opportunities for sustained inquiry-based investigations. Not all schools possess the resources to offer science fair activities. Informal science education and out-of-school time organizations can fill this gap by incorporating science fairs into their STEM programming.
References


Title of the submission:
A Mixed Method Study: College Professors’ Perceptions of Pre-service Teachers In a Clinical Teaching Experience for Program Improvement Prior to Acceptance into the Teacher Education Program

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Abstract:

Teacher education programs face common areas of concern for beginning teachers including struggles with classroom management, organization, curricular and pedagogy concerns, self-efficacy, commitment to the profession, and leadership. Successful student teaching experiences are key to developing future teachers, increasing student success, and keeping effective teachers in the classroom. The teaching profession is often associated with a high level of attrition in beginning teachers. Our world faces a problem in our school systems with high turnover, which has a negative impact on student learning. This case study examined three research questions: 1) What predictors point to a successful student teaching experience, 2) What teacher candidate preparation affected the success of student teaching, and 3) What are the specific experiences of the student teaching placement that are most influential and problematic in shaping a successful placement? The study incorporated five data sources. A Likert scale survey, open-ended surveys, observations, information interviews, and quantitative data analysis allowed the researchers to gain insight about student teaching experiences to modify teacher education programs therefore increasing successful teaching practices and reducing attrition.
Over the past half-century the United States has spent sizeable sums of money on teacher professional development (PD). PD comes in several forms including after school seminars, weeklong workshops, and even multi-week long term programs. Regardless of the amount of time spent in the PD workshop, one important element of program implementation that is often overlooked is the follow through with the teachers in teaching situations where they can see examples of the program at work and receive mentorship as they work to develop their own skills. Evaluation of a Math/Science Partnership (MSP) grant indicated that without follow through few of the teachers implemented the workshop materials and methods in the classroom. Recognizing this problem, a second MSP grant included follow-up training over the course of the school year to assist teachers in the classroom with program implementation. The results indicate that the group receiving the follow through mentorship had significantly more success at implementing their reform program than the group that did not. Suggestion for effective implementation are reviewed and discussed.
1. Title of the submission: Calculators and Mathematics Achievement: An analysis of the 1996 NAEP data.

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6. Abstract and/or full paper.

An analysis of the 1996 National Assessment of Educational Progress 8th Grade Main Mathematics Assessment to determine the effects of policies supporting the use of calculators in mathematics education on students’ mathematics achievement and the potential for over-reliance on calculators.

With the development of the electronic calculator came the debate of whether or not calculators should be used in mathematics education. Supporters claimed that calculators were a tool to help facilitate mathematical learning; opponents considered them a crutch that would artificially support the mathematically feeble.

Calculators are now commonplace in schools, but the debate continues with regard to what effect they have on students’ mathematical achievement. After 30 years of debate, has the calculator actually become the technology that allows students to “learn more mathematics more deeply”, or have calculators fulfilled the ominous prediction of being a “crutch” to support those who have achieved “calculator-assisted mathematical incompetence”?

A valuable source of information for assessing the results of large scale calculator implementation is the National Assessment of Educational Progress (NAEP). The 1996 NAEP Mathematics Assessment included several items that could be used specifically to assess the effects of policies advocating the widespread use of calculators on mathematics achievement. This research analyzed the data from the 1996 NAEP to assess the large scale implementation of calculator use in schools. The analysis utilized quantitative methods within the causal-comparative (aka ex post facto) design in order to assess the cause-effect relationship between calculator use and achievement in mathematics. This method was selected because the NAEP data is specifically designed for secondary analysis procedures based on the presence or absence of a condition and not the experimental manipulation of the condition.

Four questions guided the research. Their results and discussion are presented in order below:

Question 1: How does frequency of calculator use in the classroom relate to mathematics achievement on the NAEP Mathematics Assessment?
Results clearly indicate that more frequent calculator use is associated with higher achievement levels as measured by the 1996 NAEP Main Mathematics Exam. These results are significant at the $p < 0.0001$ level when comparing the daily users to all three other calculator use categories. There was only a 2 point difference in score (out of 500 possible points) between the weekly and monthly use groups, and this difference is statistically nonsignificant ($p = 0.4472$). Those in the never group fare the worst, finishing 22 points behind the daily group ($p < 0.0001$), 10 points behind the weekly group ($p = 0.0001$), and 9 points behind the monthly group ($p = 0.0027$).

The effect-size calculations indicate that the daily use of a calculator produces a $d = 0.61$ in score when compared to those who never use a calculator. To put this in perspective, the average student in the daily group would finish at the 73rd percentile in the never group. Such an effect size is between medium and large and would be “visible to the naked eye”. The effect sizes for the weekly ($d = 0.29$) and monthly ($d = 0.24$) groups are considered small, but they are still worth noting.

The one thing that is noticeably absent in this analysis is any evidence to support the “calculator as crutch” theory. There is not a single instance of a less frequent calculator use group outperforming a more frequent use group.

**Question 2:** How is this relationship with achievement affected when potentially confounding variables are controlled?

Controlling for gender, socioeconomic status, parent’s level of education, NAEP achievement level, and type of school attended (public vs private) had no effect on the results initially found in Research Question 1. The only factor that did make a difference was the teacher’s knowledge level of the NCTM Principals and Standards.

In nearly every case the trends consistently indicate that higher scores are associated with more frequent use of the calculator, and in the vast majority of comparisons, the differences are statistically significant. What is remarkable about these analyses is the consistency of the results. Some factors would be expected to show a difference between groups, but the within group results showed time and again that students who use a calculator more frequently will, on average, score higher than those who use it less frequently.

**Question 3:** How is this relationship affected when the data are disaggregated by question type, where the calculator is allowed on some NAEP questions but not others?

The results of this analysis indicate that more frequent calculator use is associated with a higher percentage of correct responses regardless of whether the calculator is allowed or restricted, and there is no significant interaction effect between the two item types and the students’ frequency of calculator use. The daily users, on average, answer 8% more items correctly than the never users on both the calculator—allowed and the calculator—restricted items. According to former NCTM president John Dossey, such an effect is the equivalent of one grade level of achievement. This result continues to hold when questions are further divided by their difficulty levels, content strands, and ability levels—in all cases the percent of correct responses gradually steps down with each decreasing level of calculator use.
Question 4: How does frequency of calculator use relate to whether students recognize that it is appropriate or inappropriate to use a calculator to solve specific NAEP problems?

The results show that all four calculator use groups are equally adept at properly withholding calculator use when it is inappropriate (93% properly withheld). What they are not equal at is applying the calculator when it is appropriate and being able to come up with the correct result. Daily users used a calculator 65% of the time when it was required, while the never group only used it 46% of the time (80% or more was considered the benchmark). The probability that a student will appropriately apply a calculator and get the correct answer is as follows: daily, \( p = 0.475 \); weekly, \( p = 0.357 \), monthly, \( p = 0.297 \), and never, \( p = 0.283 \).
1. Title of the submission:

   From Silence to Participation: Building an Engaging School Culture

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   Abstract

   This presentation will present a case study of a 50 person staff moving from a traditional hierarchical structure, to a format of participatory leadership in a complex, high-needs school. At the end of the presentation, participants will have an understanding of the powerful effect of participative decision making on staff engagement and student achievement.
Educators are the critical contributor to student engagement and achievement. Engaging staff, all staff, boosts their desire and willingness to contribute to the success of the students and school. Leaders who create a school culture of engagement for all participants move multiple voices from silence to participation.

How many of your staff are engaged participants in the life of the school? Leaders often experience the frustration of a few eager staff members who contribute to intramurals, clubs, and committees. Often, there are a few staff members who rarely contribute. Support staff may be left out completely. In staff meetings, a few voices seem to dominate decision-making. Engaging everyone in the work of the school provides a wonderful model for students, the community, and makes teaching much more purposeful.

Using a case study of a 50 person staff, this session will outline a school that moved from a traditional hierarchical structure, to a format of participatory leadership in a complex, high-needs school. At the end of the presentation, participants will have an understanding of the powerful effect of participative decision making on staff engagement and student achievement.
Get the Job You Want: Acing the Resume, Cover Letter and Interview


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Abstract

This workshop will help you prepare your resume and cover letter to highlight your skills and talents and encourage a prospective employer to invite you for an interview. You will practice and be ready to answer common interview questions so you can shine and get the job you want.
Many educators change jobs infrequently. Writing your cover letter, preparing your resume, and then participating in an interview can be challenging. Being prepared to “strut your stuff” is one of the hardest things that we do. Getting that ideal position can seem out of reach.

This workshop will help you know yourself, and reflect on possibilities for your career. It will provide you with a format for your resume and cover letter that will highlight your skills and talents and encourage a prospective employer to invite you for an interview.

Templates and easy to use formats for the resume and cover letter will be presented. Tips for networking and using online application systems will be shared. The workshop will also help you practice, and be ready to answer common interview questions that will allow you to shine and get the job you want.
Title:
Managing Emotions: Teaching Effective Self-Regulation to Students Through Emotional Intelligence and Mindfulness

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Program Book Description: (75 Word Limit)
Children and adolescents are exposed to multiple psychosocial stressors that can limit their ability to effectively self-regulate their emotions and behaviors in the educational setting. Inspired by the concept of Emotional Intelligence and the Mindfulness movement, this poster session will explore how school counselors can incorporate an “Emotionally Mindful” curriculum that will aide students with effective identification and regulation of feelings. Participants in the poster session will have access to actual tools and techniques.

Abstract:

Today’s student is exposed to multiple psychosocial stressors that can limit their ability to effectively self-regulate their emotions and behaviors in the educational setting. Evolving state and federal government academic and standardized testing requirements, the rise of technology based bullying and its impact on peer relations, dysfunction within the home setting, and genetic predisposition to psychiatric conditions are only a few factors that contribute to students increasing mental health needs within the educational setting. The result is overwhelmed students, frustrated educational staff, and schools that struggle to implement mental health interventions in a non-clinical setting. According to the National Research Council and Institute of Medicine report (Preventing Mental, Emotional, and Behavioral Disorders Among Young People: Progress and Possibilities, 2009) which collected findings from previous studies indicated that up to one in five American children experience a mental health disorder in a given year. This pattern of social emotional
factors impacting academic achievement will only worsen if left unattended or if inadequately addressed by reactive or fragmented behavioral interventions.

Often interventions under the umbrella of Positive Behavior Supports (PBS), particularly in secondary schools, focus on undesired behaviors that need to be extinguished rather than a proactive preventative psychoeducational skill building approach to encourage improved distress tolerance and self-regulation. Inspired by the concept of Emotional Intelligence and the Mindfulness movement, this interactive poster session will explore how school counselors can incorporate components of an “Emotionally Mindful” curriculum that will aide students with effective identification of feelings, regulation of behavioral reactions, and development of problem solving skills.

Mayer et al. (1997) and Goleman (2008) have proposed that Emotional Intelligence is as critical as an individual’s intellectual intelligence in that it assists with regulation of emotion, empathy, and improved awareness that benefits social skills. Emotional intelligence is not only an innate ability, but also a skill set that can be taught and developed through a child’s formative years. Over the last decade, the concept of Mindfulness, or cultivating the ability to be fully present, has been more accepted in the clinical world due to the proliferation of such evidenced based treatment approaches as John Kabat-Zinn’s Mindfulness Based Stress Reduction research. This research has indicated that Mindfulness can assist with regulation of emotion, improved attention, and a decrease in anxiety symptoms. A recent NBC news report on a San Francisco school that incorporated meditation, a form of mindfulness, revealed that the school experienced less disciplinary issues, improved attendance, and an increase in overall grade point average.

It is proposed that an approach that combines mindfulness, or the ability to be fully present, and a psycho-educational curriculum focused on the development of Emotional Intelligence skills could assist students not only with the regulation of emotions and behaviors, but would also allow students to better manage the psychosocial stressors that contribute to or exacerbate mental health conditions. This poster session will provide an overview of the components of this curriculum and several specific approaches/tools that can be implemented in varying degrees to compliment a secondary school’s Positive Behavior Supports (PBS) or Response to Intervention (RTI) programs.
Title of Submission: Interdisciplinary Approach to Developing a Health Navigation Certificate Program between Health Education, Nursing and Social Work Programs

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Abstract: Submission ID # 765

Interdisciplinary Approach to developing a Health Navigation Certificate Program between Health Education, Nursing and Social Work Programs

Background: With the advent of health care reform, there is increased emphasis on reducing the number of hospitalizations individuals experience through promoting preventative health services. Hospitals, health systems, and local community organizations are utilizing existing health care professionals and other staff to help patients and community members navigate the complex medical and social support systems. To date the role and educational requirements for this type of worker are poorly defined and there is no clear or consistent job title for these individuals. The purpose of the study was to develop a clearer understanding of the role of a health navigator in a post-industrial urban Midwestern city. This study addressed the following questions: 1) what types of roles or responsibilities do health navigators perform? 2) What characteristics do individuals depict who are serving in the role of health navigator? 3) What educational background is needed to fulfill the role of health navigator?

Methods: Focus groups were conducted to gain information on the role of health navigators in the health care system. This descriptive study utilized two focus group sessions facilitated by social work and public health researchers at a Midwestern urban university. Focus groups were conducted with participants who work in a variety of health navigation roles in a post industrialized urban community.

Results: Data were analyzed to identify common themes that emerged across focus group participants. Eight themes were identified from the data. Interested faculty from the health education, nursing, and social work programs worked collaboratively to develop a health navigation curriculum utilizing focus group feedback, information on health care reform, and a review of existing curricula to develop a health navigation program. The program was developed as a minor or certificate to meet the needs of bachelor level students and community members who are seeking a certificate in this area.

Conclusion: As health care is changing to a more team based approach, it is essential to conduct more interdisciplinary approaches to health. As a result we must also train and educate our students through interdisciplinary academic programs and research creating a new archetype of student.
Title: Utilizing non-traditional methods and strategies to teach community assessment in a post industrialized urban educational setting

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Abstract #766

Utilizing non-traditional methods and strategies to teach community assessment in a post industrialized urban educational setting

Background: Needs assessment strategies such as focus groups, surveys, and interviews are validated means of conducting community assessment. However, while effective, they may not always be the most appropriate way of assessing the community especially populations in urban settings. There are non-traditional methods that are effective and may be more engaging to community participants. In addition, while students are taught to include the community in the assessment process, few courses involve population of interest or lay community expert in teaching students the most appropriate ways of engaging the population of interest in the assessment process. Inclusion of community in all aspects of addressing their health is necessary to effectively impact health. Teaching non-traditional strategies and involving community members in teaching students assessment methods is a critical component in the needs assessment process.

Methods: Non-traditional assessment methods such as PhotoVoice, story circles, windshield tours, community dialogues, were introduced and taught to graduate level health education students. Students enrolled in a Community Assessment course learn how to understand and assess a community’s needs and assets through non-traditional assessment methods. These non-traditional approaches were taught to students by lay health persons and community experts who were engaged in health education/promotion practice in the local community. Utilization of such methods have proven to be effective at engaging communities’ in addressing their own health needs.

Lessons Learned: It is essential to community assessment to have varied strategies of assessing a community’s needs. Inclusion of community members and utilization of non-traditional methods can 1) be perceived as less intrusive 2) provide a setting where participants are more receptive to discussing issues and 3) provide opportunities for students to learn to utilize the expertise in the communities in which they work. By focusing on such methods, students are exposed to multiple strategies for
community assessment beyond more traditional methods. Students learn to work with community members in a team approach utilizing the expertise of the community to address its own health needs.
Title of Submission for 2016 Hawaii International Education Conference:

*Integrating a global perspective into the classroom*

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Abstract

Integrating a Global Perspective into the Classroom

In today’s increasingly international world, leadership theories, capabilities, and practices must evolve to meet the demands of a global society, be it in business, non-governmental, or governmental organizations. Whether in the home country or abroad, this complex international environment means there is a greater need for leaders and followers who are globally minded and equipped with global leadership skills (Bikson, Treverton, Moini, & Lindstrom, 2003). Therefore, it is essential for leaders and followers, and consequently students to learn to navigate our increasingly complex global environment. The changing global environment demands that educators prepare students differently in that they must prepare their students to think, act, and work from a global perspective.

The increased demand for intercultural competency skills (Stokke, 2013) that facilitate positive relationships between people who are different from one another is essential in our global society. As a result of the specialized cognitive, behavioral, and emotive abilities required to lead effectively cross-culturally, it is difficult for organizations to find candidates with this global perspective, also referred to as a global mindset. Additionally, research confirms there is a limited hiring pool of global leaders (Lam & Selmer, 2004). The growing necessity for global skills and abilities, points to the need for development before one enters the workforce. By developing global capabilities, students will gain a competitive advantage in the global workplace, reinforcing the responsibility of today’s educators to guide their students in developing global skills and abilities, all of which are vital to student success.

This is valuable information to K-12 and higher education faculty in that it not only introduces the concepts of global mindset and global leadership, but also urges these educators to recognize the concept of global mindset as vital to students’ success in both their personal lives and careers in a global society. This interactive workshop introduces research and practical applications of methods of developing and enhancing a global mindset and global leadership capabilities in the classroom that will enable students to become productive global citizens and leaders.
Title of Submission for 2016 Hawaii International Education Conference:

Teaching and serving students of hidden diversity: Cross Cultural kids, Third Culture Kids, and Global Nomads

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Abstract

Teaching and serving students of hidden diversity: Cross Cultural kids, Third Culture Kids, and Global Nomads

Teaching and serving students of hidden diversity: Cross Cultural Kids, Third Culture Kids, and Global Nomads, is based on cross cultural kids, global nomads, global transitions, and international education fields of research. The workshop discusses methods of supporting the often-unrecognized student population returning “home” after years of living as expatriates outside of their home countries, also referred to as passport countries. Some of these students hold multiple passports, further complicating their identities. Additionally, students of minority cultures already living within their home country face cultural identity issues as they daily transition between their homes and schools. The value and importance of this topic is demonstrated in the comments of Dr. Eva Gortner a licensed psychologist, who specializes in serving the expat community:

“Returning teens are often expected to remember how to behave and feel at home, which can be hard when they have internalized the norms and behaviors of other cultures…it may also take time to re-adapt to the unique colloquialisms and speech patterns in their peer community at home – leaving them open to peer scrutiny. All of this can lead to feeling like an outsider.” (Stephens, 2013, n.p.)

Not only does their experience abroad make it difficult for them to fit in upon return to the home country, affecting relationships with peers, it also affects their ability to succeed academically, whether K-12 or higher education, or even in the workplace. As our world becomes increasingly global requiring more and more families to live and travel outside their home or passport countries, so is there an increasing responsibility of educators to understand the needs of these global students and adapt accordingly to support student success.

This session will define hidden diversity and discuss challenges facing this population, including their needs and strengths that emerge from their unique growing up experience. It will also offer suggestions and tools for teaching and serving these students successfully. Additionally, the workshop provides participants the opportunity for self-reflection of one’s own cultural identity and introduces tools to help educators promote student success within this population. More specifically, the session includes the following material:

a. Who are they?
   o Define and discuss, Cross Cultural Kids, Third Culture Kids, and Global Nomads
b. Why do educators need to recognize and understand who they are?
   o Discuss challenges of this population’s unique growing up experiences and the impact on their self-esteem, self-identity, and ability to adapt to living and attending school in their home culture or dominate culture.
c. What are their characteristics and abilities?
   o Explain characteristics and abilities and how do these influence their education and ability to adapt to college environment in the US.
d. What are their needs and potential contributions?
   - Discuss the need to say goodbye and grieve
   - Discuss the unique needs and strengths that emerge from these challenges and attributes

e. How can educators support them for student success?
   - Introduce ways to support cross cultural kids and global nomads in the classroom
   - Introduce ways to support these students through student services and counseling
References


Developing Teacher Competencies in Transformed Societies:

Problem-Based Learning and Promoting Academic Achievement with Language Learners

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Our Teachers College enacted a plan to change how we teach and develop teachers for a changed world. We embrace Problem-Based Learning as a method (a) to prepare future teachers and (b) that graduating teachers will implement. Simultaneously, we advance the goal of developing a faculty with the disposition, knowledge, and skills to develop general education teachers to effectively work with English language learners. The goals are merged into a program called Problem-Based Enhanced-Language Learning.
Developing Teacher Competencies in Transformed Societies:
Problem-Based Learning and Promoting Academic Achievement with Language Learners

Problem-based learning (PBL) with enhanced language support can contribute solutions to two different school challenges. Immigration continues to change world regions (Kaufman, 2014) and thus classrooms. Students not proficient in the language of instruction face academic challenges (OECD, 2010). In our state of Arizona, only 25% of English Language Learners graduate from high school (Stetser & Stillwell, 2014). PBL experiences in content areas with design elements to enhance language development can help these learners. PBL naturally presents opportunities for thinking and discussing, and by developing these engaging openings PBL can be an ally when working with language-minority learners. We call our language-rich PBL approach Problem-Based Enhanced-Language Learning (PBELL).

The second challenge arises from opportunities that digital technologies foster for making information readily available. In his 1859 essay, Spencer (1911) asked the famous question “what knowledge is most worth knowing?” Over 150 years the question was never resolved and with the world’s knowledge increasingly accessible and growing, the answer is more elusive. A new reality calls for shifting education’s focus from memorization of knowledge to competencies including problem solving, using information, collaborating, and communicating (NRC, 2011). To create an alternative to rote learning, PBL needs to become a prominent method in schools.

Despite the changing needs of learners in today’s classrooms, the practices of the past prevail (Schwerdt & Wuppermann, 2011). Our teachers college is moving to help bring about change through preservice teacher education. This paper describes the change we seek in K-8
education and how we are revamping what we do as a college to accomplish these goals.

**Problem-Based Learning**

While ideas related to problem-based learning (PBL) can be traced back to Dewey (1938), PBL was established in the field of medical education in the 1970s, with origins at McMaster University (Barrows, 1996; Barrows & Tamblyn, 1980; Zubaidah, 2005). Challenging the existing lecture and memorize method, medical students learned content and clinical reasoning ability by identifying symptoms in real patients, simulated patients, or written case studies (Barrows & Tamblyn, 1980); diagnosing medical conditions; and prescribing treatments (Barrows, 1996). From medical doctor education, PBL has been used in other professional fields including nursing, architecture, engineering, advertising, physical therapy, and business administration (Barrows, 1996; Gould & Sadera, 2015; Quinn & Albano, 2008; Rideout & Carpio, 2001; Zubaidah, 2005). PBL has moved into preK-12 education where the focus is not on specific clinical skills or problem-solving within a context of a single profession, rather curricula are designed to prepare learners for many possibilities in life (Delisle, 1997; Edwards & Hammer, 2007; Marle et al., 2012; Torp & Sage, 2002).

**Problem-Based Learning Definitions**

With a variety of PBL uses, there are a variety of PBL definitions (Barrows, 1986; Zubaidah, 2005). The following three definitions resonate well with our approach: (a) “Problem-based learning is the learning that results from the process of working toward the understanding or resolution of a problem” (Barrows & Tamblyn, 1980, p. 1); (b) “Problem-based learning is an active learning approach in which problem solving provides a context for students to apply prior knowledge and acquire new knowledge” (Quinn & Albano, 2008, p. 330); and (c) “Problem-
based learning is an approach to learning where curricula are designed with problem scenarios central to student learning in each curricular component (modules/units). Students working in small teams examine a problem situation and, through this exploration, are expected to locate the gaps in their own knowledge and skills in order to decide what information they need to acquire in order to resolve or manage the situation” (Savin-Barden & Wilkie, 2006, p. 3-4). The following operational definition guides our work and communication: Problem-based learning is an instructional approach where learners grapple with meaningful problems and collaboratively work toward their resolution.

**PBL Key Components**

Our operational definition is broad and inclusive, which can provide great flexibility. To offer guidance, we have also identified the nine most salient components of PBL for the preK-12 classroom.

**Meaningful Problem**

Ranging from situations to simulations to real world questions, there are a variety of contexts for problems that can be used in PBL (Barrows, 1996). In some experiences, teachers can give the problem, in other situations students develop their own problems. To engage the students and sustain learning, the problems have to be both meaningful to the students and the solutions are not immediately evident (Hmelo-Silver, 2004).

**Problem First**

Instruction has long been dominated by a tell-first system (Ross, 1991). In mathematics, the teacher would explain how to do a particular calculation and then provide a question for students to solve using the explained approach. Science teachers would describe a particular
concept and then students’ lab work would allow them to see and possibly confirm the concept. PBL is different; it begins with a situation that contains a problem (Boud, 1985). Thus, learning begins with uncertainty.

**Solution Seeking**

A meaningful problem creates a drive to solve it (Jonassen, 2000). The solution-seeking state is achieved when learners are engaged and have not been previously taught how to solve this particular problem and/or have not seen similar problems. Thus, solution seeking is marked by thinking that is discussed, rejected, modified, and put into action. The process typically requires observations, manipulation of materials, and/or research to gather new information.

**Collaborative Work**

In PBL there is a premium on learners working together in teams to grapple with and solve problems (Hmelo-Silver, 2004). These interactions and conversations are the bridge to learning and skill building. The collaborative work also includes teachers acting as coaches alongside the teams (Hmelo-Silver & Barrows, 2006). As teams experience needs, teachers help them discover methods to reach their goals. Collaboration could also include contacting outside-of-the-classroom people for their thoughts, ideas, and expertise.

**Solution Sharing**

Some of the best problems in PBL are those without a clear right solution. As students grapple with their problem and consider many variables and influences, they will eventually move towards what they consider to be the best solution to their problem. In the solution sharing process the teams describe their problem, how they came up with their solution, and their evidence and claims for why it is the best solution (Marle et al., 2012). Typically the sharing is
with other students and the teacher but the audience could also include people outside of the classroom.

**Problem Guides the Learning Approach**

The problem influences the learning environment and what is learned (Boud, 1985; Jonassen, 2000). Some problems may best be solved with mathematic manipulatives or science materials, and access to outside resources such as the internet could circumvent the problem solving process. Other problems might best be solved through out-of-classroom resources. Learning supports often need to be created to assist students in developing an understanding of the content.

**Student Centered**

Students are active learners as they grapple with problems, discuss, and search for solutions. Their activity is often self-directed, where learners take responsibility for how they will solve their problems (Hmelo-Silver & Barrows, 2006). When completed, they share their solutions and listen and provide feedback on the solutions of others.

**Focused Outcomes**

Communication, collaboration, critical thinking, creativity, content learning, decision making, inquiry skills, problem solving, reasoning, research skills, and teamwork are among the possible potential positive outcomes that can be achieved with PBL (Barrows & Tamblyn, 1980; Boud, 1985). For our approach we have added an integrated language outcome to support content learning and language development. (Jonassen & Hung, 2015).
Evaluation

Evaluation is an important PBL component (Chaves, Baker, Chaves, & Fisher, 2006). Some PBL experiences will be sustained over time and involve significant student work so assigning grades based upon their work may be appropriate. Formative and summative evaluation helps teachers know if the outcomes are met. This is essential to evaluate and improve the PBL experience and to use this knowledge in the planning of subsequent learning experiences.

Language Learning

Teachers are more effective in increasing ELLs’ academic achievement across content areas when they have a greater amount of specialized preparation in meeting the specific needs of ELLs (Maxwell-Jolly & Gandara, 2006). Menken and Look (2000) have identified what they consider to be the specific knowledge and skills needed by teachers of ELLs to be effective in working with this population and include the following:

a) an understanding of basic concepts in second language acquisition
b) the nature of language proficiency
c) the demands that mainstream education places on culturally diverse students
d) the role of first language and culture in learning
e) the capacity to make academic content accessible
f) the ability to integrate content and language instruction
g) an understanding of how differences in language and culture affect students’ participation in the classroom
h) an understanding of the needs of students with limited formal schooling

i) an understanding and ability to work with students whose families may have little knowledge of U.S. schools

j) a belief in students as individuals and an understanding that their limited English is not a deficiency.

Frequently, teaching ELLs is seen as simply a matter of applying “just good teaching” (deJong & Harper, 2005), although there is general consensus among second-language experts in the field that specific knowledge and skills such as those identified by Menken & Look (2000) are critical for all teachers working with ELLs. General education discussions of ELLs continue to fail to acknowledge the language and literacy demands specific to ELLs (deJong & Harper, 2005).

Although many strategies that are effective for native English speakers can be effective for ELLs, there are also a number of issues that teachers need to be aware of in order improve the academic achievement and language development of ELLs. In many of our content area courses in teacher preparation programs, professors and instructors typically cover the content standards and effective strategies for delivering instruction within the content area. However, too often there is a lack of discussion regarding how to effectively address the specific struggles with language and content that ELLs may face.

Problem-Based Enhanced-Language Learning (PBELL) is still in the infancy and as it is evolving, it draws from the Sheltered Instruction Observational Protocol (SIOP) which was developed by Echevarria, Vogt, and Short (2006). SIOP provides an operational description of
sheltered instruction, a method by which content is made accessible for language learners. The SIOP model is composed of eight sections (a) lesson preparation; (b) building background; (c) comprehensible input; (d) strategies; (e) interaction; (f) practice/application; (g) lesson delivery; (h) assessment.

**Content and Language Objectives**

One critical area that PBELL is addressing in our goal of infusing effective strategies for ELLs into science methods courses is the integration of content and language objectives. Both are critical to addressing both the academic content and linguistic needs of ELLs. SIOP (2006) defines content objectives as an objective that identifies what students should know and be able to do at the end of the lesson and leads to assessment. It is linked to engaging activities and to the learning outcomes. Language objectives are defined as process-oriented statements (action verbs) of how students will use English with the content. In PBELL, we are promoting the integration of both content and language objectives. In addition, we are differentiating between two types of vocabulary that teachers should be aware for when designing and implementing science lessons for ELLs. The PBELL Lesson Template includes a listing of Operational Vocabulary, defined as vocabulary needed for the lesson experience and vocabulary that should be introduced prior to when it is needed in the lesson. Conceptual vocabulary is vocabulary that will be developed as a result of the lesson experience.

**Language Supports**

In order for ELLs to access both the academic and linguistic content, specific language supports need to be intentionally integrated into the delivery of the lesson. In these early stages of implementation, PBELL has focused on three specific language supports (a) sentence starter;
(b) graphic organizers; and (c) manipulatives.

**Sentence Starters**

Sentence starters provide a partial frame for students to begin their idea or sentence (Hermann, 2015). The point is that sentence starters only begin the idea, and students are responsible for completing the idea. The following are examples of sentence starters.

- An example of a type of pendulum is…
- I would explain momentum as …..
- The first step in designing our own pendulum was…
- Immediately following that we...

Sentence starters include a variety of academic terms, some at higher levELLs than others. In order to address the various language proficiency levELLs of the ELLs in a class, it is important to use a variety of sentence starters. In order to help ELLs move to higher levELLs of academic language proficiency, it is important to challenge them with sentence starters that are just above their current language level. Providing sentences starters can help ELLs engage in academic conversations that provide various intentional opportunities to engage in extended, meaningful talk in school (Zwiers & Crawford, 2009).

**Graphic Organizers**

An early definition of graphic organizers comes from Estes, Mills, and Barron (1979) who defined graphic organizers as a “visual and verbal representation of the key vocabulary of a learning task in relation to more inclusive or subsuming vocabulary concepts that have previously been learned by the student” (p. 41).

Echevarria, Vogt, & Short (2006) address the use of graphic organizers in several of its
eight sections including in lesson preparation and in practice and application. They are promoted as valuable tools for scaffolding content and language for ELLs. However, as Echevarria, Vogt, & Short (2006) emphasize, the use of graphic organizers needs to be purposeful. Moore and Readence (1984), in their quantitative and qualitative review of graphic organizer research, emphasize that fitting graphic organizers into instructional context requires systematic attention. They also found that teachers reported feeling more prepared when they presented content through graphic organizers. Furthermore, they reported that graphic organizers tend to produce the most learning when they mirror the presentation of content and when vocabulary is used as the criterion variable, important to keep in mind when working with ELLs.

**Manipulatives**

Manipulatives, in an educational context, are physical tools of teaching, engaging students visually and physically with objects such as blocks, puzzles, and markers. The use of manipulatives is constructivist since students are actively engaged in discovery during the learning process (Firestone, 2015). Shaw (2002) reports that manipulatives are effective for the following reasons: they are multi-sensory, they represent ideas in more than one way, they promote communication among students, and they increase confidence, leading to lessened confusion and deepened understanding. Manipulatives help students make the leap from intuitive to logical thinking, from the concrete to the abstract (Hartshorn & Boren, 1990). Furthermore, Ruzic and O’Connell (2001) in a study for the National Center for Accessing the General Curriculum reviewed a number of studies and found that ELLs benefit from using manipulatives.

**Language Learning Methods to Optimize PBL**

PBL provides authentic and meaningful occasions to develop language. For ELLs,
opportunities to practice and interact using relevant academic language can help them achieve academically while simultaneously developing English language skills. However, while the focus should be the academic content, it is critical that language has a central role in PBL lessons. Language learning does not occur by chance but through careful planning and intentional scaffolding by the teacher.

**The Role of Preservice Education**

The proliferation of accessible information has decreased the need to memorize and has led to calls for competency based education (NRC, 2011). People in the workforce need to be able to work together and communicate. Perhaps above all, there is a recognition that people need to be good problem solvers as they lead their lives (Jonassen, 2000). “Today, because of rapid economic and social change, schools have to prepare students for jobs that have not yet been created, technologies that have not yet been invented and problems that we don't yet know will arise” (Schleicher, 2010). There has never been a better time for the large scale incorporation of PBL in schools.

Immigration is changing many parts of the world. The United States, Canada, New Zealand, Liechtenstein, and Russia, each had more than a 5% increase in immigrants between 2000 and 2009, resulting in immigrants representing 8% to 30% of these countries student populations (OECD, 2010). Students that are not proficient in the language of instruction face academic challenges (OECD, 2010). As mentioned earliery, in our state of Arizona, only 25% of English Language Learners (ELLs) graduate from high school (Stetser & Stillwell, 2014). The challenges start early, for example, in the 2012-13 school year only 40% of ELLs passed the Arizona elementary math assessment and only 53% passed the reading assessment (Arizona
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Department of Education, 2013). Research that suggests non-proficient-language-of-instruction students tend to have lower academic achievement have contributed attention to the situation.

The will to overcome these challenges, however, is not evident on a global basis. Immigration is a very hot topic in conversations and the media (Skey, 2014). In high-immigration situations there is often anti-immigrant sentiments (Kaufman, 2014). This, as well as costs and lack of expertise by teachers and administrators (Edwards, 2012; Samson & Collins, 2012), may hinder the development of resolve to implement school solutions for language-minority learners.

The National Center for Education Information documented that 87.5% of the teachers they surveyed had little or no training in teaching ELLs (NCELA Newsline Bulletin, 2005). Most teacher education programs are currently lacking in explicitly attending to the linguistic and cultural needs of ELLs (de Jong & Harper, 2005). In a study providing an overview of the preparation of teachers working with ELLs, Menken and Antunez (2001) found that less than 1/6th of the 417 institutions of higher learning in their study required specialized preparation for mainstream teachers regarding the education of ELLs. Even among those programs that did provide preparation for meeting the linguistic needs of ELLs, oftentimes it was embedded within multicultural education courses in which ELLs were but one of several populations addressed (Morrier, Irving, Dandy, Dmitriyev, & Ukeje, 2007).

School traditions have resistance to change. Lectures and memorization have been the system for so long that even with superb access to electronic information and calls for competency-based education, prior practices prevail (Schwerdt & Wuppermann, 2011). The best prospects for change may be with new teachers joining the profession. Yet according to the US
Secretary of Education, colleges of education “are doing a mediocre job of preparing teachers for the realities of the 21st-century classroom” (Duncan, 2009). Our teachers college seeks to produce change through teacher education.

**Our Teachers College Approach**

The MLFTC has taken the approach of integrating strategies to promote English language and literacy skill development in all math and science methods classes programs for the early childhood and elementary (PreK-8) preservice teachers through the use of problem-based learning. Initially, reforms are being implemented in math and science methods courses before being implemented in the rest of the teacher preparation courses. The four main goals that MLFTC seeks to meet are as follows: (1) to reform early elementary and elementary teacher preparation programs to address the need for highly qualified general and special education teachers for ELLs; (2) to redesign math and science methods courses to include instructional strategies that promote language and literacy development; (3) to redesign course signature assignments to use problem-based learning (PBL) pedagogy and design principles that support teacher candidates’ application of knowledge and skills in “real world” classrooms; and (4) integrating and understanding evidence-based practices and scientifically-validated research for teaching and learning of ELLs, including data-driven decision to improve differentiated instruction. To begin this process, several strategies have been implemented: (a) establishment of program enhancement team (PET); (b) hiring of instructional coaches; (c) design, development and implementation of PBELL lessons; and (d) re-design and development of signature assignments.
To achieve educational reform, we recognized the need to work collaboratively across disciplines to reform and enhance coursework by creating a change in culture. We began by engaging faculty in PET, using the principles of the professional learning communities’ framework, to cultivate a culture of change for how we prepare teacher candidates to meet the needs of ELLs (DuFour, Eaker, & DuFour, 2005). MLFTC has engaged faculty to integrate evidence-based practices for language and literacy skill development in math and science methods courses. The program enhancement team provides the forum for faculty to work together around the common goals of the iTeach ELLs grant, where all faculty will have ownership and contribute to program reforms and enhancements. In these meetings, faculty have worked to: (a) establish a culture of change; (b) understand academic vocabulary, literacy and language acquisition strategies; (c) developed PBELL lessons; and (d) share experiences in developing and implementing PBELL lessons. Thus, through the PET meetings, faculty have been able to model for preservice teachers PBELL lessons.

To aid in implementing these reforms, we have added additional expertise in the form of coaches. Ultimately, we will hire coaches focused on the two key features of the reform – practices for English language learners and project-based learning. Thus far, we have acquired two coaches with expertise in ELLs. So far, these ELL coaches have co-taught with MLFTC faculty in targeted science method courses, infused greater language enrichment into PBELL experiences, taught PBELL experiences in a low SES and high ELL population middle school, assisted in planning and conducting of PET meetings, and provided other research and program support. In the future, coaches will co-teach with site coordinators who teach and supervise teacher candidates in partner schools. Coaches will support faculty and students in the implementation and evaluation of these practices.

**Early Successes and Challenges**

The first pilot year has seen a host of successes. In the first year, our approach has seen
the formation of a PET team, development of PBELL lessons, the addition of ELL coaches and the first iteration of changes to methods courses. The PET team met several times during the semester. These meetings helped to identify what prior knowledge of PBL and ELLs bring with them. The PET meetings also provided a forum for learning strategies for scaffolding ELLs in the development of academic vocabulary—both by identifying strategies that were already being implemented as well as additional strategies for developing PBELL lessons. In addition, faculty were able to design and implement a PBELL lesson in their method courses. These lessons are now a part of an archive of lessons for future use by both faculty and preservice teachers in their placements.

The additions of ELL coaches have also supported the implementation of reforms. The coaches have provided the opportunity to begin piloting changes in science methods courses. For example, the coaches have been able to work with two science methods faculty to pilot how to write content-language objectives and implement lessons that model for preservice teachers how to support ELLs during PBELL lessons. Coaches have both observed the teaching of lessons and co-taught lessons with faculty. The ELL coaches have also helped in identifying opportunities to infuse strategies for helping ELLs to develop academic vocabulary. Moreover, they have assisted in the design of a PBELL lesson template for science methods courses.

The process of making these changes has not been without challenges. Though the PET teams have been very successful, keeping faculty involved has proven to be a challenge. Faculty have many responsibilities and their ability to participate depends on their teaching schedule, service and other factors. Though we hope to keep involved, we cannot control whether or not participants are teaching the targeted courses or do not have other priorities that conflict with
PET meeting times.

The hiring of coaches with an ELL focus has been a great success. We also desired to hire a PBL coach. The initial posting indicated we wanted to hire a coach, with early elementary or elementary teaching experience, knowledge of PBL and experience with ELLs. However, this search proved to not be successful. This was because not enough applicants with PBL experience and/or applicants did not have ELL experience. Thus, we have revamped the posting for the position to be more explicit about the knowledge of PBL desired and not included a requirement for experience with teaching ELLs.

**Conclusion**

Immigration and digital technologies have transformed our societies and the needs of our schools. PBL begins with a question that engages students in learning and then develops learning competencies. Many specific language learning techniques can be implemented with PBL and in other situations to advance academic growth of learners. To embrace these needs, teachers need to have knowledge, abilities, and attitudes to implement PBL and methods for language-minority students. Our teachers college is moving to meeting these goals.
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The Image and the Word in Film/Literature

Submission ID 778
Cross-Disciplinary Areas of Education
Panel

This panel intends to present cross-disciplinary approaches to human imagination, focusing on culturally significant images and exploring the interaction between imagery and spoken/written words in film/literature. Particular attention will be paid to discrepancies between the visual and the verbal to show that film/literature can be enriched by such discrepancies. Four panelists will tackle the image-word relations from a cross-cutting perspective. Ima-Izumi will examine the image of the legendary female “white snake” in Japanese and Chinese film/literature. Masuda will analyze the image of “tunnels” pertinent to male characters in American film/literature. Karasawa and Kaizu will deal with the images of “beer” in the West (U.K.) and of “pottery” in the East (Japan) respectively.

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The Female White Snake in Japanese and Chinese Films

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Abstract

The snake symbolically has many faces. It is a reminder of Satan or the cause of evil in Christianity, but it can be an ouroboros, a snake holding its own tail in its mouth, which symbolizes eternity, just to mention a few. It indeed has a variety of characters and meanings, among which I select a legendary female white snake which transforms into a human female in order to get married to a human male.

The legend of the white snake had widely spread in China until it was edited and published in the collection of legends and short stories by three different editors at three different periods of time—by Ri Bo in Taiping Collections in 978; by Ko Ben in The Legends of Towers in West Lake in 1551; and most thoroughly by Fu Bo Ryu in The Legends of Wisdom in 1624. The third version has been the primary source of the later novels and films not only in China but in Japan.

This paper explores the image of the female white snake in films made in Japan and China in reference to the above-mentioned written texts in modern translation. It pays particular attention to discrepancies between the visual (films/TV dramas) and the verbal (the written text of the legend), thus making a cross-disciplinary approach to literature and film. It also intends to clarify the cultural differences in representation of the female snake between Japan and China.

Films to be examined are two canonical Japanese films, The Bewitched Love of Madam White (1956) and The Legend of the White Snake (1958), two from Hong Kong films, The True Legend of the White Snake (1978) and Green Snake (1993), and three films/TV dramas from China, White Snake (2004), White Snake Again (2011), both of which were broadcast in the mainland China, and The Legend of the White Snake (2011).

Key Words
white snake; film; literature; legend; Japan; Hong Kong; China; representation; female; Bai Niang; Xu Xian; Fa Hai; cross-cultural; cross-disciplinary
Introduction

The intermarriage between humans and non-human creatures is depicted in myths and legends all over the world. Zeus in Greek mythology, for example, transforms himself into a swan to get physically involved with Leda. It is often the male who goes through a change in the west, but it is more often the female than the male who is a transformer in Asian imagination. Analyzing Japanese and Chinese white-snake films and literary texts, I wish to clarify the interplay between the visual and verbal expressions of a non-human female creature who desires to unite with a human male.

The legend of the white snake had widely spread into all China from the region of Hangzhou, the location of Leifeng Pagoda and West Lake, until it was fixed in words and published by three editors at different periods of time. The three published texts of the legend share two significant features of the story: the nature of the white snake as femme fatale and the function of Leifeng Pagoda as a container to lock her in. The first feature concerning the nature of the white snake is already seen in the first version (978), where she is continually replaces her husband by a new man. When asked by her maid “Madam, a new man has come today, and the old man is no longer useful, isn’t he?” The white snake answers: “Cook him in hurry and serve it [the cooked body] with drink to Xi xuanzan [the newcomer].”?1 This image of the femme fatale or fatal woman is carried over to the third written version of the legend (1624). Though it introduces the new element of love into the relationship between the white snake and her only husband, by deleting all other men, Bai Niangzi reveals her nature as a fatal woman by reproachfully saying to him: “You believe in what an irresponsible stranger says and damage to our married life. I am honest with you. If you willingly listen to me, everything will be all right. But if you have a mind to betray me, I will kill all the people in your town by cruelly drowning them in big waves.”2 The three written versions also share the conclusion in which Bai Niangzi is locked in Leifeng Pagoda by the collaboration of the monk Fa Hai and Xu suan, who abandons the white snake under the supervision of the monk.

A large number of the white snake films have been made in Japan and China,

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and they invariably depict the white snake or Bai suzhen as a dedicated wife who would even risk her own life for her love of her husband. There is no single film that should depict Bai suzhen as a fatal woman who would kill her husband. I will quote the ending few sequences from each film and, examining the differences between the written text and the visual representation, clarify the meaning of the change.

The protagonist is variously named as Bai Niang, Bai Niangzi, Bai Suzhen, and Bai Niangniang in the written texts and films, but I will use Bai Niang in this paper for convenience sake. As for her human husband who is also variously named as Xu Xian, Xu xuan, and Xi xuanzan, I will use the term Xu Xian.

**Japanese Imagination (1)**

**A Double Suicide in The Bewitched Love of Madame White (1956)**

The first film to be examined, *The Bewitched Love of Madame White*, is a canonical film both in Japanese and Chinese (including Hong Kong) film history. The project of making the white snake film was suggested in the mid-1950s to Toho, one of the biggest Japanese filmmaking companies, by Shaw Brothers, the most successful Hong Kong film company at the time, which was known as Hollywood in the East and was to create the golden age of Hong Kong films in the late 1960s and 70s. The staff were all Japanese; Shiro Toyoda was appointed as the director, and the big movie stars such as Toshiko Yamaguchi, Ryo Ikebe, and Kaoru Yachigusa were cast for the main characters. The special effects were assigned to Eiji Tsuburaya, who had successfully brought *Godzilla* (1954) to the worldwide attention, and color cinematography was assumed by Mitsuo Miura, who let Toyoda win the Honorable Mention at Berlin International Film Festival for the use of color. The last three sequences form an unexpected, unique ending which is devoid of either of the two characteristics of the written versions of the legend: the representation of Bai Niang as a fatal woman and the function of Leifeng Pagoda as a prison to lock in Bai Niang. The film presents a quite original and Japanese interpretation of the legend.

The first of the three sequences depicts the flood caused by the powerful spell of Bai Niang and her attendant Green Snake (*Figs. 1-3*) to make Fa Hai surrender and let Xu Xian, whom the monk has kept in his temple, run free. During the fight, Bai Niang sees her husband Xu Xian in danger of drowning and stops casting the spell (*Figs. 4-5*). She is far from the fierce fatal woman in all the written texts of the legend. Bai Niang in the film is feeble, and her attendant Green Snake is contrastingly a strong character. Green slaps her idle mistress and blames her for
standing in a stupor. When finding her mistress incapable of proceeding with the spell, Green decisively says: “I am disappointed with you because you are so cowardly.” Green abandons her mistress and swims away. There is no written text, or in any other film whether Japanese or Chinese, that depicts Green Snake abandoning Bai Niang. The sequence of the flood, emphasizing the solitude of the female protagonist, concludes with the shot of her lying limply and alone on the shore (Fig. 6). Despite the fact that she has been living for over a thousand years and is capable of making excellent use of sorcery, she is reduced to a miserable small creature washed by waves on the shore.

The topic of solitude is reiterated in the next sequence, where Bai Niang is abandoned even by her husband. She uses all her strength that is left to come close to Xu Xian, but cannot constantly hold her human form. When she appears as a woman, Xu Xian approaches her as if he desired to touch her (Figs. 7-11). But when she appears in the form of a snake and clings to his straw hat, he is repelled by the sight and steps all over the snake, knowing that it is his wife (Figs. 12-14). Tramped continually, Bai Niang finally fades away (Fig. 15), with the hint that she is dead.

3 Quoted from the flood sequence in The Bewitched Love of Madame White (1956).
4 The intense hate of Xu Xian against the snake is not unrelated with the director Toyoda’s extraordinary abhorrence of snakes. He is said to “be absent from the days scheduled for shooting the snake scenes.” Quoted from the accompanying Commentary to the LP version of The Bewitched Love of Madame White (1956) distributed by Toho.
The final sequence begins with Xu Xian recollecting his happy married life with Madam White on his way home in Hangzhou. He suddenly comes to the realization that he loves her no matter what she is, and he begs her forgiveness in his monologue: “What was I afraid of? .... Please forgive me, Bai Niang. I really didn’t care what you were. I was happy with you.” When he is determined to return to Madam White, the monk appears in front of him and makes Xu Xian fall dead on the ground (Figs. 16-17). The next moment Xu Xian’s transparent form escapes from his physical dead body and, with the monk’s words that “you should leave this world and fly, hand in hand, to an island of supernatural beings,” he flies up into the sky with the equally transparent human form of Madam White. The film ends with the shot of the transparent couple being connected to each other by the read long scarf and flying upward (Fig. 18).
The film thus uniquely introduces the traditionally Japanese notion of double suicide to have the two conflicting stances exist at the same time: the one is to deny the anti-intermarriage between the human and the non-human, and the other is to let the couple go happily ever after. The couple are forbidden to be happily married in this world by crossing the boundary of the species, but they are allowed to be united in the after world. Fai hai is given a significant role to control the fate of the couple.

It is clear that the film does not adopt either of the two fundamental features of the legend: it neither depicts Madam White as a fatal woman nor introduces Leifeng Pagoda as a prison to lock her in. Madam White is always dedicated to Xu Xian, and never becomes a fatal woman. She is feeble and dying, and does not have to be locked in Leifeng Pagoda.

The film credits for its source both the Chinese legend and a Japanese novel by Fusao Hayashi, *The Witchcraft of Madam White* (1948), which is based on the legend. The novel has a very different ending from the film, for it emphasizes the sweeping victory of Madam White over the monk, who gracefully admits his defeat: “I am completely lost. Xu Xian is yours.” In the novel, Xu Xian is always in love with Madam White, no matter what shape she takes. His strong attachment to her enables her to take him back from the monk. The novel by Hayashi glorifies the victory of Madam White and deletes the episode of Leifeng Pagoda. Both the novel and the 1956 film in Japan regard the negative characterization of the white snake and the role of Leifeng Pagoda as nothing significant. *The legend of the White Snake* in 1958, which I am examining, takes the same approach to the two basic elements of the legend. The white snake is always loved by Xu Xian and Leifeng Pagoda does not lock her in.

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Japanese Imagination (2)
A Happy Married Life in *The Legend of the White Snake* (1958)

Satisfied with the success of the Japanese film of 1956, Shaw Brothers suggested a new project to create an animated version of the legend of white snake to another big film company in Japan, Toei. Shaw Brothers probably wanted to sign a contract with each of the big five Japanese film companies. They had previously coproduced with Daiei a successful film *Yokihi* (1955) nominated for Golden Lion in Venice Film Festival. The following year they coproduced with Toho the well-accepted *The Bewitched Love of Madam White* which won the Honorable Mention at Berlin International Film Festival. Next was Toei that was expected to coproduce an animated film of the white snake. But the project went to an unexpected way. The head of Toei was so ambitious that he decided to independently make the first Japanese feature-length animation film in full color by their own efforts. He built a most advanced studio specialized in making animation films, and Toei was soon to be called Disney in the East.

The ending sequence of the animated film *The Legend of the White Snake* (1958) depicts the fight between Bai Niang and the monk. The flood arises due to the spell of Xiao qing, the spirit of a blue fish and the attendant of Bai Niang. Bai Niang cannot cause the flood, because she is no longer a spirit but a mortal woman as she has given up her perpetual youth and longevity in trade for a flower of life to restore dead Xu Xian to life. Seeing Bai Niang and Xu Xian almost drowned in the flood, Fa Hai comes to the realization that he has no reason for disrupting their coupling because both are now human and avows that “I am on your side now.”6 He sends a boat to the drowning couple among the waves, and saves their lives (Figs. 19-21). The reformation of Fa Hai is the clue to a happy life of the couple.

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6 Quoted from the last sequence of *The Legend of the White Snake* (1958) with Taiji Yabushita as director.
Leifeng Pagoda is crossed out in this film as well as its precursor of 1956. But a seven-storied pagoda, which looks exactly the same as the real Leifeng that collapsed in 1924, appears in an unexpected way. It appears in a dream of Xu Xian, in which the image of Bai Niang dissolves into the image of pagoda (Figs. 22-23). He soon arrives at the pagoda (Fig. 24) to find that Bai Niang and Xiao quin are living there. Leifeng is not a prison but a pleasant home for the female protagonist and her attendant.

Fig. 22 Fig. 23 Fig. 24

Hong Kong Imagination (1)
Father and Son in Love of the White Snake (1978)

The representations of the white snake in Chinese and Hong Kong films and TV dramas show a different aspect from the Japanese examples. In The Love of the White Snake (1978), a Hong Kong film with the director Chen Chi-Hwa, the white snake gives a birth to a son. The last two sequences depict the prime happiness of Bai Niang and Xu Xian and the ensuing misery caused by Fa Hai.

The couple create a beautifully symmetrical composition with the baby in the middle (Fig. 25). This symmetry means their harmonious happiness, but is soon disrupted by the absence of Xu Xian, who excuses himself for a moment. The disruption of the symmetry triggers the intrusion of Fa Hai into their home, with his face being ominously in shadow (Figs. 26-27). Scared by his appearance, Bai Niang stares at him (Fig. 28). Their fight soon takes place and she is eventually caught by him in a bowl (Figs. 29-30) so that she may be taken to Leifeng Pagoda.

Fig. 25 Fig. 26 Fig. 27
Xu Xian detects that Fa Hai is a hypocrite who only wants to disrupt their happiness. He shouts at the monk and the baby held in his arms cries in the turmoil (Figs. 31-32), but no one prevents the monk from disappearing with the bowl (Fig. 33). This is the first explicit expression of the wickedness of the monk in the white snake films, and it is to be adopted by the ensuing films in Hong Kong and China.

The film ends with a brief sequence of Xu Xian and the grown-up boy coming to Leifeng Pagoda to look up in silence as if to greet Bai Niang inside (Figs. 34-37). The silent, sad, and grim expression in their faces intensifies the cost the Fa Hai has brought to this family, and attests to the remark that Xu Xian has given: “You only want to destroy our happiness.” This negative characterization of Fa Hai in the 1978 Hong Kong film also marks the 1993 Hong Kong film to which I am now turning.

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7 Quoted from the ending sequence of *Love of the White Snake* (1978, Hong Kong, director: Chen Chi-Hwa).
Hong Kong Imagination (2)
Bai Niang Killed by Leifeng Pagoda in *Green Snake* (1993)

*Green Snake* (1993) produced in Hong Kong shares with its precursor the idea of Bai Niang giving a birth. But the birth does not give even a momentarily happy family image. The last two sequences depict the conflict between Bai Niang and Fa Hai, so that she may get back her husband. She causes the flood with the help of Green Snake, but in the middle of the fight with the monk, she suffers from such a heavy labor pain that she must interrupt the fight (Figs. 38-40). Looking at Bai Niang giving a birth, Fa Hai for the first time comes to a realization that “she’s really elevated herself to a human!”\(^8\) Bai Niang is exhausted and has the strength left only to hold her baby high up among the waves (Figs. 41), when Fa Hai shouts “Bai Niang, Leifeng Pagoda is coming to you. Danger!”\(^9\) The repentant monk saves the baby, but Bai Niang is left in the water to be struck by the pagoda spire to death (Figs. 42-43).

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\(^8\) Quoted from the flood sequence of *Green Snake* (1993, Hong Kong, director: Tsui Hark).
\(^9\) Ibid.
Not only Bai Niang but Xu Xian are dead. The latter is stabbed at the heart by Green (Fig. 44), who wants to send him to the after world where Bai Niang has gone, telling him “You should be with her.”¹⁰ Unlike the Japanese film of 1956, the couple after death are not depicted. Fa Hai is left alone with Bai Niang’s baby in his hands (Fig. 45). The silent misery fills the film, and the uselessness of the fight is intensified. The only positive element in this film is that Fa Hai has repented and that the line between a human and a non-human is eliminated.

Chinese Imagination (1)

**Xu Xian Guarding Leifeng Pagoda in Madam White Snake (2004)**

In China, there have been quite a number of the broadcast TV dramas of the legend. They all agree to represent the monk as an evil spirit, thus expanding the negative interpretation of the monk in the Hong Kong films of 1978 and 1993. Moreover, the TV dramas introduce a new element of the ambivalent feelings of the monk for Bai Niang. His obsessive rejection of Bai Niang is, as defined by the successful TV drama *The Legend of the White Snake* (2004), derived from his repressed love for her. The inner voice of Fa Hai is heard, when the close-up of his own ear is shot: “You’re afraid of falling for her, that is why you want to kill her” (Fig. 46). His inner voice further points out: “Why do you interfere with other people’s business? ... You have become a demon ... Those who destroy love leave the world to

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¹⁰ Quoted from the last sequence of *Green Snake* (1993, Hong Kong, director: Tsui Hark).
become a demon.” What he desires to destroy is a happy family built upon the love between Bai Niang and Xu Xian (Fig. 47).

Fa Hai and Bai Niang make a contrasting pair. The former is defined as a human being degraded to a demon, while the latter is a snake demon elevated even to a human and further to a deity. In the last sequence Bai Niang rides on a boat bound for the heavenly kingdom to become a deity (Fig. 48). But she chooses to return to this world to see Xu Xian only once more.

In the final meeting of the couple, Xu Xian gives to Bai Niang a symbolically significant umbrella which, throughout this TV drama, is repeatedly lent from Xu Xian to Bai Niang as an indication of his love for her as well as her loving gratitude for him. Holding the umbrella against her bosom and being seen off by him, Bai Niang gradually drifts upward in the air (Figs. 49-52). When she is locked in Leifeng Pagoda, the voice of Fa Hai is heard: “You can only spend your life here” (Fig. 59).

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*Quoted from the episode 11 of Madam White Snake (2004, China, director: Li Peisen).*
Deprived of his dear wife, Xu Xian determines to go to his enemy’s temple, which is close to Leifeng Pagoda, and to become a monk himself, because only monks are allowed to approach the immediate vicinity of the pagoda. Seeing that he successfully becomes a monk (Figs. 54-55), Fa Hai quickly changes to an ugly, gaunt loser (Fig. 56). Xu Xian enters the vicinity and begins taking care of the pagoda by sweeping the ground (Fig. 57). In response to his words, “If you’re aware of this, could you please respond?” the umbrella that he has given to Bai Niang appears above his head and stays there as if to protect him (Figs. 58-59). Xu Xian is satisfied with this peculiar way of communicating with Bai Niang, and this image of Xu Xian with the umbrella above him (Fig. 60) is indicative of their happiness and victory over Fa Hai. This way of communicating with each other continues until Xu Xian becomes an aged man and the umbrella becomes ragged (Figs. 61-62).

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12 Quoted from the episode 30 of Madam White Snake (2004, China, director: Li Peisen).
Chinese Imagination (2)


*Love of the Millennium* (2011), a TV drama that was made seven year later, follows its precursor in that Fa Hai is sexually attracted to Bai Niang. The monk’s love is more emphasized than ever, and his daydreams of her tender response to his desire are often depicted (Figs. 63–67). As he never gets her attention in reality, he uses a dirty trick to put her asleep and caresses her during sleep (Figs. 74–75). He obsessively retains Xu Xian from Bai Niang out of jealousy, and he is appropriately called “hypocrite” and “dictator” by Xu Xian (Figs. 78–80). The theme of this TV drama is not the line between a human and a non-human but a triangle love. All the main characters of this TV drama, including Bai Niang, Xu Xian, and Fa Hai, are inhabitants of the heavenly kingdom before they come to this world. They are incarnations of non-human creatures to begin with, and Fa Hai’s excuse for disrupting the relationship between a human and a non-human is not really valid. This TV drama is most far away from the legend in that it presents Fa Hai as a monk who is unreasonably attracted to another man’s wife.

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13 Quoted from the episode 35 of *Love of the Millennium* (2010, China, directors: Liu Feng Sheng, Xuhui Kang).
The last sequence, however, shows a trace of the legend of the white snake. Leifeng Pagoda is depicted as a place for locking in Bai Niang. She accepts her fate and graciously walks to the pagoda with many monks lined up on both sides of her path (Figs. 75-76). The drama shows Bai Niang looking up the facade sign of the building in close-up to confirm that it is unquestionably Leifeng Pagoda (Figs. 77-78). She enters it and sits there motionlessly (Figs. 79-80). But when she finds Xu Xian approaching the pagoda, she sends out the small umbrella that she has
kept as a token of their love romance in the heavenly kingdom before they come to this world (Figs. 81-83). The couple exchange their smile across the door of the pagoda (Figs. 84-85). They can thus commune with each other even though they are separated in and out.
Re-introducing the Intermarriage between a human and a non-human in *The Sorcerer and the White Snake* (2011)

*The Sorcerer and the White Snake* in 2011 casts away the triangle love and re-introduces the issue of the line between a human and a non-human. Unlike the contemporary Chinese TV dramas, this film emphasizes the nature of Bai Niang as a white gigantic snake (Fig. 86). Fa Hai’s obsession to repel a non-human is equally re-introduced, and the deadly final fight between the snake and the monk forms a climactic spectacle.

The last sequence depicts such a spectacular fight which is triggered by the monk’s kidnapping Xu Xian, to whom Bai Niang is married while she is in the form of a woman. The white snake breaks a blockage of the monk’s temple and reaches dormant Xu Xian (Figs. 87-88). She carries him out to a safe place, which happens to be the walkway leading to the facade of Leifeng Pagoda (Fig. 89). The pagoda is thus introduced in the scene. The fight shows the greater power of the snake than the monk’s but, when Bai Niang is about to win, Buda’s hands appear and throw her into the pagoda (Figs. 90-94).
It turns out to be Budda's intention, rather than the monk's, to lock the snake in Leifeng Pagoda. Bai Niang's wish to see her husband only once more is granted by Budda, and their final embrace is shot with a song glorifying an eternal love (Figs. 95-99). This Chinese film has a quite unique ending that Xu Xian peeps into the pagoda where the white snake is enshrined under the supervision of Budda (Figs. 100-101). Leifeng Pagoda functions as an instrument of Budda. Xu Xian decides to take care of it as a guard for the rest of his life (Fig. 102).
Conclusion

There are cultural differences in the representation of the white snake between Japanese and Chinese films. The Japanese Snake is not locked in Leifeng Pagoda. Such a pagoda and the West Lake in Hangzhou have no significance to the Japanese spectators, who would not care where the story should take place. The spectators in Japan obviously preferred the couple's happiness to their misery. That the couple should have a happy ending is the key issue.

The Chinese films and TV dramas, on the other hand, are constrained by the existence of Leifeng Pagoda, on which all elements should converge. The pagoda is destined to separate Bai Niang and Xu Xian, thus leading the whole story to a tragic ending. To most Chinese people the specified location, Leifeng Pagoda in Hangzhou, means an obstacle to a happy life of their heroine, and should hopefully be removed. One of the representative Chinese novelists, Lu Xun, affirms that, when the real Pagoda collapsed in 1924, “people must have exploded in great exultation” to learn of the long-waited release of Bai Niang from the pagoda,\textsuperscript{14} for the legend tells that the snake would be liberated only if the pagoda falls down. Leifeng Pagoda is the key to the white snake films in China.

Besides the cultural differences, some discrepancies between the written text of the legend and films/TV dramas can be perceived, as examined. The text emphasizes the negative nature of the white snake as a fatal woman, who would have taken Xu Xian’s life if the monk had not distanced him from the snake. The action of the monk to disrupt the marriage between the white snake and Xu Xian is therefore justified in the written text. But the white snake in films/TV dramas is deeply in love with Xu Xian. Her pure love is accepted by Xu Xian with pleasure and they could lead a happy married life if the monk did not interfere with their happiness. The monk in films/TV dramas is a villain.

\textsuperscript{14} Lu Xun’s words are quoted in Kenji Nakano, The Record of Chinese Places (Toho Sensho, 1988), pp. 198-9. Nakano mentions several movements to save Bai niangzi out of the pagoda prior to its actual fall in 1924.
This paper has thus examined the selected Japanese and Chinese films and TV dramas based on the legend of the white snake in the cross-cultural and interdisciplinary perspectives to understand the differences in characterization of the white snake, her human husband, and the monk.
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The Representation of Inner Darkness of the Characters in
Arthur Miller’s *A View from the Bridge*

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Abstract

Alfieri, a lawyer in Arthur Miller’s *A View from the Bridge* (1955), describes the leading character Eddie Carbone’s eyes “like tunnels” to indicate his psychological blindness in seeing only the fixed goal of his fate on the other side of the tunnel. Eddie is not the only character who is described as psychologically blind and dark in Miller’s plays. Joe Keller in *All My Sons* (1947), Willy and Ben Loman in *Death of a Salesman* (1949), and Phillip Gellburg in *Broken Glass* (1994) are similar characters to Eddie in terms of the limited scope of insight, to name a few. In this paper, the meaning of this inner darkness is explored through the visual analysis of Sidney Lumet’s film version of the same title, made in 1962. Based on Miller’s play, Lumet changed the portrayals of Eddie, his wife Beatrice, and his niece Catherine, including a radical ending to Eddie’s fate. How did Lumet employ the early 1960s filmmaking style to describe the relationships between Eddie, Beatrice, and Catherine? What effects did he introduce to revitalize Miller’s play? What is the significance of Lumet’s film adaptation of Miller’s play in the early 1960s? These are the questions that this paper will answer to reevaluate *A View from the Bridge*, which, until recently, had received little attention from both academics and critics in the United States.

Lumet’s Changes to the Ending of the Film

In the original play, Eddie is killed by accident in the confrontation with Marco, one of his relatives about whom he informs illegal immigrant status to the bureau of immigration. Alternatively, in the film, Eddie kills himself with a hook (or a dock spike, which symbolizes longshoreman’s life), upon realizing he is completely isolated from his community. Frank R. Cunningham points out the reason for this change as follows: “In Lumet’s vision, the death is not accidental, but the director charges Eddie with greater responsibility for his end, as for his life.”15

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15 Frank R. Cunningham, *Sidney Lumet: Film and Literary Vision* (Lexington, KY: The
Lumet characterizes Eddie as an existential hero, like Miller’s John Proctor in *The Crucible*, who takes responsibility for his own life and death. However, what Miller originally created in his play is a tragic hero who is unable to change his fate. Miller’s Eddie is like the tragic heroes of Greek tragedy. For this reason, Miller has the lawyer Alfieri describe Eddie’s eyes “like tunnels.” The word “tunnels” does not only mean the narrowness of Eddie’s mind like the similar expression “tunnel vision,” but also signifies the fixed fate of the character. Like Sophocles’ Oedipus, Eddie cannot change his fate. Unlike Oedipus the king, Eddie is a working class man of the 1950s who acts according to his own instinct rather than his intellect. However, both Oedipus and Eddie cannot change the course of their lives according to the situations surrounding them. Eddie is a character who advances forward even though he knows the tragic end is coming closer. Thus Alfieri’s description of Eddie’s eyes “like tunnels” fits well in the context of the play. Then how does Lumet change the portrayal of Eddie for his cinematic adaptation?

Lumet employs large depth of field in his *A View from the Bridge*. Instead of using Miller’s words “like tunnels,” the director takes advantage of in-depth composition to express Eddie’s inner darkness. In this film, the characters in the shallow foreground dominate the subjective points of view in each scene. In many cases, the characters in the middle of the field express confrontation and the characters in the deep background are the object of desire for those in the shallower field. As a whole, this in-depth composition functions “like tunnels” that confine the scope of field in which the characters think and act. The confined space which stretches only into the deep background signifies the destiny which they cannot avoid. Lumet skillfully and successfully converts Miller’s play into an early 1960 American film in which the staging of in-depth composition was an artistic convention in the industry. Elia Kazan, John Cassavetes, and John Frankenheimer are examples of characterization created by in-depth composition to name but a few. So what are the particularities of Lumet’s use of this convention which distinguish him from his contemporaries? How is the characterization of Eddie, Catherine, and Beatrice affected by the alteration of the ending and subsequent use of in-depth composition?

**The Change in the Depiction of Eddie**

Eddie is shown in the open space of the waterfront near Brooklyn Bridge at
the beginning of the film. He can freely walk around the docks surrounded by his fellow longshoremen who trust him as a leader of the community. He is an honorable man who never betrays his friends and relatives. He lives in a humble neighborhood where he is a role model of the community and trusted by people of all ages. He is even treated as a hero by the children of the neighborhood. Eddie’s free movement in the open space all the more emphasizes his sense of confinement inside his apartment. Eddie’s intimate relationship with his eighteen year old niece, Catherine, is depicted in a narrow bathroom where he washes his face in his underwear while she, sitting beside him, applies her perfume. She serves him beer and later lights his cigarette. Framed in a two shot, they appear affectionate enough to be mistaken for lovers (Figs. 1-3). Eddie evidently feels too much intimacy towards Catherine than an uncle should, and she, likewise, expresses too much affection towards him, even though, for her, he is a surrogate father figure. Since she is an orphan, it is her basic instinct to try to be an object of her uncle’s love and even desire to extract as much care and concern from him until she finds her young and handsome protector outside of the family.

Fig. 1

Fig. 2
When Eddie notices Rodolpho, another relative from Italy, taking Catherine for a ride, ignoring his wife’s warning, he violently grabs the knob to open the front door, which is shown in Dutch angle through a mirror’s reflection, to chase the young couple. The use of Dutch angle in this crucial moment means something is wrong with the situation and this is further exaggerated by shooting through the mirror. When Eddie opens the door, shot from this slanted angle, he chooses a difficult path in his life (Figs. 4-6). From now on, all he can do is reach the other side of the tunnel, which leads to his destruction.
Eddie follows the young couple through the city streets and enters a Horn and Hardart automat in which Catherine and Rodolpho are on a date. He sips coffee alone and his isolation and loneliness are emphasized in a low angle close-up, which clearly shows his expression, with fixed eyes staring at the empty space before him. He leaves the automat alone and starts walking straight towards the lights far ahead of him. He moves into the night and the darkness of the city street. Here Lumet visualizes Eddie’s inner darkness using the dark city night. (Figs 7-9).

![Fig. 7](image)

When Eddie decides to accept the duel with Marco, he opens the same door to reach his tragic end. The front door of Eddie’s house in the film is depicted as the tunnel’s exit. Eddie’s fate is decided from the beginning in the original play. As Stephen A. Marino points out, “Eddie’s real tragedy is that he does not recognize the tunnel he is walking through.”

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16 Stephen A. Marino, “Verse, Figurative Language, and Myth in *A View from the
to open the door to tragedy himself. He is conscious of the fact that he is walking through the tragic tunnel, however, he cannot stop walking. Simply put, he cannot stop loving Catherine. Eddie does not listen to Beatrice’s last plea, “You want somethin’ else, Eddie, and you can never have her!” (p. 70) His determination isolates him from the community so completely that his close up is shot against the complete darkness. Eddie’s face looks as if it were his death mask (Fig. 10). He hurries down the dark stairs (Fig. 11). He gets out of his apartment, ready to have the duel (Fig. 12).

Fig. 10

Fig. 11

Fig. 12


17 All the quotations of _A View from the Bridge_ are taken from Arthur Miller’s two-act version published in 1957. (New York: Penguin Books, 1957)
The Change in the Depiction of Catherine

In the original two-act play, Catherine is unconscious of Eddie’s desire for her. However, in the film, Catherine shows her intimate and affectionate relationship with Eddie in front of Beatrice. Catherine in the film is competing with Beatrice for Eddie’s love and desire in order to secure her position in the household as an orphan. Thus, when Catherine is warned not to act as if she were a twelve year old girl and not to walk around in front of Eddie in her slip, she pretends to have forgotten the warning. Consequently, she lies to Beatrice and that lie is pointed out by her.

Catherine gives a beer to Eddie and lights his cigarette. When she is asked not to wear high heels nor “walk wavy,” she says to Eddie, “Well, I don’t know what you want from me.” (p. 4) She is aware of Eddie’s desire to preserve her chastity. At the same time, as a grown woman, “Catherine shows acute sensitivity to Eddie’s needs as a man and remarkable perception that Bea does not provide for them.”\(^\text{18}\) In the film, she is aware of Eddie’s sexual desire for her and Beatrice’s jealousy towards her (Figs.13-15).

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\(^{18}\) Marino, p. 207.
The Change in the Depiction of Beatrice

Beatrice is depicted as a frustrated wife who realizes her husband’s desire for his niece from the beginning of the film. She warns Catherine not to behave as if she were a twelve year old girl in front of Eddie. Beatrice tells her to act like a grown woman who keeps appropriate distance from her uncle. Beatrice is quick to see through Catherine’s lie about staying at her uncle’s as long as she can. She fully understands that Catherine considers Eddie’s protection to be just a temporary shelter for her life, so promptly denies Catherine’s remark about her staying with Eddie: “You’re lying.”

Beatrice is positioned in the shallow foreground when she confronts her husband about their sexual relationship. She dominates the foreground of the frame while Eddie is lying on the bed in the background (Figs. 16-18). This framing expresses the idea that Beatrice is the subject of the scene and Eddie is the object. Beatrice asks him, “When am I gonna be a wife again, Eddie?” (p. 25) She continues, “What’s you gonna stand over her till she’s forty? Eddie, I want you to cut it out now, you hear me? I don’t like it!” (p. 25)
Beatrice does not witness the violent scene in which Catherine and Rodolpho’s love affair ignites Eddie to kiss Catherine on the lips and threatens Rodolpho with a broken beer glass, pointing its jagged edges at him (Figs. 19-21). This image appears dark and blurring and dimly-lit to represent the darkness and sinister side of the characters’ relationship. Significantly, Catherine and Rodolpho’s love scenes are presented fully lit by contrast, as this is deemed a more appropriate relationship. So Beatrice rather convincingly remains a faithful wife to Eddie until the end of the film. In the original play, Beatrice sees Eddie passionately kiss Catherine on the lips. Beatrice in the film is characterized as a dutiful woman who understands and forgives Eddie out of genuine love for him. She even slaps Catherine’s face when she insults Eddie as “this rat.” (p.68)
Alfieri’s Depiction of Eddie

Alfieri functions as a chorus in Greek tragedy which predicts the fate of tragic heroes. When he gives legal advice to Eddie in his law office, Alfieri realizes that Eddie is not a man who follows advice. After the consultation with Eddie, he confesses that “I could see every step coming, step after step, like a dark figure walking down a hall toward a certain door. I knew where he was heading for, I knew where he was going to end.” (p. 38) Alfieri’s depiction of Eddie is visualized by Lumet in the dark street scene in which Eddie walks into the dark street as if he were seeking the other end of the tunnel. After this visual image, Alfieri receives Eddie in his office and gives him his final warning. Alfieri fully understands Eddie’s desire for Catherine saying, “Somebody had to come for her, Eddie, sooner or later. You won’t have a friend in the world, Eddie! Even those who understand will turn against you, even the ones who feel the same will despise you! Put it out of your mind! Eddie!” (p. 54) Alfieri is unable to stop Eddie for reporting two illegal immigrants, Rodolpho and Marco, to the Immigration Bureau to get young Rodolfo out of Catherine’s life.

When Eddie leaves his office, the door is shot in a dimly lit background towards which he is walking. Or more precisely, wherever he goes, that place is shot in low key lighting. He is a character who is destined to a tragic end. Alfieri says in the original play, “But I will never forget how dark the room became when he looked at me; his eyes were like tunnels.” (p. 53) Stephen A. Marino gives his
interpretation of this line, “Alfieri describes Eddie’s eyes ‘like tunnels’ to indicate the light and inevitability of fate through which he was traveling.”

Marino’s interpretation of the line emphasizes Eddie’s fixed fate. However, unlike the original play, the words “like tunnels” are not used in the film. Instead, what is projected on the screen is the way in which Eddie makes his final choice in life. The close up of Eddie is shot against the dark background to express his dark will to get rid of Rodolpho, whatever price he must pay for it (Fig. 22). He dashes through the door and heads straight for a telephone booth. His direct movement emphasizes his strong will to walk through the tunnel towards his final destination. (Figs. 23-24)

Fig. 22

Fig. 23

19 Marino, p. 212.
Conclusion

Eddie's fixed eyes are depicted in upward and downward tilt rather than horizontal shots like pans or tracking shots. He is constantly shot in in-depth composition to indicate the narrowness of his mind. He is shot against the complete darkness in crucial moments when he reveals his dark nature. He does not try to overlook the situation around him to broaden his mind. He is a character who lives in a limited circle of people and community. He is a human being who is incapable of living in isolation from his fellow citizens. Since he committed the sin of incestuous desire for his niece and the betrayal of his relatives from Italy, he has been expelled from his community. In the film, Eddie is clearly warned to put Catherine out of his mind by Alfieri and Beatrice. It is his choice to let his obsession with Catherine continue, even though he is fully aware of the consequences. Therefore, Eddie's death is more suitably depicted in the film than in the original play. Eddie's death is a suicide chosen by his own will rather than an accident caused by the confrontation with Marco. In this sense, the film version of the play is more suitable to the realism of the American 1960s. The characterization of Eddie, Catherine, and Beatrice is more convincing to the audience of the 1960s, especially in France and other European countries. Lumet, who knows the taste of the European audience, turned Miller's rather naïve interpretation and depiction of the characters into a more mature one and made the film more sophisticated for the world audience.

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The Image of Beer in William Hogarth's *Beer Street* and *Gin Lane*

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Abstract
The pair of engravings by William Hogarth, *Beer Street* (Figure 1) and *Gin Lane* (Figure 2), show a clear difference in terms of drinking. The engraving about beer drinking shows happy people in pleasant atmosphere, on the other hand, that of gin drinking shows degenerates groaning under miserable state. Those engravings are published in the time of gin craze to alarm danger of gin drinking.

The image of beer is the key to searching the differences between the two engravings, and it is determined by small items arranged in them. A basket accompanied by a man on the right corner of each engraving enhances the image of each atmosphere. The fictional book *Politicks vol. 9999* in the basket in *Beer Street* is the most important material which shows people's attitude which leads to happiness or misery expressed in each engraving.

Plato argues in *Laws* that a rightly held banquet is good for education. His ideal education is training for becoming a perfect citizen who rules himself by his consideration. The book *Politicks vol. 9999* is the influential book about knowledge which is befitting citizen and this shows that the people in *Beer Street* are interested in being perfect citizens. The image of beer is connected to education and self-discipline to show Hogarth's ideal.

Introduction
When we think about the contrast between *Beer Street* and *Gin Lane*, we are likely to conclude that alcoholic drink in each engraving caused their happiness and misery. This is the authentic answer for this question, but when we pay attention to other materials, we will discover hidden meanings which help to understand Hogarth's ideal expressed in his works. Charles Lamb emphasizes that Hogarth's print is readable\(^\text{20}\). Reading is the most effective way to analyze his works.

I will clarify the image of beer by small items such as books, newspaper, and foods in baskets which are arranged in the foreground of *Beer Street*. I will also point out importance of pleasant atmosphere in the engraving. The poems dedicated

\(^{20}\) Lamb, p. 106
to the pair of engravings give comprehensive image for us to read Hogarth’s works. Plato’s *Laws* and *Protagoras* help my analysis of the meaning of the fictional book *Politicks vol. 9999* and positive image of beer drinking.

Figure 1 *Beer Street* by William Hogarth (1751)
My analysis will mainly be made on materials and people in the foreground of *Beer Street* and I will point out that of *Gin Lane* when necessary. First I will argue materials such as books, pamphlets and newspaper to explain about the function of letter, and then I will start to analyze meaning of the fictional book *Politicks vol. 9999* in the basket. I will also make clear function of pleasure with beer in mugs and
foods in baskets. The obvious connection among beer, politics and education will be discovered in the end.

**Knowledge in Beer Street**

When we look at *Beer Street* we find the satisfied people who are working and drinking. Contrary to the people in *Gin Lane*, they are in the calm and convivial atmosphere. The pleasant people in the foreground are singing, arguing, and wooing, and the people in the background are also pleasant to work except the pinched pawnbroker.

The books, the pamphlets, and the newspaper in the foreground are emphasized by being put at the front of the people, and this shows that they are satisfied to be educated to be rational. Those materials are shown as knowledge of enlightenment which helps them to control their emotion. People's deeds in *Beer Street* are led by their rationality which is obtained by the study at the beer banquet.

Contrary to the calm people in *Beer Street*, we find the violent people in *Gin Lane*:

Gin, curst fiend! with [*sic.*] fury fraught,
     Makes human race a prey:
It enters by a deadly draught,
     And steals our life away.

Virtue and Truth, driv'n to despair,
     Its rage compels to fly,
But cherishes, with hellish care,
     Theft, murder, perjury.

Damn’d cup! that [*sic.*] on the vitals preys;
     That liquid fire contains:
Which madness to the heart conveys.
     And rolls it through the veins.

This poem was specially written for this engraving by James Townley, an artist, who is a friend of Hogarth. He describes gin as the worst thing in the world. Cheap gin easily deprives health and sanity, just as the saying on the gin shop’s entrance
shows as follows: drunk for a penny, dead drunk for two pence, clean straw for nothing.

As Henry Fielding alarmed, increase of thieves, destruction of morality and loss of laborer were the grave problems to be reformed. Agricultural progress throughout the Eighteenth Century gave birth to wealth for all classes. Overproduced corn is brewed to gin, which bewitched Londoners between 1720 and 1750 and it is called ‘gin craze’. Londoners, especially people in lower class consumed cheap gin excessively for recreation, and this lead to increasing crime and death rate.

Townley’s poem has fierce image of demolition of humanity caused by gin drinking, and there are many criminal deeds in Gin Lane. Henry Fielding wrote in his An Enquiry into the Causes of the Late Increase of Robbers, &c. that gin drinking drives people to bad deeds:

This will appear from considering, that however cheap this vile potion may be, the poorer sort will not easily be able to supply themselves with the quantities they desire: for the intoxicating draught itself disqualifies them from using any honest means to acquire it, at the same time that it removes all sense of fear and shame, and emboldens them to commit every wicked and desperate enterprise. (375)

The people in Gin Lane are the very people who Fielding wrote in his work. They are not far from rationality but from discipline to stop their desperate motivation. He also wrote that their crime was caused just because they were intoxicated and when they became sober they were no more wicked criminals. As Fielding says, the people in Gin Lane are deprived of rationality by gin drinking, and if they do not drink gin they would be less desperate.

Through searching letter in Gin Lane we find two types of it: letter as the gadget in this tragedy and letter in signs. The former is used in the ballad in the gin seller’s basket in the foreground, and it is shown only to the spectators to explain that the misery was caused by gin drinking. The latter are used in the signs of the gin shop, the pawnbroker, and the gin distiller. Those signs are both for the spectator and the people in this engraving.

There is no educating material is shown in Gin Lane. Contrary to Beer Street, letter in Gin Lane is mainly used for the signs of those shops, and this shows that
there is letter only for commercial purpose, not for education. What they have is savagery in the mess of gin drinking.

The Ideal Education

There are the baskets in the foreground of each engraving. They are described as containers which hold items in them and there are more baskets in Beer Street than in Gin Lane. The Baskets in Beer Street have fresh fishes, vegetables, and books, on the other hand, one and only basket described in Gin Lane has a gin bottle and a ballad “The downfall of Mrs. Gin”.

Two of the most important baskets in my investigation are on the right corner of each engraving. Each basket is accompanied by a man who has the same image to each engraving: the man who has small and empty basket in Gin Lane is poorly dressed and almost dying, and the man who has big and full basket in Beer Street is neatly dressed and vigorous.

The basket full of knowledge is accompanied by the lively man who is drinking beer delightfully. Those books are strongly tied in case of scattering while materials in other baskets are not. Those books are the essays in those days except the fictional book Politicks vol. 9999. Compared with the almost dead man who has only dramatic gimmickry in his basket in Gin Lane, we can read Hogarth’s message here that knowledge and beer are essential for one’s life.

Our issue now is the fictional book Politicks vol. 9999, which is put on the base of other books. The books are tied so strictly that they are not changed their position. It is important that Politicks vol. 9999 is the base of those books and knowledge which is essential to one’s life. Also we know from its title that political knowledge is very important among the people in Beer Street.

There is an argument about politics and banquet in Plato’s Laws. The thesis which tells a rightly held banquet is good for education is argued eagerly in the Book 1 and 2. The Athenian stranger shows the ideal education as follows:

οὐ γὰρ ταῦτα ἡγομένων, ὡς ἔοικεν, εἶναι παιδείαν ὁ νῦν λόγος ἢν εἴη, τὴν δὲ πρὸς ἁρετήν ἐκ παιδείων παιδείαν, ποιοῦσαν ἐπιθυμητὴν τε καὶ ἔραστην τοῦ πολίτην γενέσται τέλεων, ἀρχὴν τε καὶ ἀρχεσται ἐπιστάμενον μετὰ δίκης. (Laws, 643Ε)

But I think our talk until now is not about the subject on education now. The education we speak of is the training from childhood for goodness, which makes a man who desires and loves to be a perfect citizen understanding how to rule
and to be ruled righteously. (translation mine)

He emphasizes that the ideal education is the training for becoming a good, not the training for becoming a businessman. The issue is how to be a member of his community in order to give it the greatest benefit and the Athenian stranger also shows that intelligence and justice are the important materials. According to him, even a banquet will be an educative event because who educated rightly usually become good people and education is the greatest gift for good people.

It is important that this ideal education is just for freeman. The people in Beer Street consist of workers of lower class and women, whom Plato excluded from the argument here. I will argue this issue later and would like to go on to the next article:

Καὶ μὴν πάλαι γε συνεχισάμεν ὡς ἀγαθῶν μὲν ὅντων τῶν δυναμένων ἄρχειν αὐτῶν, κακὸν δὲ τῶν μη. (Laws, 644B)

We even agreed a little while ago that who can rule themselves are good, but who cannot is bad. (translation mine)

The distinction made by Plato fits in the image of each engraving that Beer Street is good and Gin Lane is bad. The people in Gin Lane seem to fail to control themselves against both pleasure of forgetting reality and pain of stopping gin drinking. Actually the pleasure which they choose is a bad one which will bring them more pain.

There is another argument about controlling oneself in Plato’s Protagoras. According to Socrates people usually fail to rule themselves:

οἶσθα οὖν ὅτι οἱ πολλοὶ τῶν ἀνθρώπων ἐμοὶ τε καὶ σοὶ οὐ πείθονται, ἄλλα πολλοὺς φασι γιγνόσκοντας τὰ βέλτιστα οὐκ ἔθελεν πράττειν, ἐξὸν αὐτοῖς, ἄλλα ἄλλα πράττειν. καὶ ὅσους δὴ ἐγὼ ἠρώμεν ὧ τι ποτὲ αἰτίων ἐστὶ τοῦτο, ὑπὸ ἥδονῆς φασιν ἠπτωμένους ἢ λύσης ἢ ὅν νῦν δὴ ἐγὼ ἔλεγον ὑπὸ τινος τούτων κρατουμένους ταῦτα ποιεῖν τοὺς ποιοῦντας. (Protagoras, 352D~E)

Now you know that most people will not listen to me and you, but say while many people know the best thing, they refuse to do it, though they are allowed to, and do other things. And once I asked what the reason of this is, they say
those who act so are defeated by pleasure or pain or conquered by one of the things I mentioned before. (translation mine)

Those kinds of people are not rare, but this is the problem. It is clear that gin craze continued because people failed to stop drinking gin, even if they knew the importance of their health. The degenerates in *Gin Lane* were the common people with normal character from the first, and they were far from people with evil intention.

Contrary to the normal people in *Gin Lane*, the People in *Beer Street* seem to succeed in controlling themselves. They are also lower class people and the difference between them is the important point. Those good people know what the best thing to do is and they also perform it without being defeated by anything. The moral difference between the two of engravings is explained from the knowledge arranged in the foreground of *Beer Street*:

Now do you imagine that knowledge is basically good and is able to govern man, and that whoever learns good and bad will never be conquered by anything to act otherwise than knowledge orders, and that prudence is a sufficient assistance for humankind? (translation mine)

The people in *Beer Street* are ruled by knowledge which orders them to perform the best thing, that is, to drink beer, while the people in *Gin Lane* do wrong thing, that is, to drink gin, because they lack knowledge. The miserable people in *Gin Lane* are governed by gin and this is explained by the sign of the gin shop which says “GIN ROYAL”. The tyrant of fire water comes with a draught in their brain to take their moral away.

The Athenian stranger adds value on prudence in *Laws* as a conductor for ruling oneself. He says that one’s motivation is made by five factors as pleasure, pain, fear, boldness, and consideration. Consideration helps one to tell good from bad and it is necessary for self-discipline because of its function. He also says what is good and what is bad have to be taught righteously in one’s community from
childhood.\textsuperscript{21}

Those five materials, which are able to lead one both to good and bad, attract one to perform each deed which is effected by each thought and passion.\textsuperscript{22} The Athenian stranger emphasizes that consideration is the only factor which helps one to perform and become good to control oneself. So it is important for one to resist other thought and passion but this factor. He also says that laws are the common statement in a nation which are made by the lawgiver’s consideration.

The image of happiness is the other important element in \textit{Beer Street}, and it concerns with their alcoholic drink:

\textit{oίον δὴ λέγω ἐδοική μὲν καὶ πόσει καὶ ξυμπάση τροφή παρέπεσθαι μὲν τὴν χάριν, ἢν ἣδονὴν ἄν προσείπομεν· ἢν δὲ ὑρθότητα τε καὶ ὑφέλειαν, ὅπερ ύμεινὸν τὸν προσφερομένων λέγομεν ἐκάστοτε, τούτ’ αὐτὸ εἶναι ἐν αὐτοῖς καὶ τὸ ὑρθότατον. (Laws, 667B\textendash{}C)}

For instance, as I say, food, drink and nutriment in general are accompanied by charm, which we call pleasure. And, as for correctness and utility, the very thing which is wholesome every meal and which is contained in nutriment are what we call the most correct element. (translation mine)

We can find not only beer but also meat, fish and vegetable in the foreground of \textit{Beer Street}, and those nutriments except meat are hold in mugs and baskets. Meat is grappled tightly in the smith’s hand, and it has image of strength. Those images show just as the books in the basket that nutriment is essential for one’s pleasure and strength. On the contrary to \textit{Gin Lane}, the people’s pleasure in \textit{Beer Street} is not the motivation for their behavior, but gift of beer drinking.

Those nutriments are movable because they are not fixed in the baskets, and it shows that they are less important than the books. Also, if they change their baskets in the \textit{Beer Street}, the meaning they have is not changed. They are just pleasure held in the containers.

Correctness and utility of those nutriments, especially beer, are shown in the people’s health in \textit{Beer Street}. In regard to gin, it is not described as nutriment because those who in \textit{Gin Lane} are far from wholeness. The only thing to have

\begin{footnotes}
\textsuperscript{21} Plato, \textit{Laws}, 653

\textsuperscript{22} Ibid, 644C\textendash{}645C
\end{footnotes}
correctness and utility in *Gin Lane* is money, and it is shown in success of the gin shops and the pawnbroker. Their houses are handsome and gorgeous in the wreck because they drain all of money in the lane.

We go on an argument about learning next:

Καὶ μὴν καὶ τῇ μαθήσει παρακολουθεῖν μὲν τὸ γε τῆς χάριτος τῆς ἥδονῆς, τῆς δὲ ὀρθότητα καὶ τὴν ὑφέλειαι καὶ τὸ εὖ καὶ τὸ καλῶς τῆς ἀλήθειας εἶναι τὴν ἄποτελοῦσαν. (*Laws*, 667C)

Also, learning is accompanied by charm which we call pleasure, and what makes correctness, utility and goodness is truth. (translation mine)

Learning, which helps one to train consideration, has pleasure, correctness and utility, just as nutriment does. According to this, the people in *Beer Street* have double advantage compared to those in *Gin Lane* by both beer and knowledge.

Townley also wrote a poem for *Beer Street*. Contrary to that of *Gin Lane*, It has bright image, which is expressed by the words as happy, strength, cheer and health. Those words fit in the argument now:

Beer, happy product of our isle,
    Can sinewy strength impart;
And, wearied with fatigue and toil,
    Can cheer each manly heart.

Labour and art, upheld by thee,
    Successfully advance;
We quaff the balmy juice with glee,
    And water leave to France.

Genius of health, thy grateful taste
    Rivals the cup of Jove;
And warms each English, generous breast,
    With liberty and love.

The barley nectar cheers the healthy people and gives them enough vitality for working and art performing. This poem also shows that they are enjoying not only
banquet of beer, but also correct and useful element in their nutriment.

Although beer is expressed as the upholder of art in this poem, the artist who is painting the sign in the foreground does not drink beer. Moreover the motif is a gin bottle and the artist seems to be pleasant painting the sign of gin. He is a skinny person with poor clothes, while his countenance has no difference to other people in the foreground. The artist is the only person who is with gin, which destroyed the lives of the people in *Gin Lane*.

Each engraving contains a few elements which has the image of the counterpart. The artist in *Beer Street* has the same image of poverty to the people in *Gin Lane*. The dogs in *Gin Lane* may be fighting dogs for bear baiting, which was played in alehouse. There are also common motifs in two and it is the pawnbroker. In Gin Lane it gripes all money and belongings of people, as its name on the sign says, on the other hand, in *Beer Street*, it is pinched and the shopkeeper buys a half-pint of beer through the hole in the door, withdrawing in the shop.

Most of the elements which have the image of the counterpart are in a miserable state, while the artist of the gin sign looks happy in *Beer Street*. He was arranged in the foreground with other pleasant people drinking beer, and his mysterious smile seems to be the key to this issue.

If smile on the artist’s face is not caused by beer drinking, why does he look pleased? Plato argues in *Laws* about pleasure concerning art as follows:

> Οὐκόν ἣδονὴ κρίνοιτ' ἂν μόνον ἑκάστα ὀρθῶς, ὃ μήτε τινὰ ὑφέλειαν μήτε ἀλήθειαν μήτε ὁμοίωτητα ἀπεργαζόμενον παρέχεται, μηδ' αὐτῷ γε βλάβην, ἄλλ' αὐτῶ τούτῳ μόνῳ ἐνεκα γένοιτο τοῦ ἵμαρσαι τοῖς ἄλλοις, τῆς ἀλλιτικής, ἢν δὴ κάλλιστα τις ὁνομάσαι ἄν ἣδονὴν, ὅταν μηδεν ἀυτῇ τούτων ἐπακολουθῇ; (Laws, 667D-E)

Then the only thing judged by the criterion of pleasure is what provides neither profit nor truth nor similarity, nor yet harm, and what is produced for itself, being accompanied by the other elements. The charm is named pleasure whenever it is accompanied by none of them. (translation mine)

The Athenian stranger says that music and art are important for education to teach people good and bad so a judge is required goodness. He also says that value of music and art should not depend on whether they are pleasing, but on whether their theme and expression are fit for the purpose.

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23 Ibid, 653D-674C
According to the Athenian stranger, pleasure is an element which is just pleasing. It seems that there are two types of pleasure in Beer Street which is made by different causes. Investigating other elements which are named in the article should show us the reason for the artist’s smile.

The gin sign is small compared with the beer sign above, and the picture is not very similar to the bottle hanged as a model. It is not clear whether the upper sign was painted by him, but the gin sign which the artist is painting now is too small to make enough profit to change him a plump, neatly dressed man as other people enjoying drinking beer.

The bad effect brought by this sign seems to be little because the people regard beer as the best and the only alcoholic drink, so scarce attention is paid to it. The gin sign seems to be used for a material which shows that the time of the pair of engravings are almost same, that is, the time of gin craze. Degeneration of gin in Beer Street is effective for education to teach the spectator that beer is good but gin is bad.

The gin sign is not accompanied by harm, profit, truth or similarity, and this shows that the artist smiles just because he feels pleasure in painting itself. He may be satisfied with his talent of painting, but the sign does not show the truth and the similarity concerning to art which Plato argues in Laws.

The common element which the people in foreground have is pleasure. As for the artist, he is rather an additional element to the beer sign which says “Health in the Barley Mow”. The outdoor pub under the gorgeous sign provides them happiness, and teaches the spectators superiority of beer over gin in everything.

Their pleasure has good effect on the spectators too:

Οὐκοῦν ὁ μὲν μὴ χωρίζων λόγος ἥδυ τε καὶ δίκαιον καὶ ἴγαθόν τε καὶ καλὸν πιθανός γ’, εἰ μηδὲν ἔτερον, πρὸς τὸ τινα ἐθέλειν ζῇν τὸν ὅσιον καὶ δίκαιον βίον, ὡστε νομοθέτῃ γε αἰσχροτος λόγον καὶ ἔναντιώτατος ὃς ἂν μὴ φῆ ταῦτα οὕτως ἔχειν: οὐδείς γὰρ ἂν ἐκὼν ἐθέλοι πειθεῖσθαι πράττειν τούτο ὅτι μὴ τὸ χαίρειν τοῦ λυπεῖσθαι πλέον ἔπεται. (Laws, 663~663B)

In fact, the opinion which does not separate pleasure from justice, good and beauty is persuasive, if nothing else, to let someone live a devout and just life, so, to the lawgiver, the opinion which refuses this is the most shameful and the most opposing of all. For no one is willingly persuaded to do a painful thing which is not accompanied by more pleasure. (translation mine)
Pleasure helps people to live good lives when it is the concomitant to a lesson. The first concern to the lawgiver is how to lead the people to do their nation the best, and it should be performed with their agreement. It is important to teach them what the happiest life is, and the two kinds of lives are easy to imagine.

If the lawgiver teaches them that the happiest life is the most pleasant life, it is too human to suit to the point of view that laws are endowed by gods. On the other hand, if he teaches the happiest life to be the justest life, they choose the pleasant one because it has more charm than the other. So it is persuasive to connect justice with pleasure when the lawgiver leads the people to the purpose, because pleasure is very attractive for those who are subject to their passion. Most of the people are not trained enough to control themselves.

The pleasant people in the foreground of Beer Street are gimmickry to teach the spectator what the happiest life is, and it is the very purpose of the pair of instructive engravings. Banishment of gin may be accompanied by pain, but one get more pleasure to do their country good, with a mug of beer.

**Conclusion**

Now we need to remember the thesis that a rightly held banquet is good for education. The banquet in Beer Street is the right one which is effective for instruction. The Athenian stranger shows the ideal banquet as follows:

Οὐκοῦν ἔφαμεν, ὅταν γίγνηται ταῦτα, καθάπερ τινὰ σίδηρον, τὰς ψυχὰς τῶν πινόντων διαπόπους γεγονόμενας μαλθακωτέρας γίγνεσται καὶ νεωτέρας ὡστε εὐπαίγονος ξυμβαίνειν τῷ δυναμένῳ καὶ ἑπισταμένῳ παιδεύειν τε καὶ πλάττειν, καθάπερ ὡς ἦσαν νέαι; (Laws, 671B–C)

You know we said that when they are held, the souls of the drinkers become just like hot iron and turn softer and younger, so they become easy to lead for the man who has the skill and ability to educate and mold, just as when they were young. (translation mine)

The rightly held banquet is an educative place for people’s soul organized by the lawgiver who can instruct them to be good. He also expects that people never have a drunken brawl if banquets are administered in this way and each drinker endeavors to train himself. As the case of ruling oneself, even consideration is
regarded as an important factor in a banquet.

According to the Athenian stranger, prudence should be trained in the ideal banquet. There are two elements which are essential to ruling oneself, and they are courage and prudence. He also says that the former is trained in fear, aided by law, on the other hand, the latter is trained in the situation which make one bolder, that is, in a banquet. The ideal banquet is not an event to just be merry, while pleasure in Beer Street is important for its lesson.

As the saying goes, alcoholic drinks sometimes disclose the character which people does not show usually. It is useful not for spying out someone’s shortcoming but for knowing weakness in the soul of oneself. The Athenian stranger also regards banquet as the event to know the state and the character of the attendance’s soul. He also says that this process helps to take care of oneself.

Here the Athenian stranger mentions the art related to banquet:

Τοῦτο μὲν ἄρ’ ἂν τὸν χρησμοστάτον ἐν ἑι, τὸ γνώναι τὰς φύσεις τε καὶ ἐξεις τῶν ψυχῶν, τῇ τέχνῃ ἐκείνῃ ἥς ἔστι ταῦτα θεραπεύειν· ἐστὶ δὲ ποι, ὡς οἴμαι, πολιτικὴς. ἥ γὰρ; (Laws, 650B)

This, the event to know the natures and the conditions of the souls, will be one of the most useful things to that art to take care of the souls. And I suppose the art is the art of politics. (translation mine)

The ideal banquet is the educative place for the softened souls to know the nature and the condition of themselves and to train their prudence aided by consideration. Moreover it is necessary for the art of politics, that is, the art befitting a citizen. It is the training to become a perfect citizen which the Athenian stranger defined the ideal education. Whoever wants to be a perfect citizen should rule himself with his consideration, and, at the same time, he is ruled by laws which are made from the lawgiver’s consideration.

The fictional book Politicks vol.9999 hold in the basket in the foreground of Beer Street is the book about the art of politics, which contains the knowledge for being a perfect citizen. It is also noteworthy that the book is very voluminous. It takes a long time to compile 9999 books, so we can imagine that the art of politics have been the primary concern to the people in Beer Street.

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24 Ibid, 646E–650B
25 Alcaeus, 333, 366
The art of politics is accompanied by banquet, and it should be that of beer. Beer which is described in *Beer Street* is not the alcoholic drink for intoxication while gin which is described in *Gin Lane* is just for intoxication. This contrast is also shown in the poem by Townley. In his poem, gin only deprives people from everything, and it never gives anything good to them. Contrary to the description of gin, beer is mentioned as the giver of grace.

Two men on the right corner of the engravings have the same images to their world, and they are characterized in the plump or skinny bodies. The image of the body of each man is determined whether he has the pleasure, the correctness and utility in his alcoholic drink.

The gin drinker is skinny and is about to die because he does not receive those good elements from gin. In other words, gin has the only element of drunkenness, so he cannot take any other nourishing elements. The poor thin man is dead drunk and he seems not to have any intention.

On the other hand, the plump body of the beer drinker shows the extra good elements in beer. There are nutriments and knowledge in *Beer Street*, and he is enjoying good elements in all of them. He is not dead drunk and he looks vigorous. He shows his intention by quaffing beer to absorb more goodness from his alcoholic drink.

We can see a passage of time in *Beer Street* in the volume of the book, while momentary events are shown in *Gin Lane*. There seems to be an expectation that gin craze is just a temporary nightmare and that the people have enough power to recover their reason and pride. Once they get consideration again, they begin to train themselves to be perfect citizens aiming for goodness.

We have a pending argument about the members of *Beer Street*. They are workers of the lower class and women, who are excluded from the discussion in the Plato's ideal education. Although there is a disagreement between the engraving and the materials, it is effective way to stir up the imagination of the spectators. Charles Lamb writes about the work of imagination in Hogarth's engraving in *Critical Essays on the Genius and Character of Hogarth* as follows:

Through a gap in this wall are seen three figures, which appear to make a part in some funeral procession which is passing by on the other side of the wall, out of the sphere of the composition. This extending of the interest beyond the bounds of the subject could only have been conceived by a great genius. ...This he well calls *imaginary work [sic.]*, where the spectator must meet the artist in
his conceptions half way; and it is peculiar to the confidence of high genius alone to trust so much to spectators or readers. (111)

The argument here is about the three people in the most interior part of the background of *Gin Lane*. The three parish beadles behind the funeral of the young mother are heading for the rightward, while the place they are going to go to is not shown to the spectators. Here imagination works for the spatial extension, and we know that the lane is not the one and only place where gin is destructing the lives of the people, and that funerals are held everywhere.

Lamb appreciates Hogarth’s ability to show spectators more things which is not described in his work to call him a great genius. The subject on the three parish beadles shows us clearly the extended problem of the more victims and the more death caused by gin drinking. The imagination of the spectators is aroused when they do not see but read Hogarth’s works, and, as a result of this, the hidden meanings and messages in them emerge to the surface.

The work of imagination helps us a lot when we arguing about our issue now. For we can regard the disagreement between the members of the engraving and the people referred in the Plato’s materials as the element which stirs up our interest. The imagination is extended both to space and class to understand Hogarth’s message and ideal expressed in *Beer Street*.

We are likely to expect that the people in higher class are also good, if we see the people of the lowest sort living devout and just lives. The people in lower class, both men and women, in *Beer Street* succeed in controlling themselves helped by knowledge. Then we are interested in the people in higher class, imagining that they also live in goodness. This is the expansion of imagination to the class.

Lamb’s argument about the three parish beadles passing through the most interior place in *Gin Lane* shows the expansion of space, and it is also useful to read *Beer Street*, too. It can be imagined that the people in higher class are training themselves to be perfect citizens in beer banquet somewhere Hogarth did not describe. We also imagine that there are also pleasant and educative place besides the street.

Imagination reveals Hogarth’s ideal which is hidden in the unseen place. He hoped that every people in every class, both men and women, can be perfect citizens when they drink beer again. His message becomes very persuasive when two engravings, *Beer Street* and *Gin Lane*, have strong contrast of good and bad. Motivated by indignation over gin craze, Hogarth described the present condition to
be reformed and the ideal state to be aimed for.

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The Image of Pottery: Muneyoshi Yanagi’s Art in Abiko

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Abstract
Muneyoshi Yanagi, as also known as “Soetsu” resided in Abiko in the early twentieth century. He is the leader of an artists’ colony in Abiko, he was interested in creating pottery. The image of pottery is significant in his artistic activities, as well as his large body of writings.

Introduction
Muneyoshi Yanagi is the founder of the Mingei Movement. The word “Mingei” has entered the English lexicon and even now in the twenty-first century, studies on Yanagi continue to be carried out both in Japan and abroad. The Mingei movement is thought to have begun in 1926 when Muneyoshi Yanagi discussed the movement together with Shoji Hamada, Kanjiro Kawai in a temple in Koyasan and later published “Plans to Establish the Japan Folk Crafts Museum.” To examine the reason behind the birth of this movement, it is important to note that famed British potter Bernard Leach’s kiln was built in the artist colony founded by by Yanagi in Abiko. Also, it seems the exchanges among artists, discussions about pottery, Yanagi’s meeting with the Asakawa brothers, and the fire which destroyed Leach’s studio all influenced Yanagi’s later activities. As a few years passed, Yanagi expanded discussions on art theories of Mingei, exchanges and social movements.

The Mingei Movement was fertilized at a village of Abiko, Chiba Prefecture near Tokyo.

Beginning of the Artists’ Colony in Abiko
This section will examine the years spent in Abiko as a crucial point in Yanagi’s work because it considered that Abiko provided Yanagi with an opportunity to enjoy daily communications with Shirakaba members, the suburban environment and changes in his lifestyle. Abiko attracted much attention as a location for villas outside of Tokyo.

Yanagi’s uncle Jigoro Kano was a great educator with an international perspective and is known as a founder of Judo. He was one of the first people to purchase a villa in Abiko.

With Daisetsu Suzuki’s instructions as well as his uncle Jigoro Kano’s international perspective, Yanagi began to cultivate a viewpoint that was beyond the idea “West versus East.”

After Edo changed in name to Tokyo, it became a megalopolis. Yanagi lived in its center. In
the late Meiji era, when Japan was trying to modernize herself with the notion that the West is ahead of the East, “catch up and surpass the West” became a widespread thought in Japanese society then.

While Yanagi and his friends were at Gakushuin school, they first met Bernard Leach from Britain. But as Leach became more and more interested in Eastern art, he stopped teaching them etching, a technique used in Western art. Leach became interested in pottery.

In 1906, Leach showed Yanagi a book on William Blake2, Yanagi was very much influenced by Blake’s artistic vision. When Leach arrived in Japan, Blake was regarded as heretical in his own country. There were a few artists who came to admire Blake’s work, like the Rossetille brothers who began to understand Blake’s work (Sato: 2015). Yanagi, who had been endeavoring to express his spiritual world, was very inspired by Blake who drew mystical paintings and composed prose (Mizuuo: 2004).

Then in September, 1914 after moving to Abiko, Yanagi met Noritaka Asakawa. Yanagi was struck by the beauty of a piece of Korean pottery which Asakawa brought him. In 1915 Yanagi traveled to Korea and further developed his interest in Korean crafts and culture. The following year he stayed in Korea for a month, traveled to Beijin and met with Leach. He insisted Leach come back to Japan to Abiko, instead of returning to Britain. Yanagi proposed to build a kiln and to provide Leach with room and board. After this trip, Yanagi began writing about Eastern culture in Shirakaba. It was the first unique attempt in the journal, which had mainly introduced Western Art to its readers (Shirakaba, July issue, 1919).

Fig. 1 is a sketch of Yanagi’s study done by Leach. We can see a pottery behind Yanagi. He had purchased a Korean pottery in an antique shop in his youth (Tsurumi: 1976). We can also see Rodin’s sculpture “A Small Shadow”(Fig. 2) on the upper shelf. The Shirakaba members admired Rodin, the brilliant art. It was one of the three pieces of sculpture sent by Rodin, to thank Shirakaba members for the Ukiyo-e prints they had sent to him.

Despite the fact Yanagi was the youngest in the group, it is understandable that Rodin’s sculpture was placed in Yanagi’s home (Kumakura: 2005), as his knowledge on art and excellent language skills were greatly admired, and he might have worked hard to receive.
With such exchanges in and outside Japan, Yanagi were gradually altered to revise eastern art upward. But at the same time his study room, which he designed and had built by a local carpenter who specialized in building temples, remained his favourite place. He could see Tega Lake and Mt. Fuji and watched farmers work from there. “It was a good decision to come here,” he wrote (Yanagi: 1980-1992). Stating his impression of Abiko, he wrote “The most beautiful place on earth” and “it is like Leonard’s nature” (Yanagi: 1980-1992).

He enjoyed looking at the lake every day and sometimes he would row a boat on it. He may have wished for the West and the East to be unified. He seemed to have thought of the times
when Japan and Korea were active in their cultural exchanges.

Throughout the Abiko period, there are three main influences which created and sustained it at various times over the years.

**Leach’s Kiln**

In early twentieth century Blake was not well understood in Britain; however, Leach was one of the exceptions. The Shirakaba members were excited about Blake. Especially, the 25-year-old Yanagi was enthusiastic about Blake’s work and was writing papers on his research about Blake. Yanagi often went to Shinshu (Nagano) to give lectures. Readers of *Shirakaba* in Shinshu included young teachers, because the journal was influential on young people. Kaneko, who was a classical singer, held concerts there to encourage them up. Readers in Shinshu had donated much money to Shirakaba Art Museum and followed to New Village Movement, some of them sold their house to donate money.

Key members of Shirakaba; Naoya Shiga and Saneatsu Mushanokoji were also newly married and Yanagi suggested that they too move to Abiko nearby Yanagi. These announcements were printed in *Shirakaba* and it was said that readers of Shirakaba visited Abiko and that it gave the impression of being an artists’ colony (Yanagi: 1921).

At the same time, Leach was living in Beijing and worrying about what he should do. Yanagi persuaded Leach to leave Beijing and build a kiln at his residence in Abiko, and he promised Leach that he would arrange everything. This led Leach to making the first step to a studio potter.

When he met the Shirakaba members, Leach understood immediately that they were talented young artists. In addition, Yanagi understood Leach was an artist who had a strong interest in the East, such as no other Westerners had. The two of them got over the hardship of the war period by friendship, through their experience and memories around the kiln which was brought from the sixth generation Kenzan Ogata³, Leach’s teacher. Yanagi and Leach both influenced each other. They are spoken of as the “Father of British studio pottery” and the “Founder of Mingei.” Even through World War II, these two continued to maintain their friendship and were destined to become the go-betweens of East and West.
The bowl in Fig. 3 has three Chinese characters inside it which mean Abiko and a design of a boat on Tega Lake. Through this pottery he tried to create a line with Asian taste at Abiko kiln for his pottery as his drawing in the above circle of Tega Lake (right) and Chinese characters (left). Through the design of the pottery (Fig.3), Leach tried to create a line with Asian taste, which he was learnt by Korean lines. Yanagi wrote in his article Shirakaba journal that he notices the different concept of lines and forms from the Chinese and Korean pottery.

Fig.4 was evaluated as an early work, but Leach was already showing his originality. It shows that his restoration slipware technique is successful as a combination of Western and Eastern arts and philosophies. Kenkichi Tomimoto found the book about western traditional pottery by
Charles Lomack by chance and knew the technique as eastern one also had. Leach had revived its image in Abiko kiln at last. After that, those his works were sold out when exhibited at a gallery, which tells of his success after his Abiko training period.

The stone memorial for Bernard Leach at Abiko is engraved with some lines that Leach chose. The same as Leach, Yanagi was deeply impressed by Korean pottery. Abiko was the place where Leach established a kiln after having apprenticed with the sixth generation Ogata Kenzan. From the eleven firings carried out, Leach was able to create pottery to a high degree of perfection. Pottery is the result of a fusion between clay and fire and subtle differences can affect the aesthetic appeal of a piece. Ultimately the potter has to leave everything up to the force of nature. Glaze on pottery undergoes a change according to how the kiln is fired. Therefore, it can be said that nature is the deciding factor on whether or not a pot will turn out well.

![Fig. 5 Bernard Leach Memorial Stone, Abiko](own source (2015))

**Korean Pottery and the Asakawa Brothers**

The Asakawa brothers, Noritaka and Takumi, made appeals for the preservation of Korean pottery and other crafts. They travelled all over the Korean peninsula to carry out surveys and the pottery they found was exhibited at the Korean Folk Art Museum in Seoul, forming the museum’s collection. Yanagi was extremely impressed by their activities and also by the Korean artistry and by the prolific culture of Korea. A close relative of Yanagi’s was involved in the Japanese colonial regime in Korea; however, Yanagi was antagonistic towards Japan’s colonial policies in Korea. He made a determined stand against the regime by meeting with activists in the independence movement and showing his cooperation by supporting Korean students. This
was because he had become aware of how Japanese culture had been influenced by Korean culture during his travels in Korea with Noritaka and Takumi Asakawa.

Yanagi’s meeting up with the Asakawa brothers had a positive influence on research in both Japan and Korea as he passed on information about pottery-producing areas in Korea to Japanese potters such as Tomimoto, Shoji Hamada and Kanjiro Kawai, and Bernard Leach, as well as showing them shards of old Korean pottery. Noritaka Asakawa went to Korea to work as a teacher while his younger brother, Takumi, followed him to take up a post as a forest engineer. They lived in typical Korean houses and generally assimilated themselves into the Korean way of life. Noritaka began to devote his attention to pottery from the Joseon period (1392-1910) and became the top expert on Korean pottery. Both Noritaka and Takumi were devout Christians. They were very sympathetic to the Korean people and often arranged for the payment of scholarships (Takasaki: 2005).

As the Shirakaba journal had thus far focused on introducing Western art, it took two and a half years until illustrations of Eastern antiques appeared in the journal for the first time, in the July 1919 issue. Yanagi pointed out that Eastern art was of as much value as Western art and as deserving of respect with a universal sense of values in life. When Yanagi visited Korea again with his wife Kaneko in May 1920 for lectures and concerts, he was shown a porcelain jar that Noritaka owned and he was deeply impressed by it (Takasaki: 2005-306). He wrote in his diary “It was like a dream” and he could not hide his amazement at how wonderful the pot (Fig.6) was. Chinese’ pottery was excellent in form and pattern but K It was at this time that he began to Korean’s was excellent in creative lines. He began to clearly voice his idea for setting a Korean National Folk Art.

Fig. 6 Porcelain jar, underglaze design in cobalt-blue and copper-red of a lotus
Source: Osaka Museum of Oriental Ceramics collection (Joseon Period, latter 18th century)
It was after Yanagi had met up with the Asakawa brothers that the March First Movement occurred. Yanagi issued statements voicing his opposition to the violent manner in which the Japanese government dealt with the growing independence movement. It is thought that Yanagi was influenced by the manner in which Noritaka and Takumi responded to the Korean people with love, based upon their Christian faith, which he observed during his stay at Takumi’s house.

In the February 1920 issue of Shirakaba, Yanagi wrote about Eastern art for the second time. In that commentary, he asserted unique qualities of Korean art:

> Even though a deep historical relationship exists between them [China and Korea] and Japan, I feel that a significant difference exists in their expression of beauty. The strong form of Chinese art cannot be seen in Korea while certainly the line in Korean art is the property of the Korean people only.

Observations such as these derive from Noritaka’s hard work and dedication in carrying out his own individual surveys and research all over the Korean peninsula, and he established his own research method - Tohen kara Yomu [Reading Pottery Shards]. He was known as the “patron saint of Korean pottery.” Noritaka’s work triggered further conservation and identification of many pottery shards throughout the Korea peninsula which suffered much wartime destruction in the past. As one of the few intellectuals to express his opinion, Yanagi’s method of discussing Korean art in the public arena was his way of fighting against the Japanese government which was trying to strengthen its colonial grip on the Korean people. Yanagi was most likely inspired by seeing with his own eyes how sincere and earnest Noritaka and Takumi Asakawa were in their activities. Yanagi continued to publish articles about Korean art and worked to bring about the establishment of the Korean Folk Art Museum. However, with the worsening of Japanese and Korean relations after the war, the museum was closed and the whereabouts of its collection are unknown.

In light of these circumstances, the exhibition “Yanagi Muneyoshi” held in 2013 at Korea’s National Museum of Modern and Contemporary Art in Seoul was of great importance to both Japan and Korea. When taking into consideration the political difficulties between the two countries, one can understand how much effort was required of the Asakawa brothers and Yanagi in selecting pottery and other craft items for the collection of the Korean National Folk Art Museum and their activities to preserve them.

**Contributions by Kaneko Yanagi at the artists’ colony**

When replying to an interview in her latter years, Kaneko Yanagi remarked “If I had known
that we would end up with the police following us because of our resolute endeavors in Korea, I
may have thought twice before I married Yanagi.” His wife’s unwavering support was the
deciding point for those in Yanagi’s immediate circle to continue backing Yanagi. How was
Kaneko, who married at the age of 22 years, able to carry on so bravely? One reason given by
Kaneko was having Jigoro Kano as a neighbor; that made her feel quite secure. Leach’s pottery
workshop and kiln shed near the Yanagi’s house burnt down very early one morning in 1919. At
the same time, Yanagi had released his paper Chosenjin wo Omou [Letter to the People of
Korea] and was being watched by the Japanese secret police. This all happened when a teacher
in Nagano, who belonged to the Shirakaba group, was sacked and had come to Abiko to help
Leach in his pottery.

Around the time of his marriage, Yanagi was devoting his time and energy on research about
William Blake. He published many articles in Shirakaba about Blake, subsequently compiling
them into book of more than 700 pages which he published. This was he was living at Abiko,
six months after his marriage. As the illustration of Yanagi’s study shows, at the time lamps
were used for lighting in Abiko (Fig. 1). Kaneko wrote out a clean copy of the text and also
made up a list of errata. She was the first person to read Yanagi’s book on Blake and was
Yanagi’s sympathizer. She came to understand the essence of art though her contact with
Blake’s works and became a singer unusual in the respect that she tried to get as close as she
could to that essence.

Kaneko Nakajima met Yanagi in the autumn of her eighteenth year when he was twenty-one
and had just entered university (under the educational system of the time). Yanagi had been striving to find answers from a scientific approach and undoubtedly Kaneko brought about major changes in Yanagi. After exchanging letters almost every day and meeting up with each other, Kaneko withdrew from music college in line with the rules (Matsuhashi: 1984).

Kaneko formally studied Western music under Hanka Petzold at the Tokyo College of
Music and great hopes were held for her to become a singer. Kaneko held a concert which
served to introduce Korean students to Western music. People she taught went on to become
instructors in Korea musical circles. She took it upon herself to be active in Korea. Kaneko gave
many concerts in Korea at the request of their Korean acquaintances and took care to choose
pieces from her repertoire that would encourage those in the audience. She was rewarded with
thunderous applause. Kaneko was determined to thoroughly support her husband, Yanagi, and
with her musical activities, she raised money towards the building of the Shirakaba Art Museum,
the Korean Folk Art Museum and the Japan Folk Crafts Museum. Kaneko’s name can be seen at
the top of the list of the record of donations in Shirakaba. Keiko Matsuhashi, who wrote a
biography on Kaneko Yanagi and has compiled a chronological record of her life, states that

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“Yanagi’s income was used to collect craft items in Korea, books and so on; so it was mostly up to Kaneko to find the money for living expenses.” Kaneko’s husband spent large sums of money in activities to preserve Korean pottery, leaving the pieces of pottery that he purchased in the museum established in Seoul, for the sake of friendship between Korea and Japan. Any criticism of Yanagi in regards to Orientalism can be recognized as invalid after learning about how this couple worked together with the Korean people to bring this project to fruition.

The change in Yanagi’s interest from the West to the East overlaps with his move to Abiko. Kaneko played a major role in helping to support the artists’ colony with its pottery. Leach received enormous help in setting up his pottery and kiln. One year after moving to Abiko, a country life that she was unfamiliar with, Kaneko gave birth to her first child. While looking after her child, Kaneko did a lot of cooking and also provided bread and butter for Leach. She came up with the idea to put miso in curry, which was still very unusual at the time. The Yanagi’s dinner table, which they shared with their Shirakaba friends, was quite international with a blend of Japanese and Western style flavors. Exchanges with the first-class artists living close to the Yanagi family provided a stimulus to Kaneko. She was the first woman to be awarded the Imperial Prize by the Japan Art Academy.

The flavors of both East and West that Kaneko tried so hard to incorporate in her cooking would have undoubtedly made Leach twice as happy when things went well while providing solace when failures occurred. When speaking of his memories of his time at Abiko, Leach said it was the happiest time of his life. He was doubtlessly very grateful to Kaneko.

Conclusion

Muneyoshi Yanagi was born and grew up in the central Tokyo. Despite this, he chose to live in the countryside in Abiko from 1914-1921. Yanagi invited artists from the Shirakaba group to also come and live in Abiko and they enjoyed interactions while living close by one another during those years. Yanagi began to have a closer connection with Bernard Leach during this period although their mother countries, Japan and Britain, were destined to become enemies as World War II loomed on the horizon. It was also during his residency at Abiko that Yanagi deepened his connection with Korea which had been colonized by Japan. A dedicated pacifist, Yanagi was determined to maintain frequent contact with his friends from other countries. Especially, he published papers in which he protested about Japan’s colonial policies.

Time was necessary for Japan to rebuild its relations with its neighboring countries in the aftermath of World War II and also for the rest of the world to recognize Yanagi’s theory of Mingei. The manifestation of Yanagi’s theory of beauty can be traced by to his late twenties when he was involved in the effort to establish an artists’ colony. Research into the colony at Abiko elucidates what Yanagi was aiming towards while revealing an image of Yanagi who
wished for a peaceful marriage between East and West.

The Japan Folk Craft Museum, established by Yanagi, has in its collection many pieces discovered by the Asakawa brothers. These pieces are a testament to the deep relationship between Korean and Japanese culture. The significance of this can be seen by the steady stream of visitors from outside of Japan who come to see the museum.

To say that the establishment of the Japan Folk Craft Museum laid the groundwork for the Mingei Movement is too simplistic a view. Yanagi called upon his Shirakaba associates and together they formed the artists’ colony where they lived close by one another. Yanagi’s house, which had Leach’s kiln nearby, formed the center of the colony. Leach’s pottery evolved by a system of trial and error. Yanagi witnessed this firsthand and gave Leach encouragement. A friendship was built that was not hindered by differences in nationality or by war in that era. Yanagi’s real intention is clear. The geniuses experienced failures but were lead ultimately to success. They did not give up or stop along the way. They stayed focused on their end goal and worked towards it. In accordance with their motto of looking towards the future goal, they were able to achieve their mission. The memory of being encouraged by the gathering of artists at Abiko was their driving force.

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1 Yanagi's teacher at a peer school. An author of books and essays on Buddhism, Zen and Shin that were instrumental in spreading interest in them to the West.
2 An British artist, poet and mystic of the Georgian to early Victorian eras.
3 Leach's master of pottery. A book about was written by Leach, entitled Kenzan and his Tradition (Faber & Faber in London, 1966).
4 Hanka Petzold studied the piano under Liszt and singing under Mathilde Marchesi. Born in Norway, she came from a musically talented family. Her brother was a famous composer.
Abstract

Municipalities in Japan have a “Childcare Support Center” for the sake of young parents who do not have an opportunity to talk about their children with their own parents. Young mothers take part in activities of these support centers to communicate each other, take counsel with the staff about childcare, or are taught how to play with children by the staff. Although there exist these facilities, the number of counseling on child abuse in Japan is increasing year by year; for example, the figure was 26,569 in 2003, and 40,639 in 2007. About sixty percent of abusers are children’s real mothers. While the birthrate and the number of children are both declining, the number of counseling on child abuse is growing up. It may be because childcare itself has become difficult for mothers. This research tries to reveal the actual condition of childcare, especially about how much mothers who are bringing up their children utilize a childcare support center. Subjects of the survey: We surveyed those who are bringing up their children and using childcare facilities in City M. We distributed the question sheets to 200 people at two childcare facilities in City M. One-hundred and twenty-nine respondents (5 males and 124 females) returned the sheet; namely, the return rate was 64.5%. Twenty-nine respondents were in their twenties, 82 in their thirties, and 18 in their forties. Fifty-two respondents (40.3%) have used the childcare service, and 77 (59.7%) have not used. The reasons of the nonparticipation were “The time of activities is not convenient” (47.8%) or “I do not have to use it” (32.2%). More than half of those who have not used the support centers answered that they have not used because the time was not convenient. On the other hand, more than half (53.8%) of those who have used the support centers keep using it. Among those who have used it four times or more, 20 people (71.4%) are in their thirties. Now that working mothers are increasing in number, operating hours of support centers have to be reconsidered.

Keywords: Childcare Support Center, municipalities in Japan, young parents

1. Background

Municipalities in Japan have a “Childcare Support Center” for the sake of young parents who do not have an opportunity to talk about their children with their own parents. Young mothers take part in activities of these support centers to communicate each other, take counsel with the staff about childcare, or are taught how to play with children by the staff. Although there exist these facilities, the number of counseling on child abuse in Japan is increasing year by year; for example, the figure was 26,569 in 2003, and 40,639 in 2007. About 60% of abusers are children’s real mothers. While the birthrate and the number of children are both declining, the number of counseling on child abuse is growing up. It may be because childcare itself has become difficult for mothers. This research tries to
reveal the actual condition of childcare, especially about how much mothers who are bringing up their children utilize a childcare support center.

2. Method

(1) Subjects of the survey

We surveyed those who are bringing up their children and using childcare facilities in City M.

(2) Survey period

The survey period was from June to September in 2010.

(3) Survey method

We conducted the questionnaire survey on those who were bringing up their children. The questions include whether they participated in activities of a support center, how many times they have participated, why they have not participated if not, what they are conscious of in childcare, etc. The respondents answered them in writing.

3. Results

We distributed the question sheets to 200 people at two childcare facilities in City M. One-hundred and twenty-nine respondents (5 males and 124 females) returned the sheet; namely, the return rate was 64.5%.

Twenty-nine respondents were in their twenties, 82 in their thirties, and 18 in their forties.

Fifty-two respondents (40.3%) have used the childcare service, and 77 (59.7%) have not used. The reasons of the nonparticipation were “The time of activities is not convenient” (47.8%) or “I do not have to use it” (32.2%).

Among the respondents, 13 people have participated just once, 5 have participated twice, 5 have three times, and 28 have four times or more. The benefits of participation were “I made a friend” (26%) and “It served as a mental diversion” (24%). About childcare, 91.4% answered “I would like to consult,” and its contents are related to “child’s development” (28.7%), “discipline (20.9%), “treatment of poor physical condition” (18.6%), etc.

<table>
<thead>
<tr>
<th>Benefit</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>to make friends</td>
<td>13</td>
<td>26.0</td>
</tr>
<tr>
<td>Consultation of experts</td>
<td>1</td>
<td>2.0</td>
</tr>
<tr>
<td>talk to the participants</td>
<td>7</td>
<td>14.0</td>
</tr>
<tr>
<td>Change of pace</td>
<td>12</td>
<td>24.0</td>
</tr>
<tr>
<td>Freedom from child-rearing</td>
<td>3</td>
<td>6.0</td>
</tr>
<tr>
<td>Play of children</td>
<td>5</td>
<td>10.0</td>
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<tr>
<td>Prevention homebound</td>
<td>2</td>
<td>4.0</td>
</tr>
</tbody>
</table>

Table 1: good to participate

<table>
<thead>
<tr>
<th>Benefit</th>
<th>n</th>
<th>%</th>
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Table 2: Participation
Development 37 28.7  
Training 27 20.9  
Correspondence at the time of the ill-health 24 18.6  
Meal 16 12.4  
Termination of breast-feeding 12 9.3  
Rebellious phase 5 3.8  
Other 7 5.4  

| Table 2 Consultation content |

4. Discussion  
According to the result of Longitudinal Survey of Newborns in the 21st Century\(^1\), the employment rate of mothers was 55.4% one year before giving birth. However, the rate declined to 25.1% immediately after giving birth and bounced back up to 60.5% one year later. It means that about half of the mothers have returned to work after their children's growth. More than half of those who have not used the support centers answered that they have not used because the time was not convenient.

On the other hand, more than half (53.8%) of those who have used the support centers keep using it. Among those who have used it four times or more, 20 people (71.4%) are in their thirties. Now that working mothers are increasing in number, operating hours of support centers have to be reconsidered. According to previous researches\(^2\)\(^3\)\(^4\), those whom mothers would like to ask for advice about childcare include “spouse,” “mother,” “friend,” and “doctor” in this order. Nakanishi et al. (2004)\(^4\) indicates that 46.4% of their respondents made friends with other participants after participating a childcare circle. To be concrete, 35.7% of them go out or have a walk together, 30.4% exchange emails, and 28.6% consult with each other about childcare. Especially, 60.7% of the respondents who have participated three times or less made friends. Our survey shows that those whom they would like to ask for advice about childcare include ”friend”(83), ”spouse”(78), and ”mother”(76). These results suggest that mothers bringing up children prefer friends as advisor about childcare because both of them live in similar situations.

Comprehensive Survey of Living Conditions\(^5\) shows that 18.5% of all households are three-generation family while our survey shows that 107 (82.9%) are nuclear family and 19 (14.7%) are three-generation family. These results mean that nuclear family increases in local communities. It may be that “friends” have become closer than “relatives” because of the expansion of nuclear family. A Childcare Support Center should utilize the manpower in the local communities to give advice to mothers who tend to isolate themselves. Mothers who are bringing up children hardly experience various types of childcare in these days because they have few opportunities to communicate with others’ children. We suppose that this situation causes mothers to seriously worry about children and consequently leads to child abuse or nervous breakdown due to childcare.

Local communities have to be empowered not only by promoting mutual communication between specialists and mothers or between mothers themselves but also by involving elderly people with childcare. We believe that establishment of support environment also leads to the security of manpower in the support center.
4. Conclusion

We have to consider measures to create an energetic local community where the whole community supports childcare so that mothers can bring up their children without anxiety.

Since this research did not survey the situation of local community itself, we have to study effective measures concerning that viewpoint.

References


Title: Reframing Discipline: Connecting with Every Child

Topic Area: Elementary Education / Cross-disciplinary areas of Education

Presentation Format: Workshop

Description: Children have challenging behaviors that connect to their social-emotional development. This workshop focuses on a variety of techniques, tools, activities, resource and research for preventing behavior problems through building a relationship between the teacher-student and student-student. This relationship will develop and create a safe, inviting, comfortable and risk taking environment for children to have a positive experience while engaging in their learning.

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Abstract:
When children feel valued, accepted and understood, they are more likely to cooperate with adults. Developing a positive relationship with an adult is a difficult task for most children and sometimes they have no idea on how to develop those relationships. There are children who have had a negative experience with an adult, which then translates into challenging behaviors for these children in the classroom (Joseph, 2010). Educators will be taught how to apply techniques on preventing behavior problems through building relationships with even sometimes ‘difficult to engage children’. Through role-play, table discussions, and creative hands on activities, educator will learn to create a safe and inviting learning environment for students for both higher positive experiences and academic achievement.

Reference:


1) Title of the submission: Group Work in Online Business Education – Pain or Gain?
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6) Full paper
Group Work in Online Business Education – Pain or Gain?

Abstract

In business education being able to collaborate is an important graduate attribute. However, group work often leads to frustration among students. The paper investigated how students in an online business unit perceived group work. Results revealed distinctive student profiles. Some students thought they gained from it and clearly saw value in different characteristics of group work. For other students group work was a pain. The paper concludes with recommendations how to address these student groups.

Introduction

In 2014 more than 74% of all job ads on seek.com.au, Australia’s number one job website, included ‘team’ as a keyword, showing the importance of team skills for today’s workforce. In the near future the importance of this employee skill increases. In 2020 being able to work collaboratively online is one of the key workforce skills in a globalized business environment (Davies, Fidler, & Gorbis, 2011). Consequently business education has to consider this essential skill in curricula to prepare graduates accordingly.

Contemporary business education makes extensive use of team-based pedagogies (Colby, Ehrlich, Sullivan, & Dolle, 2011). However, especially in online education, students are often frustrated when having to work in teams (Capdeferro & Romero, 2012). It is therefore necessary to understand how students perceive group work in an online setting to improve learning outcomes.

This study focuses on the student experience of a group work presentation assessment task adapted for an online cohort of business students at an Australian University.

Literature review

Online courses play an important role in tertiary education. In 2012 more than 25 percent of all tertiary students in the US were enrolled in distance education (US Department of Education, 2014). For students online studies offer convenience and flexibility of time and place (Arbaugh 2000). However online education has limitations which could affect how students perceive the delivery of an education course.
Online education relies on computer mediated conversation to offer students a convenient learning environment. However, online communication is limited. Online communication are semantically poor, text based, exchanges with limited non-verbal cues. Furthermore most online courses use asynchronous communication models which offer participants more time to reflect and generate a considerate response but lack in spontaneity (Curtis & Lawson, 2001).

This time-lag often results in frustration when group work among students needs to be done, especially when peers are in different time zones or have time pressures because of work or family commitments (Belland, Kim, & Hannafin, 2013). Therefore supporting students is essential to avoid frustrations diminishing learning outcomes.

First of all curriculum designers have to acknowledge that assessments which require working in teams have benefits but require scaffolding. Less experienced students for example need to learn additional skills such as how to work in a team, how to make decisions in a group and how to negotiate to help them being successful with their team. Also at least an initial face to face contact helps to get to know peers and reduce misunderstandings because of the described online communication limitations (Macdonald, 2003).

In this face to face meeting a process of setting ground rules such as roles and responsibilities, milestones, contact information and escalation can be at least started (Macdonald, 2003). Clarifying at an early stage that non-participants have limited benefits from the efforts of participants and active participation is recognised in the final outcomes will further reduce the potential for frustration at a later stage (Goold, Craig, & Coldwell, 2008). Given this early stage of a group building process, facilitation can support the learning process (Soon & Campbell, 2011). Still, it is unclear how students perceive group work.

**Methodology**

Learners enrolled in the online version of the ‘Organisational Behaviour’ unit of an Australian university were asked to fill in an online questionnaire about their perception of a group work assessment. The questionnaire covered several areas such as demographics (age and gender), the experience with the team and if students found the assessment worthwhile.

As part of the assessments in class, students had to do a team presentation and comment on work of others. The students undertook an online teamwork assessment to produce a presentation. They were provided with scaffolding around the timing of various steps in the completion of the presentation and when to gain feedback on a draft from their peers. A ‘how-to’ teamwork guide was
developed and provided, which conveyed the importance of teamwork as a skill to develop for the future workplace, along with suggested steps for the teamwork process to assist teams in approaching the task. Learners were also provided with learning and practice for how to frame feedback constructively as a part of their learning in the unit. Following the ‘how-to’ guide to support the teamwork process was not a compulsory aspect of the task submission – ie. marks were mainly focussed on the product of the teamwork (ie. the submitted presentation).

16 students returned the questionnaire. 1 case had to be deleted because of missing values, leaving 15 valid cases.

$X^2$ tests investigated differences of students disagreeing (strongly disagree and disagree) and agreeing (agree and strongly agree) in the following outcome based questions: ‘Overall the team presentation assessment was helpful for my learning’ (Helpful for learning), ‘Will you participate in a team presentation again in your study’ (Team presentation in the future), ‘Creating a team presentation has made me more interested in my study’ (More interested in my studies)

**Results**

The following table 1 shows how students differ in their perceptions when agreeing or disagreeing to the above mentioned questions.

<table>
<thead>
<tr>
<th>Tab. 1 Agreement and disagreement to outcome based questions</th>
<th>Agree</th>
<th>Disagree</th>
<th>$X^2$, df</th>
<th>p</th>
<th>Overall, the team presentation assessment was helpful for my learning</th>
<th>Creating a team presentation has made me more interested in my study</th>
<th>Will you like to participate in a team presentation again in your study?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall, the team presentation assessment was helpful for my learning</td>
<td>6</td>
<td>7</td>
<td>10.3704, 1</td>
<td>.001</td>
<td>7.0243, 1</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td>I consider it a useful experience learning how to present as part of a team</td>
<td>8</td>
<td>6</td>
<td>10.5, 1</td>
<td>.001</td>
<td>8.75, 1</td>
<td>.003</td>
<td></td>
</tr>
<tr>
<td>Giving Feedback on another team presentation informed our group’s performance</td>
<td>8</td>
<td>6</td>
<td>4.6667, 1</td>
<td>.03</td>
<td>5.5293, 1</td>
<td>.02</td>
<td></td>
</tr>
<tr>
<td>Receiving feedback from another team helped me with reviewing the presentation</td>
<td>6</td>
<td>8</td>
<td>7.0243, 1</td>
<td>.01</td>
<td>5.5293, 1</td>
<td>.02</td>
<td></td>
</tr>
<tr>
<td>Working in a Team made</td>
<td>4</td>
<td>9</td>
<td>6.24, 1</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Students agreeing or disagreeing to the three outcome based questions showed different profiles in regards to the other questions. Most students answering that they found the team presentation helpful for their learning regarded giving and receiving feedback positively, thought that it was easier to work in a team to do the assessment and saw value in it such as being more creative and gaining new skills and abilities from it. Overall they enjoyed the assessment and had no problem with the guidelines.

Most students agreeing that the assessment has made them more interested in their studies agreed that the assessment was useful and helpful in their learning, enjoyed participating in it and want to participate in a similar assessment again but were ambiguous in regards to the other questions.

Students who would do a team presentation again also found the assessment useful and helpful in their learning. They also liked giving feedback to another team and saw value in the assessment in regards to gaining new skills and abilities. These students enjoyed the assessment but questioned the time commitment.

**Discussion, Limitations and Future Research**

Comparing students’ agreement or disagreement to different questions showed a clear profile regarding the view how helpful the group work assessment was for learning. The ‘groupwork is a gain’ students agreed that this assessment was helpful, saw value in different features of the group work assessment such as giving and receiving feedback and less effort working in a team than working on your own. In regards to the other questions, asking if students were more interested in their studies because of this assessment and if they would do it again, less distinct profiles arose.
Using ‘helpfulness’ as a satisfaction metric, this study could indicate which factors in a group work assessment could increase student satisfaction. Obviously peer review, highlighting creativity and other benefits of group work could support the group work process and reduce frustration.

The ‘groupwork is a pain’ students did not view the assessment as useful or helpful to their learning, nor did they find value in the feedback of others or skills gained (eg. teamwork or presentation skills). Consequently the need for greater scaffolding in the teamwork assessment design may be required for these students. This could include mandating the following of steps around the teamwork process (rather than providing suggested guidelines), along with explicit statements in the assessment around which teamwork skills were being acquired at each step in the teamwork process.

While the survey results show that the majority found the task requirements clear and unambiguous, there are a number of students that found that working a team did not make preparing the presentation easier, and found that it took up too much time to do prepare the team presentation. This may indicate potential for diminishing the requirements of the ‘product’ outcome of an online teamwork task, if the focus is to be more on learning the ‘process’ for successful and a satisfying online teamwork experience.

A limitation of this study is the categorical character of the variables reducing options for analysis given the four point scale. Future research should use a 7 point Likert scale or other metric scales.

Furthermore including an established satisfaction scale could provide a better understanding how students view group work and how frustrations in doing group work could be limited.

Also future research should use a larger sample of students as results could be more stable than the results of the tiny sample used for this research.
References


1) Title of the submission: Student Mental Issues in Distance Education
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6) Abstract
Abstract

Distance learning has evolved globally through the electronic technology embraced by tertiary educational entities including universities. Universities benefit from increased student tuition without the need to accommodate their presence on campus. In addition to increased revenue, universities benefit from a more diverse student population due to the trend of life-long learning. Yet, not all students or staff are equipped to successfully navigate the demands of online learning and teaching as indicated by the low on-line retention rate. There are myriad barriers that preclude a higher retention rate, including mental health problems. For many, mental health issues are an insurmountable barrier to achieving their academic goals. This working paper proposes investigating on-line students with mental health issues including staff’s lack of awareness and training. In addition, this paper suggests a support framework to potentially increase student and staff on-line learning success.
The 14th Annual Hawaii International Conference on Education

Title of the submission:
A Cross-National Comparison of Factors Affecting Reading Achievement PIRLS 2011

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A student's ability to read well is crucial for him or her to master any academic subject. How well students can read is now not only constantly monitored, assessed, but also compared within and between nations. Progress in International Reading Literacy Study (PIRLS) 2011 is the third comparison of reading achievements of fourth graders from 45 participating countries. This study investigates the effects of student factors (e.g., whether a student likes reading, is motivated to read, is confident about reading, and is engaged in reading) and instructional factors (e.g., classroom libraries, instructional strategies) on reading achievement based on the standardized results released by PIRLS 2011. Reading achievement is categorized by three criterion-referenced levels: basic, proficient or advanced. The linear mixed-effect quantile regression is used to estimate the effects of covariates for each category. In 27 out of 45 countries, significant interaction effects were found between student and instruction factors.

Keywords: Linear Quantile Mixed Models, Reading achievement, PIRLS
Formation of Students’ Customer Experience in a Learning Environment: Case Yrityslabra

**Topic area:** Higher Education

**Presentation format:** Poster Session/ Case Study

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**Description:** This case uses five elements to describe the formation of a student’s customer experience in Yrityslabra (Business Lab) learning environment at Laurea University of Applied Sciences. Examination and development of the student’s customer experience have become an even more important part of Yrityslabra’s operating model and its success. Making the student’s customer experience the focus of development moves Yrityslabra’s activities towards customer orientation, which in turn makes the opinion of students the most important viewpoint.
Abstract

Formation of students' customer experience in a learning environment: Case Yrityslabra

"The customer experience is the qualitative aspect of any interaction that an individual has with a business, its products or services, at any point in time” (Watkinson, 2013)

This case uses five elements to describe the formation of a student's customer experience. The case describes Yrityslabra (Business Lab) learning environment located on the Lohja campus of Laurea University of Applied Sciences, where students complete studies in workplace-oriented projects. Development of Yrityslabra began in 2010. The aim of the new learning environment was to speed up the pace of studies for students at the Lohja campus, stop the decline in student numbers on the campus, and ensure student employment after their studies. Yrityslabra’s operating model was developed from the customer experience viewpoint, and the following five elements were identified as being most important in terms of developing the customer experience: an informal physical environment, an informal social environment, the student's personal learning process, the teacher's role as a mentor, and tools to support the student's studies. These elements provide the foundation for customer-oriented development, and each element has an impact on building the student's customer experience.

Examination and development of the student's customer experience have become an even more important part of Yrityslabra's operating model and its success. Making the student's customer experience the focus of development moves Yrityslabra's activities towards customer orientation, which in turn makes the opinion of students the most important viewpoint.

Case Yrityslabra has demonstrated that developing the customer experience of students has improved students' commitment to their studies. The students also have better opportunities to develop their competence according to their own areas of interest. In addition, students are better able to determine their study schedule, have more open cooperation with the mentoring teacher, and build a confidential atmosphere with the teacher and other students. Developing the customer experience has affected the results of the Laurea Lohja campus by accelerating the pace of studies, reducing the number of student transfers to other campuses, and improving student employment after completion of their studies.

Reference:
From Formative Assessments to Learning Outcomes:  
A between-course approach to freshmen studies at two Japanese universities  

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Abstract  
This study considers the relationship between formative assessments and learning outcomes by comparing students’ responses on courses with and without formative assessments, while considering the possibility of intermediation by length and distribution of learning time. A path analysis of 220 courses in two Japanese universities reveals that: (1) the relevance of formative assessments to course objectives has a larger effect on learning outcomes than experience or feedback from the assessments; (2) time distribution has a greater effect on learning outcomes than the duration of independent learning; and (3) the type of formative assessment causes the paths to vary in terms of the length and distribution of learning time, as well as the most sensitive learning outcome. These findings are interpreted in the context of methodological research issues and the quality assurance of higher education. It is also suggested that international comparisons and panel research are necessary to understand the effectiveness of formative assessments more in depth.  

Keywords: formative assessments, learning outcomes, path analysis, Japanese undergraduate education
1. Background

The effectiveness of formative assessments

This study examines the effect of formative assessments\(^1\) on student learning using an evidence-based approach. As readers may be aware, previous research, such as by Black and Williams (1998), Yorke (2003), and McMillan et al. (2013), has discussed these impacts, and newer findings on university education continue to emerge. Previous studies can be separated into three categories according to the unit of analysis: in-course, between-course, and between-program.

Most in-course studies investigate the efficacy of specific formative assessment techniques. These are generally based on the responses of students taking the same course, module, or subject delivered by different instructors. Most research on formative assessments falls into this category. In fact, in *Assessment & Evaluation in Higher Education* from 2000 to 2013, 15 out of the 17 studies with titles that included the term “formative assessment” adopted an in-course method. This strategy is popular in other journals as well. For example, Lipnevich et al. (2014) analyzed data on 100 students enrolled in child development courses at a large, urban university in the northeastern United States. They found that the writing of students who received detailed rubrics for their formative evaluations improved compared to other students.

A between-course approach attempts to discern the differences in learning experiences resulting from the use of formative assessments in university courses. A course, which normally lasts one semester (15 weeks in Japan), is a unit of study with a corresponding awarded credit.\(^2\) Although the between-course style is not as common as the in-course method, Nishigaki and Yabe (2008) give an example of the former. They studied 300 students at a Japanese national university and concluded that there were no significant differences in self-reported outcomes for courses with different formative assessment conditions. In contrast, McDowell et al. (2011) developed the Assessment for Learning Questionnaire and collected 698 responses at an institution in the United Kingdom. They showed that students who took part in an “assessment for learning” module were more likely to report having a deeper learning approach and greater engagement with the subject matter.

Most macro perspectives use a between-program approach; in formative assessments, this technique is part of or characteristic of entire degree programs, and is
not specific to individual courses. Based on audits of 23 degree programs in 8 universities and 1,220 responses from the Assessment Experience Questionnaire, Jessop et al. (2014, 84) asserted there was no significant correlation “between [the] volume of formative assessments and [the] quantity of effort” ($r = .109$, $p > .05$). Conversely, Morozumi (2009) used the results of a nationwide student survey in Japan, and found that mid-semester assessments significantly increased learning times in engineering departments ($\beta = .243$, $p < .001$).

Although each of the three types of analysis can be used to discuss the effects of formative assessments, this study employs a between-course comparison, because in-course studies in Japan have little relevance for English-speaking countries since the discrepancy in teaching languages makes it difficult to share the nuances of tangible practices in the classroom. Furthermore, between-program studies do not seem to attract much attention due to certain particularities of the Japanese undergraduate curriculum, which will be explained in the next subsection. In view of these circumstances, this study will use the between-course approach, and not the in-course or between-program techniques.

**Students’ recognition of learning outcomes**

The undergraduate curricula at Japanese universities contain two unique components: one’s major and general education courses. Students generally take general education courses until the middle or end of their sophomore year, and then proceed to choose their major.iii Courses included in the general education curriculum often include foreign languages, interdisciplinary thematic programs, and introductory courses outside of one’s major.

The required courses for general education normally vary depending on the university. Accordingly, it is not relevant to compare the learning outcomes of the courses of freshmen by looking at academic grades or grade point averages. Rather, students’ own recognition of learning outcomes is more suitable for relative comparison, regardless of course or university attributes.

In this paper, learning outcomes are measured using three dimensions: satisfaction, achievement, and motivation. All of these are essential to retain students, especially freshmen; however, they are usually treated separately as learning outcomes. Horstmanshof and Brownie (2013) cite several prior studies that assert that formative
assessments positively influence student satisfaction. Hodgson and Pang (2012) found that for the dimension of achievement, 90.2% of participants agreed or strongly agreed that one could reach an in-depth understanding through formative assessments. In Weurlander et al.’s (2012) qualitative research of medical students at a Swedish university, they concluded that formative assessments motivate students to study in several ways.

While the aforementioned findings are derived from in-course studies, this study will try to validate the relationship between formative assessments and students’ recognition of learning outcomes through a between-course approach.

**Research questions**

In light of previous findings and the characteristics of Japanese higher education, this article has three main research questions.

1. What aspects of formative assessments relate to learning outcomes? Despite a basic consensus that formative assessments impact learning outcomes, there are some contradictory findings. One possible reason is that the focused aspect of formative assessments differs among studies (MacMillan et al. 2013). This article distinguishes between the quality of formative assessments and experiences with them, and compares the effectiveness of both elements on learning outcomes. In this way, it will be clear whether experiences with formative assessments or their quality is more important for student learning.

2. How does learning time intermediate the relationship between formative assessments and learning outcomes? In addition to the direct effects of formative assessments on learning outcomes, there are presumed to be indirect impacts in terms of the length and distribution of learning time. Formative assessments force students to prepare for tasks (Hodgson and Pang 2012), so learning outcomes must depend partially on learning time. The link among formative assessments, learning time, and learning outcomes will be examined using path analysis.

3. Does the relationship expressed by the path diagram differ depending on the type of formative assessment? For independent learning, whether a formative assessment task is done in or outside the classroom should have a bearing on the path diagram. It is reasonable to predict that formative assessment tasks done outside the classroom will have a bigger influence on learning time, and possibly on learning
2. Methodology

Survey procedure

The participants in this study were from two Japanese universities located in different parts of Japan: national university A and public university B, both with around 10,000 undergraduates studying a wide range of fields. Sixty-nine/twenty-five freshmen from university A, and 44 from university B volunteered to respond to the online questionnaire in August 2014.

Respondents were asked about the courses they took on a certain day of the week. The author of this article predetermined the chosen day to randomize the answers, which was necessary because on average, freshmen in Japan register for 16 courses a semester and meet with instructors once a week (National Federation of University Co-operative Associations 2014). Course categories tend to be scheduled for a certain day of the week or time of day. It can thus be difficult for students to answer questions about all of their courses, and course categories could be biased if the day was not randomly appointed. Each respondent answered questions about 1–4 courses, depending on their registration, and information on a total of 220 courses was collected.

The online questionnaire was developed in 2012 and has been revised several times, with reference to the results of semi-annual surveys. The version used in August 2014 consisted of four sections. Students gave information on their personal details in section 1, an outline of their courses in section 2, their learning experiences in section 3, and their perception of assessment tasks in section 4. For sections 2–4, students answered the questions for each course taken. Learning outcomes and times were gauged in section 3, and questions were asked regarding experiences with formative assessments and their quality in section 4.

The procedure for this study focuses on students’ views of assessments and learning. Studies such as Gilles et al. (2001) that focus on teachers’ perspectives of assessments are indispensable in order to see how they are actually used in practice. However, to understand the relationship between formative assessments and student learning, it is reasonable to ask students about how they experienced these evaluations, and to judge their quality (Struyven et al. 2005).
Data description

This paper divides formative assessments into two types: “in-class” and “hand-in.” In-class formative assessments (ICFAs) require students to demonstrate their knowledge and abilities through tasks such as mid-term exams, quizzes, and presentations. In contrast, hand-in formative assessments (HIFAs) require students to write reports or complete assignments outside of class and submit them to the instructor.

For both types, respondents were asked about their experiences (Was there an assessment in the course? Yes = 1, No = 0), relevance (Was the assessment task relevant to the course objectives? Definitely yes = 5 to Definitely no = 1), and feedback (Did the feedback about the task help you understand the reasons for the grade you got? No feedback = 0, No = 1, Yes = 2). Table 1 shows the number of respondents (N), the means, standard deviations (SD), and the minimum and maximum (Min. and Max.) values for the data. The percentage of students who reported experiencing ICFAs (39%) is slightly less than for HIFAs. The mean scores for relevance and feedback are higher for ICFAs than for HIFAs.

The survey also asked questions concerning the length of independent study (How long did you study outside of class for the course during this semester?) and the distribution of learning time (Did you consistently spend time studying out of class? Definitely yes = 5 to Definitely no = 1). Since one semester consists of 15 weeks in both universities, the mean score in Table 1 indicates that the respondents spent less than 30 minutes a week per course on studying outside the classroom. The mean score of time distribution implies that learning was concentrated near the end of the semester, possibly due to preparation for summative assessments, such as final exams and reports.

The learning outcomes are considered based on the three dimensions described earlier: satisfaction (Were you satisfied with the learning in this course?), achievement (Did you learn a lot in this course?), and motivation (Did this course motivate you to learn more about the theme or subject of the course?) All questions were answered using a 5-point scale, ranging from definitely yes = 5 to definitely no = 1. Table 1 displays the results. A comparison of the three mean scores reveals that it is more difficult to motivate students to learn further than it is to make them feel satisfied or have a sense of achievement from the course.
Table 1. Descriptive results of variables

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>In-class formative assessments</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experiences</td>
<td>220</td>
<td>0.39</td>
<td>0.49</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Relevance</td>
<td>81</td>
<td>4.17</td>
<td>0.86</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Feedback</td>
<td>81</td>
<td>1.27</td>
<td>0.77</td>
<td>0</td>
<td>2</td>
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<tr>
<td><strong>Hand-in formative assessments</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Experiences</td>
<td>220</td>
<td>0.45</td>
<td>0.50</td>
<td>0</td>
<td>1</td>
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<tr>
<td>Relevance</td>
<td>93</td>
<td>4.02</td>
<td>0.83</td>
<td>2</td>
<td>5</td>
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<tr>
<td>Feedback</td>
<td>93</td>
<td>1.17</td>
<td>0.70</td>
<td>0</td>
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<td><strong>Length and distribution of learning time</strong></td>
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<td></td>
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<tr>
<td>Length of learning time</td>
<td>220</td>
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<td>10.42</td>
<td>0</td>
<td>90</td>
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<tr>
<td>Time distribution</td>
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<td>2.37</td>
<td>1.23</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td><strong>Recognition of learning outcomes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfaction</td>
<td>220</td>
<td>3.67</td>
<td>1.01</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Achievement</td>
<td>220</td>
<td>3.76</td>
<td>1.00</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Motivation</td>
<td>220</td>
<td>3.34</td>
<td>1.21</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

3. Path analysis

**Analysis model**

The relationship between formative assessments and learning outcomes can be examined using path analysis, with consideration of the indirect effects of learning time. Figures 1 and 2 illustrate the basic models. The experiences with and quality (i.e., relevance and feedback) of formative assessments are analyzed separately due to the difference in sample size; only respondents who answered “yes” for experience are included in the quality analyses.

Figure 1 is based on the hypothesis that experiences of formative assessments directly influence the three learning outcomes, and impact them indirectly through the length and distribution of independent learning time. Error variables for learning time and learning outcomes are correlated accordingly. The influence of formative
assessment quality (i.e., the relevance of assessments to course objectives and feedback on the assessments) is presumed to be related in a similar way. This can be seen as in Figure 2.

Both analyses were performed based on in-class and hand-in formative assessments, described in the next subsection. The path analysis begins with the basic
models (i.e., Figures 1 and 2), then paths are removed based on statistical significance until all remaining paths are $p < 0.1$. The resulting models are shown in Figures 3 and 4, with fit indices (acceptable standards are $p > .05$; GFI/AGFI > .90; and RMSEA < .05). Subscripts for the paths are the standardized regression coefficients (**$p < 0.001$, **$p < 0.01$, *$p < 0.5$), and those for the variables are $R^2$ values. Error variables and the correlations between them are not included in Figures 3 and 4.

**Results**

Figure 3a indicates that experiences of ICFAs have no direct effect on the duration of learning or learning outcomes. However, students tend to learn more evenly outside the classroom in courses with ICFAs, and the distribution of the learning time elevates the outcomes slightly (the degrees of variance explained are 2%–5%).

The effect of the quality of ICFAs is stronger than that of experiences with them (Figure 3b). If ICFAs are relevant to course objectives, students are more likely to be satisfied, learn a lot, and feel motivated. Although the degree of feedback is not related to learning outcomes, it can affect the duration and distribution of independent learning time.

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Figure 4 depicts the results for HIFAs. The diagram for experiences with HIFAs is almost the same as that of ICFAs, except for the path to the duration of learning, which does not lead to learning outcomes. This difference is reasonable.
because HIFAs are usually in the form of homework assignments.

The relevance of HIFAs directly influences the three learning outcomes (Figure 4b), and relates to all three learning outcomes, although the relationship is weaker than for ICFAs. Additionally, feedback has an effect on satisfaction and achievement, but the statistical significance is $p < .10$. Learning time can increase through HIFAs, but it does not change the recognition of learning outcomes in the same manner as experiences with HIFAs.

4. Conclusion

Discussion

The findings can be summarized in response to the research questions as follows. First, the relevance of formative assessments has a greater effect on learning outcomes than experiences or feedback. Experiences themselves do not impact learning outcomes directly, but do have an indirect effect via the distribution of learning time. This is compatible with Biggs and Tang (2011) and McConnell and Doolittle (2012), who ascertained that the alignment between expected results and assessments is important for learning outcomes. Furthermore, despite the amount of previous in-course studies that emphasize the importance of feedback—for example, Drew (2001), Nicol and Mafarlane-Dick (2006), and Hounsell (2007)—feedback was not found to be significant in the between-course approach.
This implies that feedback on formative assessments relates to learning outcomes for individual courses, but is not a decisive factor for students' relative recognition of learning outcomes when comparing each course with the other courses. Alternatively, the contradiction between this study and previous research may be owing to the selection of learning outcomes. While feedback enhances objective outcomes such as grades on final exams or academic grades, it is probable that subjective results of student learning do not change considerably through feedback on formative assessments.

Second, it is suggested that time distribution has a greater impact on learning outcomes than the duration of independent learning. The length and distribution of learning time did not intermediate between the quality of the formative assessments and learning outcomes, but time distribution did intermediate between experience and the outcomes. This is an interesting result because it is intuitively reasonable that time spent on tasks should positively relate to learning outcomes; empirical research has generally supported this connection (please see a review by Gog, 2013 for further details). In Japan, since the Central Council of Education (2012) questioned the sufficiency of students’ learning time, universities have been pushed to make students learn more specifically outside the classroom in order to improve the quality of their graduates. However, this study has indicated that simply increasing learning time through formative assessments is not enough to result in greater satisfaction, achievement, and motivation, at least for Japanese students.

Finally, the type of formative assessment causes the paths to vary in terms of duration and distribution of learning time, as well as regarding the most sensitive learning outcome. For the paths to learning time, it is evident that feedback on formative assessments can motivate students to learn longer and more evenly only when they perform tasks in the classroom. Experiences with formative assessments and their relevance influence the duration of independent learning only when tasks are completed outside the classroom. The most sensitive learning outcome varies, as seen in Table 2.

Using class time for formative assessments is supposed to make students feel satisfied because they can see that the teacher cares about their academic progress. It is assumed that HIFAs do not relate strongly to satisfaction because they force students to spend their spare time on tasks outside the classroom. However, students do realize that they learn a lot in courses with HIFAs. Table 2 also suggests that it is not easy for
teachers to motivate students through formative assessments. Although they can incentivize learning (Walvoord and Anderson 2010; Sambell et al. 2013), they seem to not be able to encourage students to learn more about the theme or subject after a course ends. These discrepancies make us aware of the different, notable points of formative assessments so that students can better recognize learning outcomes.

<table>
<thead>
<tr>
<th>In-class formative assessments</th>
<th>Hand-in formative assessments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfaction</td>
<td>T = .50 (D = .44, I = .06)</td>
</tr>
<tr>
<td>Achievement</td>
<td>T = .43 (D = .38, I = .05)</td>
</tr>
<tr>
<td>Motivation</td>
<td>T = .33 (D = .30, I = .03)</td>
</tr>
</tbody>
</table>

**Limitations**

One of the most notable limits of this study is the sample design. Although the number of respondents and their answers about the courses are acceptable as a case study, they are not enough to generalize the findings. A large sample would allow analysis of the differences in the relationship between formative assessments and learning outcomes in accordance with students’ traits (Sambell and McDowell 1998). The connection may differ depending on a student’s stage of study, their department, or learning orientation. In light of this, the sample of freshmen at two Japanese universities examined in this study is only a starting point for research on the effect of formative assessments using a between-course approach. Moreover, if it is possible to compare the results of analyses internationally, the findings will have greater relevance for undergraduate curriculum development.

Another conceivable improvement of the research framework is to widen the indicators of the learning outcomes. In addition to students’ recognition of satisfaction, achievement, and motivation, academic grades should be considered. This is especially so for international comparison because some evidence of relationships between formative assessments and grades or degree classifications has been reported in the
context of higher education in the United Kingdom (Gibbs and Simpson 2004). On the
other hand, long-term outcomes should not be ignored either. In this study, questions
about the recognition of learning outcomes were asked just after courses ended. More
time might be required to precisely judge the value of courses, and panel research could
be used to gauge long-term effects.

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1 In this article, “formative assessment” refers to the tasks assigned by instructors during a
course of study, and not at the end of the course, regardless of their purpose and method of
academic grading. Generally, as can be seen in the work of Irons (2008), Brookhart (2011),
and others, it is assumed by definition that the results of formative assessments are always
used to improve students’ learning and teachers’ instruction. Nevertheless, the definition in
this paper emphasizes the timing of assessments because feedback is treated as a variable of,
but not a given condition of, formative assessments.

2 The credit system established by the Japanese government requires that a student earn at
least 124 credits in the four years to graduation. The minimum requirement is altered to
188 credits in medical and dental programs, 186 in pharmacy programs, and 182 in
veterinary science programs. These programs last for six years.

3 The curriculum structures of Japanese universities and liberal arts programs in
American higher education have a lot in common. The big difference is in the admission
systems. Japanese college students are forced to complete general education coursework,
even though they decide their major before being admitted and before they have entered a
specific department.

4 One credit equals approximately 45 hours of study in the Japanese credit system. The
required contact (in-class) hours vary depending on the instructional style: 15–30 hours in
lectures and seminars, and 30–45 hours for experiments and practicals. This system is
similar to the European Credit Transfer and Accumulation System (ECTS) with a
standardized number of credits to complete a degree (Gonzalez and Wagenaar 2008), and to
the American in-and-out of class time distribution approach (United States Department of
Education Office of Postsecondary Education 2011).
References


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A Comparative Analysis of the Codes of Ethics in Education in Nigeria and Georgia (USA)

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Abstract

Many professions adopt a code of ethics to regulate members of their profession. The teaching profession is also governed by a set of code of ethics. This paper compares the Code of Conduct for teachers in Nigeria with the Code of Ethics for educators in Georgia, USA. The two codes were compared in terms of their purpose, governance/control, focus, scope, organization, location of violation, dissemination and enforcement. Although the two sets of codes cover the same topics, there were differences in purpose, tone, organization and strategies for dissemination and enforcement. Specifically, the purpose of the Georgia code is to protect the students and provide a safe learning environment, while the Nigerian code emphasizes the professionalization of the teaching profession. The significant difference is in the efforts being made and strategies being used by the governing bodies to make educators aware of and knowledgeable about the codes. Georgia has made awareness and familiarity with the Code of Ethics a condition for entrance into teacher education program and a condition for initial certification and renewal, whereas Nigeria is yet to enforce teacher registration as a condition of employment. Nigeria could borrow a leaf from the strategies that Georgia has perfected.
Introduction

Some of the characteristics that distinguish a profession include a highly specialized level of education or preparation, self-regulation or accountability and code of ethics. The professions establish standards for preparation, licensing/certification and behavior or operation. The professions also establish sanctions that help to ensure compliance of their membership. Professions like medicine, law, engineering, counseling, have enjoyed undisputed recognition as professions longer than the teaching profession which has continued to fight for that recognition and acceptance. The teaching profession is unique in that unlike the other professions, it is almost universally true that the code of ethics for the teaching profession is established and enforced from outside the profession, often by the government, rather than by members of the profession. In the United States, accreditation from national education associations like the NCATE, TEAC, now, Council for Accreditation of Educator Preparation (CAEP) is voluntary. The accreditation is also for the program providers so the associations do not issue license for individual practitioners. The approval that counts is the one from the government agencies like the Georgia Professional Standards Commission (GaPSC). Such agencies not only approve the preparation programs, they set the standards for licensing individual practitioners and establish and enforce the code of ethics for teachers, in the case of countries like Nigeria, or for all educators as in Georgia where all educators, not just teachers, require a license or certificate to work in public school systems.

The purpose of this paper is to examine the code of ethics for teachers in Nigeria (called Teachers’ Code of Conduct (TCC)) and the code of ethics for educators in Georgia, USA. Georgia is chosen as a purposive sample out of convenience. The two sets of code of ethics will
be compared in terms of context/background, governance, scope, focus, the organization of the standards, dissemination and enforcement.

**Context/Background**

Nigeria decided to “professionalize” the teaching profession in 1993 by enacting a law, ACT. No. 31 of 1993 that established the Teacher Registration Council of Nigeria (TRCN) which was empowered to enact and develop laws and rules that parallel those guiding the medical, law and engineering professions in Nigeria. According to TRCN,

[T]he history of education in Nigeria show[s] that teachers occupied the position of great honour and influence in their communities. They epitomized integrity, knowledge, leadership, moral rectitude and selfless service. They spearheaded the development of their communities and country. But over the years things appeared to have changed for the worse. In order to maintain and restore the teacher’s enviable status and qualities, there is the need to enact this code of conduct to define the minimum standards expected of professional teachers in terms of thoughts, words, and actions. (2005, p. 10).

Consequently, the first objective of the TCC was to “re-awaken the sense of self-esteem, dignity, honour, selfless service and moral rectitude in the teacher”, (TRCN, p.10). Another interesting objective of the TCC was to “boost public confidence in the ability of the teaching profession to regulate itself and to bequeath to the nation products that are capable of making maximum contribution towards the development of the nation in particular and the world in general” (TRCN, p.10). This objective is interesting given, as shall be seen under
governance, that it is the government, not the profession that regulates teaching. Officially, the teaching profession is accorded the same respect and privileges as the other professions in Nigeria. A major difference is that while the other professions determine through medical board or bar examinations who practices medicine or law in Nigeria, thus, self-regulating, the teaching profession remains the “ward” of the federal and state governments. The TRCN is an agency of the federal government which has the authority to set standards of preparation, practice and sanctions to ensure compliance. Incidentally, the same is true in the United States, specifically, in Georgia.

The Georgia Professional Standards Commission (GaPSC) parallels the TRCN of Nigeria. The GaPSC is a state agency established by law in 1991 to set standards for preparation and certification of educators in Georgia (GaPSC, 2015). The agency approves and renews approval for public and private colleges of education to prepare educators in the state. It ensures that only educators prepared in such approved programs can receive certification/licensure to teach in Georgia.

A sister agency, the Georgia Practices Commission, was established at the same time to set up and enforce the Code of Ethics for Educators. The GaPSC absorbed the responsibilities of the Georgia Practices Commission in 1997 (GaPSC, 2015). The GaPSC since 1997 has three divisions that oversee its regulatory responsibilities of educator preparation, educator certification and educator code of ethics. The Code of Ethics for Educators is maintained and enforced by the Ethics Division. The Georgia Code of Ethics and the Nigerian
Codes of Ethics in Education in Nigeria and Georgia (USA)

Code of Conduct are the focus of this cross-cultural comparison. The remainder of this paper will focus on similarities and differences in the characteristics of the Georgia Code of Ethics and the Teachers Code of Conduct in Nigeria, as summarized in Table 1, how they are enforced and the sanctions imposed. The next section focuses on the governance of each agency that administers the codes of ethics.

Governance/Control

The first obvious difference between Nigeria and Georgia is the level of control. In Nigeria, the profession is centrally controlled at the federal level, while the level of control is at the state level in Georgia. Thus, the Teachers Code of Conduct is established at the federal level by the TRCN for the whole country. The TRCN then establishes a Teacher Investigation Panel (TIP) in each state and in the federal territory. The panel comprises five members appointed by the TRCN, one of which is a legal practitioner. The TIPS receive complaints, conduct investigations and decide whether or not a case should be dismissed or referred to the Teacher Disciplinary Committee (TDC) at the national level. The TDC comprises 10 members appointed by the TRCN and chaired by the chairperson of the TRCN board. The TDC is a tribunal and functions in the same way as the 20-member GaPSC Commission. The TDC conducts hearings on the cases referred to it, makes a judgment of guilt or innocence, decides on the sanctions and metes out the punishment. In Georgia, on the other hand, the GAPSC sets the standards in the educator Code of Ethics; this is in turn communicated throughout school systems and is accessible to the public via the agency website. The Ethics division
serves a similar role as the TIP in Nigeria. It investigates valid complaints of improper conduct and when necessary, ethics cases that have merit are sent to the GaPSC commission for deliberation and appropriate disciplinary actions. The sanctions in Nigeria include advice, reprimand, suspension from registration as a teacher, or deletion from the federal teacher register. These parallel the decisions in Georgia: Clearance to continue employment, reprimand, suspension, and revocation of certificate.

Scope

Another interesting difference between the Codes of Ethics in Nigeria and Georgia is the scope or the various professional categories they cover. In Nigeria, as the name indicates, the Teachers Code of Conduct is specifically for teachers alone. On the other hand, as the name implies the Georgia Code of Ethics for Educators, applies to all categories of educators who work in the school systems and are associated in one way or the other with providing services to students. These categories include the administrative, service and teaching fields. The administrative includes superintendents, and their deputies, principals, assistant principals, all who hold administrative positions at both the building level or at the central office. The service fields include all categories of individuals that provide services that facilitate student learning such as psychologists, guidance counselors, media specialists, technology specialists, etc. Teachers include all levels of teaching from para-professionals to the highest level of teaching. In Georgia, everyone who requires a certificate from the GaPSC to work in the public school system is covered by the codes. It is telling that not all the directors
and other administrators in the schools or states’ boards of education in Nigeria e.g. the Anambra State Universal Basic Education Board (ASUBEB) or the Anambra State School Services Commission and their deputies in Nigeria are under the Teachers Code of Conduct.

**Focus**

The focus of the Code of Ethics for Educators in Georgia is the protection of the students while in Nigeria, the focus is on the “professionalization of teaching.” Thus, in Nigeria the Code of Conduct enunciates an ethical framework for “what the new cherished values, ideals and practices should be” (TRCN, p.4) for teachers. As Obaji (2005) puts it, the code of conduct in Nigeria “defined what is now acceptable or unacceptable in the occupational and even personal lifestyle of teachers” (p. 4). In Georgia, the code of ethics comprises a set of standards. Each standards states what an educator shall or shall not do and is followed by examples of unethical conduct that would violate that standard. For example Standard 2 - Conduct with Students states: “*An educator shall always maintain a professional relationship with all students, both in and outside the classroom.*

*Unethical conduct includes but is not limited to:*” This is followed by a list of examples of what constitutes unethical conduct such as “committing any act of child abuse, including physical and verbal abuse” (Georgia PSC Rule 505-6-.01, p. 2). The *Teachers Code of Conduct*, because of its purpose to provide guidelines or principles that make a profession, covers more topics/ground than specifically what constitutes ethical or unethical behavior like the Georgia Code of Ethics does. The Nigerian document describes both the structure of the chain of
command in the oversight of the administration of the code of conduct for the teaching profession, as well as the role of each level. Specifically, the TIPs receive and investigate complaints about teachers at the state level and forward those that have merit to the TDC which conducts hearings, passes judgements and hands out sanctions where necessary.

The document also includes nine chapters on the relationships with colleagues, the role of teachers as administrative/academic leaders, relationship with learners, relationship with parents/guardians, the relationship with employers, relationship within the society and other general comments. These chapters consist of what the actual code of conduct is in Nigeria. The tone is more positive than that of Georgia. For example item 53, Respect of contract, under the Relationship with Employers, says that “Teachers should strive to fulfill contractual obligations and to render their services only in accordance with the terms of the contract or the law”. The GAPSC Standard 8 - Abandonment of Contract, on the other hand, states that “An educator shall fulfill all of the terms and obligations detailed in the contract with the local board of education or education agency for the duration of the contract. Unethical conduct includes but is not limited to: 1. abandoning the contract for professional services without prior release from the contract by the employer…” (GaPSC p. 4).

While the Nigerian code implores the teacher to “strive” to fulfill a contract, the Georgia version states clearly that an educator shall fulfill it
and goes on to specify that doing otherwise, without being properly released from the contract, is considered unethical.

**Organization**

Another striking difference between the Code of Ethics in Georgia and the Codes of Conduct in Nigeria is that Georgia’s is organized as succinct standards of behavior e.g. legal compliance, conduct with students, refrain from use of alcohol or drugs, honesty, use and handling of public funds and property, remunerative conduct, handling confidential information, abandonment of contract, reporting, demonstrating professional conduct and administering state-mandated assessments. In Nigeria, the codes or expectations of behavior are couched under relationships with stakeholders in the education enterprise: specifically, relationship with colleagues, learners, parents/guardians, employers, and the rest of the society. Organizing behaviors by the stakeholders involved may lead to duplication. For example, corruption or not accepting gifts are repeated under relationship with student, parents, employer, and the society. A better presentation would be to pull all these under a remunerative conduct as in the Georgia’s codes. Nigeria’s codes emphasize relationships with the stakeholders and reflect a cultural phenomenon where interpersonal relationships and group membership, family or community, are esteemed and sometimes interferes with, or even prevents, objective application of the law.

Stating the code of conduct in terms of relationships probably required the use of a positive and less legalistic tone. For example, in relating with colleagues, teachers are expected to be loyal to one another and “should cooperate with one
another to achieve professional goals” and with regard to integrity, “teachers should be honest, by demonstrating integrity in all contacts, should respect persons and property, be trustworthy and preserve confidence.” In neither of these, nor in many other codes, does it specify or illustrate what an unethical conduct would be. This leaves room for individual interpretations and judgements as to what constitutes ethical and unethical conduct towards a colleague.

**Location of Offense**

In Georgia, educators are bound by the Code of Ethics even when they are not on school property or at work. Under the *Conduct With Students*, teachers are liable if they fail to prevent students’ use of alcohol or illegal or unauthorized drugs while under their supervision, “including but not limited to at the educator’s residence or any other private setting” (p.2). This extends to off campus activities sponsored by the school, e.g. School field trips or excursions to local, out-of-state or even foreign countries. While the Nigerian Code of Conduct expects teachers to be role models to the learner at all times, it does not specify locations where the teacher may be held responsible. It would probably take challenges to sanctions imposed under this code to get greater clarification as to what is unethical conduct.

**Dissemination and Enforcement of the Codes of Ethics**

The *Teachers Code of Conduct* in Nigeria is 10 years old this year, yet research (Agih, 2013) indicates teachers’ lack of awareness or knowledge of the existence of the document or the expectations of behavior. Agih’s study was conducted in Bayelsa state Nigeria using 1,980 secondary school teachers and 80 secondary school principals. He found that principals were quite knowledgeable about the *Teachers Code of Conduct* and “comply with some of the acts adjudged to be misconduct in the profession.” Both principal and teachers were most familiar
(97.5% and 92.6%, respectively) with an indicator of “forgery or mutilation of official
document.” There was also reasonably high but flipped compliance rate of 70% and 88% to the
indicator among principals and teachers, respectively. Both groups were very familiar (96.3% vs
92.6%) with the indicator of not fighting on school premises and also complied (98.8% vs.
90.5%). Yet, only 66.3% of principals and 28.4% of teachers knew that teaching without
registering with TRCN was adjudged a misconduct, with 60% and 14.7% compliance,
respectively. It is not clear whether the author investigated the source of the familiarity or
knowledge. In other words, is it possible that respondents have no personal knowledge of the
document, but just know behaviors that could be considered reprehensible for teachers?

The findings of Agih (2013) are probably not unique. Even though a copy of the
document is available on the TRCN website, many teachers neither know to look for it or do not
have access to internet and so are ignorant of the codes of conduct and, as would be expected, do
not observe them. The Teachers Code of Conduct document proudly lists organizations,
institutions of higher learning, government agencies and professional associations that provided
feedback and probably received copies of the final version. The important group that is not listed
is the classroom teacher, except as represented by the Teaching Council of Nigeria or the
Nigerian Union of teachers. Also, missing was a plan of how all teachers would get a copy of
this document or at least be made aware of it. As Agih (2013) pointed out, the document cannot
guide behavior if teachers do not know of its existence or its contents.

In Georgia, there is a wide dissemination of the Code of Ethics. Educator preparation
programs teach about it, and the codes are communicated throughout school systems and are
accessible to the public via the GaPSC website. It is interesting, however, to note that the Ethics
division of the GaPSC still handles a huge number of ethics complaints and violations.
Consequently, the commission has implemented other ways to increase familiarity and compliance. In Georgia, since 2014, teacher candidates in teacher preparation programs are required to obtain a pre-service certificate to be allowed in public schools for observation or student teaching. One of the conditions for obtaining that pre-service certificate is submitting a copy of certificate of completion of an online training on Educator Ethics. The program is designed to teach the candidate, through scenarios, the Georgia code of ethics and when they meet a pre-determined acceptable level of performance, a Certificate of Completion is generated which candidates will submit with their applications for the pre-service certification. At the end of candidates preparation (one to three years later), they are required to take an Ethics assessment in which they must obtain a passing score, just as they must pass certification tests in their content areas to receive a teaching certificate from the GaPSC to teach in Georgia public schools. The development and administration of all these tests are contracted out to an external testing company. Teachers already employed are expected to take and pass their Ethics test when they renew their teaching certificate, usually three to five years, depending on their current level of certificate on Georgia’s tiered certification system.

In Nigeria, the code of conduct could be embedded in a specified required course in all teacher preparation programs. Alternatively, a copy could be given to new registrants at the point of registration or induction. The TRCN has to invest money in professional development using education faculty members in collaboration with the states’ school boards during the summer vacations. For teachers to participate in such mandatory professional development, attendance has to be made a condition of continued employment. Copies of the Teachers Code of Conduct should be one of the workshop materials distributed and discussed. If these workshops are organized close to home, teachers would not incur undue costs and would not need to be
reimbursed for participation. The fact that only 28.4% of the secondary teacher survey knew they were expected to register to be teaching and that only 14.7% actually complied shows that the TRCN has its work cut out for it. Copies of the Teachers Code of Conduct need to be placed in the hands of all teachers if they are to serve as guide for teacher behavior. For registration with TRCN to be taken seriously, there has to be sanctions for schools or principals that hire or allow any teacher that does not show valid registration to teach in their schools. That means that the TRCN should also facilitate verification of registration validity. The current requirement for annual renewal of registration is burdensome on teachers and probably not sustainable. TRCN could try a five-year validity period as Georgia and some other states in the USA have in place. It must also have enough staff and technology to ensure quick turnaround for applicants trying to register or renew their registration.

The TRCN has authority to enforce registration since Section 17(2) of the TRCN Act of 1993 specifies that:

[I]t is a criminal offence for any individual who is not registered by TRCN as a teacher to do the job of a teacher or earn the reward of a teacher or use the title or identity of a teacher. […] It further states that the employer(s) or facilitators of such an individual shall be liable for the same fine or two years imprisonment or both (TRCN, 2010, p.4).

The TRCN is aware that compliance with registration is low and intends to do something about it as this statement indicates: “TRCN is poised to commence the enforcement of this Act systematically and steadily until the offenders appreciate that the TRCN Act is the same as the ones being used by other agencies of government now regarded as powerful because they have the political will to enforce their enabling laws” (TRCN, 2010, p. 4). This
statement was made in 2010! Agih (2013) and Onwuka and Onwuka (2014) suggest that enforcement is lax or non-existent.

**Conclusion**

While the Nigerian *Teachers Code of Conduct* and the Georgia *Code of Ethics for Educators* cover similar topics, they differ in purpose or focus, tone, scope, organization, dissemination and enforcement. Georgia’s is focused on the protection of the student and thus appears more legalistic in tone. On the other hand, Nigeria’s is focused on its primary purpose of helping the teacher behave in a manner that befits a profession. Thus, the tone is mild and many times the code does not specify what constitutes unethical behavior.

A few cultural differences can be observed in specifying expectations of behavior on similar topics. For example, Codes of Conduct are organized around relationships with stakeholders in Nigeria while they are organized as standards of behavior in Georgia. There is more emphasis on drugs and alcohol in the Georgia Code of Ethics than in the Nigerian version. On the other hand, the Nigerian Code of Conduct specifies that teachers should not be involved in sexual misconduct, drug addiction, and cultism and should not patronize student associations that are not lawful and should help to eradicate them. Cultism was specifically mentioned because that has been a major problem in some Nigerian universities and even secondary (high) schools (Martin’s Library, 2014), but a non-issue in Georgia where even the problems in fraternities and sororities, common at the university and college levels, are non-existent at the grades Pre-K -12 levels.

The state of Georgia has developed a full-proof method to ensure educator familiarity of the codes of ethics by making it a condition for entry into and completing teacher preparation (Ethics Entry test) and a requirement for certification (Ethics Exit test). The TRCN has the authority and structures to enforce registration. It just needs strategies like those the Georgia
Codes of Ethics in Education in Nigeria and Georgia (USA)

Professional Standards Commission has put in place to ensure familiarity with and knowledge of the code of conduct and to enforce compliance.
Codes of Ethics in Education in Nigeria and Georgia (USA)

References


Appendix

Table 1

*Characteristics of the Nigerian Teachers Codes of Conduct and Georgia’s Code of Ethics for Educators*

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Nigeria’s Teachers Code of Conduct</th>
<th>Georgia’s Educator Code of Ethics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governance/Control</td>
<td>National Teachers</td>
<td>State</td>
</tr>
<tr>
<td>Scope</td>
<td></td>
<td>All Educators – administrators like superintendents, principals; service professionals like counselors, and teachers, including paraprofessionals and substitute teachers</td>
</tr>
<tr>
<td>Focus</td>
<td>Instruction of teacher on acceptable and professional behavior; less focus or examples of unethical behavior</td>
<td>Protection of student and sanctions</td>
</tr>
<tr>
<td>Organization</td>
<td>Organized around relationships with various stakeholders: students, parents, colleagues, administrators</td>
<td>Organized around standards of behavior</td>
</tr>
<tr>
<td>Physical location of offence</td>
<td></td>
<td>School premises; school district – related events or trips or activity designed to enhance the school curriculum</td>
</tr>
<tr>
<td>Dissemination/Enforcement</td>
<td>No evident plan for dissemination and enforcement is yet to be verified</td>
<td>Made a requirement for student teaching and for initial certification</td>
</tr>
</tbody>
</table>
A strategy for understanding of Public Health Nursing

-Consideration of Educational Effectiveness by “Practice lessons of community exploration” -

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Abstract: Second year students at Nursing Universities mainly lean about nursing in hospitals focusing on patients during treatment period of the time. That makes it difficult for them to understand about the patient as a person having a life in a community. And that is the challenge on education of Public Health Nursing for those students as well. Therefore, We offered "Practice lessons of community exploration” during the 15 times lectures’ program of “Introduction to Public Health Nursing” after proving knowledge of Public Health Nursing to those second year students as a classroom lecture style. These practice lessons were an approach for those students to develop their viewpoints of people as community residents through their own experiences. The 15 times lectures’ program of “Introduction to Public Health Nursing” was set as following. 1; The knowledge of Public Health Nursing as a classroom lecture style, 2; Group work based on training of Community assessment on Community-as-Partner Model (Anderson. & McFarlane, 2004) to the municipal borough where the university belongs. 3; Practice lessons of community exploration. We made a separation of this municipal borough as in 5 blocks based on the local community centers for these “Practice lessons of community exploration”, and the second year students of the nursing university made explorations of these through the viewpoints along Community-as-Partner Model (Anderson. & McFarlane, 2004). In addition, the students interviewed about how the residents think or feel of their towns with residents joining some programs that those local community centers provided. After the experience of “Practice lessons of community exploration”, the students extracted categories with viewpoints of people as community residents such as “Nature environment”, “Education”, “Institution”, “Topography”, “Public safety”, “Local culture”, and “Communication skills in community” apart from Gordon’s 11-functional-health-patterns (Marjorie Gordon 1987). For the difficulty of second year students at nursing universities to understand about the patient as a person having a life in a community, this approach of "Practice lessons of community exploration” during the 15 times lectures’ program of “Introduction to Public Health Nursing” made an effect on the second year students at the nursing university. Moreover, We would like to consider more about the instructional mode for those students in order to explicate the knowledge of Public Health Nursing.
Introduction

Public Health Nurse is responsible for the health maintenance and promotion of the residents of the community. In order to work as a Public Health Nurse, You have to pass the national examination. It was able to obtain the exam requirements of the national examination of the Public Health Nurse as long as graduating from the college until now. However, the qualification of taking the national exam is given only results superiors from 2012.

Specifically, the number of credits of nurse training is increased to develop expertise. Meanwhile, the majority of the students who are not selected will be subject to fulfilling nurse training. Students of “Introduction to Public Health Nursing” are directed to all members not only the selected. These beginners in nursing have learned about the patient to be treated in a hospital. So that, it is difficult for them to understand about the patient from the perspective of public health nursing. Therefore, after having learned the necessary knowledge in the classroom, they developed the point of view that includes the subject and the society in which patients live through Practice lessons of community exploration in the lectures “Introduction to Public Health Nursing”.

We report the methods and results of the specific initiatives.

Method

Objective

81(male 13: female68:) Students at N Nursing Universities

Survey was carried out for two periods (180 minutes) in the first semester (spring to summer) of second year.

1. Readiness of the students:

   (1) first grade

   -Lecture:

   Liberal Arts (foreign language, second foreign language, biology, chemistry, etc.)
   Specialized subjects (Anatomy and Physiology, pathology, pharmacology, psychology,
   Introductions of basic nursing)

   -Exercise:

   Specialized subjects (Practice of basic nursing, nursing process)

   -Practice:

   Early experience training (to communicate the various generations of patients),
Basic nursing training 1 (to provide the skills of livelihood supports for patients who are hospitalized)

First year students were promoted to the second year to get these credits of subjects above. They studied disease theory, health assessment, Introductions to adult nursing in the first semester of second year.

(2) We taught them “the concept of Public Health Nursing, health promotion and primary health care, the history of Public Health Nursing, Public Health problems and health care and welfare systems and institutions in Japan, theory and methods of community exploration, regional diagnosis in Public Health of the model area (1) and (2) among the lecture “Introduction to Public Health Nursing”. We taught them “the concept of Public Health Nursing, health promotion and primary health care, the history of Public Health Nursing, Public Health problems and health care and welfare systems and institutions in Japan, theory and methods of community exploration, regional diagnosis in Public Health of the model area (1) and (2) among the lecture “Introduction to Public Health Nursing”. regional diagnosis in Public Health of the model area (1): We explained “Community-as-Partner Model” at June 25, 2015. We had them collect information of a modeling area and report it to share their thoughts with each other at the same day. We distributed the finished version of the district diagnosis of modeling area. We also showed a case of the nursing process of one of the patients and applied Gordon’s 11-functional-health-patterns (Marjorie Gordon 1987) to information for 11 categories.

2. Practice of community exploration (at June 25, 2015)
(1) We organized 8 groups in 12-13 persons per group and divided N city into five blocks. Then we made the local community center of each of the district as a base of activity.
(2) We interviewed residents participating the activities in those local community center that how they think the city you were living. Moreover, we spoke to the residents participating in group activities such as hula and calligraphy in the community center.
(3) We observed the area to walk around the local community center with the viewpoint of Community-as-Partner Model.

3. Presentations (90 minutes)
(1) We gave a presentation about the area where they had investigated in each group.
(2) We instructed to add information that they seemed to have missed to understand someone at that time to the practice sheet.
4. The practice tools and the use of them

(1) We showed a case of the nursing process of one of the patients which was the same patient information we had used on 25th June 2015.

(2) We again applied Gordon’s 11-functional-health-patterns (Marjorie Gordon 1987) to information for 11 categories.

(3) We instructed to add information that they seemed to have missed to understand someone at that time to the same practice tools in the week after Practice of community exploration.

5. The learning goals

(1) The student can understand that a patient comprehensively to become more aware of his background; district, city, and prefecture, country.

(2) The student can understand that you are affected by the history of the area, culture, industry, transportation, medical care, welfare, and the community.

(3) The student can understand that all patients do not normally belong to hospitals and they live in community.

(4) The students can understand their overall picture of N city has their university.

6. Ethical considerations

We explained the gist of our study and got agreement in writing with them to promise that results was not used for a purpose other than the study and that we considered as individual was not identified.

Analysis

The exercising tools based on the case that had been presented to the students was used before and after Practice of community exploration. They were classified in 11 categories along Gordon’s 11-functional-health-patterns (Marjorie Gordon 1987) theory before the Practice of community exploration. After the Practice of community exploration, student made Labels of add information that they seemed to have missed to understand someone at that time to the same practice tools in the week after the Practice of community exploration.

The above labels were collected and categorized for qualitative integration by Affinity Diagram. The analysis was done by 5 teachers who had participated the investigation involves 3 public health nursing and 2 home nursing teachers.
**Results**

Although labels are 289 sheets has been extracted, the following labels which apply to 11 categories of Gordon is omitted.

1. activity, exercise (16) : occupation
2. Self-perception, self-concept (18) : independence, hope, motivation, interest
3. Health perception, health management (4) : eating habits, diet, daily habits
4. Roles, relationships (16) : family structure, family, relationships with the people around, friendship
5. Stress tolerance, Coping (3): Stress

The labels relevant to the viewpoint of public health

1. Living environment (63 labels) : construction products, shopping environment, the atmosphere of the city, dwelling form, sports environment, presence or absence of the park, The number of apartments, eating out environment, environment of medical facilities, welfare facilities
2. Communication between local residents (28 labels) : relationship, communicate with neighbors, communication with the local community, communication
3. Safety and transport (23 labels) : means of transportation, traffic, public transportation, the distance between the workplace and the home, commuting means
4. geography (22 labels) : the topography of the area where A lives, geographical environment, the topography of N city, land, the number of a hill
5. environment (22 labels) : climatic impact, environment, climate, atmospheric state, temperature, water quality
6. economics (20 labels) : economics, economics in your district, economic resources, employment
7. institution (18 labels) : institution, government, politics, social and health service, welfare service, public health activities of the company, improvement of public services
8. education (11 labels) : education environment, study environment, education, presence or absence of a university, presence or absence of a private university
9. avocation (7 labels) : avocation, amusement
10. Heredity (2 labels) : Heredity
11. security (2 labels) : security, regional security
12. culture (1 label) : culture

**Consideration**

Public Health Nurse activities contains cultural backgrounds such as regional climate and temperament,
lifestyle (Marutani, 2005). Students, however, do not have the viewpoint to count these cultural backgrounds in because they have learned about the care of patients undergoing treatment in the hospital. Therefore, they need a gradual education to develop the skill of Public Health Nursing activities.

Students follow the 5 stages learning process such as “see the real image of the district and the people”, "see the target", "analyze the data associates with dates", "see the strengths of the background and region to discover health issues” and “see the outline of the institutions of the plans” in the research on learning process concentrates on how students are learning the deployment process of regional diagnosed in Public Health Nursing Practice (Nishizima, 2007).

We had them understanding the needs of the viewpoint of public health to conduct an assessment and grasp a patient. Hereby, we achieved the leaning process “see the real image of the district and the people” in the context of Nishizima(2007) to see the data in N city and do the Practice of community exploration. Next, they achieved the stage “see the target” to have the viewpoint of effects on a health condition of the patients from the cultural background of his region. It is found that they got the viewpoint such as geography, environment, living environment, security and transportation from the results of the content analysis. The viewpoint has spread to the background such as institution, economic, education and culture.

According to Tawara (2003), it is very important to see the historical background to for understanding the community activities. And "Inheritance" was interpreted as an endemic that continually occurs in the specific area and relates closely with a geographical factors such as geography and climate of the area. Although the students were able to broaden the perspective enough for a beginner of public health nursing, it is difficult for them to have a point of view of history and culture.

Although the learning goals (3) and (4) are almost achieved, learning goals (1) and (2) are, to be determined from the number of the labels, poorly understood. Thus, it is required that we teach them the viewpoint to correlate considering these historical course with understanding the health issues. Our approach based on an experiences to look at the environment and interview with residents became the help of basic understanding of the public health nurse activities.

**Conclusion**

Our goals is that students are able to expand the perspective to the background of the patients and
connect it to the viewpoint of public health nursing to understand their objects widely. The viewpoint of the students spread by exercises with experimental learning. Although the purposes are almost achieved, it is required that the accuracy of the connection between the purposes and the contents of the lectures are modified to get the viewpoint that historical or cultural course relates closely with the current health problems.

References
1. Title of the submission
What are the Key Elements for a Good Academic Presentation from Non-native English-speaking Scientists' Perspectives

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6. Abstract
English has become the major language in research communication and being able to conduct effective presentations is one of the essential skills for scientists for their research life. However, it poses a great challenge to non-native English speaking scientists, especially novice members. We thus need to urgently develop an effective training program for academic presentations in the English language, to help them establish their careers.

There are, however, fundamental problems which need to be dealt with, that is to say, specific knowledge on how to conduct a good academic presentation is, at this point, insufficient, and past studies on discourse of academic presentations are based on linguistic view points and lack audience perspectives. In response to these circumstances, clear guidelines for teaching academic presentation and systematic methods are required to be developed, along with the contents of teaching based on the genre knowledge incorporated for discourse members.

Thus, in this research, the essential elements that constitute a good academic presentation are comprehensively investigated through the use of 105 questionnaires from the Japanese scientists' perspectives of an audience. Then, the author would like to examine what the implications are for the pedagogy of teaching academic presentations and discuss what should be included in classroom teaching for realizing effective presentations.
Examining Mathematics Instruction in Inquiry-Based Classrooms:

Kindergarten to Grade Three

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Abstract

The current political and educational climate in Alberta is in flux over how to teach mathematics. Since the rise of inquiry or discovery-based mathematical learning, parents and educators preferring traditional methods of teaching math have attributed diminishing student mathematical test results to the removal of traditional methods of instruction. This literature review examines a variety of current scholarly and related educational resources to determine how Kindergarten to Grade Three children in inquiry-based schools develop a deep foundational knowledge of mathematical thinking. The study found four key teacher competencies: deep discipline knowledge, solid pedagogical knowledge, the ability to provide rich open-ended problem-based tasks and skill in probing student learning are required to deliver a successful mathematics program. Findings also noted that both discovery-type and traditional instructional strategies are necessary to successfully understand mathematical outcomes. Recommendations suggest that a balanced mathematics program combining inquiry or discovery-based learning with traditional instruction enables students to work at a deep conceptual level through a real-life problem-solving lens.

Key terms: mathematical thinking, inquiry-based learning, discovery-based learning, traditional methods of learning, Kindergarten to Grade 3
The current political and educational climate in Alberta is in flux over how to teach mathematics. Recently in Alberta a group of parents, business people and politicians have expressed the desire to go “back to the basics”, specifically returning rote memorization of basic facts and algorithms to the mandated curriculum (Alcinil, 2014; Mertz, 2014). In addition, this group has voiced concerns that the rise of discovery-based mathematical learning in the province beginning around 2008 has resulted in students no longer being taught standard methods of problem solving leading to a deficit in their understanding. Moreover, declining provincial and international standardized test scores since this implementation has fueled this discussion (Wente, 2014).

Debate around this issue is intense however. Teachers using inquiry-based learning have found that students are more engaged with mathematical learning when it is done through a real-life problem-solving lens and are able to articulate a deep understanding of the concepts being taught. Researchers have established “that real-life problems constitute authentic contexts within which students can be expected to learn and experience the power of mathematical knowledge” (Chinnappan & Pandian, 2009, pp. 198-199). “There is [also] a growing body of academic evidence that [international standardized] test scores aren’t accurate reflections of student learning” (Campbell, 2014).

I argue that inquiry-based math instruction can successfully address curricular outcomes and ensure young learners develop deep foundational knowledge when the authentic tasks include both conceptual and procedural instruction. This review examines a variety of current scholarly and related educational resources on mathematics instruction in Kindergarten to Grade Three inquiry-based schools to determine how children develop a deep foundational knowledge of mathematical thinking. A description of themes emerging from the data and an analysis of these themes to determine which strategies most successfully support teachers in planning for,
promoting and extending mathematical thinking in daily instruction will follow. Possible implications will be discussed.

Over the past seven years the Alberta government has been redesigning the provincial education system. After consultation with a diverse number of Albertans a document entitled *Inspiring Education* was produced summarizing the desired attributes and competencies of the graduates of 2030 (Alberta Education, 2010). Literacy and numeracy were the cornerstones to achieving these attributes and competencies. There was also the recommendation that teachers “move education to a process of inquiry and discovery – not just the dissemination of information and the recall of facts” (Alberta Education, 2010, p. 7). In 2013, guided by the *Inspiring Education* document the government issued a Student Learning Ministerial Order mandating these new educational goals and standards in Alberta (Alberta Education, 2013).

Although now mandated to do so, educational systems across Alberta have been moving towards inquiry-based learning for quite some time. Inquiry-based pedagogy provides opportunities for learners to invest cognitively and emotionally in their learning and through these opportunities, students are more likely to engage in and identify with schooling outcomes (Willms, Friesen & Milton, 2009). With the support of educational organizations and networks, researchers, professional development educators and authors at local conferences teachers are intentionally designing rigorous inquiry-based explorations of content.

This inquiry pedagogy includes the discipline of mathematics; as Twomey Fosnot (2007) states, “mathematicians solve problems but they also pose problems. They inquire. They explore relations, investigate interesting patterns, and craft proofs” (p. 8). Teachers report that students are much more engaged in mathematics and using personal methods of problem solving has enabled students to demonstrate a deeper understanding of the concepts being taught.
However, declining results from both provincial and international standardized math tests completed during this time of redesign have caused concern among many parents, business people, politicians and even some teachers in Alberta. Grade Three Provincial Achievement Test data from 2010-2013 demonstrates a 3 to 4% decrease as compared to the test results from the 2008-9 school year (Alberta Education, 2013). Programme for International Student Assessment (PISA) tests (for 15 year old students) written in 2012 demonstrated an increased failure rate of 15.1% in 2012 up from 7.3% in 2003 (Wente, 2014). From this, these groups postulate that children are not developing the basic skills of math facts and algorithms and have a deficit in their understanding of mathematics. They are demanding a return to a mathematical education with a focus on standard procedures and algorithms.

Armed with this information, these concerned individuals joined forces to pressure the government into reversing some of the redesign decisions, and have in fact been partially successful. In late June 2014 former Minister Jeff Johnson stated:

The curriculum will be amended in time for the fall semester to make it “explicit” that memorization of the mathematics times tables is still expected and that instructors can teach the strategies for solving equations they believe are best suited to the student. Language will also be removed that some believe discourages rote learning. (Nolais, 2014)

As teachers move forward with this revised direction, the question remains, can students develop a deep mathematical understanding through inquiry-based learning?

**Researcher’s Role**

Mathematics became an interest of mine about ten years ago. At that time, the school I was working at became involved with the International Baccalaureate Primary Years Program taking up inquiry-based learning. I then moved to another school doing inquiry-based learning
guided by the Galileo network. Throughout this time the work in both schools moved increasingly towards a single focus – inquiry; as much as possible everything, including mathematics was taught including under the umbrella of the inquiry.

In engaging in this work, however, it has become apparent to me that while a richer understanding of mathematics can be developed through inquiry, not all students are developing an understanding of and mastering the basic facts and algorithms. Feedback from teachers and parents continues to indicate that a significant number of students are not advancing to their next grades with the foundational mathematical understandings that are needed to complete the expected work at that level.

**Research Purpose**

The purpose of this study is to determine effective instructional strategies that enable Kindergarten to Grade Three children to develop deep foundational mathematical knowledge in an inquiry based setting.

The study will be guided by the following questions:

1. What classroom practices in inquiry-based schools prove most effective in ensuring children develop a meaningful understanding of higher-level mathematical thinking?
2. What classroom practices in inquiry-based schools prove most effective in ensuring children develop meaningful understandings of standard procedures and algorithms?
3. How do teachers assess for student understanding?
4. What strategies do effective teachers use when students are not able to demonstrate understanding?
5. What strategies do effective teachers use when students are ready for enrichment?

**Methodology**
In order to determine the ways Kindergarten to Grade Three students come to understand mathematics in an inquiry-based setting I conducted a qualitative literature review to gather a broad section of information. Sources for the literature review were gathered from academic and publically accessible databases initially using the key terms: mathematics, inquiry-based learning and elementary and included: peer reviewed articles, government documents, blogs, professional math books and other relevant educational material. I examined each for evidence of effective mathematical instructional strategies within Kindergarten to Grade Three inquiry-based classrooms.

When analyzing the literature, I looked for terms and practices that denoted emerging trends and patterns to establish the current, most successful instructional strategies in Kindergarten to Grade Three mathematics education. I was also interested in determining what assessment criteria teachers used to measure the success of each strategy, particularly evidence of student learning as well as note other relevant information.

Using this analysis in conjunction with the number of references within the material I grouped then regrouped the data according to common traits to determine what strategies were employed, ranked them in order of effectiveness in improving student understanding and mastery of foundational mathematics then made recommendations as to how to implement them within Kindergarten to Grade Three inquiry-based settings.

My search revealed that research for this age group is limited. Scholarly databases, blogs, social media and newspaper articles focused on a variety of ages and current government testing information was based on Grade Six, Nine and Twelve students while the PISA data focused on 15 year olds. Therefore I had to broaden my search to include inquiry-based educational articles related to older students that seemed to have universal applications. I limited my articles to the
last ten years with the exception of one controlled study from 1990 I felt was relevant to this topic.

**Literature Review**

While public interest has brought the topic of mathematics instruction to the forefront locally, it has been a growing topic of interest across many school districts in Canada and beyond for many years. Friesen, 2005, 2008; Gavin & Moylan, 2012; Makar, 2007; National Council of Teachers of Mathematics (NCTM), 2014 and Towers, 2010 have all researched and written about in it the academic educational literature. Examining these sources provided a more thorough sampling of best practices around mathematical instruction and inquiry-based learning.

**Major Themes**

Four teacher competencies and classroom practices repeatedly appeared in the scholarly literature and educational material that have a significant impact on student learning. They are: the necessity to have a deep knowledge of the discipline, the ability to provide rich open-ended problem-based tasks, skill in probing student ideas and thinking, and strong pedagogical knowledge of how children learn. Though these competencies and practices are closely connected and interwoven they will be discussed as discrete entities.

**Deep discipline knowledge.** Research is demonstrating that teaching mathematics in an inquiry-based setting requires deep discipline knowledge (Friesen, 2005, 2008; Gavin & Moylan, 2012; Makar, 2007; Towers, 2010). Teachers need to understand the core mathematical concepts, and how each concept moves from the simple to the increasingly complex. “For teachers, then, it is no longer enough to know mathematics for their own use; creating or finding appropriate representations requires them to know about the discipline in ways that make it accessible to students” (Friesen, 2008, p. 52). Teachers not only have to know their own curriculum, at a minimum they should know the grade ahead and the grade behind. They need to know what
constitutes a basic understanding of a concept and what constitutes an advanced understanding. It is important to note that children do not have to move up to the next grade level skills to demonstrate superior understanding and explore the depth and breadth of the concept they are working on. To truly support students, teachers must ensure they have developed a strong understanding of mathematics themselves.

**Rich open-ended problem-based tasks.** Thoughtful selection or creation of a task is critical in an inquiry-based setting. The task must pose and have children investigate open-ended questions that are broad in nature to ensure all students have a place to begin and rigorous enough to challenge each student to move along in their understanding of the concept (Friesen, 2008; Gavin & Moylan, 2012; Makar, 2007; Marshall, Horton, Igo & Switzer, 2009; NTCM, 2014; Van de Walle, Lovin, Karp & Bay-Williams, 2014). Tasks should also be worthy of a student’s time. “An advanced concept allows teachers many opportunities to differentiate and support students in learning material that is truly new to them” (Gavin & Moylan, 2012, p. 185). Good tasks also give students a chance to “think, reason, and justify their thinking at much higher levels than is often expected of them” (Gavin & Moylan, 2012, p. 185).

**Probing student thinking.** It “is essential to support productive struggle in learning mathematics” (NTCM, 2014). “Teachers must help students navigate several simultaneous tasks, from brainstorming initial ideas, to gathering and applying information, to ultimately explaining results” (Marshall et al, 2009, p. 576-7). The ability to probe a student’s thinking has been established as key in uncovering any misconceptions held by children as well as to determine next steps (Alberta Education, 2007; Bailey, 2007; NTCM, 2014; Tower, 2010). One way these researchers and mathematicians advocate for this to be accomplished is through ongoing dialogue. Another effective practice is posing “purposeful questions to assess and advance students’ reasoning and sense making about important mathematical ideas and relationships”
(NTCM, 2014). Wentworth & Monroe (2011) also note that teachers must thoughtfully select what student work is presented in order to carefully structure the learning of the whole group. Teachers actively seeking to understand student thinking is paramount in ensuring they are developing the appropriate understandings of the concepts being taught.

**Pedagogical knowledge.** Friesen (2005) states, “improving [teachers’] knowledge of how students learn particular concepts and topics” will positively impact the quality of their teaching (p. 9). In mathematics it is necessary for teachers to know how to “proceed from the simple to the complex and from the concrete to the abstract” (Alberta Education, 2007, p.1), to “use and connect mathematical representations” (NTCM, 2014) and to have fluency in utilizing a variety of manipulatives to support the learning (Towers, 2010). Towers (2010) also discusses the importance of practical wisdom, “what is best to do for these students, in this context, with this subject matter” (p. 245). Strong pedagogical knowledge ensures that teachers know how to scaffold learning to promote understanding and ensure that children will develop deep foundational mathematical understandings and be able to utilize these understandings in new and novel situations.

**Minor Themes**

In addition to the above four major themes, five minor themes emerged as helpful in supporting teachers develop their competencies and improve instructional practice. They were: the importance of promoting procedural understanding, accessing professional development, having personal experience in inquiry-based learning, having supportive colleagues and administration and good assessment practices.

**Promoting procedural understanding.** “Direct instructional guidance is defined as providing information that fully explains the concepts and procedures that students are required to learn as well as [provide] learning strategy support” (Kirschner et al, 2006, p. 77). Craigen
(2014), Friesen (2008), Kirschner et al (2006), Thornton (1990), and Van de Walle et al (2014) concluded that students require direct teacher instruction to develop fluency in mathematical procedures and algorithms. Alberta Education (2007) mandates “mastery of number facts” and further states, “this mastery allows for application of number facts and facility with more complex computations.” (p. 1). It is important then that teachers attend to providing direct instruction of foundational mathematical understandings and they facilitate the opportunity to develop mastery of these procedures. Van de Walle et al (2014) caution however, “a teacher who is striving to teach for understanding can share information via direct instruction as long as that instruction does not remove the need for children to reflect on and productively struggle with the situation at hand” (p. 10).

**Professional development.** To successfully develop the competencies and classroom practices and impact student learning Makar (2007) and Friesen (2005) assert that professional development opportunities are the cornerstone to sustained change in quality teacher practice. These experiences need to be ongoing rather than one time only, build on previous work and help address the needs that individual teachers are encountering. The relevance of professional development to the day-to-day work is crucial as is time and support for reflection and reexamination of practice. (Makar (2007). As professional development needs are unique to each individual, it is incumbent upon teachers to take agency and search out those opportunities that will enhance their practice.

**Inquiry experience as a learner.** “One of the most compelling experiences for the teachers in learning to teach using inquiry was having the opportunity to work through inquiry problems themselves” (Makar, 2007, p. 57). “Teachers need to have wrestled with the same problems themselves and be familiar with the range of mathematical possibilities and conceptual connections that each problem might elicit” (Bailey, 2014, para. 9). Having recently been in a
situation where I had to work through inquiry problems, I can attest to how accurate this statement is. During a math professional development activity a group of teachers worked their way through an open-ended, problem-based task. The insights and conversation that accompanied the work really focused the teachers on knowing what the students would face if completing this task and how they would adjust elements within the task to support particular learners. This experience as an inquiry-based learner highlighted some of the processes that our young learners go through and provided much more information than just becoming familiar with a good open-ended problem-based task.

**Support from colleagues and administrators.** It is imperative not to underestimate the value of a collegial environment as teachers attempt to refine their practice. Conversation strengthens voice; improves communication and challenges people to think critically. As noted by Makar (2007) “teachers relied on one another…and expressed how important it was for them to spend time together, interacting, sharing ideas and concerns, and developing a community together” as they worked through a year-long project of initiating mathematical inquiry (p. 65). This accountability also assisted in helping teachers persevere when they experienced challenges (Makar, 2007).

Towers (2012) concluded that when teachers are moving forward with inquiry-based instructional practices no matter what teacher training was received, math instruction has the tendency to revert back to traditional practices without the support of administration. In a profession that is often enacted in solitude, it appears that having a supportive team has a huge positive impact in the successful adjustment of teaching practices.

**Assessment.** It is important for teachers to establish well thought out assessment strategies. While summative assessments are used to provide a snapshot of the cumulative understanding to that point, it is the daily formative assessments that assist students in knowing
where they are and where they need to go and “teachers [in] adjust[ing] their instruction “in
time” to correct misconceptions and promote developing understanding” (Gavin & Moylan,
2012). These strategies can include teacher questions and observations, student written and oral self-assessments and utilizing rubrics designed for the task. “Well-designed, embedded, dynamic assessment practices have the potential to remove many of the current barriers to learning in the mathematics classroom” (Friesen, 2008, p. 53). Meaningful assessment will always inform all stakeholders (students, parents and others) as to what the student has achieved at any particular point and guide next steps.

Concerns

Some mathematicians and researchers (Craigen, 2014; Kirschner, Sweller & Clark, 2006) question whether inquiry-based learning provides students with enough support before engaging in open-ended tasks. Without direct instruction prior to beginning Craigen (2014) states, “a student’s toolbox for such problems is rather empty. It seems that “inquiry” is code for requiring students to solve problems for which they have not yet been exposed to appropriate methods” (2014). Kirschner et al (2006) also note that when students are given inquiry-based tasks that they have little to no background with, teachers “end up providing students with considerable guidance” (p. 79) in the form of direct instruction anyway. Their research also demonstrates that with limited guidance student “confusion can lead to misconceptions…and false starts are common in such learning situations, [causing] unguided discovery [to be] most often inefficient” (Kirschner et al, 2006, p. 79).

Findings

The findings of the literature review demonstrate a positive relationship between many inquiry-based instructional practices and the ability of students to develop deep foundational understanding of mathematics. These findings also contribute to this body of knowledge by
identifying the most effective instructional practices that enable teachers to successfully teach mathematics.

**Developing a Meaningful Understanding of Higher-Level Mathematical Thinking**

The trends in the data indicate four effective classroom practices that have demonstrated effectiveness in ensuring children develop a meaningful understanding of higher-level mathematical thinking. These are: providing open-ended concept-based tasks, pedagogical knowledge of acquisition of mathematical skills and concepts, the ability to probe student thinking, and formative assessment to guide next steps in learning. Utilizing these instructional practices on regular basis will enable teachers to stretch a child’s thinking and allow them to experience the richness of the math curriculum with an increasingly deepening understanding. In order to successfully implement these practices, research shows that teachers require deep, discipline knowledge, opportunities for professional development and supportive colleagues and administration.

**Developing Meaningful Understandings of Standard Procedures and Algorithms**

The same classroom practices and competencies that ensure that children develop higher-level mathematical thinking also demonstrate effectiveness in ensuring children develop meaningful understandings of standard procedures and algorithms. In addition “when relationships between facts, procedure, concepts and problem solving are attended to and made explicit in the mathematics classroom, student achievement increases” (Friesen, 2005, p. 9 citing Hiebert, 2005). Research data shows that intentional instruction and practice embedded within open-ended concept-based tasks lead to greater understanding and mastery.

**Assessing for Student Understanding**

Data indicates that formative assessment has the biggest impact on determining what students know and can do. Daily conversations, oral and written student reflections, justifications
and skillful questioning assist in “analyzing student understanding before the final assessment allow[ing] teachers to adjust their instruction “in time” to correct misconceptions and promote developing understanding” (Gavin & Moylan, 2012, p. 189).

**Responding When Students Don’t Understand**

Task design is the biggest factor in ensuring success for all students. By designing explorations that begin with the most basic understanding of the concepts all children will have an entry point (Gavin & Moylan, 2012). It is also important to consider “the difficulties that students [may] encounter when learning the concept and how you might nudge their thinking” (Gavin & Moylan, 2012, p. 188). Providing individual coaching and guiding, scaffolding using ‘hint cards’ (Gavin & Moylan, 2012), reviewing and creating opportunities to participate in group conversations where other students’ thinking can be made visible, discussed, and debated, can support learners emerging understanding. Teachers need to know about the discipline deeply in order to find ways that “make it accessible to students” (Friesen, 2008, p. 52). It is important to avoid repeating “approaches to the teaching of mathematics … for whom such practices did not work in the first place” (Friesen, 2008, p. 51).

**Effectively Supporting Students Ready for Enrichment**

Open-ended tasks provide many opportunities for students to delve more deeply into a concept. By considering the progression of concept development teachers can develop challenges for students to extend their understanding. Gavin & Moylan (2012) found that one effective way to do this was by creating extension task cards that modified existing tasks in a way that require higher-level thinking. Placing these cards in an accessible location allows all students an opportunity to push their thinking and stretch their minds (Gavin & Moylan, 2012).

**Discussion**
Burns (2014) writes about uncovering the math curriculum. As she discusses best practices, she states, “too often mathematics instruction gives students the erroneous notion that learning math is all about learning procedures, rather than making sense of the ideas” (Burns, 2014, p. 64). This is true for most adults as well. Except for a brief time period, mathematics was often taught through a procedural lens. That is something we all know and understand even if we can’t explain the ‘why’ behind those procedures. These procedures have served us well in most aspects of our adult lives. However, this type of mathematical learning has also left many of us with a feeling of incompetence around mathematics. Once we have forgotten the procedures we are unable to reason our way through the problem. On the other hand to many outside the classroom, discovery-based math doesn’t seem to provide students with any structure at all. It appears children are left to explore and determine how to best answer questions without developing skills in what has already been determined to be effective ways to solve mathematical problems. Based upon the literature examined however, while there has been criticism of inquiry-based learning this may not reflect the potential of the instructional practice and the call for a ‘return to the basics’ in mathematics education in Alberta will likely not meet the needs of our 21st century learners.

Teachers need to acquire deep discipline knowledge, utilize effective classroom practices that include both inquiry and direct instruction components, and be supported in their work through professional development and by colleagues and administration in order to successfully move student learning forward. To really ensure that students develop deep conceptual understanding, mathematics has to be explored independently as well as within project-based work. As Friesen (2008) stated, “The type of practice required to promote mathematical proficiency stands in sharp contrast to both transmission-type pedagogies and discovery-type pedagogies. Teaching practices that help students build mathematical proficiency combine
concept formation with procedural fluency.” (p. 52). As expected, while current research and influential mathematics organizations are promoting inquiry-based learning, this must be taken up in a thoughtful way to ensure deep procedural knowledge and understanding occurs.

**Conclusion**

In a time when mathematics instruction is being analyzed and questioned by many different individuals and groups in Alberta and beyond, this literature review highlights the teacher competencies and instructional strategies that can enable Kindergarten to Grade Three students in inquiry-based classrooms to successfully achieve mathematics outcomes. It can inform teachers on current best practice, policy makers on curriculum redesign and researchers on new questions to examine.

Teachers in inquiry-based classrooms must have deep discipline knowledge, solid pedagogical knowledge and the ability to probe student learning to enable them to successfully utilize open-ended problem-based tasks. These tasks must be open-ended to allow all students a place of entry and methodically push them to deepen their understanding and skill development. Students must participate in discovery-based learning as well as receiving direct instruction. There are additional strategies and supports that need to be in place to enable teachers to follow through on their development of these competencies and utilization of these strategies. Without relevant profession development and a strong community of collegial and administrative support it is difficult to sustain new skills long term. This review also cautions that while inquiry and problem-solving activities are highly desirable methods of conceptual learning, direct procedural instruction is also required.

Alberta’s policy makers and other concerned individuals are apprised of ways mathematics education can be supported or redesigned to move student understanding and skills forward. Additionally decision makers and advocates must also be aware of the how they are
using the data story, is it possible that additional factors other than inquiry-based learning are also contributing to these results?

The lack of scholarly research related to Kindergarten to Grade Three students demonstrates the need for further investigation in this area. These children represent a group of learners who are just beginning their formalized journey into mathematics. Their needs could be unique and require alternative instructional methods to ensure strong foundational learning takes place.

Years of mathematical research has demonstrated that inquiry-based, problem-solving learning is very effective in ensuring that students acquire deep conceptual understanding in mathematics however decreasing test scores remind us that procedural knowledge and fluency with these procedures also need to be part of a balanced mathematics program. Teachers will need to demonstrate proficiency in a variety of competencies and instructional practices to ensure that students are developing both the conceptual and procedural understandings required to be successful in the 21 century.
References


Towers, J. (2010). Learning to teach mathematics through inquiry: a focus on the relationship between


SPEED UP YOUNG CHILDREN (SPEED Learning Activities: Smart/Multiple Intelligence, Play, Environment, Ethics, and Developmentally Appropriate Approach/ DAP)

Abstract

The purpose of this study is to investigate SPEED Learning Activities (Smart/Intelligence, Play, Environment, Ethics, and Developmentally Appropriate Approach or DAP) effecting kindergarten students on their developmental areas, ethics and problem solving skills. The sample group was Fifty-five kindergarten students taken by random from 220 students at Srinakharinwirot University Demonstration School (Elementary), Bangkok, Thailand in the second semester of 2013 (November, 2013-February, 2014). This study used pretest-posttest to collect data on ethics and problem solving. The researcher used the DAP as a guideline to prepare environment, teaching and an observation recording (adapted). The results showed that students with SPEED Learning Activities increased in ethics and problem solving skills higher than a control group. In addition, the experimental group had better physical development than a control group. Limitations of the study were the number of students in the classroom and the ratio between teachers and students.

1. Introduction

Research stated the importance of early experiences; inherence and highly active experiences help young children to develop their brains and behaviors. During the early years of life, young children develop their most powerful capabilities, complex emotions, and essential socials skills (National Research Council Institute of Medicine, 2000, pp. 1-2). Froebel, who was seen as a father of kindergarten, established the first kindergarten in Germany between 1782-1852 for children less than six years of age. He viewed children as being educated in close harmony with their own nature and the nature of the universe. (Morrison, 2004). Heroman and Copple (2014, pp. 5) said that kindergarten years tend to be a wonderful time because it is their first experience in school, and it is a bridge for children to cross from preschool to a big school or first grade. High quality early childhood programs offer safe and nurturing environments that support the physical, social, emotional, and cognitive development of young children while responding to the needs of families (Bredekamp & Copple, 2010). The National Association for the Education of Young Children (2005) describes kindergarten programs at their best as including: 1) Working with community early childhood programs to create a smooth and effective transition for kindergarten children and their families, 2) Providing for the learning of all children regardless of their earlier experiences with environments, cultures, languages, abilities, or disabilities, 3) Having staff composed of degreed, certified educators who have high quality professional preparation, and relevant training experience in the developmental and educational needs of young children, 4) Using guidelines of early learning standards that emphasize the concepts and skills appropriate to and important for the kindergarten year, 5) Continuing class sizes sufficient to facilitate high-quality teaching, 6) Employing a coherent, research-based curriculum delivered through teaching practices that combine adult-guided and child-initiated experiences, physical activity, and social interaction, 7) Systematically accessing...
children’s strengths, needs, and improving weaknesses with methods that are
developmentally, culturally, and linguistically appropriate; analyze the results of this data
to direct teaching. 8) Providing respectful relationships with families to support
children’s learning as staff works with families to help identify comprehensive services
needed to promote kindergartners’ positive development and learning styles as well as
developmental characteristics of children in their kindergarten year.

Providing a quality program can enhance child development areas and learning.
SPEED Learning Activities is a teaching approach for kindergarten that consists of
necessary skills for developing young children at their highest levels with principles of
early childhood education. SPEED Learning Activities includes S-Smart/Intelligences, P-
Play, E-Environment, E-Ethics, and D-Developmentally Appropriate Approach. S means
smart or intelligences. This approach creates activities that help children to grow in
multiple intelligences for the whole week. For example, children learn how to grow
plants helps them in the area of the Natural intelligence and the Body-kinesthetc
intelligence. When they count seeds to plant, it is related to their spatial intelligences
area. A teacher creates activities that are meaningful and support young children to
explore their world. Children invent objects and experiment with them actively. Play is a
vital for young children development. Children always play in their classroom with
meaning. Before children play, they plan to play with objects and friends. During play,
they record what they do by drawing every week. Teachers understand their student’s
play. Environment, Ethics and the DAP should be provided for teaching young children.
Before teaching, a teacher provides the physical environment for young children. A
teacher creates learning areas and provides varieties of materials that are appropriate to
her children’s needs, interests and ages. In the classroom, a teacher interacts with children
by using a variety of instructional strategies such as encouraging, modeling, supporting,
or facilitating; and using a variety of leaning context such as a whole group, a small
group, learning centers, and daily routines. As Thailand is a Buddhist country, children
need to grow ethics from very young ages. It is necessary for the country to teach young
children to be a good citizen in the future.

Last, DAP and kindergarten, children change, challenge, and have opportunity
during the kindergarten year. Kindergarten is between a preschool and a primary grade.
When children are five and six years old, their intelligent development grows fast. They
learn through personal responsibility, self-direction and logical thinking. Their domains
also develop across physical, social, emotional, cognitive domains. Kindergarten shapes a
young child as a whole child, and he becomes a long life learner (NAEYC, 2014a).

2. Theoretical Framework

SPEED means fast. It means children at early childhood ages are able to learn faster than
other ages. “S” means smart or intelligence according to Howard Gardner’s Theory.
Gardner studied intelligence and found that humans have eight different areas of
intelligence. His book in 1983, “the Frame of Mine”, revealed seven areas of
intelligences as follows: Logical mathematical, Linguistics, Musical, Spatial, Body
kinesthetic, Interpersonal, and Intrapersonal. Then he added another intelligent area,
which is called the Naturalist intelligence. Gardner described that children between five
and six years of age have developed robust senses of three overlapping realms. First, they
have developed a theory of matter in the world of physical objects. Second, they have developed a theory of life in the world of living organisms. Last, they have developed a theory of mind that incorporates a theory of the self in the world of human beings. In 1995 he divided intelligence in 3 stages: 1) a symbol system means all language that children express such as sentences and story, songs, drawings, and gesture or dance. Children express their abilities through the various symbol systems, 2) a notational system means presenting the symbol through mathematics, mapping, reading, and music notion. When children progress, the symbol system and notional system merge together, and 3) a vocational or vocational pursuit occurs during adulthood and adolescence. When children gather any intelligence when they are young, its will predict their roles in the future (Gardner, 1991, 1993, 1995, 1997, & 1999).

“P” means play, which means young children are working and learning according to Piaget. Play is an essential thing for young children’s life. Young children need to play everyday as they learn about everything through playing. When children are very young, their intrinsic motivation to learn includes curiosity, hands-on investigation, and creative self-expression (Cross, 2010, pp. 5). Sheridan (2011) described the meaning of play including behavior and an approach to tasks. When children play, they increase four fundamental developments including social, emotional, cognitive and physical development. For example, children interact with surrounded objects and other children when they play. Their social and emotional, language and intelligence are growing. They learn how to deal and to communicate with others. When they interact with others, they use their intelligence to think about what they want to create. They use their small motor skills to manipulate things. Freer (2011) studied a cultural-historical theory of play with problem solving, and the children showed learning positive outcomes on concepts during imaginative and investigative play. It is discussed how teachers increase cognitive outcomes for their children during play.

“E” means ethics or character of education that is important for Thai traditional learning because it is a guideline to live his/her life with his/her morals. Ethics are related to how a person decides to do right or wrong, and good and bad things based on morals and values. To do the right thing is the main goal of ethics. The Department of Religious Affairs (2014) stated guidelines of ethics include: gratitude, kindness, discipline, unity, self, honesty, humble reverence or gentility, and religion and loyalty to the king and the nation. In addition, the Department of Education (2550) describes the eight basic ethics for children as follows: integrity, economics, honesty, discipline, gentility, unity, cleanliness, and kindness. It is important to start ethics when children are very young.

Kindergarten children are egocentric. They will understand morals when they are in elementary years. Piaget distinguished the moral thinking of elementary grades into two stages: heteronomy and autonomous. Heteronomy means, “Children are governed by others regarding right and wrong” but autonomous means, “Children are governed by themselves regarding right and wrong” (Morrison, 2014). The goal is to teach young children to focus on ethics and have good morals to support them to govern by themselves regarding right and wrong.

E means an environment that children learn best in an enriched environment. High quality early childhood programs offer safe and nurturing environments that support the physical, social, emotional, and cognitive development of young children while responding to the needs of families (Bredekamp & Copple, 1997). The study of the
relation of the kindergarten classroom environment to the teacher, family, and school characteristics and child outcomes found that classroom quality was related to teacher-child ratio and family income, not to the teacher’s level of education. (La Paro, K.M., Kraft-Sayre, M. & Pinata, R.C., 2003). Teachers create effective classrooms by providing caring and safe environments for young children, welcoming all children, working with them individually and in small groups, and helping all children develop skills necessary for success in school as well as life (U.S. Department of Education & U.S. Department of Education of Health and Human Services, 2002).

“D” means DAP or the Developmentally Appropriate Practice that is used as a guideline for early childhood teachers to teach their students. DAP is a way to teach young children that meets a child’s individual needs and to support a child’s development and learning with achievable goals (Phillips & Scrini, 2014). The four fundamentals of child development areas are social and emotional development, physical development and cognitive development (language and literacy). The NAEYC announced 12 principles of child development and learning as follows; “1) all areas of development and learning are important. 2) Learning and development follow sequences, 3) Development and learning proceed at varying rates. 4) Development and learning result from an interaction of maturation and experience. 5) Early experiences have profound effects on development and learning. 6) Development proceeds toward greater complexity, self-regulation, and symbolic or representational capacities. 7) Children develop best when they have secure relationships. 8) Development and learning occur in and are influenced by multiple social and cultural contexts. 9) Children learn in a variety of ways. 10) Play is an important vehicle for developing self-regulation and promoting language, cognition, and social competence. 11) Development and learning advance when children are challenged. 12) Children’s experiences shape their motivation and approaches to learning” (NAEYC, 2014). Three main ideas of DAP are based on an individual child’s experience with development and learning, interests and needs, and social and cultural contexts. Teachers are the key to provide enrichment experience for young children by concentrating on the DAP guidelines. DAP suggests what teachers should and should not do on issues that teachers should concerned with to provide effective teaching. Effective teaching includes: creating a caring community of learning, teaching to enhance development and learning, planning curriculum to achieve important goals, assessing children’s development and learning, and establishing reciprocal relationships with family (Copple, Bredekamp, Koralek, & Charner, 2014). The DAP has been a critical issue for decades. Dr. Copple Bredekamp and her team have worked for The National Association For Education of Young Children (NAEYC), established the DAP in 1983. Educators in the US and around the world have studied the DAP’s beliefs and teaching. Saifah (2012) studied 335 Thai teachers on beliefs and teaching with the DAP. He found that there was a significant difference of the teachers' developmentally appropriate beliefs, but there was no significant difference of the teachers' developmentally appropriate teaching practices. The findings also suggested that there was a low positive correlation between the teachers' self-reported developmentally appropriate beliefs and teaching practices.
3. Purposes of the Study

As the SPEED Learning Activities is consisted on early childhood education theories and teaching. The purposes of this study were: 1) to create the SPEED Learning Activities, 2) to study how children in an experimental group express their four fundamental developments before and after the experiment, 3) to investigate how children from an experiment group show their problem solving skills comparing with the control group, and 4) to study how children from an experiment group show their problem solving skills comparing with the control group.

4. Method and Procedures

4.1 Population and Sample

The population from this study was a kindergarten level of Srinakharinwirot University Demonstration School (Elementary) in the second semester (November to February) of the 2013 academic year. The students were between five to six years old. 218 students had different levels of abilities. Kindergarten students were divided into four groups or four classrooms, and each group had 54-55 students. This study used simple random sampling research method to get the sample group. There were 54 students that included 27 boys and 27 girls in the sample group. Children attended the SPEED learning Activities 160 days in the second semester.

4.2 Measures

The SPEED Learning Activities was applied for teaching a classroom of 54 kindergarten students. The assessment used to evaluate kindergarten students consisted of: 1) the Kindergarten Problem Solving Assessment, 2) the Kindergarten Ethical Assessment and 3) the Developmentally Appropriate Assessment.

4.2.1 SPEED Learning Activities

The SPEED Learning Activities is related to Early Childhood Education Act 2546 and the Basic Education Act 2551 that attributes on child development areas, preschool performance issues, learning contents, learning standards and indicators of learning. Moreover, the researcher studied research, theory and documents on early childhood that were involved in environment, play, ethics, problem solving skills and child development areas to design the SPEED Learning Activities. Then three experts of early childhood education revised the SPEED Learning Activities. After Improving the SPEED Learning Activities, the researcher experimented teaching with a group of nine kindergarten students that was not either a study group or a control group.

4.2.2 The Kindergarten Ethical Assessment

156 of 218 parents of kindergarten children chosed five of eight ethics created by the Department of Religious Affairs on what they wanted their children to have. The eight
basic ethics for children included: gratitude, kindness, discipline, unity, self, honesty, gentility, and religion and loyalty to the king and the nation. The researcher used five items of ethics that parents preferred their children to have to as follows: honesty, gratitude, discipline, kindness and gentility. The researcher created the assessment. Then three experts of early childhood education investigated the Kindergarten Ethical Assessment on the content validity on questions, contents and language with the IOC (the Index of item objective congruence). After the researcher revised the assessment, the researcher used the assessment to try out with 28 kindergarten students that were not in a study group or a control group. Then an expert analyzed the data with a formula KR-20 and got 20 items of questions. The researcher used pre-test and post-test to collect the data.

4.2.3 The Kindergarten Problem Solving Assessment
After studying documents on early childhood education, the researcher created the Assessment of Kindergarten’s Problem Solving and asked three experts of early childhood education to evaluate the assessment, and the assessment is analyzed the content validity. Then the researcher revised the assessment and tried out with a group of 28 kindergarten students that was not either a sample group or a control group. The expert analyzed the data with the Formula KR-20 to find reliability, and the researcher revised 20 items of questions from the assessment and used pre-test and post-test to collect the data.

4.2.4 Kindergarten’s Developmental Appropriate Practice of Observation (Adapted)
The researcher used the Developmentally Appropriate Practice as a guideline to create the DAP observation. The DAP observation was included social development and emotional development, cognitive and language development, and physical development. Three experts of early childhood education evaluated the content validity. The

4.3 Procedures
Before the school started, the researcher studied the DAP to prepare the environment and teaching. The school-age care environment rating scale by Harms, Jacobs and White was also used to prepare the learning environment. This rating scale contained as follows: space-furnishings, health and safety, activities, interactions, program structure, and stuff development. This experiment research used randomized one group pretest-posttest design to collect the data. In the second week of November kindergarten students both the sample group and the control group did pretest of the Kindergarten Ethical Assessment and the Kindergarten Problem Solving Assessment. Each group had 54 students both boys and girls between five to six years old. The researchers also observed four fundamental developments of the sample group in the second and third week, too. To prepare the SPEED Learning Activities and lesson plans, the researcher studied as follows Early Childhood Education Act 2546, the Basic Education Act 2551, theory and documents on early childhood. Students from the sample group learned with SPEED Learning Activities 160 times for 16 weeks. At the last two week of the semester, the researcher used posttest to collect the data.

4.4 Statistical Analyze
The Statistic for analyzing the assessments included basic statistic (Saiyod& Saiyod, 2539), Index of Consistency or (Saiyod& Saiyod, 2539) followed by K-R20 (Kuder Richardson). Data were analyzed using descriptive statistics. Independent T-test and analyze of variance were used to determine how kindergarten students with the SPEED Learning Activities.

5. Results
This study aimed to implement lesson plans and manual of the SPEED Learning Activities based on the Multiples Intelligences and to study kindergarten students with the four fundamental development skills, the Problem Solving Assessment, and the Ethical Assessment. The study is divided into 4 sections as follows:
1. Creating lesson plans on SPEED Learning Activities and assessments on ethics and problem solving.
1.1 SPEED Learning Activities
The researcher used random to choose a lesson plan to teach nine students who did not related to the sample group or the control group. The study showed the appropriate using a lesson plan of the SPEED Learning Activities for nine kindergarten children. The researcher was able to use lesson plans of SPEED Learning Activities.
1.2 The Kindergarten Ethical Assessment
The Finding of try out with 28 kindergarten children who were not either in the sample group and the control group was:

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Finding from the Table 2 stated that 20 items met the standard requirement as follows: 1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 14, 15, 16, 17, 20, 21, 22, 23, 24, and 25. The reliability of this assessment was .734.

1.3 The Kindergarten Problem Solving

The selected items from trying out with a group of 28 kindergarten students at Srinakharinwirot University Demonstration School were as follows:

Table 2 Validity of the Kindergarten Solving

<table>
<thead>
<tr>
<th>Items</th>
<th>p</th>
<th>r</th>
<th>Selecting</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.45</td>
<td>.54</td>
<td>Selected</td>
</tr>
<tr>
<td>2</td>
<td>.55</td>
<td>.55</td>
<td>Selected</td>
</tr>
<tr>
<td>3</td>
<td>.32</td>
<td>.45</td>
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<tr>
<td>4</td>
<td>.25</td>
<td>.25</td>
<td>Selected</td>
</tr>
<tr>
<td>5</td>
<td>.44</td>
<td>.33</td>
<td>Selected</td>
</tr>
<tr>
<td>6</td>
<td>.25</td>
<td>.35</td>
<td>Selected</td>
</tr>
<tr>
<td>7</td>
<td>.54</td>
<td>.11</td>
<td>Cut off</td>
</tr>
<tr>
<td>8</td>
<td>.74</td>
<td>.52</td>
<td>Selected</td>
</tr>
<tr>
<td>9</td>
<td>.77</td>
<td>.72</td>
<td>Selected</td>
</tr>
<tr>
<td>10</td>
<td>.32</td>
<td>.10</td>
<td>Cut off</td>
</tr>
<tr>
<td>11</td>
<td>.54</td>
<td>.44</td>
<td>Selected</td>
</tr>
<tr>
<td>12</td>
<td>.52</td>
<td>.11</td>
<td>Cut off</td>
</tr>
<tr>
<td>13</td>
<td>.56</td>
<td>.45</td>
<td>Selected</td>
</tr>
<tr>
<td>14</td>
<td>.55</td>
<td>.55</td>
<td>Selected</td>
</tr>
<tr>
<td>15</td>
<td>.32</td>
<td>.65</td>
<td>Selected</td>
</tr>
<tr>
<td>16</td>
<td>.44</td>
<td>.24</td>
<td>Selected</td>
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<td>17</td>
<td>.45</td>
<td>.25</td>
<td>Selected</td>
</tr>
<tr>
<td>18</td>
<td>.32</td>
<td>.13</td>
<td>Cut off</td>
</tr>
<tr>
<td>19</td>
<td>.36</td>
<td>.33</td>
<td>Selected</td>
</tr>
<tr>
<td>20</td>
<td>.25</td>
<td>.36</td>
<td>Selected</td>
</tr>
<tr>
<td>21</td>
<td>.85</td>
<td>.35</td>
<td>Cut off</td>
</tr>
<tr>
<td>22</td>
<td>.12</td>
<td>.25</td>
<td>Cut off</td>
</tr>
<tr>
<td>23</td>
<td>.22</td>
<td>.16</td>
<td>Cut off</td>
</tr>
<tr>
<td>24</td>
<td>.25</td>
<td>.35</td>
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<td>25</td>
<td>.81</td>
<td>.24</td>
<td>Selected</td>
</tr>
<tr>
<td>26</td>
<td>.64</td>
<td>.23</td>
<td>Cut off</td>
</tr>
<tr>
<td>27</td>
<td>.68</td>
<td>.54</td>
<td>Selected</td>
</tr>
</tbody>
</table>

KR-20 = .734
Finding from table 3 showed that 20 items of the Assessment met the requirement were 1, 2, 3, 4, 5, 6, 8, 9, 11, 13, 14, 15, 16, 17, 19, 20, 24, 25, 27 and 29. The reliability of this study was .819.

2. The findings from the four developmental areas of students with the SPEED Activities
   This study used an Experiment Research. The researcher provided Randomized One Group Pretest-Posttest Design for kindergarten students at Srinakharinwirot University Demonstration School in the second semester 2556 academic year. The sample group was 55 students selected by Simple Random Sampling. Table 3: the results of this study showed four fundamental development areas before and after students learning with the SPEED Learning Activities.

<table>
<thead>
<tr>
<th>Developmental areas</th>
<th>Before</th>
<th>After</th>
<th>df</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>1. Social and Emotional Development (8 Items)</td>
<td>13.15</td>
<td>1.85</td>
<td>13.39</td>
<td>2.03</td>
</tr>
<tr>
<td>2. Physical Development (28 Items)</td>
<td>28.26</td>
<td>0.71</td>
<td>28.35</td>
<td>0.82</td>
</tr>
<tr>
<td>3. Cognitive Development (14 Items)</td>
<td>16.03</td>
<td>2.69</td>
<td>16.52</td>
<td>2.29</td>
</tr>
</tbody>
</table>

The findings from the table 3 stated that students with the SPEED Learning Activities increased in social and emotional development without significant but students increased in physical development with significant .05. Students with SPEED Learning Activities increased in the cognitive development without significant.

3. The results from the study of students on problem solving skills
   Table 4: the findings from this study of cognitive development after students learned with SPEED Learning Activities.

<table>
<thead>
<tr>
<th>Cognitive Development</th>
<th>Before</th>
<th>After</th>
<th>df</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>A Control Group</td>
<td>11.65</td>
<td>2.95</td>
<td>10.93</td>
<td>2.84</td>
</tr>
<tr>
<td>A Sample Group</td>
<td>11.38</td>
<td>2.33</td>
<td>12.33</td>
<td>2.11</td>
</tr>
</tbody>
</table>
The finding from table 4 showed that students without the SPEED Learning Activities decreased in an area of the cognitive development without significant, but the cognitive development of students with SPEED Learning Activities increased in cognitive development with significant .01.

4. Results from students with SPEED Learning Activities
Table 5: Results from students with and without SPEED Learning Activities.

<table>
<thead>
<tr>
<th>Ethics</th>
<th>Before</th>
<th>Before</th>
<th>After</th>
<th>After</th>
<th>df</th>
<th>Mean</th>
<th>SD</th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
<th>SD</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
<td></td>
<td>Mean</td>
<td></td>
<td>Mean</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A Control Group</td>
<td>17.55</td>
<td>2.05</td>
<td>17.27</td>
<td>2.54</td>
<td>43</td>
<td>.523</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A Sample Group</td>
<td>17.08</td>
<td>2.06</td>
<td>17.98</td>
<td>1.71</td>
<td>45</td>
<td>2.032**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5 stated that students without SPEED Learning Activities decreased in ethical areas without significant but students with SPEED Learning Activities increased in ethical areas with significance .05.

6. Discussion
*SPEED Learning Activities*: SPEED Activities is consisted of Multiple Intelligences (MI) /nine intelligences), Play, Environment, Ethics and Developmentally appropriate practices. Moreover activities on MI, ethics, and problem solving were put in lesson plans of SPEED. Before teaching, the researcher set up environment and teaching according to DAP’s guideline. This study showed that the Multiple Intelligences have led to positive outcomes with children. Children learned with variety activities that supported their intelligences especially problem solving. The sample group showed their intelligent ability on problem solving significant higher than the control group. Gardner (1991) described the meaning of intelligences as “the ability to solve problems or fashion products that are of consequence in a particular cultural setting or community”. Problem solving is an essential skill for citizen in the 21 century (P21. Org). If young children know how to solve problems, they will be able to solve problems in their future. Moreover other MI studies states that students with MI had better outcomes more than other groups. For example, a study of a teaching Taiwanese students from a polytechnic university revealed that students with MI performed significantly better than students in the control group on an actual hands-on design project assignment (XIE & Lin, 2009).

This research study was used storytelling to teach young children on ethics and MI. It showed that students presented significantly better than students in the control group on ethics. The study related to the study of Ugsrisuporn (2011) on MI and storytelling for preschool. Her study showed that students with MI had higher abilities on eight’s MI than a control group except physical intelligence. And Priyawatee (2008) studied on storytelling with ethics on kindergarten students. Her finding stated that students showed better significantly on ethics that control group. Storytelling is a teaching tool for enhancing young children’s learning. Children learn about their world
through storytelling’s. In addition, playing with meaningful was provided in classroom, every week children planned, recorded and described their playing with the researcher. Children learned problem solving and thinking when they were playing. They also learned problem solving when they had field trips. For example children went to a bargain market near their school with limited money. They had to use money with limited amount and recorded what they bought. Many students showed their abilities of problem solving by decision making, bargaining things and using mathematics.

As four fundamental developments are guidelines to teach young children, Teachers should help their students to development skills on physical, emotional, social and cognitive. The sample group had extra activities once a week to play outside classroom. They had group games, Thai traditional games and free playing. Their physical development increased than students in the control group.

7. Conclusion

This study presented that SPEED Activities was an appropriate approach to kindergarten students because these have applied important areas for developing young children. The future study should provide teaching in the bigger size of the sample group to state the use of SPEED activities. Moreover, the study of Multiple Intelligences may be used which Multiple intelligent ‘s areas of students with the SPEED activities will present. Limitations of the study were the number of students in the classroom and the ratio between teachers and students (two teachers: 55 students).

Reference
Childhood Today. 13(4), 43-45.
Design and evaluation of a workshop to teach integrated skills

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Abstract: This study consists of the design and evaluation of a workshop aimed at teaching integrated skills such as media literacy and career education at a women’s university. The class used Project Based Learning (PBL) and consisted of the planning and management of lecture presentations and interviews, as well as the production of an e-book on working women who served as role models for the students. This presentation gives an overview of these efforts and reports on the evaluation of students’ learning.

Introduction
The phrase “21st century skills” is one of the most ubiquitous terms in today’s education (Bernie, 2009). It highlights the need for the next generation of university students and workers to be independent thinkers, problem solvers, and decision makers. There are many projects to this end, such as Project Based Learning (PBL), which has the three goals of “developing independence,” “knowing the actual society,” and “knowing the necessary skills.” In addition, various workshops are offered to teach students integrated skills.

The authors designed and implemented a class with a workshop format at Tsuda College, with the aim of helping students acquire comprehensive skills. In this paper, we report on the class outcomes and evaluation, focusing on the effects of career education through the e-book production.

Design of the Workshop
In this class, rather than being the recipients of media, students stand in a position to create their own media. On its axis, there are the elements of media literacy education and career education. Figure 1 show the class outline. The final challenge of the class is to produce an e-book on working women who serve as role models for the students. The purpose of this is to give students who are looking for a job the opportunity to think about possible career paths. Moreover, it is said that in order to perform career design, students must know the reality of job situations. Then, if they cannot integrate their skills into the career, it is difficult to envision the career design. Role models can facilitate this integration. Furthermore, role models provide inspiration to individuals, and this motivates the individuals to emulate aspects of the role models’ behavior or style (Speizer, 1981). In this view, role models are exemplary figures offering essential clues to identity and career achievement (Gibson, 2004). For these reasons, we selected the production of an e-book on role models as the final class project.

The course was a compulsory, cross-department Media Studies course taught by one faculty member and one teaching assistant. Each group consisted of 3–5 students. At this time, we divided the students into groups on the basis their future careers. First, each group selected graduates who would become role models and called them to talk. The students were responsible for all aspects of the lecture such as planning, management, public relations, and so on. In order to use their skills to produce an e-book, they had to face two challenges. One was a “pair interview” for which they needed to learn how to interview and how to write. The other was the “30 seconds My Promotion
“Video” to learn how to develop a video. In other words, the class was configured for students to learn writing and image expression.

![Diagram](image)

**Figure 1**: Concept of the class.

### Lessons Learned in the Workshop

A questionnaire was distributed to the class to investigate the students’ learning. The questionnaire consisted of the following three sections: “planning and management of lectures and interviews,” “production of the role model e-book,” and “group work.” It elicited the students’ opinions on each item.

1) **Planning and Management of Lectures and Interviews**
   - We have realized the importance of “report,” “contact,” and “consultation.”
   - We understand that we need a lot of preparation to do these things.
   - Without imagination, it is not possible to manage the whole.

2) **Production of the Role Model E-book**
   - We gained an image of what it will be like when we work in society.
   - We learned that it is important to continue to believe in ourselves with confidence.
   - By talking with graduates, we gained specific advice.
   - Hearing about the struggles and challenges of doing the job changed our mental attitude toward job hunting.

3) **Group Work**
   - We learned to think for ourselves about what we can do for the group.
   - We learned the importance of assigning roles that are appropriate for each group member and drawing on each person’s individual strengths.
   - It was not transmitted well even when opinions were exchanged in LINE\(^1\).
   - We thought the difficulty of group activities because the amount of work was unequal.
   - Although it was hard to distribute the work moderately, our group was lucky.

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\(^1\) "LINE" is a proprietary application for instant communications on electronic devices such as smartphones, tablet computers and personal computers.
Based on the questionnaire results, we concluded that the students learned the importance of independence and communication through their management of the lectures and interviews. Moreover, we found that they had opportunities to think about their career design by listening to graduates who served as role models.

Conclusions
We designed and taught a workshop-style course that supports career design. Through the course, students improved their basic social skills and had the opportunity to think about their careers by planning and managing lectures and interviews with role models. Furthermore, the students’ learning could be observed. For example, students commented, “There was a lot of learning from others” and “I was able to reflect on myself.” Such comments confirmed that the course supports career education.

References
Teaching Science, Technology, Engineering, and Math (STEM) to English Learners (ELs) includes learning centers, instructional games, and techniques to develop conversational language, academic language, scaffolding, concrete materials, and visual learning. Teachers can use these techniques to provide best practices in math and science instruction integrated with modifications to teach ELs. These strategies utilize technology as well as the science, math, and problem solving of engineering to improve the education of English learners.

Mathematics Teaching Strategies for EL Students

Developing Conversational Language in the Mathematics Classroom. Conversational language is an essential learning component in the mathematics and science classroom. “Conversational language” is sometimes referred to as “everyday language”, “natural language”, or “social communication.” It is often the first type of language acquired by second language learners (Cummins, 2000). Teachers of English learners are now realizing the importance of conversational language, especially in the mathematics and science classroom (Harrell & Jordan, 2004).

Developing Academic Language. Mathematics and science are academic disciplines that contains a language that includes specialized words and phrases related to content, procedures, and expressions (Echevarria, Vogt, & Short, 2004). Cummins’ (2000) Cognitive Academic Language Proficiency (CALP) is the “abstract language abilities required for academic work”. In order for EL students to be successful, they must experience multiple exposures to new terms through meaningful activities (Bielenberg & Wong Fillmore, 2005).
Scaffolding Provides Support for Mathematics, Science, and Language Learning. Vygotsky (1978) emphasized the importance for a child’s learning to be guided thoughtfully by a knowledgeable adult or capable peer. This type of guidance is often called “scaffolding” (Wood, Bruner, & Ross, 1976). Echevarria, Vogt, and Short (2004) point out that three types of scaffolding are especially important for English learners: verbal scaffolding, procedural scaffolding, and instructional scaffolding.

Concrete Materials. Students need to actively use concrete materials as they investigate new mathematical ideas and concepts. The goal of all instruction should be to help students develop mathematical and scientific proficiency and understanding that can be applied in new and varied situations (NCTM, 2000 and National Research Council, 2001). Concrete materials are important to vocabulary and language development, which is particularly beneficial for English learners. Words are easier to remember when they can be associated with something to touch (Garrison & Mora, 2005).

Visual Learning. Visual learning provides organizational representations as a regular component of instruction. Visual learning strategies are especially important for English learners as they support understanding and communicating about ideas and processes. Diagrams, charts, and tables can be used to organize new information and cue memory. Gerlic and Jausovec (1999) found a correlation between increased activity in the brain and the creation of nonlinguistic representations. Helping students discuss visual tools can enable students to more deeply understand and to recall information (Levine, 2002). Ability to visualize a situation, to generate mental pictures promotes learning (Hembree, 1992; Shigematsu & Sowder, 1994; and Mendieta, 2005). Student created representations provide insight into students’ understanding and level of generalization (Smith, 2003). English learners’ gestures may also provide important information on students’ reasoning and level of knowledge (Domingues, 2005).

Science Strategies for ELL Students with Disabilities

Today’s science teachers must be prepared to teach students whose first language is not English. The Institute of Education Sciences of the United States Department of Education defines English language learners (ELL) as: English learners who are students with a primary language other than English who have a limited range of speaking, reading, writing, and listening skills in English. Individuals who (1) were not born in the United States or whose native language is a language other than English; or (2) come from environments where a language other than English is dominant; or (3) are American Indians and Alaskan Natives and who come from environments where a language other than English has had a significant impact on their level of English proficiency; and who, by reason thereof, have sufficient difficulty speaking, reading, writing, or understanding the English language (IES, 2007).
Herr (2007) maintains that science vocabularies are complex and can be difficult even for native English speakers to learn. EL teachers should understand that a student’s difficulty in learning English should not be confused with an inability to think scientifically. EL teachers should also be aware that some of the methods that are useful for English language learners are effective for designing instruction for other students as well. In instruction try a variety of methods to see which is most effective for your teaching style and students. Speak slowly, distinctly, and write down key terms so students can see them and connect them to the spoken word.

Anyone who has recently learned a foreign language, and then traveled to a country where the language is spoken, has probably found that it is difficult to understand natives because they seem to talk fast. What is normal speed to the native speaker can be extremely fast to a language learner or to a student with a hearing impairment Herr (2007).

Herr (2007) suggests the follow strategies for teaching EL students.

Closed Captioning – When showing videos, Turn on the closed captioning so students can see what narrators and actors are saying. This helps ELL students to correlate written and spoken English, and models spelling and sentence construction. Closed captioning also helps the hearing impaired student.

Manual Video Control. Science videos often introduce new terms and concepts that can be challenging even for native speakers to remember. Herr (2007) suggests that teachers pause the video to discuss key concepts and use the bookmark and video clip features to return to precise sequences for review. Use the step-frame, slow motion, and replay features as needed.

Emphasize visual literacy - Visual literacy, the ability to evaluate, apply, and/or create conceptual visual representation, is relatively independent of language. Math and music are regarded as universal languages, i.e., can be read regardless of one’s primary language. For example, an American musician can play a score drafted by a German composer. Also, regardless of linguistic background or nationality people around the globe can interpret mathematical equations and musical scores. Science and math students can also interpret pictures and symbols, and with minimal linguistic skills, can interpret charts and graphs. Herr (2007) suggests that vector diagrams, scientific diagrams, pictorial riddles, photographic analysis, movie analysis, and map development and analysis, are a few of the activities and methods that can be utilized to facilitate visual literacy.

Graphic Organizers – Graphic organizers communicate concepts with minimal use of spoken or written language and introduce and assess concepts in
a manner that assists meaningful learning. Such diagrams or maps that show relationships facilitate integration of new and familiar ideas. Graphic organizers require minimal language. They include Conceptual grids, Venn diagrams, flow charts, mind maps, and concept maps, as well as, scatter and line graphs, column and bar charts, pie and area graphs, and high-low, combination and log plots.

**Group projects & Cooperative Learning.** These activities provide opportunities for students to discuss, write, and present ideas in a manor that facilitates understanding and retention.

**Partner English Learners with Strong English Speakers.** Teachers are aware that the best way to learn something is to teach it. Partner English learners with strong English speakers and both students will benefit from their interaction.

**Think/Pair/Share.** English learners like to share their ideas using their new language with their peers. The think/pair/share strategy provides students with opportunities to practice English by explaining science concepts.

**Encourage Participation.** Requiring English learners to speak in front of class may cause great anxiety. Encourage students to express themselves, but don’t force them to the front of the class prematurely.

**Road map to science.** English learners benefit greatly from a “road map” that shows where they are in the science curriculum. Provide students with a copy of your lectures and discussions. This helps EL students to know where they are, and where they are going.

**Scaffolding.** Relate to prior knowledge to the students' background knowledge of science concepts. Use pre-assessments to discover what your students already know about a given topic and design lessons accordingly.

**Science Laboratory.** Hands-on activities provide an excellent learning environment for English language learners.

**Demonstrate and Model Laboratory Activities.** Provide clear, procedural steps. Use a pre-lab demonstration to present procedures clearly using flow charts, pictures, and outlines. Demonstrate procedures prior to doing the activity to ensure that English language learners can see the procedures before engaging in an activity.

**Pictorial Guide.** Similar to international symbols pictorial guides provide a visual reference to glassware and other materials used in experiments and activities. Review safety symbols and post them in the room and in the lab handout.
Journaling. Effective writing requires practice. Require English language learners to keep science journals to record lecture notes, new terms, new concepts.

Science reading comprehension activities. Cloze and jigsaw are effective methods for developing and assessing reading comprehension. They can be used for formative and summative assessments of language and science learning.

Wait time. English learners must translate terms and simultaneously formulate an explanation. Provide wait-time sufficient for the majority to develop an answer before calling on any individual.

Analogies. Analogies are an effective method of relating new concepts to previously learned concepts.

EL: Vocabulary. Language-based science games such as Science Bing and crossword puzzles reinforce vocabulary and concepts and require minimal spoken language.

Picture glossary. Pictorial flash cards with a picture of the science concept on one side while the term (in the language to be learned) is on the reverse. This method helps students to correlate concepts directly with words and eliminates the need for translation.

Root words. Teach the Greek and Latin prefixes, suffixes, and roots. Approximately 50% of all words in English have Latin roots that are shared with Spanish, French, Portuguese and Italian. A knowledge of scientific root words will facilitate understand the vocabulary of a variety of languages, particularly English.

Word wall. Post new vocabulary terms on the wall in an organized, grouped according to their level of organization and/or relationships, e.g., cell, tissue, organ, etc. Herr (2007).

References

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Proceeding submission

1. **Title:** Leading a Learning Organization through Evidence-Based Decisions (EBD)

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**Abstract**

*We are all, at heart, gradualists, our expectations set by the steady passage of time. The world of the Tipping Point is a place where the unexpected becomes expected, where radical change is more than possibility. It is— contrary to all our expectations—a certainty.*

— *Malcolm Gladwell, The Tipping Point*

Faced with a seemingly insurmountable achievement gap, school staffs have been searching for the magic bullet to fix education since the landmark “A Nation at Risk” (1983). However, success has more to do with the knowledge and skill of the staff and level of implementation than a particular program. The link among the quality of leaders, caliber of teaching, and levels of student achievement is a tight one.

Reaching beyond test scores analysis, teachers must address the increasing diversity and family engagement, ensure that schools are safe and free from bullying, engage parents in their children’s education, and support culturally responsive schools and classrooms. Educators must learn about, test, and profit from successful models (Auerbach, 2009). Studies identified several school programs, factors, and remedies to improve schools. It’s estimated that anyone attempting to research what's known about depression would have to read over 100,000 studies on the subject. So the first task is deciding which studies have produced reliable results. The question then becomes how to test, prove, and advocate for programs that will be successful in specific context...your school and with your students. Teachers and administrators must become informed consumers of educational research when selecting both the content and professional learning processes of staff development efforts. (NSDC, 2004). Quality professional development builds on prior and current learning experiences and should be ongoing, career-staged, and seamless (Peterson, 2002).

Conducting original classroom research and using data systematically to ask questions and obtain insight about student progress is a logical way to monitor continuous improvement and tailor instruction to the needs of students. (Wested, 2009). However, making sense of data requires concepts, theories, and interpretive frames of reference. (Knapp et al., 2006). School leaders and teachers should engage in an Evidence-Based Decision (EBD) process in order to
isolate those practices that are most effective for them and for their students. Teachers and principals learn best from embedded opportunities reflecting relevance and prompting collaborative problem solving (SEDL, 1997). Although merely examining student achievement outcomes does not provide over-time relevant information regarding the programs or processes that need to be modified or abandoned to get better results. Feedback systems are essential for developing organizations that can learn from prior practices and intentionally shape practice to achieve anticipated ends (Senge, 1990; Senge, et. al. 2000). Comprehensive measures, used together and over time, provide much richer information. With this intersection, we can answer a key question, “Are our schools making a difference for students and families?” (Student Learning by Demographics by Perceptions by School Processes, Bernhardt, 1998).

Effective schools address multiple key correlates of excellence such as ensuring a safe school, promoting meaningful parent involvement, use of frequent monitoring, data-driven decision-making, culturally responsive education, and high-effective staff (Lezotte, 2009, Reeves, 2001, Gay, 2001; 2002). Schools making a difference measure multiple, key performance leading, coincident, and lagging indicators against internal and external benchmarks, ensuring that both the people and the operations are optimized to improve outcomes. Identifying, releasing, and publicizing common performance measures enables educators to pinpoint a significant success or failure (Hanuchek & Raymond, 2003). Conducting Evidence-Based Decision through a distributive leadership and community of practice process propels student learning. There is ample research to support the involvement of the entire staff or faculty in the use of data to improve student achievement. (Wayman, 2006). Good teachers perpetually look for ways to improve their effectiveness (Farr, 2010)

This session addresses and explores evidence-based decision-making methods aimed at creating a culture of continuous school improvement, including (1) the collection, analysis, and interpretation of multiple measures (2) the inter-relationships between evidence-based interventions and educational outcomes; (3) commonly used analytic strategies and processes; (4) a step-by-step approach to evidence-based decisions; (5) keys to when action is warranted; and (6) opportunities for widespread implementation of evidence-based decision-making through distributed leadership and communities of practice.

Partial Bibliography


Proceeding submission

1. **Title:** Straight To The Source: The Voice of Students About Being ELLs

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**Abstract:**

Straight To The Source: The Voice of Students About Being ELLs

Students who are designated as English language learners (ELL) participate in programs of
English language assistance, high-intensity literacy support, and academic language acquisition.
ELLs are among the fastest-growing student demographic group in nearly every state across the
country. While states reported over 400 languages spoken by ELLs nationwide, Spanish and
Asian languages are the most common. Data submitted by states to the federal department of
education indicate that the great majority of ELL students claimed Spanish (79 percent) as their
native language, followed by Vietnamese (2.0 percent), Hmong (1.6 percent), Cantonese (1.0
percent), Korean (1.0 percent), and other (15.4 percent). The percentage of United States
public school students who were ELLs was significantly higher in 2011–12 (9.1 percent, or an
estimated 4.4 million students) than in 2002–03 (8.7 percent, or an estimated 4.1 million
students). In 2011–12, eight states with the largest percentages of ELL students in their public
schools were in the west: Alaska, California, Colorado, Hawaii, Nevada, New Mexico, Oregon,
and Texas. Also in 2011–12, ELL students living in cities comprised an average of 14.2 percent of
total public school enrollment, ranging from 10.9 percent in small cities to 16.7 percent in large
cities. All organizations agree that ELL student enrollment has increased substantially over the
years.
Across the United States and the world, there is widespread concern regarding successfully educating the growing number of non-native language speakers. A result of population growth, population migration, and a rise in linguistic diversity, many schools have increasing numbers of non-native language speakers. These students struggle academically at the elementary, middle, and high school levels demonstrating lower educational success as compared to their English-speaking counterparts. ELLs lag behind native English speakers in academic progress (Massachusetts Department of Elementary and Secondary Education, 2012; Olsen, 2010). This is due, in large part, to the need of ELL students to simultaneously learn English and content knowledge (Genesee, Lindholm-Leary, Saunders, & Christian, 2005). Compounding this challenge is the lack of teachers skilled in language acquisition strategies. As the numbers of ELLs in pre-K-12 classrooms continue to grow, so does the need for effective and trained educators to work with this diverse population. Nationwide, approximately 2.5 percent of teachers who instruct ELLs possess a degree in English as a Second Language or bilingual education (National Center for Education Statistics, 1997). In California, only one-third of ELLs had a teacher who had received a credential of any kind (Gándara & Maxwell-Jolly, 1999).

After inspecting published reports, the need to invest in and complete primary research regarding the quantity and quality of the services and support for ELLs was recognized. Designed as an initial step in the development of the Master Plan for ELLs, the English Language Acquisition Discovery Process sought to obtain both quantitative and qualitative information through a series of focus groups and surveys. Research gathered through a combination of quantitative and qualitative processes is a powerful tool for understanding school needs.

Instruments used during the study included a structured questionnaire and semi-structured focus group questions. Schools’ students, parents, and staffs opted to participate in the focus groups by responding to an email invitation. Similarly, all individual respondents volunteered to be included in the focus group activities. Participants were requested to complete and return a brief survey prior to leaving the focus group sessions. Of the 217 surveys distributed, 216 were
Straight To The Source: The Voice of Students About Being ELLs
R. Karlene McCormick Lee, Ed.D.
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returned completed. Instruments used during the study included a structured questionnaire and semi-structured focus group questions. The surveys assumed that respondents have explicit knowledge, are aware of their perceptions, and know how they feel. Often listening to others’ opinions in a familiar, accepting, and safe environment of a focus group allows respondents to clarify and form cogent thoughts and opinions. The focus groups revealed a wealth of detailed information, deep insight, and ideas. Responding in their own words while adding meaning and emphasis, focus group participants were thoughtful in their answers and shared concerns for ELLs and struggling students. Surveys were valuable in collecting consistent information about respondents’ experience, perceptions, attitudes, and skills. Therefore the combination of an initial focus group and survey was well suited for this study. For both the discussions and the survey, respondents were asked to provide unvarnished, realistic descriptions of the services and programs available to support academic language acquisition and ELLs. The findings, and recommendations included in this session are informed first impressions and should be used to raise questions for further research and considered in the development of planning documents. The theory of discovery was to begin the strategic planning process with as much knowledge as possible and to give a voice to those most directly impacted.

Partial Bibliography


Strategies for Success Implementing Comprehensive School Reform Program (2000). Southwest Educational Development Laboratory. SEDL interview with Dennis Sparks.
Current Status and Issues in Teaching English to Students with Specific Learning Disorders in High Schools in Japan
- from the Results of Interview and Class Observations -

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Abstract

This study examines whether multi-sensory approaches can help teaching English to L2 learners with specific disorders (LD) in “regular classes”. As the first step, the researcher investigates the actual condition, for instance teachers’ current approaches to support LD learners and the major factors when their instructions do not work, in some high schools through interviews with teachers and class observations by the researcher.

Japanese SNE has been revised since the Act on Support for Persons with Neurodevelopmental Disabilities was enforced in 2005. A part of the School Education Act also was changed and all schools have to provide SNE to support students with neurodevelopmental disorders. Children with those disorders are included as the objects of SNE in “regular” classes for the first time in the country. Teachers have better knowledge about neurodevelopmental disorders than before, but many of them are facing an uphill struggle to teach the students by trial and error (Fukushima & Masataka, 2010). Some researchers have examined effective teaching approaches in English education, but more studies and concrete examples are needed to find better ways of teaching English to Japanese LD students.

This study focuses on “regular classes” in high schools for the following two reasons. First, most studies focused on individualized instruction in special-need classes, but teachers want to know how to teach and support LD students in their classes. Second, it is said that Japanese special needs education (SNE) in high schools are behind elementary schools and junior high schools. One investigation shows that about 2.2% of high school students are suspected to have neurodevelopmental disorders (Central Education Council Special Education Committee, 2009). Teachers should make various efforts in regular classes such as instruction in small groups, team-teaching, instruction according to different achievement levels and the use of support assistants.
The biggest issues for high school English teachers might be instruction in school courses. The words “universal design (UD) lessons” are becoming common and UD lessons are promoted these days, but it is doubtful teachers comprehend the essence and principles properly. They also do not have adequately guidelines or examples. How do they design their classes now under these circumstances? Interviews are given to some English teachers in two public high schools in Japan that have teaching difficulties, to describe what they know about UD. In addition, the researcher observes their classes to grasp how they help students’ learning at the present moment.

Key words: EFL/ESL, special needs education, specific learning disorders

**Further Study** (plan of this study)

This study is going to assess students’ characteristics with reading-span test, vocabulary tests, questionnaires, and interviews. Then the researcher will design UD lessons using multi-sensory approach integrating visual, auditory, tactile (touch) and kinesthetic (movement) learning elements and examine the effectiveness to suggest some example UD teaching approaches.

**References**


Charter Schools in the Aloha State, an Update

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Abstract

In 2005 I published my dissertation which was a qualitative study on the legislative parameters and fiscal incentives and disincentives that helped or hindered the growth of charter schools in Hawai‘i. Themes emerged from the perspective of people who started charter schools. Findings revealed several disincentives embedded both in legislative and financial aspects of charter school reform. Since then significant events have occurred. Legislators created a Hawai‘i State Public Charter School Commission which provides real oversight of charter schools, beginning with the charter school application process. In this paper I trace the changes in the charter school landscape in Hawai‘i and discuss how the changes have helped or hindered the development of Hawaiian-centered charter schools. Of the 33 charter schools in Hawai‘i there are the 17 Hawaiian-centered charter schools whose focus is on Native Hawaiian cultural value. I discuss the expectations for non-Hawaiian-centered charter schools. Specifically, how is student learning defined in Hawaiian-centered charter schools?
Statewide Special Education Practices to Improve the Quality of IFSP Outcomes

Topic Area: Special Education
Presentation Format: Poster Session

Description of Presentation: This poster session is a descriptive study of one state’s use of a Part C early intervention special education accountability tool and professional development to increase the quality of functional outcomes. The study will describe the use of an accountability tool over seven years and the process used to aid early interventionists and families in writing functional IFSP outcomes during team meetings. Recommendations are given for state special education systems, preservice education, and early interventionists.

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Abstract

The outcomes are the foundation for services within the Individualized Family Service Plan (IFSP) in early intervention and serve a vital role in meeting the needs of the child. Every child eligible for Part C services in special education must have an IFSP based on their strengths and challenges, including outcomes outlining the goals of the upcoming year according to IDEA 2004. Early interventionists work with families to write outcomes based on the needs of the child and family. Early interventionists often struggle to create quality outcomes on a consistent basis.

This study is a description of the process one Midwestern state used to increase the quality of functional outcomes in IFSPs. The state used their monitoring process with the creation of a quantitative tool to merge professional development, technical assistance, and accountability systems to comply with federal regulations and increase the quality of IFSP outcomes. Over time, families and early interventionists used state and nationally developed materials to promote the understanding of how to write functional outcomes as a team. Description of the process includes the varied approached used to increase the overall quality of the IFSP as well as the outcomes including prompts within the IFSP, monitoring processes, development of an accountability tool, and professional development. The study describes the process over seven years.

The study highlights the need to develop and implement meaningful professional development for outcome development at the state level by reviewing the process that evolved in the state. The study also focuses on further investigating performance competencies in writing outcomes for professionals in early intervention and using a mechanism to evaluate the quality of functional outcomes. Recommendations are given for state Part C systems, preservice education, and early interventionists.
Introduction

The outcomes are the foundation for services within the Individualized Family Service Plan (IFSP) in early intervention and serve a vital role in meeting the needs of the child. Every child eligible for Part C services in special education must have an IFSP based on their strengths and challenges, including outcomes outlining the goals of the upcoming year according to IDEA 2004. Early interventionists work with families to write outcomes based on the needs of the child and family. Early interventionists often struggle to create quality outcomes on a consistent basis (NECTAC, 2008). Early interventionists continually struggle to write quality IFSP’s with functional and measurable outcomes, although early interventionists have been exposed to many training events on the topic (Jung, 2010; McWilliam, 2010).

Purpose of the Study

This is a descriptive study of the eight-year process used to develop and implement meaningful professional development for Early Intervention (EI) staff in the area of functional outcome development in IFSPs. This study reviews the functional outcome process that evolved in one, Midwestern state. The study also focuses on further investigating performance competencies in writing outcomes for professionals in early intervention and using a mechanism to evaluate the quality of functional outcomes.

Description of Process

This study is a description of the process one Midwestern state used to increase the quality of functional outcomes in IFSPs over an eight year period by merging professional development, technical assistance, IFSP prompts, and accountability systems to increase the quality of IFSP outcomes. Over time, families and early interventionists used state and nationally developed materials to promote the understanding of how to write functional outcomes as a team.

The process included varied approaches used to increase the overall quality of the IFSP, as well as the outcomes including prompts within the IFSP, monitoring processes, development of an accountability tool, and professional development. During the first three years of the state process, a new accountability tool called the Case Review Tool (CRT) (Johnson & Votava, 2007) was developed to rate compliance measures in IFSP’s, and the state required the tool to be used once a year for compliance monitoring (Votava, Johnson & Chiasson, 2011). The tool was based on the Missouri First Steps IFSP Quality Indicator Rating Scale (QIRS) developed in 2005 to train staff about quality indicators in IFSPs, and it contained three measures for functional outcomes including (a) outcomes that correlate with family priorities and concerns, (b) child outcomes that are functional, measurable, and related to everyday routines, and (c) outcomes that are developmentally appropriate. The state developed face-to-face training events to train EI staff in use of the tool with the goal of integrating professional development, accountability, and technical assistance systems of the state to improve child and family outcomes.

A 2011 study documented the use of the CRT, comparing outcomes written by EI staff before and after use of the three CRT functional outcome ratings and associated trainings. Votava et al. (2011) stated, “IFSP’s in this study included more outcomes that met the criteria for (b) child outcomes that are functional, measurable, and related to everyday routines. No change was noted in (a) outcomes that correlate with family priorities and concerns and (c) outcomes
that are developmentally appropriate” The study also noted that when five or more outcomes were included on an IFSP, the measurable and functional components increased (Votava et al., 2011).

During year four to six, EI staff had the opportunity to attend face-to-face training events on the topics of Routines-Based Interview (RBI) Family Assessment and Family-Guided Routines-Based Intervention (FGRBI), as well as regional state technical assistance. Over this time, the CRT (Votava & Johnson, 2013) was also revised to include six criteria for functional outcomes. The six criteria were based on a training package developed collaboratively from staff of the Early Childhood Technical Assistance Center (ECTA) and the Western Regional Resource Center (WRRC). The training package includes a set of six criteria that can be used to understand how to develop high quality, participation-based outcomes. Following are the six criteria (Lucas, Gillaspy & Peters, 2012):

- The outcome is necessary and functional for the child’s and family’s life.
- The outcome reflects real-life situations
- The outcome crosses developmental domains and is discipline-free.
- The outcome is jargon-free, clear and simple.
- The outcome emphasizes the positive, not the negative.
- The outcome uses active words rather than passive.

Using the CRT-revised, the state IFSP was integrated into a web-based system, and IFSP prompts from the CRT-revised were included in the IFSP to aid early interventionists in the writing of the family assessment and outcomes. During year eight, the state announced a year-long focus on writing functional outcomes, ending with a year of random, qualitative monitoring of functional outcomes. At the same time, a placemat was developed, based on the ECTA and WRRC training package, which included the six criteria, examples of what the criteria do and don’t look like, and definitions of the criteria. The placemat was given to EI staff as a resource to bring to IFSP meetings while developing outcomes with families.

**Discussion**

Over eight years, the state developed an evolving and multi-faceted approach to increase the quality of functional outcomes in IFSPs. The approach changed over time as it began with the use of an accountability tool, professional development, a revised tool, IFSP prompts, a team placemat resource, and finally accountability through qualitative monitoring. This varied and flexible professional development system helped EI staff develop skills in areas where increased skills were needed, although the goal was initially increasing the quality of functional outcomes. Through the process, the following three areas were highlighted as areas for professional development: 1) Interview skills, 2) Embracing routines within typical family activities, and 3) Lack of understanding in the foundation of evidence-based practices (EBP).

As EI staff worked to increase skills in writing functional outcomes, the value of high quality family assessment became more evident. McWilliams, Casey, Ashley, Fielder, Rowley, DeJong, Mickel, Stricklin & Votava (2011) noted that EI staff “need to conduct a much more in-depth assessment of needs than simply asking families about main concerns” (p. 50), and this requires an increased emphasis on teaching interview skills. The knowledge gained in the family assessment through the use of interview provides valuable information to increase the quality of the outcomes.
In the second area, EI staff failed to include routines within typical family activities when writing outcomes with the family. By contriving situations for outcomes that were not everyday occurrences, outcomes were not written functionally. Jung & McWilliam (2005) noted that early interventionists often paint themselves in a corner by asking families superficial questions, which result in just two or three low quality outcomes. Outcomes that are high-quality need to develop from the family assessment. Detailed information gained from the family assessment aids the team in developing outcomes that are family-centered and within the family’s typical activities. Brown & Woods (2015) state “Further examination is needed to align high-quality coaching practices, intervention strategies, and relevant child outcomes with the context in which services are delivered” (p. 63). EI staff need to develop the knowledge and skills that value family-centered practice within the context of EBP practices.

Overall, a lack of understanding of the foundation of EBP in early intervention contributed to decreased skills in writing high-quality functional outcomes. The field of early intervention is often not the focus of preservice education programs. This results in a workforce that is learning on the job. Inexperienced early interventionists with an educational experience that had little focus in EI work to apply what has been learned about older children to the birth to three population. McWilliam et al. (2011) notes that EI professionals often conduct assessments with very little or no training. EI staff are often trained on the job or through mentorship over time.

Recommendations

Recommendations for state special education systems
1. States should design professional development systems for early intervention personnel that include a focus on family assessment and functional outcomes utilizing the infrastructure of resources within the state and federal system.
2. Family assessment and high-quality outcomes professional development for early interventionists needs to build from a foundation of knowledge for staff and include the opportunity to apply the learning and then reflect on performance with mentors within programs.
3. Performance competencies for early intervention personnel need to be developed for family assessment and functional outcomes utilizing the infrastructure of resources within the state system.

Recommendations for preservice education
1. Preservice education should include a foundation of Part C philosophy and EBP including the understanding of family-centered practice within typical routines.
2. Early intervention certificates should be developed as an opportunity for professionals to gain skills in EBP in the area.
**Recommendations for early interventionists**

1. Early interventionists should encourage state systems and local early intervention providers to include training within their professional development systems in family assessment and functional outcomes through a coaching model available.
2. Early interventionists need to pair with colleagues who are skilled in family assessment and the development of high-quality outcomes in a mentorship relationship.
3. Early interventionists need to engage in reflection of their practice and seek out opportunities to increase their skills in family assessment and writing high-quality functional outcomes.

**References**


Abstract

Language loss is occurring globally and every day a language is slowly disappearing and for every language that is lost, a piece of knowledge is destroyed and it is taken away. Efforts for language revitalization are present in different communities and are successful in restoring their knowledges and languages such as the Maori and Hawaiian people (Warner, 2001; Wilson & Kamana, 2001). Although their efforts are strong, it is a long and difficult process to reverse language shift.

The objective of this paper is to present an auto-ethnographic study of language reclamation within a family. The author describes language learning and revitalization while negotiating her positionality within her family and personal life. Her parents are native speakers of Nahuatl often refer to Mexicano (Hill & Hill, 1986). Although her parents are fluent speakers of the language they deliberately chose not transfer the language to their children (Kroskrity & Field, 2009) due to passed down language ideologies (Spolsky, 2004). The author critically reflects and unravels years of internal colonization to reclaim her language through a sociocultural and auto-ethnographic lens. The author further discussed language learning outside a traditional educational institution, by native speakers (parents) at the center to language learning in a home. Drawing on Ancestral Knowledge Systems (AKS) (Sandoval, Lagunas, Montelongo, Diaz, under review) conceptual framework through a sociocultural perspective (McCarty, 2011) and auto-ethnographic lens of language planning this study examines language reclamation while the researcher’s positionality and reflexivity is at the center. The analysis is broken into three parts: researcher’s positionality, language learning through meaningful sociocultural practices (Hinton, 2001) and decolonizing language ideologies.

The central question of the paper is What are the past down language ideologies within and across generations in this family setting and how does language shift and language revitalization come into play? The author used auto-ethnography and critical reflexivity along her study and journey to reclaim her language. The author collected a year-long of fieldnotes and audio recordings from their weekly language class, along with her personal reflection journal and informal interviews/conversations with her parents. The researcher peeled layers of passed down generational language ideologies and internal colonization within her personal life as well as it pertains to her relationship with her parents. The weekly language class provided insightful
learning and re-discovering and re-negotiating one’s identity. Hidden internalized colonization ideologies surfaced amongst the author’s family as they continued language learning and teaching. Thus sparked dialogue on how to preserve ancestral language and knowledges within the home. This study contributes to the larger field of language revitalization and education. It demonstrates the importance of language learning in the homes. Hinton & Hale (2001) shares three characteristics in order to make a language revitalization program successful: persistence, sustainability, and honesty. Through socio-cultural practices language is transferred along with ancestral knowledge learning. The study suggests the need of native speakers to transfer their language in everyday practices within their homes.
Title of Submission: iTeach ELLs: Efforts in Closing the Achievement Gap

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To answer questions about effective teacher preparation for pre-service teachers this paper draws upon data sources from a specialized group within Arizona State University. This research examines how a college wide initiative (promoting a culture of change) will help prepare all students to work with ELLs. Recent data indicate an imperative to prepare teachers who can face the ongoing issues of ELL education in Arizona. For example, only 25% of ELLs graduate from Arizona high schools, a figure that is well below the 60% graduation rate defined by the U.S. Department of Education, (Stetser & Stillwell, 2014).

The efforts are built on a Teacher Quality Partnership grant that is in year one of its five year duration. Data collected for the discussion involve syllabi enhancements, problem based learning (PBL) lessons, feedback from a program enhancement team (of math and science faculty) as well as discussions from partner school districts.

This research has several implications for both higher education as well as PreK-8 teaching. This comprehensive program is designed to raise student achievement for ELLs through curriculum reforms and enhancements which will prepare our graduates to address the education needs of ELLs with integrated, project-based lessons, that support science and math content acquisition as well as addressing language and literacy skill development for this unique population.

It helps diffuse barriers and segmented thinking of teachers by preparing all pre-service teachers in evidence-based practices for ELLs. The program reforms and enhancements discussed will prepare our PreK-8 teacher preparation graduates to be equipped with the skills, knowledge, and dispositions to teach ELLs with special focus on STEM content areas of math
A goal of teacher preparation programs is to prepare excellent teachers and positively impact the lives of the students they will serve. The research discussed in this poster presentation helps bring proven best practices to the discussion and further link theory and practice on this vital topic.
Title: Individual Paths to Literacy Engagement: Three Narratives Revisited

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Abstract: Student engagement has become a popular topic in Canadian schools and world-wide, especially with such research surveys as The Programme for International Student Assessment (PISA) and the National Survey of Student Engagement (NSSE). Yet, what does it mean to be engaged, especially when it comes to literacy learning? It is this question that drove my doctoral research in 2007, as I became a participant observer in a grade two classroom with the goal of making the everyday visible while sharing a greater understanding of classroom life in relation to engagement. Six years later, I returned to the original school when the students were in grade eight for the purposes of revisiting and expanding upon student understandings of what leads to successful engagement in learning during literacy-related activities. As part of the original study, three portraits were developed to discuss differing and individual paths towards literacy engagement. In this paper session, I revisit the narratives of Spike, Jasper and Avery to consider themes of change and continuity, including ways in which initial success and struggle appeared to influence their journey over time.

Using a mixed-methods approach, data sources include workshop discussions, digital photographs, one-on-one interviews, and the use of graphic organizers to highlight engagement understandings. More specifically, the follow-up study was centered around a classroom workshop as a way of re-introducing myself to the original participants as well as to involve all the grade eights regardless of their original participation. The workshop began with individual and group brainstorming of what engagement meant to them as learners, followed by the completion of a graphic organizer/rating scale (developed from the original study). The final portion of the workshop drew on the use of digital cameras to capture moments that signified engagement. In comparison to the original study, a key finding to be discussed is a greater recognition of engagement as more than visual participation (e.g. hands raised and body posture). In addition to the workshop, the original participants, including Spike, Jasper, and Avery, were invited to participate in a follow-up individual interview to consider their engagement journeys then and now.

The session’s goal is to not only expand discussions about the complexity of engagement, but to continue to put students’ understandings at the forefront of educational discussions about engagement. Implications for classrooms will be discussed.
Concierge EFL teaching, “mentoring,” is a concept that the author introduced to the Hirosaki “English Lounge” (EL) language center in 2013. All university English students in Japan are at the false beginner or higher level. Most of them fall in an area where they possess most of a base and, consequently, do not experience the joy of going from nothing to something that students new to a language may feel.

In the first phase of the project, the EL mentoring program was open to the student body. A very small number of students took advantage of the opportunity, but the interactions were quite pleasant and may have changed said students’ attitudes toward studying English. The obvious flaw with individual mentoring is that there are a limited number of hours a fulltime faculty member can spare for such efforts and many students who could potentially benefit from this sort of personal attention.

In 2015, the author decided to create a new tier of mentoring for students in an honor’s program that had already shown more than significant motivation. Entitled English Superstars, this program began as next-level assistance with three highly motivated students that were experiencing some frustration and/or stall in the progress of their English abilities. In addition to special assignments and individual counseling, the author arranged for semimonthly video conference classes with the three students.

In the second phase of the project, students will be asked to clarify their learning goals and keep a learning journal, c.f. “My English Communications Goals for the Month of November 2015” sample form below. They will also become involved as either mentor or mentee in what USC sources refer to as “frientoring,” where they will have an opportunity to work closely with another student in the honor’s program.

One of the expected outcomes of this program is for students to feel they have a better sense of their own progress. They will also have a journal to look back on and realize that they have invested quite a bit in the learning process. During the video conferences and the personal sessions, they will be allowed to voice their issues and challenges, as well as mention accomplishments and breakthroughs. The hope is that the sensation of being “stalled” will fade and they will enter a new phase in the lifelong mission that is foreign language learning.
CASE STUDIES:

Progress Report 1
There have been three video conferences in the past two months. M. K. was not able to attend the first two. A group learning management system (LMS), Moodle page was established and all three students have posted to it.

R. O.
Every English teacher’s dream student, she is beginning to lose a bit of her spunk and sparkle due to various factors, especially with regard to her reaction to less interest in the program among other honor’s college students. She is self-motivated and interested in doing better on the standardized tests that will eventually decide whether she gets a completion certificate in the honor’s college. In addition to her participation in the video conferences and other general work, she has been directed to short academic articles in a variety of subjects, which should help her with the upcoming IPT TOEFL examination.

Y. T.
She is perhaps at the lowest English level of the three, but she is very eager to learn and personable. She has trouble jumping into a conversation, so she needs to review those strategies. Even in a conversation group in the EL, where many students have lower levels of English than she does, she tends to hang back a bit. She has a very specific issue with R/L and the author advised her to work on it through a YouTube pronunciation course. In the future, the author intends to review conversational gambits that will help her become part of the conversation.

M. K.
She is in the same year as the other two in the university, but she was accepted to the honor’s college a year after they were. She is the first sophomore to be admitted to the honor’s college in its three-year history and is very excited about the program. She reached out to get some assistance with academic writing, which is taught in the second year of the honor’s college. She wants to get ahead of it, because one of the classes she is taking requires that she do her final paper in English.
**MY GOALS**

I want to work on my reading and vocabulary to improve my TOEFL score. I want to spend more time reading articles and watching English dramas and comedies.

**A. Skill-based Practice**

- **Reading**
  - 40 pages for my psychology class; 11/3; English comic; 11/15; two articles to practice for the TOEFL; 11/20; TOEFL reading practice; 11/25; Academic reading practice; 11/29

- **Writing**
  - Essay for writing class; 11/8; Essay 11/15; Written homework; 11/12

- **Speaking**
  - English Lounge: Week of Nov. 2: 6 times; Week of Nov. 9: 4 times; Semimonthly meeting with Shani; 11/14, 11/28; went out with English-speaking friends; Nov 21; Practiced pronunciation on YouTube: Rachel’s English

- **Listening**
  - Watched 5 episodes of Elementary; Listened to mock TOEFL tests; watched movie: The Graduate

- **Vocabulary**
  - Used Word Engine 12 times; made model sentences with new vocab from psych class

- **Grammar**
  - Played grammar games on www.mangthings.org

The most beneficial thing I did was: watch The Graduate and discuss it with international students.

The most fun was: Going out and speaking English with friends.

**B. Interpersonal Encounters**

I met a new international student from India and we discussed some interesting things about gender roles in different countries.

**C. Personalized Advice**

Shani suggested that I do some simple academic reading. I found interesting articles online and picked up some scientific vocabulary.
RESOURCES:


5 [http://cet.usc.edu/resources/teaching_learning/docs/mentorstudents.pdf](http://cet.usc.edu/resources/teaching_learning/docs/mentorstudents.pdf) USC Center for Excellence in Teaching
Conference Proceeding

1. Title of the submission
Perceptions of Inquiry-Based Learning Community: What Do Students Learn Outside of Undergraduate Seminars

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Abstract

Many researchers and teachers have focused on positive effects of undergraduate seminars. These are one of the inquiry-based and communal learning environments, affectionately called “Zemi” in Japan. However, there are little studies exploring what students learn in seminars with their self-reflection. The purpose of this study is to investigate seminar activities that occur in and outside of class, and then consider their effects on learning outcomes, including skills, perspectives and confidences. I conducted a retrospective interview with seven graduate students who participated in undergraduate seminars one or two years ago. The result showed that students have the following perceptions about their learning outcomes: (a) acquiring basic and transferable skills, (b) building curiosity in academic discipline, (c) learning practical approach in specific fields, (d) creating social connections, and (e) developing confidences of overcoming difficulties.

Introduction

In response to the question of what learning should take place for an unknown future (Barnett, 2004), we must consider what kind of education provided by universities would be appropriate for students. As we transition to a knowledge-based society, there is a strong demand for individuals who have the ability to respond to an unexpected future, and generic skills have attracted attention as the key to surviving in an age of rapid change. Generic skills are abilities and attributes that should be cultivated in a four-year bachelor’s program and include thinking critically, solving problems, using information, engaging in teamwork, and employing self-management. Interactive education and active learning play a significant role in acquiring these skills, and undergraduate seminars affectionately called “Zemi” are considered to be effective because they involve students engaging in interpersonal relationships, solving problems, and demonstrating knowledge and skills.

Seminars were born in the nineteenth century in Germany under the idea of “education through research”, and were introduced to the United States or Japan in the twentieth century (Ushiogi, 1997). Seminars are defined in two ways in the context of Japanese higher education: (a) an educational method in which presentation and discussion are the center of activity for a faculty and a small group of students, and (b) a community which is comprised of a faculty and students (Mouri, 2006). The Oxford Advanced Learner’s Dictionary states that a “seminar is a class at university or college when a small group of students and a teacher discuss or study a particular topic.” Oberst et al. (2009) state that “the seminar represents a methodology focused on the acquisition of competences and reflective skills and abilities.” Most faculties and researchers consider seminars as a learning community which includes relationships based on mutual understanding and trust.

Seminars are held for a small number of students, and faculties are able to provide more individual, careful, and polite instruction for students than in a regular classroom. A popular seminar format is one in which an faculty and about 20 students participate in a meeting intended to help the students gain further understanding of their research project, and the students receive the advice of the faculty and other students about the state of progress and the problems with their research in a specific domain of expertise. Being an important teaching method, along with lectures in university education, seminars also represent research-oriented and dialogue-based communities of the faculty and students. They offer students the opportunity for close interaction with the faculty and help develop new
relationships; it is possible for students to absorb ideas and tacit knowledge of specialized fields through daily communication.

In other words, the value of learning in seminars is supported by both formal learning pursuits and informal activities outside of class. For example, there are various activities that are relevant to seminars: camps, drinking parties, competition among seminars, and networking with other universities’ students. Such extracurricular activities complement and strengthen the learning and the atmosphere in class. In light of the positive effects of informal learning on students’ achievements of various abilities, activities outside of class seem to promote the growth of generic skills. Additionally, students feel that seminars are a home and a place where they belong. Yet, it has not been fully discussed in previous studies that what kind of informal activities are conducted, and how students learn through these activities outside of class. Therefore, the present study investigated seminar activities that occur in and outside of class, and then considered their effects on learning outcomes, including skills, perspectives and confidences.

Methods
Perspectives

The activities in seminars are shown in Fig. 1. As previously mentioned, I recognize that informal activities outside of class play a role as significant as formal learning activities in seminars. In regard to many types of formal learning activities in class, there would be writing thesis, reading books and articles, planning some sort of events or workshop. All these activities are considered to be effective for students in generating motivation, acquiring generic skills, and achieving a sense of satisfaction by many researchers. This study focused on the exploration of students’ perceptions about learning through informal seminar activities outside of class, and the following research question was posed: what do students learn from their informal experiences in seminars.

![Figure 1. A framework of “learning in seminars” including formal and informal activities](image-url)
Procedures of data collection

A retrospective interview (45-60 min) was conducted with seven graduate students who participated in different undergraduate seminars one or two years ago. Table 1 shows respondents to this survey.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Age</th>
<th>Theme of a seminar</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Female</td>
<td>24</td>
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<tr>
<td>B</td>
<td>Male</td>
<td>23</td>
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<tr>
<td>C</td>
<td>Male</td>
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<td>D</td>
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<td>F</td>
<td>Female</td>
<td>24</td>
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<tr>
<td>G</td>
<td>Female</td>
<td>22</td>
</tr>
</tbody>
</table>

I asked students the following questions: (a) what kind of activities did you participate in outside of class? (b) how were seminar activities promoted outside of class? (c) what kind of instruction and advice did the faculty provide? (d) what experiences did you have through these activities and how did you evaluate them? and (e) what kind of knowledge, skills, and attitudes did you acquire? I transcribed taped interviews and divided each document into coherent semantic units, coded these units, and classified codes from the bottom up, based on a qualitative analysis.

Results and Discussion

From the interview, I found that students engaged in several types of activities outside of class hours. The informal seminar activities are shown in Table 2.

<table>
<thead>
<tr>
<th>Camps</th>
<th>Drinking parties</th>
<th>Competition among seminars</th>
<th>Networking with other universities' students</th>
<th>Cooperation with outside organizations</th>
<th>Study session</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
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<td>●</td>
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<td>●</td>
</tr>
</tbody>
</table>

Note. Black circles show that students participated in each activity.
The result showed that students have the following perceptions about their learning outcomes through seminar experiences including the informal activities: (a) acquiring basic and transferable skills, (b) building curiosity in academic discipline, (c) learning practical approach in specific fields, (d) creating social connections, and (e) developing confidences of overcoming difficulties. This indicated that students in seminars are encouraged to think and act on their own initiative by the informal activities. We will conduct further interview surveys for undergraduate students to study more details about the influence of extracurricular seminar activities on students’ learning outcomes.

References
Analysis of Students’ Various Reasoning in Mathematics and Science Convergence Instruction

Kim, Sun Hee (Kangwon National University)
Bang, Dami (The Catholic University of Korea)
Kim, Jiyoun (Doonchon Middle School)

This study has analyzed Korean middle school students’ reasoning process through which they found a linear function from gas temperature and gas volume in mathematics and science convergence instruction. The analysis was based on Toulmin’ Argumentation Pattern (TAP) and Peirce’s reasoning types. Toulmin identified different types of statement which support a claim C (the conclusion of an argument), data D (facts we use to justify the claim, or minor premise), warrant W (the statement serving as a logical link between data and the claim, or major premise), backing B (further reason to strengthen the warrant), and a qualifier Q. In the same way Krummheuer (2007) analyzed Peirce’s reasoning using TAP, we analyzed the students’ reasoning process. As a result, we have found that students applied various reasoning types of deduction, induction and abduction. More specifically, they used both deduction and induction to draw a graph, and abduction to find a linear function. In other words, deduction was used to confirm whether their model of a linear function is correct to the real situation and induction was employed to experimentally verify whether their reasoning is correct. Meanwhile, abduction was applied to produce a linear function from the relationship of gas temperature and gas volume. Based on the analysis result that students found a linear function through their various reasoning in a scientific context, we have gotten implication for the design and practice of mathematics and science convergence instruction.

Reference
Acknowledgements

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Title of Submission:
Effects of Abductive Reasoning Training on Hypothesis Generation Abilities of First and Second Year Baccalaureate Nursing Students

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Abstract

Background: There is much debate on the best way to educate students on how to generate hypotheses to enhance clinical reasoning in nursing education. To increase opportunities for nursing programs to promote the discovery of accurate and broad-level hypotheses, scholars recommend abductive reasoning which offers an alternative approach to hypothetico-deductive reasoning. Purpose: This study explored the effects of abductive reasoning training on hypothesis generation abilities (accuracy, expertise, breadth) of first and second-year baccalaureate nursing students in a problem-based learning curriculum. Methods: A quasi-experiment with 64 participants (29 control, 35 experimental) was conducted. Based on their allocation, study participants either took part in abductive reasoning training or informal group discussion. Three different test questionnaires, each with a unique care scenario, were used to assess participants’ hypothesis generation abilities at baseline, immediate post-test and one-week follow-up. Content validity for care scenarios and other study materials was obtained from academic experts. Results: Compared to control participants, experimental participants showed significant improvements at follow-up on hypothesis accuracy (p=0.05), expertise (p=0.006), and breadth (p=0.003). While control participants’ hypotheses displayed a superficial understanding of care situations, experimental participants’ hypotheses reflected increased accuracy, expertise
and breadth. **Conclusion:** This study shows that abductive reasoning, as a scaffolding teaching and learning strategy, can allow nursing students to discover underlying salient patterns in order to better understand and explain the complex realities of care situations. Educating nursing students in abductive reasoning could enable them to adapt existing competencies when trying to accurately and holistically understand newer complex care situations. This could lead to a more holistic, person-based approach to care which will allow nursing students to see various health-related issues as integrated rather than separate.
Using an Electronic Portfolio to Translate Theory Into Practice for Field Work In Educational Administration

Presented to
2016 Hawaii International Conference in Education

By
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Abstract
The purpose of this paper is to describe the National University Educational Administration Preliminary Credential Portfolio Fieldwork program, translating theory into practice. This paper will also trace the lengthy developmental process from the traditional hardcopy fieldwork portfolio that candidates have traditionally assembled over the past 20 year to the newly-developed E-Portfolio. The E-Portfolio will be described in detail, where candidates post their fieldwork activities and documentation online, which has encouraged more student/faculty interaction throughout the entire fieldwork process, and has provided more consistent instructor grading from a rubric, and more complete data reporting for the university accrediting agencies.

Brief Overview of National University’s Educational Administration Program
National University is headquartered in San Diego, California, and has 28 campuses throughout the state and one in Nevada. It was founded in 1971, so it is a relatively young university. Its mission, then as now, is to serve the needs of the adult learner. Today the University enrolls 27,000 full-time equivalent students, with an average age of 34. Nearly 50 percent of the students are in the School of Education and nearly 1000 each year prepare to become licensed school administrators not only in California but also throughout the United States. There is a small but growing number of students completing their Master of Science degree in Educational Administration while residing in other countries as well. From its beginning, National University developed an instructional delivery format that has students take one course a month for two nights a week, with one Saturday class. This format is replicated in online courses as well. (Hoban and Castle, 2007)

National University, according to statistics provided by the California Commission on Teacher Credentialing (October 24, 2007), which is responsible for overseeing certification in California, has prepared the largest number of certified school leaders/administrators in the state, approximately 300 a year, for the past several years. In 2006, the faculty moved from an administrative/management based curriculum to a leadership/instruction based curriculum to
serve online students. This move came as the result of several years of department discussion, reflection on leadership research, assessing the needs of students, and, above all, responding to the national and international calls as well as new state mandated accreditation directions for developing standards based school leadership preparation programs. (Hoban and Tyler, 2008)

The Field Experience Component---Translating Theory Into Practice

In the National University Educational Administration Preliminary Credential Program, candidates complete 1.) Reflective essay for each of the seven core educational administration course signature assignments, and 2.) Twelve significant administrative activities within six Tier I program learning outcomes for the Educational Administration Credential Program, which align with ISSLIC (Interstate School Licensure Consortium) standards. These activities are designed to apply theoretical concepts studied in core credential classes to practical and realistic settings. Field experiences include both day-to-day functions of administrators and long term policy design and implementation, conducted in schools with a culturally and linguistically diverse student population.

Previously, students submitted a traditional two to four inch hard copy loose leaf portfolio binder, organized into the 22 separate activities, each with documentation, along with the necessary signed field experiences agreement, field experiences plan worksheet, candidate contact log with the university supervisor, candidate self-evaluation, evaluation of candidate, and evaluation of program by candidate. (The E-Portfolio Manual, National University, 2009).

The Traditional Portfolio—Issues and Concerns

While the traditional portfolio (hard copy loose leaf binder) satisfactorily met the fieldwork course outcomes and requirements, it fell short in several areas: 1) inadequate and infrequent contact between the student and university supervisor for providing formative feedback and evaluation of completed activities until the final submission of the portfolio binder at the end of the course, when all of the activities were signed off for completion. 2) Another concern regarding the use of the traditional, hard copy portfolio has been lack of storage space for student-competed multiple loose leaf portfolio binders at the University’s regional academic centers. Often the binders would disappear or get lost over time and were not maintained or properly stored for easy access in the event of accreditation visits. 3) Other concerns included the absence of a rubric for evaluating the quality of the students’ completed activities and inconsistent data collection from the loose leaf binders when preparing internal and external program assessments. This inconsistency occurred because there are a large number of instructors teaching this fieldwork course who submitted incomplete data or no data at all.

Why an Electronic Portfolio for the National University Educational Administration Program: A Rationale
National University’s Educational Administration program, leading to the California and other states’ equivalent preliminary administrative services credentials, has utilized a portfolio to capture student responses to field work experiences for over 20 years. To complete their field work part of the program, students, as noted immediately above, have been required to complete a portfolio that addresses a short reflection for each of the Program Learning Objectives, the complete two activities for each of the 12 administrative competencies which today align with the California Professional School Educational Leadership Standards (CPSELS) and the ISSLIC (Interstate School Licensure Consortium) standards. Students then produce a self-evaluation and request a site mentor/supervisor to evaluate them in terms of these standards. These requirements are summarized and outlined in a published Portfolio Manual.

Over the years, however, this approach to portfolio construction was lacking, with faculty consistently recognizing that the student reflection/evaluation piece, especially, was weak. Students typically dismissed the evaluation component with exceptionally brief and often almost meaningless comments. That motivated faculty to find a better way to address this concern. To start, they began with an examination of the theoretical underpinnings of portfolio development.

The literature regarding the construction of student portfolios is consistent. For the most part, it addresses student teacher portfolios and rarely field work completed by candidates seeking to become school administrators. And what can be usually found for administrative candidates is a portfolio approach that archives student projects from completed courses, not actual field work itself.

Helen Barrett in a keynote address to the Eifel Conference in London, 2009, observes that “reflection is the heart and soul of a portfolio.” Barrett, in another venue, recalls the history of portfolio development when she writes:

“The use of “portfolio assessment” in education emerged in the late 1980s, primarily in college writing classrooms (Belanoff, Elbow, 1991), to address the needs for accountability: the emphasis on portfolio assessment. In K-12 classrooms, the emphasis was more on portfolios as a showcase of learning, as a counterpoint to traditional forms of assessment or to illuminate capabilities not covered by standardized testing. the emphasis on portfolio assessment. According to Kathleen Blake Yancey and Irwin Weiser (1997), those purposes are becoming reversed, with post secondary institutions exploring the wide varieties of purposes for portfolios (learning, advising, employment) and with state departments of educations (Kentucky, Vermont, Connecticut) designing statewide models of student portfolios for statewide assessment.”

It is to this latter aspect of using portfolios—not the archival/showcase process—that educational administration faculty at National University began to turn, especially learning and advising. More specifically, the faculty wanted to
redesign the existing portfolio approach from just documenting student progress in completing field work to providing administrative candidates with greater opportunities to reflect upon and to evaluate their actual work and to explore how the field experience might impact their future career performance. In other words, the portfolio was not to be a volume collecting past history of things done, but an interactive tool to be used with faculty in giving meaning to field work experiences and to consider what the Stanford Center for Innovations in Learning (2002) explored in its Folio Thinking Project, noting that “the reflective practice of creating portfolios enables students to document and track their learning, develop an integrated, coherent picture of their learning experiences, and enhance their self understanding.”

Definitions
E-portfolio or digital portfolio is a collection of electronic evidence compiled and organized by a user, i.e. student. Such electronic evidence may include inputted text, electronic files, images, multimedia, blog entries, and hyperlinks. E-portfolios can be a user’s self-expression or a demonstration of student’s abilities, which is maintained over a period of time. Some e-portfolio applications permit varying degrees of audience access, so the same portfolio might be used for multiple purposes. An e-portfolio can be seen as a type of learning record that provides actual evidence of achievement. Learning records are closely related to an individual student learning plan, an ingenious way for individuals to manage their learning independently.

Students can communicate their learning for understanding to an instructor or others through an electronic portfolio. E-portfolios, like traditional portfolios, can facilitate students' reflection on their own learning and can lead to more awareness of learning strategies and needs. Results of a comparative research between paper based portfolios and electronic portfolios in the same setting, suggest use of an electronic portfolio leads to better learning outcomes.

There are three main types of e-portfolios, although they may be referred to using different terms: developmental (e.g., working), reflective (e.g., learning), and representational (e.g., showcase). A developmental e-portfolio is a record of things that the owner has done over a period of time, and may be directly tied to learner outcomes or rubrics. A reflective e-portfolio includes personal reflection on the content and what it means for the owner's development. A representational e-portfolio shows the owner's achievements in relation to particular work or developmental goals and is, therefore, selective. When it is used for job application it is sometimes called Career portfolio. The three main types may be mixed to achieve different learning, personal, or work-related outcomes with the e-portfolio owner usually being the person who determines access levels (Wikipedia, 2009).
In addition to allowing for administrative candidates to reflect on their field work experiences, moving to an electronic portfolio engages candidates in advancing their own technical skills, something necessary for a school leader these days and well stated in a paper “Applying Learning Pattern Theory to Electronic Portfolio Development: Navigating On-Going Programmatic Evaluation.”

As technology continues to be integrated into schools and classrooms, the principal is viewed as the technology leader (Creighton, 2003). Leadership candidates need to develop sufficient comfort with technology in order to assume the responsibility inherent in the position of principal. An assignment to create an e-folio, thereby, offers leadership candidates the opportunity to develop expertise in multiple software environments. Students’ technological skills are important factors in the construction of efolios and the success of an assessment system (Montgomery and Wiley, 2004).

Another aspect to portfolio development that needed to be considered—the assessment of student work, not only for the student’s benefit but also to meet the needs of state, regional, and national accrediting bodies. For some time National Council Accreditation Teacher Education (NCATE) has required substantive, documented assessment data as it reviews programs. These data are to be from a variety of sources, including signature assignments in courses, comprehensive program exit examination results, candidate evaluations by site supervisors, and assessments of field work by university supervisors.

These data points are also essential in meeting internal University annual program assessments and state accreditation requirements such as those required by the California Commission on Teacher Credentialing (CCTC) and the Western Association of Schools and Colleges (WASC), both accrediting organizations of National University’s educational programs. Capturing these data in the past had been somewhat of a chore, with heavy reliance on individual faculty reporting of scores and affirmation of field work portfolio assessment being indicated by a “Pass—Fail” designation without individualized discrimination regarding the qualitative accomplishment of students on the competencies/standards addressed in the field work. Developing and implementing an electronic portfolio would enable university supervisors not only to assess individual work using a scoring rubric but also would allow for an efficient data collection process to be designed that would not rely on manual tabulation and faculty reporting. This would expedite the assessment process considerably as Wetzel and Strudler, Addis and Luz (March, 2009) discovered in their study of Board of Examiner Reports submitted to NCATE in 2007 which showed that more and more universities were using the electronic format.

**The Journey to an Electronic Portfolio**

While the National University Educational Administration Department introduced the electronic portfolio as a requirement for completing fieldwork in January,
2009, the journey to develop a usable, student and faculty friendly instrument which addressed the concerns noted above was long and hard. The Educational Administration Department faculty began exploring the development of an electronic portfolio almost ten years ago. A first effort began with an outside vendor that had difficulty in conceptualizing what an electronic portfolio was expected to provide, and perhaps, not the clearest directions from the faculty who wanted to have an exact replicate of the hard copy version. And, unfortunately on the part of the external development team, most of the concern was for the technical side of development, with a team being sent from Barcelona, Spain to the University to make a presentation on the technology and the mathematical formulae being used to build an electronic portfolio, which was later abandoned. After another attempt for development with another company, a dispute developed over the costs of development, with actual costs substantively overrunning projected costs.

As an interim measure to move beyond hard copy three ring binders with portfolio write ups and selected artifacts, the department decided to require that all student materials and artifacts, as formatted in the original hardcopy Portfolio Manual, be presented on a CD which then would be reviewed by university field work supervisors and archived for later manual data retrieval for assessment purposes. This approach solved the hard copies storage problem, but did not address the faculty’s interaction with students electronically while building their portfolios during their field work.

In 2006, a faculty committee was formed to develop an electronic portfolio, with attention being given to interaction with students as they were completing their field work. This became more important since the most students were completing the program online, many of whom resided to far from the faculty for in-person visits during the field work experiences. In addition, assessment needs had grown for the university to retrieve data from employers regarding student performance on competencies/standards and dispositions/skills needed to become a school leader, and for graded, qualitative assessment of student field work using a rubric.

The faculty committee met regularly and explored several e-portfolio approaches with a design team from E-College headquarters in Denver, and a local University technology expert affiliated with E-College. Several prototypes were presented and tested and faculty issues being resolved, it was decided to “go live” on January 1, 2009, with all new students and continuing students being required to use the electronic portfolio as they progressed through their field work.

Now that the electronic portfolio for field work is in place, students and faculty are using it with relative success. Some adjunct faculty who served as field work supervisors resigned because they did not want to learn the new technology, even after a number of training sessions led by the in house e-portfolio expert and a colleague from the department who is well versed in this approach.
The Final Product

The latest just revised fieldwork class, EDA 600 (Applications in Leadership), is described as supervised application of theoretical concepts in practical settings. Candidates complete a portfolio of administrative activities demonstrating competency in areas identified in the California Professional Standards for Educational Leaders as sanctioned by the Commission on Teacher Credentialing for awarding of the preliminary administrative services credential. A triad consisting of the University Supervisor, the Site Mentor/Administrator, and the candidate, develops a plan at the onset of the class. This plan ensures that the activities in which the candidate is engaged are aligned in the candidate will take. As the candidate a sequence so that they coincide with the theory learned in the courses has courses scheduled in advance, the triad has advance notice of the course learning outcomes and can plan accordingly. The plan stresses day-to-day administrative functions as well as policy analysis and implementation. This course is the first course in the program and will be taken concurrently with all other program required courses. This course takes 7-12 months to complete. It must be completed within 12 months of being scheduled. This course must be completed in residence.

Credential Program candidates currently complete project field work requiring: 1) Three dispositions that assess the candidate’s strengths and weaknesses: one at beginning, one half way through the course, and the final at the end of the course and 2) Twelve significant administrative activities within six Tier I Program learning outcomes for the Educational Administration Credential Program, which today align with the ISSLIC (Interstate School Licensure Consortium) standards. These activities are designed to apply theoretical concepts studied in core credential classes to practical and realistic settings. Field experiences include both day-to-day functions of administrators and longer term policy design and implementation, and are conducted in schools with a culturally and linguistically diverse student population.

Prior to the current e-portfolio, the traditional portfolio (hard copy loose leaf binder) was lacking for faculty recognition of the student reflection/evaluation piece, and weak effective assessment/evaluation. It also fell short in inadequate and infrequent contact between the student and university supervisor for formative feedback, assessment and evaluation of completed activities until the final submission of the traditional portfolio binder at the end of the course, and inadequate submission of hard data for university accreditation agency purposes.

This current e-portfolio requires more student/instructor interaction time (almost a year) throughout the process rather than an exclusively summative document in the traditional portfolio. Also, the quality of responses and reflections is improving, with current instructor observations that the quality of reflections and responses significantly better than those found in the traditional portfolio. The e-portfolio fieldwork has now become a true learning and reflective process.
Students communicate their learning for understanding to an instructor or others through an electronic portfolio, reflecting their learning, leading to more awareness of learning strategies and needs. The results of a comparative research between traditional portfolios and electronic portfolios suggest use of an electronic portfolio leads to better learning outcomes.

The following is an example response to a category/competency required of the student. For each category there is a template that is completed by the students and submitted to the instructor/university supervisor. As the activity is being completed, the student sends a copy to the instructor who provides feedback. When the final version is ready, the student submits the write-up and the documentation for evaluation. What follows is a sample write up, the rubric, the score, and the final comment of the instructor—in this case short because there was more lengthy commentary provided earlier in the process. It is apparent that the student has thought through the activity and has learned from it—the goal of the field experience activity in the first place. This scoring information, including the site mentor’s evaluation of the student, is automatically entered into the University’s electronic assessment system.

<table>
<thead>
<tr>
<th>Student Name</th>
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<tbody>
<tr>
<td>Category 6. Human Resource Administration</td>
</tr>
<tr>
<td>National University</td>
</tr>
<tr>
<td>Activity Title: Mock Evaluation</td>
</tr>
<tr>
<td>Date Completed: August 1, 2009</td>
</tr>
</tbody>
</table>

Identify the activity:
I will conduct a mock evaluation of a fellow teacher using the union approved evaluation tool. The evaluation will be done on a teacher who agreed to volunteer to let me evaluate them for the purpose of this class. I will hold a post conference just as an administrator would.

Explain the implementation:
I used the union approved evaluation tool to evaluate a fellow teacher just as an administrator would in my district. I observed the teacher for one whole period just as an administrator would during a real evaluation. I tried to conduct myself just as an administrator would for a real evaluation. The teacher who volunteered was aware that I would be coming in to conduct an evaluation, but would only be using the results to fulfill the requirements for this class. The volunteer also agreed to the post conference after the mock evaluation was completed. Examine the process: I have had experience being evaluated with our approved evaluation tool. Four domains are examined during an evaluation in our district:

- Domain A - Organizing Content Knowledge for Student Learning
- Domain B – Creating an Environment for Student Learning
- Domain C – Teaching for Student Learning
- Domain D – Teacher Professionalism

However only two of the domains are used when a teacher is being observed in the classroom: Domain B- Classroom Environment and Domain C- Instruction. The other two domains A and D are discussed towards the end of the year during a summative evaluation along with the three classroom evaluations that were completed during the year.

For the purposes of this class I used the "Teacher Observation Instrument" which focuses on domains B and C. There are 5 performance ratings that are used during a classroom evaluation for each of the subsections in the two domains: U: Unsatisfactory N: Needs Improvement S: Satisfactory E: Excellent N: Not Observed.

As part of our CIP (Continuous Improvement Plan), I had to observe fellow teachers to see if they had an engaging classroom with engaging activities, so when I went to conduct my mock evaluation I was not too nervous. I sat down in the back of the room with my Teacher Observation Instrument and began to take notes. I briefly scanned the 10 items that are to be observed and evaluated.

The classroom I observed was a science class and the teacher's lesson was a water lab. After a while I decided to get up and actively engage myself in the classroom (my administrator does this quite often when he observes). Doing this was the best
thing that I could have done. Walking around and being engaged allowed me to get a better feel for evaluating the classroom environment and instruction. It helped me to reassure myself that the subsections for each domain were being met.

The teacher displayed to me every subsection; all with S or E ratings. I gave an E rating for B5: Making the physical environment as safe and conducive to learning as possible and C4: Monitoring understanding, providing feedback, and adjusting learning activities as the situation demands. These are two very important things that a science teacher must do during a lab. Students seemed to know the lab rules and everyone stayed dry. The teacher also walked around the room giving "teacher checks" as students completed each phase of the lab. I did give an S for C5: Using instructional time effectively, because when the bell rang not all of the students were ready to be dismissed and were still cleaning up. I did not feel that this merited an NI or U since it was a lab and time can sometimes be hard to plan for.

Later that day the teacher came to my administrator's office to meet with me for the post conference. I discussed what I had observed and explained my notes to the teacher. I explained to the teacher how I thought the lesson was a great lesson and pointed out the things that I thought were excellent. Then we discussed ways the teacher would improve even more the next time the lab was done. At the end of the conference both of us signed off on the "Teacher Observation Instrument" and just as an administrator would, I made a copy for the teacher to take back with them. This was a great experience for me. Being on the other end of an evaluation really showed me how thorough only 10 items can be. I not only have gained new respect for my administrator, but also for the union sub-committee that developed the observation tool.

### Student Activity Form

<table>
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<th>Rubric</th>
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<tr>
<td>A clearly written, reflective and fully developed three part response</td>
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<tr>
<td>to the activity. The response demonstrates content mastery and provides substantial documentation.</td>
</tr>
<tr>
<td>An acceptably written, reflective three part response to the activity. The response demonstrates content mastery and provides adequate documentation.</td>
</tr>
<tr>
<td>An unacceptable response with limited or no documentation.</td>
</tr>
</tbody>
</table>

Results: 3

- Comments: I am glad that you had such a successful experience. I thought you would.

### Some Final Thoughts

Now that the e-portfolio for National University’ educational administration has been implemented, there are a number of students who have completed their work using it. While definitive reactions may be pre-mature, some conclusions can be drawn: The e-portfolio does require more student – instructor interaction time than was usually the case when the old portfolio was presented at the end of the process—taking almost a year—as an almost exclusively summative document. The capability of interaction keeps the students and instructors in touch throughout the process. Also, as the sample shows, the quality of responses and reflections is improving, with current instructor observations indicating that the quality of reflections and responses to be significantly better than those found in the older, hard copy/CD approach. The field work has now become a true learning and reflective process and is considerably more than a chronicle of activities. The educational administration faculty is quite pleased with the e-portfolio result and looks forward to continually improving the process and enhancing the learning opportunities for future school leaders.

What did the National University Educational Administration Department learn by its past development mistakes, and would do differently to provide lessons and insights for other institutions to follow, who may want to develop or adopt a
portfolio platform? 1) Work with the same vendor, i.e. Blackboard that develops all of the other university online courses, instead of using different vendors, 2) Seek out clear direction and understanding from the accreditation agency(ies) as to what student evaluative data is needed for accountability records for accreditation, 3) Pilot test the e-portfolio product before fully implemented, and 4) Conduct an external review and evaluation of the student fieldwork e-portfolio for further improvements and updates to reflect accreditation changes, 4) Provide quality training an in-service to faculty members on the use and management of field service e-portfolios to gain full faculty acceptance and understanding, and 5) Research the portfolio platform for introduction to Competency Based Learning (CBE).

References

National University Catalog 78, p. 347


Mentoring and the HBCU Faculty

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Abstract

The purpose of this paper is to provide the results of a university level mentoring program conducted by a Faculty Union at a University in the State University System of Florida. The mentoring program was established to help faculty members in the achievement of the following goals: professional career development; support professional identity formation; and identify and develop successful professional competencies. The mentoring program also facilitated professional learning, socialization and adaptation of new faculty into their professional roles.

*Keywords*: Mentoring, Historically Black Colleges and Universities, Performance Funding.
Introduction

Issues of accountability, cost, quality and effectiveness are constantly being discussed when evaluating HBCUs and their contribution to African Americans’ access to higher education and achievement. In today’s shifting higher education public agenda, concerns about HBCUs and their effectiveness are especially relevant with individual states’ and the federal government’s increased focus on accountability for all higher education institutions. State after state has developed matrices to measure predetermined performance outcomes. HBCUs are now being criticized for their performance on these metrics, as well as for their graduation and retention rates. This criticism ignores the fact that for the past few decades African Americans have made “notable progress” in the area of access to higher education than ever before (Delgado, 2000). However, unfortunately, as a group, HBCUs have failed to obtain the “gold ring” (a college education) for the majority of their constituency. The mentoring program was conceived as a way to improve the professional skills and outcomes at a primarily Black university in Florida.

In August of this year, as President of my union chapter, I proposed a mentoring program for faculty at my University. After thirteen years on the job and a senior professor, I believed that mentoring would aid and assist some of the problems facing my University. The mentoring process is an interpersonal relationship between an experienced faculty member and a novice faculty member who are at different stages in their professional development. In a good mentoring relationship the experienced faculty member takes an active role in the career development of the new faculty member by serving as role model, adviser, and/or guide in various formats that range from highly structured and planned interactions to ad hoc and
informal interactions (Jipson & Paley, 2000). At its core, mentoring as a form of learning and professional development originates from the belief that learning occurs through observing, role modeling and/or apprenticeship, and questioning.

Context of the Investigation

The context of this investigation was a mentoring program established by the local faculty union chapter of Florida Agricultural and Mechanical University (FAMU), the United Faculty of Florida (UFF-FAMU). FAMU is a historically black university located in Tallahassee, Florida and is one of twelve institutions in Florida’s State University System (SUS). FAMU’s enrollment is composed primarily of undergraduate students and the University offers 62 Bachelor’s degrees in 103 majors/tracks, and 36 Master’s degrees.

FAMU was established in 1887, as the State Normal College for Colored Students. It became a Land Grant university in 1891 under the Second Morrill Act, changing its name to State Normal and Industrial College for Colored Students. It became an official institution of higher learning with the 1905 Buckman Act. In 1909, it became the Florida Agricultural and Mechanical College for Negroes, and in 1953 the name was changed to its current name, Florida Agricultural and Mechanical University. FAMU is noted for its College of Pharmacy, College of Journalism, and School of Business and Industry. Currently, FAMU has 620 faculty members.

The faculty union, the United Faculty of Florida (UFF), represents more than 23,000 faculty members at eleven public universities, one private university, nine public colleges, and four K-12 research schools, as well as the graduate assistants at four public universities. The mission of UFF is to protect and support the practice of higher education professionals, including their teaching, research, and service. It does this by means of collective bargaining, as Florida is one of the few states in the south which legislatively allows collective bargaining by state
employees. Collective Bargaining is a bilateral process that, with the weight of law, conveys equal power to unions and administrations to negotiate terms of employment, including salary, benefits, and workload. These contracts acknowledge and legitimize shared governance, and convey power to faculty unions. Often, the collective bargaining system coexists with a faculty or academic senate that provides faculty with structured involvement in the governance of the institution.

The mentoring program was conceived to assist FAMU faculty in cultivating the skills and dispositions to take their students and themselves to the next academic level. The root of the current situation facing FAMU is being ranked dead last in the performance matrices of the (SUS). The Performance Based Funding Model includes 10 metrics that evaluate Florida institutions on a range of issues. These metrics were chosen after reviewing over 40 metrics identified in the University Work Plans. The model has four guiding principles: 1) use metrics that align with SUS Strategic Plan goals, 2) reward Excellence or Improvement, 3) have a few clear, simple metrics, and 4) acknowledge the unique mission of the different institutions. (SUS Webpage) The performance benchmarks for State Universities are determined by:

1) Percent of Bachelor's Graduates Employed Full-time in Florida or Continuing their Education in the U.S. One Year After Graduation

2) Median Wages of Bachelor’s Graduates Employed Full-time in Florida One Year After Graduation

3) Average Cost per Bachelor’s Degree [Instructional Costs to the University – rounded to tens digit]

4) Six-Year Graduation Rate for First-time-in-College (FTIC) Students [includes full- and part-time students]
5) Academic Progress Rate [Second Year Retention Rate with GPA Above 2.0]

6) Bachelor’s Degrees Awarded within Programs of Strategic Emphasis

7) University Access Rate [Percent of Undergraduates with a Pell grant]

8) Graduate Degrees Awarded within Programs of Strategic Emphasis. (Florida State University System Webpage).

FAMU missed out on millions of dollars in performance funding from the state this year after dropping three points on the benchmarks which tied funding to performance. Despite the belief held by many FAMUans that the SUS performance-based funding model is unfair to FAMU, given our long-standing role of providing an education to poorer minority students who might not get accepted elsewhere, the Board of Governors of the State system disagrees. They believe that FAMU needs to address how much of its resources are being directed toward students who are not adequately prepared for a four-year university, and that faculty also need to explore how much heavier teaching loads are taking time away from their research obligations (a topic frequently discussed by this union). Last year, FAMU and the University of North Florida tied for the final spot and FAMU received $10.8 million in performance funding, $5.5 million of which was new. In that year, FAMU scored high enough to have its base level of performance funding restored, which last year totaled $3.6 million (UFF FAMU December Newsletter, 2015).

The faculty union believes that a formal peer mentoring program, will take the faculty to the next level.

Theoretical Foundation of the Program-Mentoring

What is Mentoring?

Although the idea of having a mentor or being a mentor has become very popular these days; there is no single definition of “mentor”. Rather, most of the definitions include the
function of mentors. While many of us use the term quite often, very few know the true model for its use. The term mentor and the model for its use while based in Greek mythology, many of our great leaders participated in a mentor/protégé relationship, including Socrates and Plato, Freud and Jung, Boas and Mead, Sortre and de Beauvoir, Hayden and Beethoven. Although the mentor may serve as a teacher and or sponsor, the mentor’s primary function is to assist the protégé in realizing his or her potential.

The concept of mentoring is very complicated and as with all other concepts, mentoring can be defined broadly or narrowly. When defined narrowly, it can be assumed that mentors have certain characteristics and mentoring occurs in certain of situations. If mentoring is defined very broadly, e.g. mentoring is good pedagogy, the characteristics between the situation and mentors are also much broader. The broader the definition one uses, the more different situations and mentor types can be included in the definition, and the more mentoring exists. If one uses very strict definitions, the less mentoring can assumed to found.

Malderez and Bodoczky (1999) offer a definition of the mentor. They see the mentor as more experienced in comparison to the mentee. Mentoring happens in a one to one relationship. Malderez and Bodoczky present five types of characteristics of mentors to offer a clearer picture of this whole phenomenon. The five types of roles mentors can have are:

- Model
- Acculturator
- Sponsor
- Supporter
- Educator
All these roles have different functions. A mentor can use combination of the roles in different situations. As a model the mentor inspires and demonstrates to the mentee, being an acculturator involves showing the mentee the ropes and helping the mentee adjusting to a new environment. As a sponsor the mentor is opening doors, introducing the mentee to discuss problems or barrier success. As a supporter the mentor focuses on being there when needed, providing opportunities for the mentee to let off steam and to act as a sounding board. As a supporter, the mentor focuses on emotional aspects and on the affective elements of the mentor–mentee relationship, whereas acculturator and sponsor emphasize more practical aspects. The final role, educator, focuses on the learning processes: the mentor encourages mentee’s reflection and articulation of practice and helps the mentee to achieve his learning objectives.

There are two basic types of mentoring relationships – formal and the informal. The formal is organizationally arranged, structured relationships, in which the mentee is matched with a mentor based on pre-arranged criteria (Chaoe & Walz, 1992). The main purpose of formalized mentoring programs is to orient outsiders to the particulars of the inside culture of an organization over a designated period of time. Through these programs, mentors provide accessibility and frequent interaction, allow mentees to work with high-level leaders, insist that mentees receive feedback from mentors, acknowledge successful mentors in the program, and encourage a strong commitment to the mentoring process. All of these factors help to insure that mentees have the opportunity to receive psychosocial benefits that are often associated with formalized mentoring, as well as benefit from career development functions of the mentor (Faison, 1996). In the second form of mentoring, the informal arrangement, mentoring just happens. There are no program, no meetings to attend – just two people whose chemistry is compatible who get together to share ideas and learn with one taking the role of teacher or
mentor, the other the student or protégé. In these situations, there are low expectations and the mentoring is "easier to do", but it is less effective and requires little or no training.

Mentorship promises potential benefits in three areas (Little and Nelson, 1990). Others believe that mentoring is important for induction---to help transition individuals into the work world. Some believe that mentoring is important for career enhancement---to provide an avenue for leadership, public recognition and professional development and program innovation. Finally, having a mentor contributes to overall job satisfaction.

Formal mentoring programs have provided the most significant increase in enrollment and retention of minority students, as well as increased their overall satisfaction with their educational experience. Faison (1996) says that successful mentoring experiences are based on participants sharing common goals, perceptions and worldviews.

The Benefits of Mentoring

The number of mentoring programs has grown dramatically in recent years. This popularity results in part from compelling testimonials by people--youth and adults alike--who have themselves benefited from the positive influence of an older person who helped them endure social, academic, career, or personal crises.

If the mentor/protégé relationship has been beneficial and rewarding to both parties, a long-term friendship may develop; however, the contact and involvement may not be as frequent. The protégé may internalize the admired qualities of the mentor more fully, thereby enriching himself/herself.

Because mentoring is a two-way relationship in which individuals share stories, experiences, and ideas, there are rewards for the protégé/mentee as well. Observing a person grow and learn is an affirmation of the mentor's efforts. The special bond that develops between
mentor and protégé can develop into a career-long friendship. Connections forged through mentoring open the doors to greater opportunities. Most successful professionals can attribute much of their achievement to their mentoring relationships.

Further, organizations of any size can enjoy the benefits of mentoring. The quality and quantity of projects and work related initiatives are directly related to the ability of the organization’s people to work together to surpass their expectations. Nurturing and collaborating through mentoring can only enhance the organization's work. As a corollary benefit, people who feel better about themselves and their work will make a better impression on customers/clients. Customers/ Clients see the positive interactions and, in turn, feel better about the organization's work.

Several disciplines have researched the rewards and benefits of mentoring African Americans. The most notable are the areas of Business and Education (Davidson and Foster-Johnson 2002; Dreher & Cox, 1996, Lee 1999, Leveinson, 1978, Thomas, 1990; Zen 1994). Studies of African American executives show a direct correlation between job growth, promotions and salary increases and having mentors:

- Not having an influential mentor or sponsor was reported as one of the top barriers to advancement of African American female executives, according to Catalyst’s (2002) "Women of Color in Corporate Management Report."
- The study also showed that 69 percent of those with mentors were promoted, compared with 50 percent of those with no mentors.
- According to Korn/Ferry International's study (1998), "Diversity in the Executive Suite: Creating Successful Career Paths and Strategies," formal and informal mentoring and
support from superiors and co-workers are key factors that help place minority executives on the organizational fast track.

- Korn/Ferry International’s study also shows that African American executives who reported having informal mentors at work (73 percent) had faster salary and total compensation growth than those without one.

- The study also showed that 69 percent of those with mentors were promoted, compared with 50 percent of those with no mentors.

Research on organizations has long documented the importance of mentoring in the development of top-level managers. Mentor-protégé relationships provide budding managers with information instrumental to career advancement and also provide "psychosocial support". A major element of the classic mentor-protégé relationship is a high level of rapport and interpersonal chemistry. Research indicates that mentors and sponsors are more likely to choose protégés who are more similar to them in terms of race and gender. To the extent that mentors tend to avoid risk in selecting protégés, stereotypes of African Americans as incompetent pose a substantial barrier to their selection as protégés.

Benefits to Protégé/Mentee

- Development of an interpersonal relationship with a caring, informed, supportive advisor
- Ability to receive constructive feedback
- Direction in defining and achieving career goals
- Acquisition of an objective and credible source of information

Benefits to Mentors

- Satisfaction in helping the mentee/protégé define and achieve career/professional goals and objectives
A sense of pride from observing the mentee/protégé develop

An opportunity to improve interpersonal communication, motivation, coaching, counseling, and leadership skills

Pleasure in knowing the you are contributing to the success of the organization

An opportunity to impart valuable information, expertise, and wisdom to a receptive individual.

Results

Because of political chaos in the institution, the implementation of the mentoring program has been delayed. The faculty was in impasse over the summer 2015 concerning faculty salary negotiations. The impasse was successfully resolved by the beginning of Fall 2015. It is anticipated that the mentoring program will begin the first stage of implementation in the Spring of 2016.

The long-range vision for the mentoring program is to integrate mentoring into the daily operations of the university. It is hoped that the success of the mentoring program will lead to many successes in university functions, including academic, enrollment and retention.
References


1. Title of the submission:

   The Effects Values Based Career Counseling Intervention has on Career Decision Making: A Quantitative Approach

2. Name of the author:

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3. Affiliation of the author:

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6. Abstract:

   Adult career counseling in a university context is a substantively different process from career counseling with traditional aged students. The session is grounded within the values-based literature of both adult education and career counseling and explains and interprets this difference, paying particular attention to historical, social, contextual, and developmental aspects of this distinction. Shared is a research study using values-based career counseling interventions to help adults in various aspects of their career decision making.
THE ROLE OF THE 18TH CENTURY SHIPBOARD ARTIST IN EDUCATING THE PUBLIC: A COMPARATIVE STUDY OF JAMES WEBBER’S DEPICTION OF HAWAII’S KEALAKEKUA BAY ON CAPTAIN COOK’S THIRD VOYAGE (AND THE FIRST DEPICTION OF SURFING)

By

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ABSTRACT: In the eighteenth century, shipboard artists played a key role in educating both the British Admiralty and public about the far-flung and often exotic locations that explorers such as Captain James Cook visited. They added the visual reinforcement that not only heightened public interest in otherwise straightforward narrative and reports, but also provided the government with illustrations to help determine the benefits of additional exploration of new lands. One such artist was John Webber, who accompanied Captain Cook on his third Pacific expedition (1776-1780) and left memorable artistic renderings of the Hawaii Islands. One of the most famous of these was his depiction of Kealakekua Bay on the Big Island and the first depiction of the Hawaiian pastime of surfing. The accuracy of his art is truly remarkable.

British artist John Webber accompanied Captain Cook on his third expedition to the Pacific from 1776-1780 aboard the HMS Resolution. His job was an educational one. Officially, he was to record what he saw on the voyage through his drawings and paintings to help the British admiralty with its plans for future exploration and expansion, and to add to a growing body of knowledge about unknown parts of the world. Through his efforts, authorities could see rather than only read or hear about what they might expect to encounter on their voyages to remote corners of
the globe. Webber’s illustrations were also distributed for the general edification of the British public to inspire interest and curiosity for a variety of reasons—personal and commercial, altruistic and exploitative. His historically important works are among the earliest visual opportunities to learn about areas on the western coast of North America, Asia, and the Pacific—including Australia, New Zealand, Hawaii, Tahiti, and Tonga. Nothing at the time short of being there could substitute for viewing such places and peoples. Webber’s originals were subsequently engraved and published in England and France. They have since gone through a number of editions.

People have always wanted this type of visual reinforcement for the written word. In fact, it may be said that education begins with pictures. For most of human history, this reinforcement was necessary simply because of the high degree of illiteracy. Artists accompanying monarchs on military expeditions have a long history, which can be demonstrated by depictions of battles going back to the Ancient Near East and Egypt. While the original purpose of these artists was primarily to glorify a leader’s military prowess, as society progressed it was not only rulers who understood the power of the visual image but also ambitious politicians. One wonders, for instance, if illustrations might not have accompanied Caesar’s vivid narrative in his Commentaries, which were largely designed to enhance his position in Roman Republican politics. During the Roman Empire, emperors called upon artists to depict them in glorious poses, as well as feature them in battle. The Columns of the Emperors Trajan and Marcus Aurelius, which may still be viewed in Rome, could only have been based on actual renderings by artists on the battlefield.
Generals and officers celebrated their achievements, too, but in less grandiose scale on private works. One particularly fine example is the Portonaccio Sarcophagus in the Palazzo Massimo at Rome, which depicts the potential occupant, Pompilius, hammering his way through barbarians on the Danube frontier in a mostly realistic rendering by an artist who clearly had witnessed the carnage (see Robert B. Kebric, *Athens Journal of History*, Volume 1, Issue 3, July, 2015, pages 175-194).

As literacy, technology, and the ability to render art improved, so, too, did the production and distribution of that art. Also, as the public came to have more of a role in government spending, elected officials were compelled to take the *vox populi* more seriously. In Great Britain, for example, John Webber’s art had its governmental purpose, but it was also intended for public distribution as encouragement to support future funding for expeditions like Captain Cook’s. It had the desired effect. In today’s society, the public is incessantly bombarded with visual images of politicians, businesses, entertainers, athletes, and everyone else vying for publicity, support, or funding—and through it all, the visual image has provided a powerful (though not always intentional) educational tool.

The question to be examined here, however, is a simpler one. It is not whether art has been used in the past to glorify, mislead, or misinform the public for political and other reasons. Its only purpose is to determine whether or not John Webber did his job—educating both the British Admiralty and public through his artistic renderings. It would have been easy for an artist on such an extended expedition to become careless or fulfill his responsibilities simply by dashing off quick sketches that were acceptable. If the general nature of the subject or landscape was captured,
then that should be good enough. Besides the chance of enlisting a poor or lazy artist, just the grueling wear and tear on someone who was not by nature a seaman, could take its toll on a very good artist on a voyage such as Cook’s. Even the Captain did not survive this one, killed in an unfortunate scuffle with native Hawaiians on Kealakekua Bay, not far from where his ship is shown anchored in Webber’s engraving.

In John Webber’s case, it appears that nothing stopped him from producing the most accurate and reliable drawings and paintings anyone could have made at the time. Webber (1751-1793) was only in his mid-twenties when he was selected to be Captain Cook’s artist. He had been educated in Bern and studied painting in Paris. Obviously, he was already establishing his reputation by 1776, or he would not have been selected for the job. It was not unusual (in fact a regular practice) to select younger men for this kind of task, a grueling voyage from which there was an even chance of not returning. The opportunities for a young artist, however, appear to have outweighed more practical concerns, and Webber became the first European to have the opportunity to depict the Sandwich Islands, as they were called at the time. After he returned to England in 1780, his works were exhibited at the Royal Academy, an honor that certainly helped lead to his election as an associate of the Academy in 1785. Cook’s death on the voyage also attracted unexpected attention to the artist, particularly because of his rendering of “The Death of Captain Cook,” which became the highlight of his engravings when they were published.
In the one example of his Hawaiian art we are discussing--Webber's rendering of Kealakekua Bay on the Big Island--the detail is exceptional. It is fortunate that we can use one of his Hawaiian engravings for a conference paper that is being presented in Hawaii--but even if it were not, the fact remains that John Webber was a brilliant artist. Comparing the original engraving of Webber's rendering of the Bay with photographs I took at the same site last January, readily confirms this impression. I attempted to position myself as closely as possible to Webber's vantage point, using a copy of his engraving as my guide.

There have, of course, been some major changes at Kealakekua Bay over the last two-and-a-quarter centuries. Probably the most traumatic happened only a little more than nine years ago on October 15, 2006, when a 6.7 magnitude earthquake struck the Big Island at 5:07 P.M. It hit the Bay hard, and massive landslides caused a thick cloud of brown dust to cover the entire area. The cloud of debris can still be viewed in a sequence of photos on-line at www.flickr.com, under “Hawaii Earthquake 2006.” Interestingly, I did not know about the earthquake until I returned to my hotel in Kona after going to the Bay to make my comparisons. The car attendant asked where I had been, and I told him what I had been doing, producing my copy of Webber's engraving. I said the comparison was remarkable and about the only thing really different was that the bluffs at the top of the ridge above the Bay were gone. He replied that he lived in the area, and that bluffs were once there, close to what Weber had depicted. He then proceeded to relate some personal details about the 2006 earthquake. His family was having dinner nearby at the exact time the earthquake struck, and the entire wall of earth at the top of the...
bluff had fallen into the sea. The resulting dirt and debris rose high in the air and
did not clear up for some time, as the aforementioned photographs following the
2006 earthquake show. He said he was at the Bay frequently, so he knew exactly
what it had looked like before the quake-- and it was pretty much like Webber had
depicted it in his rendering. My admiration for the artist only increased with this
new knowledge.

Even with the recent changes in the physical landscape of the Bay, it may be seen
by comparing the engraving and my photographs below that they still match up
very well— in fact, the result is amazing. I even ended up using the copy of
Webber’s engraving to discover features of the landscape I would have otherwise
missed because of subsequent overgrowth and changes in topography. In the final
analysis, the most meticulous government officials, the royal navy, universities and
schools, and members of the general public in 18th century Great Britain could have
used Webber’s depiction of Kealakekua Bay with complete confidence.

The result of this one comparison between a Webber engraving and the actual
Hawaiian site he was depicting is almost frightening in its accuracy. I have not
attempted similar experiments at other locations in the Pacific because of obvious
geographical and financial obstacles, but based on this one example, Webber was
the man for the job. That accuracy is reinforced by his ink wash and watercolor in
the Honolulu Museum of Art entitled “Kealakekua Bay and the Village Kowrooa
(1779)” -- where Cook was killed and the Cook monument stands today – which
depicts the far left end of the Bay (mostly obscured by the ships in the engraving).
While erosion has diminished the scale of the bluffs in Webber’s original engraving,
the general line of the landscape of Kealakekua Bay can still be perceived. We can be sure since Cook’s explorations and death on the Bay raised such interest and inspired so much patriotism that this engraving became almost a national treasure for the British.

What Webber depicted as a part of the incidental activity going on at the Bay while he was working on his illustration also includes the first known representation of Hawaiians engaged in their “national” sport of surfing (see last photo below). As a result, it is today an iconic “must-have” for anyone interested in the beginnings of surfing and reproductions (and sometimes an original) are sold all over the islands. Webber was not ignorant in including surfing in the engraving because notes from other members of Cook’s expedition also contained their curious observations about the Hawaiian pastime—which, of course, went on to become an international sporting phenomenon and inspired the Southern California surfing culture that captured the country’s imagination in song, film, and slang in the 1960s.

That is education!

*                                                  *                                                     *

What follows are recent photos of Kealakekua Bay compared to Webber’s original engraving. The 2006 earthquake caused considerable damage to the area, especially loosening the top most cliffs, which not only fell into the sea but also transformed the terrain beneath and changed its configuration. I have looked through hundreds of photos and postcards on-line, attempting to develop some type of visual timeline
of changes to the site but to no avail. It would be fortunate, indeed, if any such record could be pieced together, but it would be too coincidental if artists or photographers over the centuries had just happened to reproduce or take photos of precisely the same panorama. I specifically took my photos of the Bay for this presentation using Webber’s engraving as my guide. Even without such a record, it may be presumed that there have been other earthquakes and shifts in topography that made the heights originally depicted by Webber over two centuries ago look very different today. That is just a part of the natural evolution of all landmasses. Nonetheless, the photographs included here still show many of the same landmarks Webber saw. Despite changes to the landscape, they remain eminently visible-- and confirm Webber’s expert depiction of the Bay.
John Webber’s engraving of Kealakekua Bay.

A recent panoramic photo of the same scene.
Weber’s engraving and same area as it appears today after earthquakes and erosion.
Furthest extent of landmass at Kealakekua Bay and site of Kowrooa village, where Captain Cook was killed (Cook Monument). Ships obscure it in Webber’s engraving.
Recent view of area depicted in Webber’s engraving. Effects of earthquakes and erosion over two centuries show on top, while basic contours below remain.
Recent view of area depicted in Webber's engraving. The dark depressions at center right in the original, cave-like in appearance, can still be seen at left in the photo.
The rock cluster in Webber's original engraving is still visible among the foliage.
The earliest representation of a surfer in Webber's engraving.
A Journey To Calm: Becoming a Trauma Informed School

Abstract

August 2015

The basis of the presentation is to demonstrate the positive effects of making social-emotional learning (SEL) a priority in a school setting. For years, schools focused on how to get students to perform well on standardized tests. The social-emotional wellness of students was not in the forefront of learning. In urban schools, children enter with an array of emotional issues, anger, signs of physical abuse and/or trauma. Many witness violence in their homes or communities. In general educators are not trained to deal with these issues and are often at a loss. When students experience these issues, teaching and learning is at a loss, too. This presentation plots the journey of one elementary school from 2009 – present. During the six-year period, administration and staff used data, student, parent and staff surveys to implement school-wide strategies, and SEL programs. Staff, parents and community members participated in trainings to understand and communicate the need to prioritize social-emotional learning and developing interpersonal relationships. As a result of the journey to calm, the climate of the school improved over time. The environment is conducive to teaching and learning; thus, leading to students growing academically and emotionally.

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Meeting the Needs of Diverse Learners

Abstract:

Due to the changing demographics in our public schools, teachers are faced with new challenges. Questions such as, “How can I meet the diverse needs of my students?” are asked. Reform documents such as Science for All Americans (AAAS, 1990) calls for us to meet the needs of all students, not just a select few. We can accomplish this goal by differentiating the instruction we provide for our students. Teachers can differentiate the content, process, and/or product according to students’ readiness, interest, and learning style (Tomlinson, 1999).

Content can be differentiated through a range of instructional strategies. Lessons can be tiered to provide content that is leveled according to the students’ readiness. Gifted and talented students can be provided for with instruction that is compacted.

Teachers can differentiate student products. These products reflect the concepts and/or process students have understood and are able to apply. One way to differentiate the products we assign our students is to design activities according to different learning styles or multiple intelligences (Gardner, 1991). Activities can be designed to provide students with a choice according to their strengths. For example, to provide for the musical intelligence a student might create a rap song. A verbal linguistic activity would engage students in discussion. While a bodily kinesthetic activity would engage students in creating a dance or some movement to illustrate the concept learned.

In this workshop, participants will learn how to differentiate their instruction according to the needs of their students. Then, they will progress through centers to create four tools; a choice board, a tiered activity, varied questions, and contracts, all of which they will be able to use in their classrooms to diversify their instruction to meet the diverse needs of their students.
Proposal #1

a). Title of the submission

The polarization between pro-school and anti-school subcultures in Japanese elementary schools: Investigating the influence of school, family and regional factors

b). Topic area of the submission: Elementary Education

c). Presentation format: Paper session

d). Description:
A literature review in the field of pedagogical research shows that the polarization between pro- and anti-school subcultures in elementary schools is not well known in Japan. The Purpose of this study is to identify the factors facilitating elementary students' adaptation to school.

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Abstract:

This study attempts to identify the factors facilitating elementary students’ adaptation to school. A literature review in the field of pedagogical research shows that the polarization between pro- and anti-school subcultures has been well studied in junior high and high schools, but this phenomenon in elementary schools, particularly its relationship with family and regional factors, is not well known. To fill this gap, survey questionnaire data were gathered from 5656 fifth graders studying in 64 schools in four cities of Japan from July to September in 2013. Statistical analysis of data shows that classroom and regional factors have positive effects on students’ adaptation to school but family factors have negative effects. These results will be discussed in terms of the importance of school and classroom management to promote students’ and local residents’ school involvement.
1. Title of the submission:
Children Inspire Glass Project at Emporia State University

2. Name(s) of the author(s):
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**Children Inspire Glass Project at Emporia State University**

**Abstract**

In the spring of 2013 an interdisciplinary project, *Children Inspire Glass* took place at Emporia State University in Emporia, Kansas. Under the co-direction of Dr. Carol Russell, Professor of Early Childhood Unified, and Fletch Russell, Adjunct Professor of Art, in collaboration with Roberta Eichenberg, Associate Professor of Art, and Dr. Heather Caswell, Assistant Professor of Early Childhood Unified & Early Literacy Consultant, an extraordinary opportunity for children, ages 5 – 10 was provided, to create stories and design creatures to be transformed into glass sculpture. The project was funded by the Kathrine K. White Faculty Incentive Grant & the C. F. Marshall Trust and the pilot project was awarded the 2014 Ervay Family Applied Scholarship Award.

This project celebrated children and their imaginations, in collaboration with instructors and students of various educational disciplines who share this enthusiasm. This pilot project was modeled after the *KIDS DESIGN GLASS* program at The Museum of Glass in Tacoma, WA, stretching it a bit further to incorporate faculty and students from various disciplines: Elementary Education, Children’s Literacy, Art Therapy, Art Education, Early Childhood, and Art ~ Glass. Within the month of May, six children, male and female, ages 5 – 10, created stories and designed creatures to be transformed into glass sculpture. The program consisted of five sessions. The first four sessions were held at the Emporia Art Center. During this time the children were presented with materials for designing a creature in 2D and 3D form, while a composing a story to accompany their creation. When designing their creatures, the color palate of markers and clay was limited to specific colors (primary and secondary, and black and white) to match the color of the glass we ordered, so that we could be as authentic as possible with the children’s designs.

Documentation was a major aspect of our project in hopes of sharing ways to foster creativity for all children. The documentation (photos and DVD) illustrating the process of this educational program has been used as a teaching tool for various ESU courses, such as: Glass, Art Education, Art Therapy, Elementary Education and Early Childhood, will be used in national presentations, and to accompany grants for future funding of the project. Several art shows have showcased the children’s creations, stories, and glassworks produced by ESU glass students at several locations on campus, the community, and in the region. Art shows have included ESU’s Children’s Art Gallery in The Teachers College; ESU’s Art Department - Eppink Gallery, March 10– March 21, 2014; Emporia Arts Center in
January – February, 2015; and Baker University’s Art Gallery in Baldwin City Kansas in November 2 – Dec. 11, 2015. The children’s participation in these art shows has been rewarding and enjoyable.

Dr. Russell shares a personal reflection, “Personally, the Children Inspire Glass Project has presented an abundant amount of effort and coordination, yet has been one of the most joyful, inspiring and collaborative projects of my career. It has demonstrated the power of authentically creative experiences for children, and importance of their genuine ownership in that process. This experience has clearly defined for me, as an Early Childhood Educator, the importance of what we do and HOW we do it! It is amazing how children can be engaged and focused when you foster creativity with an appropriate environment, materials, interactions, and TIME! We tend to structure so much of their young lives and hurry them through processes; rather than slowing down for learning through play, giving them TIME to show us how much they know, allowing TIME for problem solving opportunities, and TIME to create.”
1. Detailed title page of submission

   a. Title of the submission: “Proposed Research: Towards Understanding the Dynamics of Industry – Academe Partnership, Case Studies of Selected Colleges in Metro Manila

   b. Topic area of the submission: Education Policy and Leadership

   c. Presentation format: Paper Session

   d. 2-3 sentence description of your presentation which should not exceed 75 words in total.

      The paper is about some prevailing partnerships between Industry and Academe, specifically in Higher Education, which is always struggling to prove its relevance to the broader society, and more specifically, the requirement of industry. The case studies will investigate, explore and reveal partnership engagements, its motivation, norms practices; and identify potential areas of conflicts as interpreted by stakeholders.

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2. Email abstract and/or paper. Receipt of submissions will be acknowledged via email within 48 hours. Please see Abstract in the following page
Abstract

Socio-economic environment challenges compels Colleges to perform their roles as producers of relevant skills and competencies in graduates. Likewise, ASEAN Integration calls for products of academe to better participate in the global economy with the onset of talent mobility across the ASEAN. With the burgeoning and inevitable emergence of partnerships between industry and academe, this study hopes to guide and contribute to the establishment and development of models of collaborations and make judgments about its maturity of purpose and execution. The proposed research will initially focus on two private Colleges in the Philippines, among a total of four (4) Colleges as planned: Asia Pacific College, established by Industry partners to strategically bridge the employment gap; and the College of Saint Benilde, established to address the need for alternative learning system to enable productivity among underserved populations in the country. To examine the factors influencing the goals, development and sustainability of partnerships engaged by the selected Colleges, a case study approach will be employed, an empirical inquiry that will investigate the phenomenon in depth and within real-life context. The paper presentation will reveal results and present to the audience findings and conclusions of the case studies.
The department of Health Education at San Francisco State University engaged in a process of curriculum re-imagining, developing student-learning outcomes, and creating a scaffolded and cohorted undergraduate program. The curriculum is four semesters, and each semester is lead by a sequenced course that builds upon the knowledge, competency and skill our students need to succeed after graduation. This poster session will show the curriculum roadmap, and note increase in our students’ success and time to graduation.

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Curriculum Redesign for Increasing Student Success in an Undergraduate Upper Division Degree in Health Education

Across the California State University (CSU) system, the graduation rate average is 13% for four-year completion, and 36% for five-year completion. At San Francisco State University (SFSU), the graduation rate is 15% for four-year completion and 25% for five-year completion. In an effort to help our students successfully complete their Bachelor of Science degree in Health Education (H ED), the department redesigned, sequenced and cohorted its undergraduate curriculum over four semesters. The current department graduation rate average is 29% four-year completion, and 37% for five-year completion (higher than both SFSU and the CSU) and we project to see that percentage.

Our student-learner focused and writing intensive curriculum has been strategically scaffolded to produce both skilled and capable public health educators. This is accomplished while, also, achieving a higher than average time to graduation rate. Our sequenced and cohorted curriculum is aligned both vertically and horizontally, while also keeping within compliance of the competencies and requirements of our governing accreditation body, Council on Education in Public Health (CEPH). The horizontal alignments are the department program learning outcomes, which are threaded through the scaffolded curriculum, with an emphasis on social justice and professionalism. The vertical alignments contain the designated courses by semester, with each course student learning outcomes and signature assignments connected and synced. Since implementing this curriculum redesign in Fall 2013, the current department time to graduation rate is 94% for four-semester/two year completion.


1. Title: An Empirical Model: Implementing Business Intelligence Technology in Higher Education

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6. Abstract

Business intelligence (BI) solutions have emerged as the top IT related priority in higher education due to the vast positive impacts on data-driven decision making processes (Chen, et al., 2012; Grajek, 2014; Guster and Brown, 2012). The 2014 ECAR report (Grajek, 2014) indicates that a “Business Intelligence Dashboard” is the top IT strategic priority in higher education, and 64% of higher education institutions are estimated to implement BI Dashboards by 2016. Although there are many benefits to BI, literature suggests that implementing BI is challenging, especially in higher education (Blanton 2010; Guster and Brown, 2012).

The purpose of this presentation is to provide an empirical model, focusing on the collaboration efforts and the strategies to implement and adopt BI infrastructure in a higher education institute. In order to support the institution’s mission, a joint task force was constructed consisting of cross-functional leaders, including the institution's data analyst, researchers, database managers, and IT team. The task force team launched a project implementing BI infrastructure as an effective tool to promote students' outcome and teaching success. The BI structure has grown using prototyping and agile approaches (Guster and Brown, 2012), in four major overlapping developmental phases.

The first phase involved establishing a Data Warehouse (DW), which is the central component of the BI system. The DW has been established by the IT department, independently of the current project, at the time of the project, the task force team was able to move on to the next phases. The DW contains integrated data extracted from multiple databases in the institution, mitigates risks associated with the storage of PII, and lays the groundwork for institutional analytics. The DW is refreshed nightly from the source databases using the replication and ETL (Extract, Transform and Load) processes. A BI Reporting system was linked to the DW, in a way to support analytics capacity of data mining, explanatory and predictive models to gain insights on
the institution. The second phase required incorporation of mission-critical institutional knowledge and cross-department collaboration, to develop the institution’s key success indexes (Blanton, 2012). The key success indexes were aggregated, correlated, compared, and summarized by various sub-groups (fiscal years, classes, schools, departments, etc.). This phase enabled the institution’s logics to be adequately incorporated in the BI solution. The third phase was prototyping. The task force team has had regular meetings with the project sponsor and stakeholders at an interval of 2 ~ 4 weeks to extract and refine their requirements and needs. Continuous updates and deployments of working models have been shown to stakeholders, whose feedback has changed the BI system properly. The fourth phase, the current phase, elaborates the security strategy, data governance policy, risk assessment of non-compliance occurrence, and protecting data stakeholders (Guster and Brown, 2012).

Throughout the developmental phases, the task force team has fostered excitement on cross-campus knowledge transfer and institutional collaboration. The BI solutions are currently in beta testing, and employed for the After Class Review model (Hughes, 2015), one of major program evaluation procedures adopted in the institution. When the BI infrastructure is deployed to production, the application will enhance evidence-driven teaching and learning which will result in promoting students’ outcomes.

References


Title
Crafting teacher-training workshops: What do teachers need?

Topic area
Teacher Education

Presentation format
Poster presentation

Description of presentation
This paper examines the issue of providing support for English teachers in Japan through intensive teacher-training workshops. The authors explain how they approached the design of a series of intensive teacher-training workshops after consultation with members of the teaching community.

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Crafting teacher-training workshops: What do teachers need?

Anthony Cripps, Richard Miles and Sean O’Connell

Abstract

This paper examines the issue of providing support for English teachers in Japan. The presenters explicate how they are crafting a series of intensive teacher-training workshops that are designed to help improve in-service teacher training. The presenters will outline their plans to provide pedagogical support for Japanese teachers of English in three ways; Creating practical lectures and workshops which will address the teachers’ pedagogical needs; Making an online teacher support center (TSC) which will house teaching videos, audio files, word files, and other support material for teachers to freely access whenever and wherever they like; Publishing practical handbooks based on the lectures and workshops.

Key words: Online material, pedagogical support, teacher-training workshops
Title
Navigating MOOCs: Students’ perspectives

Topic area
Teacher Education

Presentation format
Poster presentation

Description of presentation
This paper examines students’ perspectives on using Massive Open Online Courses (MOOCs) for the first time. The authors briefly outline the design of the MOOC project, before discussing in detail the students’ experiences of navigating the MOOC terrain.

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Navigating MOOCs: Students’ perspectives

Anthony Cripps and Sean O’Connell

Abstract

Many university students in Japan are unaware of Massive Open Online Courses (MOOCs) and their potential for learning. Two groups of students (n=22) taking a ‘Teaching with Technology’ course at Nanzan University were encouraged to explore online courses provided by platforms such as Coursera, edX, and FutureLearn, as part of a semester-long research project. The aim of the project was to broaden the students’ knowledge of this growing field and they were given free rein to navigate the MOOC terrain in any way they wished. Throughout the project each student kept a diary in which they logged both their MOOC use, and their opinions of the courses. Interviews, diaries, focus groups, reports, and questionnaires all provided rich data. The authors outline the design of the project, before discussing in detail the students’ experiences of mapping the MOOC terrain.

Key words:  MOOCs, online learning, pedagogical innovation
A Comparative Analysis of Test Takers’ Reactions to Direct Testing and Semi-direct Testing

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Speaking tests have become more important in Japan over the past decades with the recent emphasis on communicative language teaching. Many internationally oriented English language speaking proficiency tests have the person-to-machine format, or semi-direct test. At school, this format is also often conducted if facilities such as language laboratory are available. In spite of the popularity of this trend, there is a need to evaluate speaking test formats, in particular, from the test takers' perspectives. The present study compared two speaking testing modes, a direct test and a semi-direct test and analyzed the reactions and perceptions of the test-takers. The results showed that the test-takers favored direct speaking testing and that they felt more nervous when they took a semi-direct test.

BACKGROUND

Speaking tests have become more important over the past decades with the recent emphasis on communicative language teaching in Japan. However, assessing speaking skills is quite difficult in terms of its practicality; in general, it requires teachers to take significant amount of time in order to conduct and score the tests. Because of this tremendous burden on teachers, speaking tests are lower in frequency at schools in Japan although speaking activities are generally frequently conducted in these same schools. As Hirai & Koizumi (2009) argue, "the students may not take speaking activities seriously when there is a wide gap between the frequency of opportunities for speaking activities and their assessment in English class (p.152)."

In order to reduce the issues of the amount of time necessary to conduct speaking tests, semi-direct speaking tests have been developed. An example of a semi-direct test is where test takers respond to audio stimuli or directions written on paper and their own responses are recorded and later
assessed. Many internationally oriented English language proficiency tests, such as TOEFL iBT and TOEIC test, also have a semi-direct speaking test format with the computer-based version. At school, this format is also often conducted if facilities such as a language laboratory are available. Assessing speaking skills with computers or other forms of multimedia technology has been popular in recent years. In spite of the popularity of this trend, there is a need to evaluate speaking test formats, in particular, from the test takers' perspectives.

SPEAKING TEST FORMATS

There are three types of test formats to assess speaking skills: indirect testing, direct testing, and semi-direct testing (Hughes, 2003; O’Loughlin, 2001; Qian, 2009).

Indirect testing is to assess the items that underlie the speaking skill instead of measuring the test taker’s speaking skill directly. For example, Lado (1960) proposed that a pronunciation test could be assessed by indicating one word which is pronounced differently from other printed words. This kind of pronunciation test doesn’t require test takers to actually speak throughout the test. Indirect testing has the advantage that it does not require a large number of test admission officers or teachers. Moreover, normally their burden is not so large. However, indirect tests cannot always accurately measure the test takers' speaking skill, and indirect testing is no longer considered a valid test format.

Direct testing aims to measure test takers’ skills in specific areas that teachers are interested in. Hughes (2003, p.17) says “testing is said to be direct when it requires the candidate to perform precisely the skill that we wish to measure.” In direct speaking test, test takers are required to perform oral tasks which can show their speaking skill and to involve face-to-face communication with one or more interviewers. Direct testing more authentically reflects face-to-face interaction in a daily life. However, interviewers control the interview and "the language elicited in an interview is unlikely to reflect the discourse of real-life conversation (O'Loughlin, 2001, p.6)."

Semi-direct testing elicits test takers' speaking by directions presented on computer screens or printed test paper rather than by directions given by interviewers. Normally, an audio recording of test takers’ speaking is made and later it is assessed. Semi-direct testing can be carried out to a large number of test takers at the same time and within a very short period as long as there are availabilities of facilities, such as language laboratories or
IC recorders, to record test takers' performance. Therefore, the advantage of semi-direct testing is that it is cost-effective and efficient (Qian, 2009). With the development of computer technology, semi-directing test has become more popular (Qian, 2009).

Of these three testing formats, indirect testing is viewed as the least valid measure of speaking ability because test takers are not required to speak (O'Loughlin, 2001). Semi-direct testing and direct testing are generally used as legitimate speaking testing formats. Therefore, this study will focus on direct testing and semi-direct testing as well as the analysis of test takers' reaction to the two testing formats. In this study, direct testing is defined as live, face to face testing where test takers and one or more interviewers are on the spot, while semi-direct testing is defined as tape or digital-recorded testing in which test takers' respond to audio-recorded questions or to the directions on printed paper.

SEMI-DIRECT TESTING VS DIRECT TESTING

In comparing these two speaking testing formats, a number of researches have been conducted by analyzing and comparing the features and structures, testing scores, and test takers' reactions and perceptions of semi-direct tests and direct tests (for example, Brown, 1994; Deguchi, 2013; Hughes, 2003; Luoma, 2004; Nakamura, 2015; O'Loughlin, 2001; Quin, 2009, etc).

Table 1. A list of the Results Drawn From the Literature

<table>
<thead>
<tr>
<th>Study</th>
<th>Test</th>
<th>Direct</th>
<th>Semi-direct</th>
<th>Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brown, 1993</td>
<td>Occupational foreign language test (Japanese)</td>
<td>25%</td>
<td>57%</td>
<td>18%</td>
</tr>
<tr>
<td>Nakamura, 2015</td>
<td>Oral-English proficiency test : eiken</td>
<td>53.4%</td>
<td>31.1%</td>
<td>15.5%</td>
</tr>
<tr>
<td>O'Loughlin, 1992</td>
<td>Oral-interaction sub-test: access</td>
<td>90%</td>
<td>10%</td>
<td>—</td>
</tr>
<tr>
<td>O'Loughlin, 1994</td>
<td>Oral-interaction sub-test: access</td>
<td>94%</td>
<td>5%</td>
<td>1%</td>
</tr>
<tr>
<td>Qian, 2009</td>
<td>Oral-English proficiency test</td>
<td>32.8%</td>
<td>9.7%</td>
<td>57.6%</td>
</tr>
</tbody>
</table>
Table 1 shows a list of the results drawn from the literature indicating which speaking test format test takers' prefer. Most studies report direct testing is more preferable, while Brown's (1993) study reports test takers prefer semi-direct testing. Qian (2009) reports that test takers have no particular preference. Some reasons given that test takers prefer direct testing are that they prefer to speak with interlocutors rather than to machines, there is personal interaction between test takers and interviewers, and the testing format is close to the real communication and so on.

Nakamura's (2015) study shows that test takers felt that they prefer the direct test to the semi-direct test and would choose a direct test if they had the choice. However, there is no significant difference on speaking test scores between the test takers' measure of ability.

RESEARCH QUESTIONS

This study is conducted as a follow-up survey of previous research which focused on test takers’ reactions and perceptions to direct testing and semi-direct testing. This study also aims to let teachers know test takers' format preference for further development of speaking tests.

The specific research questions that the study aims to investigate are as follows:

1. How do test takers react to and perceive each of the two test formats, direct testing and semi-direct testing?
2. Which is more preferable to the test takers? What are the particular reasons for test takers’ preferences?

METHOD

Participants

The research participants in this study are 85 Japanese university students who learn English as a foreign language. All of them are freshmen. 49 students (Group 1) major in pharmacy, while 36 students (Group 2) major in biotechnology science. The same curriculum and the same English lessons are given to the both groups, but English lessons are given separately to each group. The average English participants' proficiency levels are the semi-second grade for A.C.E. Placement test which participants took in April, 2015.
Procedures

All the participants took both a direct speaking test and a semi-direct speaking test. As a speaking assessment, the Story Retelling Speaking Test (SRST), developed by Hirai & Koizumi (2009), is employed in this study. In the Story Retelling Speaking Test, participants are required to read a story and retell it. In this study, the participants were required to state their opinion after retelling the story.

In Hirai & Koizumi’s research, the participants were required to read a story which they read for the first time. However, this study asked the participants to read a story which they had already learned in an English lesson and then retell it. This is because the aim of this study is to examine how the participants feel about the direct test and the semi-direct test, not to measure their reading ability.

The participants do not do retelling activities in daily English lessons. Therefore, the participants read the story before, but this was the first time for them to retell the story.

Before the experiment was conducted, the participants recorded their performance on an IC recorder so that they might not be confused about how to use an IC recorder.

Two types of stories (Story A and Story B) were used for the direct test and the semi-direct test. Readability for Flesch reading ease test is 98.3 for Story A and 93.5 for Story B. The level of both stories is elementary and both stories are the same level.

According to a questionnaire conducted before the experiment, about 44% participants said they had never experienced the speaking test at school. Therefore, most of the participants are not used to taking speaking tests and the first speaking test format (either direct or semi-direct test) will make them more nervous than the second speaking test format. In order to make the two test formats equivalent, Group 1 took direct test first with Story A and then took the semi-direct test with Story B. On the other hand, Group 2 took semi-direct test first with Story B and then took direct test with Story A. Table 2 shows the outline of the experiment.

<table>
<thead>
<tr>
<th>Participants</th>
<th>The first test</th>
<th>The second test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>Direct test</td>
<td>Semi-direct test</td>
</tr>
<tr>
<td>Group 2</td>
<td>Semi-direct test</td>
<td>Direct test</td>
</tr>
</tbody>
</table>

The participants were informed of which stories they were supposed to read and retell beforehand. Therefore, some participants prepared for the
speaking test at home. However, they were not informed of the questions which they would be asked after retelling. The participants were not allowed to bring anything such as pencils, pens, or handouts during the tests. They were not allowed to write and they were told to retell orally.

In the direct test, the interviewer (the author) conducted a face-to-face interview with each test taker. The interviewer gave oral directions to the participants. In the semi-direct test, the participants recorded their performance on IC recorders following the directions written on a paper. The participants were not allowed to record again on the IC recorder.

The questions asked after retelling are as follows. The questions were used in both the direct test and the semi-direct test.

1) Did you like this story? If you like this story, tell me why. If you don't, why not?
2) Which character do you like the best in this story? Tell me the reason.

Questionnaire

To examine the reactions to the semi-direct test and the direct test, a three-part questionnaire was conducted. The first part aims to examine about the participants' affective reactions to each test. The items are as follows:

1) I got nervous during the test (nervousness).
2) I thought that the test was fair (the test fairness).
3) I thought the test was difficult (the test difficulty).
4) I thought that I had the favorableness for the test (the test favorableness).
5) I performed well (the test performance).
6) I thought the test was useful (the test usefulness).
7) I thought the test would make my English improved (English improvement).

The second part inquires about the skills and knowledge necessary for each speaking test; reading skill, speaking skill, communicative skill, pronunciation skill, language knowledge (grammar and vocabulary, etc.).

The third part inquires about the participants' preference of the two test formats. In the first and second part, the participants answered questions using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). In the third part, they chose either the direct test or the semi-direct test and wrote their opinions freely.
RESULT

Table 3 shows the results of the first questionnaire which aim to examine participants' affective reactions to each test.

Table 3. The Results of the Questionnaire of the Participants' Affective Reactions

<table>
<thead>
<tr>
<th></th>
<th>Direct test</th>
<th></th>
<th></th>
<th>Semi-direct test</th>
<th></th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>M</td>
<td>SD</td>
<td>n</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>① Nervousness</td>
<td>84</td>
<td>4.06</td>
<td>1.08</td>
<td>85</td>
<td>4.39</td>
<td>0.86</td>
</tr>
<tr>
<td>② Test fairness</td>
<td>84</td>
<td>4.07</td>
<td>0.99</td>
<td>85</td>
<td>3.89</td>
<td>1.02</td>
</tr>
<tr>
<td>③ Test difficulty</td>
<td>84</td>
<td>3.32</td>
<td>1.04</td>
<td>85</td>
<td>3.75</td>
<td>1.11</td>
</tr>
<tr>
<td>④ Test favorableness</td>
<td>84</td>
<td>3.65</td>
<td>0.98</td>
<td>85</td>
<td>3.29</td>
<td>0.90</td>
</tr>
<tr>
<td>⑤ Test performance</td>
<td>84</td>
<td>2.99</td>
<td>2.54</td>
<td>85</td>
<td>2.54</td>
<td>1.02</td>
</tr>
<tr>
<td>⑥ Test usefulness</td>
<td>83</td>
<td>4.02</td>
<td>0.96</td>
<td>85</td>
<td>3.95</td>
<td>0.80</td>
</tr>
<tr>
<td>⑦ English improvement</td>
<td>82</td>
<td>4.00</td>
<td>1.01</td>
<td>85</td>
<td>3.80</td>
<td>0.86</td>
</tr>
</tbody>
</table>

* p < .05  ** p < .01

As shown in Table 3, the mean values of the semi-direct test are higher than those of the direct test with the exception of the mean value for measure of test difficulty. Significant differences between the direct test and the semi-direct test are found on nervousness (t (167) = -2.19, p = .03), the test difficulty (t (167) = -2.60, p = .01), the test favorableness (t (167) = 2.50, p = .013), and the test performance (t (167) = 2.91, p = .00). On the other hand, there are not significant differences on the test usefulness (t (167) = 0.52, p = .60) and the English improvement (t (167) = 1.22, p = .23).

Table 4. The Results of Necessary Skills and Knowledge

<table>
<thead>
<tr>
<th></th>
<th>Direct test</th>
<th></th>
<th></th>
<th>Semi-direct test</th>
<th></th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>M</td>
<td>SD</td>
<td>n</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Reading skill</td>
<td>84</td>
<td>3.79</td>
<td>0.98</td>
<td>85</td>
<td>3.74</td>
<td>1.07</td>
</tr>
<tr>
<td>Speaking skill</td>
<td>84</td>
<td>4.27</td>
<td>0.98</td>
<td>85</td>
<td>4.30</td>
<td>0.93</td>
</tr>
<tr>
<td>Communicative skill</td>
<td>84</td>
<td>3.94</td>
<td>1.00</td>
<td>85</td>
<td>3.48</td>
<td>1.12</td>
</tr>
<tr>
<td>Pronunciation skill</td>
<td>84</td>
<td>4.02</td>
<td>1.08</td>
<td>85</td>
<td>4.08</td>
<td>1.00</td>
</tr>
<tr>
<td>Language knowledge</td>
<td>84</td>
<td>4.10</td>
<td>0.98</td>
<td>85</td>
<td>4.25</td>
<td>0.95</td>
</tr>
</tbody>
</table>

Table 4 summarizes the results of the second part of the questionnaire, which inquires about the skills and knowledge necessary for each speaking test.
As for skills and knowledge necessary for speaking tests, there are not significant differences between the direct test and the semi-direct test. However, a significant difference is found on communicative skill \((t(167) = 2.81, p = .01)\). The participants felt that communicative skill was more required in the direct test.

Finally, the study asked the participants which test format they preferred. Table 5 shows the result.

<table>
<thead>
<tr>
<th>Testing format</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>In favor of direct test</td>
<td>39</td>
<td>45.9</td>
</tr>
<tr>
<td>In favor of semi-direct test</td>
<td>17</td>
<td>20.0</td>
</tr>
<tr>
<td>No opinion about either testing format</td>
<td>29</td>
<td>34.1</td>
</tr>
</tbody>
</table>

The number in favor of the direct test (n=39 or 45.9%) greatly exceeds the number in favor of the semi-direct test (n=17 or 20.0%), which indicates that the results of this study also tends to follow the results drawn from most of the previous research.

However, we should take note that 29 participants or 34.1 % held no opinion about either testing format. In other words, about one-third of the participants do not show a particular preference in terms of the testing format.

Some of the test takers' comments which were in favor of the direct test are as follows:

- I felt more relieved to see the teacher's reaction.
- I felt more encouraged when I talked to the teacher even though I made mistakes.
- The teacher nodded during the test, which made me relieved.
- I enjoyed the speaking test more when I talked to someone who listened to me.
- I like talking to someone, not to an IC recorder.
- When I recorded on an IC recorder, I felt as if I read aloud to a machine.

These comments indicates that test-takers want to have face-to-face interactions with humans, which reflects real life communication.

On the other hand, some of the test takers' comments which were in favor of the semi-direct test are as follows:

- I spoke at my own pace.
- I got nervous in front of the teacher.
- I didn't get nervous because I carried the speaking test out by myself.

Some of neutral opinions are as follows:
Either speaking test was fine.
There were no differences between the two tests.
I got nervous in both tests.

DISCUSSION AND CONCLUSION

This study aims to investigate which speaking test format is preferable for test takers, a direct test and a semi-direct test. This study also aims to examine how the takers react to and perceive each of the test formats.

The analysis of study results found that the test takers preferred the direct test to the semi-direct test. This result tends to follow the same results indicated by most of the previous research. The reason why test takers are more positive toward a direct test is that test takers are more likely to have face-to-face interactions with humans, which reflects real life communication.

According to the Affective Filter Hypothesis proposed by Krashen (1985), the existence of learners' affective feelings influences learners' learning outcome. The affective filter is thought to impact upon language tests. In other words, the emotional reactions of test takers may influence their test results. Therefore, it is important to take note that different formats of speaking test may effect test takers' emotional reactions.

With the development of computer technology, semi-direct tests have become more popular. However, this study as well as most of the previous research found that test takers would view direct testing more favorably than semi-direct testing. If this is also true with the majority of test takers, test developers and teachers need to pay more attention to the test formats with the regard to the test takers' preference and keep in mind why they prefer the direct tests. It would be beneficial to test takers if test developers and teachers bear test takers' preference in mind when creating future tests.

This study employed the STST which was developed by Hirai & Koizumi (2009) as a speaking test. In both speaking tests, the participants thought that employing speaking tests was useful in learning, and that English would improve if they kept on taking such speaking tests. In other words, the participants showed a positive attitude toward the speaking tests. Therefore, in the future, we would like to investigate on the effect of using speaking test on teaching and learning.
REFERENCES


Title:
Academic-Community Partnerships to Promote Public Health in Rural Communities: Preliminary Findings from a New Public Health Program in a Midwestern University.

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Abstract

Academic-Community Partnerships to Promote Public Health in Rural Communities: Preliminary Findings from a New Public Health Program in a Midwestern University.

Authors: Anuli Njoku, DrPH, MPH, Fathima Wakeel, PhD, MPH, Michael Reger, PhD, MPH, Emmanuel Jadhav, DrPH, MHM, Margaret Wan, PhD, MSPH, MS, LLB

Objectives: 1) Describe the development of a new Public Health (PH) program at both the undergraduate and graduate levels at a rurally located university. 2) Share insights on the processes involved in fostering academic-community partnerships in order to increase awareness regarding both public health and health disparities. 3) Finally, to advance health education research and practice agendas, both at the university and within the community.

Methods: A new PH program was developed at Ferris State University in Big Rapids, Michigan. Five doctoral-prepared faculty from diverse cultural, professional, and research backgrounds were hired in August 2014 and charged with the development of the program. Over the course of one year, faculty developed the program goals for both a Bachelor of Science in Public Health (BSPH) and Master of Public Health (MPH), as well as learning outcomes and course curricula. The faculty also individually and collectively reached out to various academic and community members to initiate and develop academic-community partnerships, aiming to help maximize academic and community resources for shared learning, engagement and advancement of PH research and practice. Methods for the establishment of these partnerships included phone calls, face-to-face meetings, emails, attendance of community and academic events, tours of community facilities, event flyers, and in-class health promotion presentations.

Results: The PH faculty developed BSPH and MPH program learning outcomes as well as eight BSPH courses and two MPH courses in the Fall of 2014 and the Spring of 2015. Additionally, through collaboration with academic and community members, the faculty organized a plethora of health education activities in order to increase awareness regarding PH and health disparities, as well as to advance research and practice agendas within the university and community. These events included: 1) PH faculty participation at a Community Health Fair and other university and community networking events; 2) meetings with community healthcare providers and relevant stakeholders; 3) contact with community partners to secure internship opportunities for students; 4) participation on the executive board of a partnership between the university and a research institution; 5) collaboration with local health department staff to speak to PH students; 6) PH information sessions; and 7) health disparities research presentations and panel discussions.

Conclusion/Implications: The implications of the development of these PH programs as well as the community partnerships are still pending as the BSPH and MPH programs at Ferris State University are in the early stages. As the main purpose of public health is to improve the health and well-being of the population, it is the belief of the faculty that the partnerships formed with stakeholders in the community will prove to be vital to the success of the new program and eventually lead to measurable improvements in the health of the surrounding population over time.
Submission Title : Role-playing to prepare for home-visit nursing care
--Student interests and learning--

Topic Area : Nursing Education
Format Presentation : Poster sessions

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Role-playing to prepare for home care nursing
–Student interests and learning–

Kyouko NAITOU¹, Sagami MITAMURA¹

Abstract

Through role-play practice, student interests and learning were examined. In the practice, which was a process that involved activities such as scenario examination, role-playing, and video recording, their creative power and ability to deepen their insight during the training were effectively developed. The role-playing made students aware of the unique aspects of home-visit nursing care. Furthermore, in order to take advantage in the home care nursing practicum, it is necessary to consider the practice configuration targeted learning point to another component of the role-play. In addition, the problem setting that a student can imagine the everyday life of the patient and the family and can think about a feeling is necessary.

Introduction

Japan’s population is aging at a rate unparalleled among countries. To respond to this situation, efforts to build community-based integrated care systems have begun. These efforts seek to move the venue of healthcare from hospitals to the home, and allow people to live in their communities in their characteristic ways their entire lives. Under such social circumstances, the new field of home care nursing was added to Japan’s nursing education curriculum in the 1997 academic year in order to foster nurses who can play active roles in their communities. Furthermore, because of the belief that the healthcare issues under the purview of home care nursing affect all people, in 2010 home care nursing was given the central position in the nursing education system as the subject integrating all nursing fields. Compared with conventional institution-based nursing, the concept of home care nursing emphasizes treating those under care as “consumers” rather than patients. It is anticipated that this approach will develop nurses who are provider of services that increase patients’ quality of life. We therefore investigated educational methods that can more effectively achieve the learning goals of home care nursing. One educational method adopted is role-play practice (RP), which seeks to deepen understanding by allowing students to experience, through simulations, nursing issues and being a nurse (Fujioka 2000). Its educational impact has been reported to include acceptance of others (Ooga 2009) and to be highly effective in enabling imagination of practical training and motivating students (Fujioka 2000). Understanding the characteristics of home care nurses (Uda 2011) and learning bedside manner (Totsuka 2009) have also been reported as effects of the use of RP in home care nursing education in Japan. However, all of these studies focused on the educational effects of training in schools. There are few studies of the educational effects of using
RP before training in clinical settings.

Thus, in this study we investigated the educational methods of RP that can be utilized for clinical training when RP is carried out before the practical training. The RP focused on home care situations encountered during the home care nursing practicum, which has a central place in the home care nursing practicum.

**Purpose of Research**

We sought to study RP teaching methods that can improve learning effectiveness in clinical training by elucidating the effects of home care RP on home care nursing practicum through a survey answered by students after they complete the practicum.

**Research Method**

2. Study period: May 2013 – February 2014
3. RP method

   Home care nursing RP was carried out as part of the first-semester home care nursing course for third-year students. The course is taken directly before students participate in the home care nursing practicum. The RP has the following three goals: (1) understand bedside manner and the necessary ways nurses and studies deal with patients and family members during a home care visit, (2) understand the importance of considering the feelings of care patients and family members, and (3) to imagine home care nursing situations. RP exercises began after the presentation of topics. Roles of the care patient, family members, the home care nurse, and nursing students were assigned, and scenarios that could be performed by each group composed of about seven or eight students for five to six minutes were examined. After several rounds of practice performances, each group’s RP was video-recorded. The entire class viewed the recorded RPs and exchanged views. The presented topics resemble the following:

   **Example of topic**

   The focus of the RP is an elderly care patient suffering permanent damage after a cerebral infarction. His blood pressure is unstable, and there is concern that he may develop difficulty walking. Because he lives with only his elderly wife, home care is a concern. The nurse and student arrive 10 minutes behind the appointed time for the home care visit.

4. Content of survey

   The survey was conducted using a self-administered questionnaire given after all students completed the home care nursing practicum. In the survey, the items “Strongest impressions left by RP”, “Differences between RP and practical training felt by students”, and “What you wish you had experienced before the practical training” asked for free response. The item “Change in awareness of practical training after RP” used a Likert scale for its response. Finally, the question “How was RP
useful for practical training?” was a multiple-choice question with eight answers to select from.

5. Method of analysis

Each free response was broken down into elemental topics; each elemental topic was considered a unit of response and recorded as such. Similar topics were grouped together into categories and examined. Topics were extracted from the textual responses and categorized by several instructors. For questions using the Likert scale or multiple choices, the responses were analyzed by simple tabulation.

6. Ethical considerations

We obtained approval from the research ethics committee of the institution to which we belong. Students were informed orally that cooperation with the survey was their free choice, that there is no disadvantage to not participating, and that the results of the survey may be presented at conferences with their responses anonymized. The survey questionnaire was given to students who agreed to participate in this study.

Results

Of the 132 students who enrolled in the home care nursing practicum, 101 agreed to participate in the study (76.5% response rate). Analysis was performed on their responses.

1. Strongest impressions left by RP

There are 121 free-response comments, of which 113 were analyzed as valid responses. By RP process, “Scenario Examination” had 21 comments, “Group Work” had 18, “Performance” had 30, “Presentation” had 12, and “Video Recording” had 32. “Video Recording” and “Performance” had the most comments. Of the 113 comments, not including “Video Recording” comments about feeling nervous, 89 comments were considered to pertain to students’ learning and concerns and were qualitatively analyzed. They were placed into five categories and ten subcategories (Table 1). In this paper, categories are represented by 【 】, subcategories by 〔 〕 and codes by <  >. (Table 1).

For the category 【Learning with Video Recording】 , the subcategory 〔Using appropriate language and awareness of actions〕 included <Being made aware again of the use of appropriate language and actions as a result of being recorded> and <Being able to view myself objectively as a result of being recorded>. For the category 【Learning from skills devised in performances】 , the subcategory 〔Understanding bedside manner in home care〕 included <Being aware of each action such as taking off shoes> and <I understood bedside manner is important>. Another subcategory, 〔Imagining the home care〕 included <I considered what I could do in the homes of actual care patients> and <It was easy to imagine during the practicum>. Codes such as <I learned to take into account the mental state of care patients> and <I learned what I should say> were included in the subcategory 〔I learned communication techniques〕. In the category 【Learning with Group Work】 , the subcategory 〔Learning effects of group cooperation〕 included <Creating in a group by having much discussion> and <Everyone could find good ways of doing things>. The subcategory 【Learning about human relationships】 included <Being involved with students I didn’t talk with>.
much before>. In the category 【The awareness from the Presentation】 , the subcategory 【Broadening perspectives】 included <I understood that each group’s performance was different and that there are various perspectives> and <I realized different things from how everyone looks at something>. The category 【Learning from skills devised for scenarios】 included the subcategory 【Skills to deal with feelings expressed by the patient and family members】 included <It was difficult to think about how to perform because I was supposed to express how a person thought and her behaviors and attitudes> and <I thought about the different feelings and actions of characters such as nurses, students, care patients, and family members>. The subcategory 【Skills devised deal with issues】 included <How to apologize when arriving late> and <Changing into different socks>.

2. Change in awareness of practical training after RP

Concerning practical training after experiencing RP, 69 (53.1%) students responded that “RP gave me confidence,” 57 students (43.8%) “There was no change,” and 4 students (3.1%) responded “I lost self-confidence.”

3. Differences between RP and practical training felt by students

There were 89 free-response comments. They were divided into six categories: 【Skills in home care nurses’ action and speech and responses】 , 【Extent of practical training that could be practiced】 , 【Diverse family structures and words and actions of family members】 , 【Differences in care patients state】 , 【Different living environments encountered during each visit】 . (Table 2).

For the category 【Skills in home care nurses’ action and speech and responses】 , the subcategory 【Skills in relating to nurses】 included <I explained the care patients’ conditions to the family in front of the patient> and <Nurses did not immediately provide guidance to care patients and family members, but instead considered together a solution plan and gave advice>. The subcategory 【Nurses’ ways of dealing with patients】 included <They entered into the room without reception from family members> and <I felt a relationship of trust from the sense of close distance between the patient and the nurse>. The subcategory 【Questions about basic nursing behavior】 included <Not changing socks during a home care visit> and <At first I didn’t wash my hands>. In the category 【Extent of practical training that could be practiced】 , the subcategory 【Students’ confusion】 included <I didn’t know my place as a student during home care visits> and <I felt more nervous when the situation was real and I could not skillfully talk with the care patient and family members>. The subcategory 【Limits of students’ involvement】 included <Students were not involved with patients much> and <Students almost never spoke>. Under the category 【Diverse family structures and words and actions of family members】 , the subcategory 【Reconfirmation of diverse family structures】 included <The care patient lived alone so there wasn’t a way for family members to respond> and <I did not talk much with family members>. The subcategory 【Family members’ warmth and worries】 included <I was welcomed more than I had expected> and <There were many questions from family members>. In the category 【Different living environments encountered during each visit】 , the subcategory 【Confirmation of environmental differences】 included <Residences were built in ways different from what I imaged>. The subcategory 【Reconfirmation
of individuality of provided nurses) included <Each family’s way of living differed more than imagined, and nursing needs to accommodate that>. In the category 【Differences in care patients state】 , the subcategory 【Diversity of Health condition】 included <There were many patients with a low level of independence> , The subcategory 【Difficulty of communication】 included <I was a little unsure about how to deal with someone who doesn’t speak and with small children>.

4. How was RP useful for practical training? (Table 3)

All subjects responded, and the number of responses per student was 3.12. The items “Bedside manner” (93 students; 70.5%), “Attitude as students” (76 student; 57.6%), and “Imagining home care” (75; 56.8%) were items said to be useful by more than 50 percent of the students. However, “How to communicate with care patients” was mentioned by only 44 students (33.3%) and “How to communicate with family members” was mentioned by 40 students (30.3%). For understanding feelings, RP was useful to less than 25 percent of the students: “Understanding the feelings of care patients” (31 students, 23.5%) and “Understanding the feelings of family members” (26 students, 19.7%).

5. What student wished they had experienced before the practical training

Students stated the necessity of learning etiquette and bedside manner they had not expected, such the proper way to respond when being served tea, basic nursing techniques, and how to communicate concerning topics such as life together with the care patient and family members.

Discussion

Student’s impression of RP for various processes

In students’ responses about what made an impression on them, in “Scenario Examination,” it was thinking about the different feelings and actions of nurses, students, care patients, and family members. For “Video Recording” and “Performance,” the students stated being conscientious about how to phrase sentences when communicating and about their actions, focusing on bedside manner, imagining home care that visualized the actual homes of care patients, and trying to be skillful about communication techniques in conversations that took the feelings of patients into consideration. These comments show that the students’ concerns were stimulated in each RP process, that the experiences of the students were consistent with the learning goals of RP that we expressed, and that RP became learning opportunities. For “Group Work” and “Presentations,” students reported that the effects of group learning, such as everyone participating and creating ideas in the group. Also reported was the broadening of perspective by seeing different performances by other groups. Reports of the learning effects of RP to date have stated that active exchanges between members produce beneficial relationships of mutually dependence from cooperative learning (Nakai 2014), and RP presentations enable one to realize views and ways of thinking different from one’s own and make clear one’s own thinking, and provide opportunities to discover clues in resolving what one could not solve by oneself (Takai 2005).
Thus, we believe we could obtain the effects of fostering the realization of the necessity of thinking about support methods by imagining the home care situation and examining the characteristics of patients, realizing differences in thinking between groups, and fostering creativity, such as by further broadening one’s perspective. Therefore, because each of the processes carried out in RP includes important learning elements, in RP we must focus on abilities strengthened by each of the elements, and present construction of topics that narrow down learning points.

Effect of RP on home care nursing practicum

In this study, the majority of the studies responded that RP was useful for the nursing practicum in the areas of “bedside manner,” “attitude as student,” and “imagining the visit.” These results were similar to those presented by a previous study. By viewing different performances by each group, students had the opportunity to experience simulations on various ways of using appropriate language and acting, on attitudes, and on characteristics of the visit. Bedside manner and attitude as a student are easy to judge visually. We can surmise that because it is relatively easier for those areas to be treated realistically, RP of those areas serve as an educational tool that is useful for practicums. After the RP, the majority of students replied that they had confidence in the participating in the practicum. Thus we believe that participation in RP led to confidence in participating in the practicum.

Meanwhile concerning “How to communicate with care patients and family members” and “Understanding the feelings of care patients and family members,” 20 to 30 percent of students, a small amount, thought RP was useful for the practicum. When examining RP scenarios, the students sought to perform characters while considering the feelings and actions of each member in the scenario. In their performances (including when viewed from the recorded videos), it could be seen that they attempted communication that took into consideration the care patients’ state of mind. We believe that their performances showed that the students sought to discern the feelings of the patients and their family members and attempted communication that took into account their partners. However, for such learning to be useful in practical training, it is necessary to further develop the ability to think on one’s own about the concerns of care patients and family members they encounter during practical training. Therefore, we believe there is a need for measures such as creating educational materials that allow students to further study the feelings of patients and family members and adding group explanation about the performance to the presentations.

Also, students felt that there were differences between the RP and clinical training in a wide range of areas. These include how home care nurses deal with and respond to patients, the actual involvement of students, family conditions and reactions, the diversity of care patients, and differences in family environment. For students with limited life experience who experience home care nursing for the first time, they must perceive and imagine the conditions of the patient at the place of visit and the environment from the content of what they learn in classes. Therefore, what are required are instructional materials that set topics to enable one to imagine the daily life of families (care givers) in RP and recall conditions that do not deviate from the onsite conditions. Also, we
believe that having discussions about daily activities as presented by students and adding explanations by instructors about the diversity of patients and family members could close the gap between RP and clinical training that students feel.

**Conclusion**

1. The RP processes, namely, scenario examination, role-playing, video recording, group work, and presentation, provide diverse learning opportunities based on home care nursing care scenarios. In particular, students were able to think of methods for assistance that are based on an understanding of the patient’s condition, to consider differing opinions within a group setting, and to reflect on their own behavior and performance from a much wider perspective. This indicates that RP should be focused on specific abilities that are reinforced by each part of the process, and specific issues based on particular points of learning should be presented.

2. Since realistic experiences during the home care nursing care practicum enable students to develop a proactive attitude during clinical training, it would be effective to set RP issues that enable students to conceptualize the daily life of the family (caregiver).

3. There is a need to evaluate components of the RP training program, such as by including materials that allow students to understand patients and family members better and providing supplementary explanation from instructors about their diversity and home-care environments, in order to apply what students learn through RP in clinical training. Further, in order to reinforce the effects of learning, it is important to nurture the students’ ability to think on their own and to develop sensitivity towards patients and families they will meet during the training.

**References**


Midori Uda, Kazuko Naruse (2011) : Effects of role-playing practicum on home-care nursing: through the simulated experience of patient's condition change over time (in Japanese), Bulletin of Kobe City College of Nursing, 15, 35-45.


<table>
<thead>
<tr>
<th>Category</th>
<th>Subcategories</th>
<th>Rationale or observation</th>
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<tbody>
<tr>
<td>Learning fromGroup Work</td>
<td>Learning effects of group cooperation</td>
<td>Being involved with students I didn't talk with much before</td>
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<td></td>
<td>Learning about human relationships</td>
<td>I understood that each group's performance was different and that there are various perspectives, and I made different things from how everyone looks at something</td>
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<td></td>
<td>Broadening perspectives</td>
<td>It was difficult to think about how to perform because I was supposed to express how a person thought and her behaviors and attitudes, and I thought about the different feelings and actions of characters such as nurses, students, care patients, and family members</td>
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<tr>
<td>Skills devised with issues</td>
<td>How to apologize when arriving late, and Changing into a different look</td>
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<td>Skills in home care nurses' action and speech and responses</td>
<td>Explaining the care patients' conditions to the family in front of the patient, and Nurses did not immediately provide guidance to care patients and family members, but instead considered together a solution plan and give advice</td>
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<td></td>
<td>Nurses' ways of dealing with patients</td>
<td>They entered into the room without reception from family members, and I felt a relationship of trust from the sense of close distance between the patient and the nurse</td>
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<tr>
<td>Extent of practical training that could be practiced</td>
<td>Not changing socks during a home care visit, and At first I didn't wash my hands</td>
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<td></td>
<td>Students' confusion</td>
<td>I didn't know my place as a student during home care visits, and found it easier when the situation was real and I could not skillfully talk with the care patient and family members</td>
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<td>Limits of students' involvement</td>
<td>Students were not involved with patients much, and Students also not never spoke</td>
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<td>Diverse family structures and words and actions of family members</td>
<td>The care patient lived alone so there wasn't a way for family members to respond, and I didn't talk much with family members</td>
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<td>Family members' warmth and manners</td>
<td>I was welcomed more than I had expected, and There were many questions from family members</td>
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<td>Difficult living environments encountered during each visit</td>
<td>Residence was built in ways different from what I imagined</td>
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<td></td>
<td>Education of individuals of provided nurses</td>
<td>Each family's way of living differed more than imagined, and Nursing needs to accommodate this</td>
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<td>Differences in care patients state</td>
<td>Diversity of Health condition</td>
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<td></td>
<td>Difficulty of communication</td>
<td>I was a little unsure about how to deal with someone who doesn't speak and with small children</td>
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<td>Helped item</td>
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<tr>
<td>1  Bedside manner</td>
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<td>2  Attitude as students</td>
<td>76</td>
<td>57.6</td>
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<tr>
<td>3  Imaging home care</td>
<td>75</td>
<td>56.8</td>
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<tr>
<td>4  How to communicate with care patients</td>
<td>44</td>
<td>33.3</td>
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<td>5  “How to communicate with family members”</td>
<td>40</td>
<td>30.3</td>
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<tr>
<td>6  Understanding of the response to the home care nurses of patients and family</td>
<td>36</td>
<td>27.3</td>
</tr>
<tr>
<td>7  Understanding the feelings of care patients</td>
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<td>8  Understanding the feelings of family members</td>
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1. Title Page

a. title of the submission

Effectiveness of holding student group conferences with process records made by trainees during home healthcare field work

b. topic area of the submission

Other Areas of Education (Nursing Education)

c. presentation format

Poster Session

d. Abstract

Using process records made during home healthcare field work as a resource, students reflected on their experiences as a group. Through analysis of revised material after this reflection, the students realized the importance of non-verbal communication, and, in group discussion, they were able to understand how each other perceived what was spoken to them during the field work differently, effectively fostering their communication abilities and showing the program to be a success.

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Title page

**Title of the submission**/ Ways to Encourage Students to be Interesting in Learning

**Topic area of the submission**: Curriculum, Research and Development

**Presentation format**: Paper sessions or Round table

**Description of presentation**: students need to be interesting in learning to learn better that impact their achievement. My research question is what are teachers’ experiences of applying strategies that would encourage students to be interesting in learning?

**Paper author**:

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**Ways to Encourage Students to be Interesting in Learning**

**Description of presentation**: students need to be interesting in learning to learn better that impact their achievement. My research question is what are teachers’ experiences of applying strategies that would encourage students to be interesting in learning?

**Research Question**

My research question is what are teachers’ experiences of applying strategies that could encourage students to be interesting in learning?
I arrive to my question when I observe KG classes and note that students on first class were more interested to learn and more active than students on the second class.

**Qualitative Approach**

I will use Case study. I chose this approach because I want to do a deep examination and understanding of teachers' experiences, teachers who teach in K-G class in elementary school at USA, by applying strategies that could encourage student to be interested in learning.

**Research methods**

I will use the observation, deep face-to-face semi-structured interview, notes to collect data and do a deep Investigation.

**Rigor and Trustworthiness, ethic**

Use triangulation, participant checks, reflexivity, and notes will enhance rigor and Trustworthiness. The participant will know about all their rights before start study and the study will not harm them..

**Data Analysis**

I will use the open coding, themes, axial coding, and iterative coding
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   Nursing Development in Saudi Arabia

2. **Name of the author:**

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6. **Abstract or full paper:**

   The next page
Nursing Development in Saudi Arabia

Leenah S. Iskandarani

College of Education, Leadership and Counseling

University of St. Thomas

2014
Nursing Development in Saudi Arabia

Saudi Arabia is a country that unified as a kingdom in 1932 (Tumulty, 2001). Prior to the discovery of oil, the economy of the country was limited. However, when the oil prospecting and exporting began the status of Saudi Arabia wealth changed dramatically. Investment in human capital has become a top priority for the Saudi government to ensure lasting growth and a knowledge-based economy (Almutari et al., 2014). The healthcare system has gone through significant improvement in a short span of time because of the need for healthcare among the population. Since then, the demand for health care increased in particular the need of professional nurses.

The purpose of this paper is to clarify the systems of gender inequality in Saudi Arabian society and to examine their impact on nursing profession development. I used Youngman’s Framework for social inequality and Education (2003).

**Timeline of Nursing in Saudi Arabia**

Nursing education started in 1948 by an American nurse who gave basic nursing care classes for five males (Adbul-Aziz, 1956). “From this small beginning, nursing in Saudi Arabia really began to grow” (Para. 4) stated by Ibrahim Abdul-Aziz one of the first nurses in Saudi Arabia. The first official training program was when the Ministry of Health (MOH) collaborated with the World Health Organization (WHO) in 1958. Only male students were registered for the program, as women were unable to enroll in any educational institution at that time. After opening the first female nursing school in 1962, the Saudi society viewed nursing as a female-identified profession. For that, the Ministry of Education (MOE) introduced the first Bachelors, Master and PhD programs exclusively for women. The graduate programs admission were limited for females only, but the two years diploma degrees were still offered for males and
females. In 2004, many nursing Bachelor degrees for men were offered by the MOE (Tumulty, 2001; Mebrouk et al., 2008; Jradi et al., 2013; Almutari et al., 2014).

**Historical Development of Gender Relation**

Saudi Arabia is a Muslim country. Islam in Saudi is not only a religious ideology, it guides the moral law of the country and works as a social system embracing every aspect of peoples’ lives. Islam does not prohibit the mixing between men and women as long there is no sexual harassment. There is no evidence from the holy Quran that enforces the segregation of sexes. However, gender separation is socially acceptable in Saudi Arabia (Baki, 2004). The Saudi population believes that the traditions of veiling, seclusion and the strict gender segregation of men and women ensures the continuation of the Muslims’ value system.

The unique cultural history of Saudi Arabia has a great impact affecting the gender equality in the society. In a male-dominated and tribal community the social norms and conservative beliefs have a powerful effect on people’s lives. Indeed, widespread cultural preference for sons is evident in Saudi society, as males are dependable and they carry on their father’s names and legacy. In fact, Saudi Arabian law requires females to have a first degree relative male guardian escort “mahram” who is responsible for all the decisions they make (Miller-Rosses et al., 2006).

**Impact on Education**

In Islam women have the right to equal access to employment and education, although their first priority should be that of the family. Traditional beliefs about gender roles in Saudi Arabia, have shaped and reflect women’s lives. Women’s most important role, according to the society, is a homemaker and mother, while the man’s responsibility is to support and protect the wife and the family (Miller-Rosses et al., 2006). Therefore, Saudi families support male
education more than females. In fact, since the establishment of the MOE in 1954, the education was offered to males only and there were no schools offering education for females until 1960.

The ramifications of the male guardianship system and sex segregation are women unable to seek education without the male relative’s permission (Baki, 2004). This restriction strongly impacts the education of Saudis women. Sex segregation undermines women's right to equality in education, especially when female university and professors are often relegated to unequal facilities with unequal academic opportunities.

The education system reflects and perpetuates women’s subordinate status, while at the same time offering opportunities to challenge this subordinate status. Girls are encouraged to study languages, secretarial skills and arts, while boys are directed toward engineering, physics, chemistry or military studies. The different qualification mean different opportunities in work, which lead, either by force or by system, to gender inequality. Women’s education was perceived as a social revolution encouraging women to leave their homes to go to school on a daily basis; a change which might challenge the prevailing tradition (Elamin et al., 2010).

**How gender inequality challenged through institutions and public practices?**

Traditionally, based on society values the principal role of Saudi women have been as caregivers and housewives. Saudi women have undertaken employment only recently with limited relaxation of cultural beliefs. Women usually engaged in sectors that were woman’s domain, such as female teaching (Miller-Rosses et al., 2006). However, nursing is not considered to be a traditional occupation for women. The values of gender segregation affect the situation of the nursing profession in Saudi Arabia. The problem that merely related to it is whether female nurses can provide care for male patients (Almutari et al., 2014).
Saudi Arabia is a conservative society with strong cultural tradition that severely restricts the participation of women in occupations outside the home. Besides, it is socially unacceptable for women to work late at night. Based on social norms, nursing suffers from a poor image in Saudi society as it is a mixed-gender work environment.

Subject to the community and work pressure, Saudi female nurses often request to work at a day-shift area such as an outpatient clinic that easily integrate with their family responsibilities and are socially more accepted (Felemban et al., 2014). Furthermore, many qualified female Saudi nurses prefer to stay home or take a job position that is not related to nursing. As a result, the demand for nurses in Saudi Arabia increases and the Ministry of Health (MOH) is challenged with growing health care needs and diminishing numbers of nurses.

How gender relations interact with ethnic relation?

The nursing profession in Saudi Arabia is a less desirable career choice for Saudi nationalities compared to other professions (Felemban et al., 2014). The lack of interest in nursing is linked to the prevailing stereotypical images, beliefs, ideas and impressions people have of nurses and the nursing career. Nursing in Saudi Arabia is perceived as an unskilled, low-paid job and often ranks lower than other healthcare professions (Almutari et al., 2014). The lack of knowledge and recognition for nurses’ job is mainly affected by the unhealthy media portrayal of the profession. The perception of nursing work as being similar to that of maids’ was attributed to the mass employment of Asian workers as domestic maids and as nurses.

A study by El-Haddad (2006) stated that the negative public attitude toward nursing contributing to the limited number of Qatari and Emirati nurses respectively. Sharing the same socio-cultural beliefs and coming from the same geographical area, the Arabian Gulf, I would argue that Saudi people have similar perceptions of nursing.
The growing economy and political openness have brought a massive influx of an international workforce with diverse social and cultural backgrounds. Saudi Arabia has relied exclusively on recruiting expatriate registered nurses to serve in the healthcare system (Felemban et al., 2014). They form the large proportion of nursing staff in the Saudi healthcare facilities. Expatriate nurses working in Saudi Arabia have different cultural values, beliefs, and attitudes. Foreign nurses are attracted by the free tax salaries, accommodation and annual vocation with round trip ticket to their home countries.

However, as an outcome of the Gulf War in 1991 (Tumulty, 2001), the repeated terrorist activities since 1995 and the events of September 11th, 2001, recruitment and retention of international qualified nurses has become increasingly difficult. Simultaneously, the global nursing shortage and the political situation in the Middle East continues to pose major challenges for international recruitment particularly from underdeveloped countries.

**What are the consequences of ethnic or racial inequality?**

The salary of nurses in Saudi Arabia varies depending on the Health institution budget and on the country of origin. “The only determining factor in the salary is the passport which the employee is applying for the job with. In fact, not even nationality matters” (Matar, 2012). Saudi Arabia does not pay base wages equally across the board. Base wages are based on the agreement with each country depending on the living cost standards; in other words, cost of living and value of money in each country. Mainly the U.S. and Canadian passport holders get the highest salary and the lowest paid goes to the Asian passport holders.

The government did not develop ethical policies for recruitment and retention to avoid any abuse for nurses who come from poor countries. Nurses travelling from their countries seeking better job opportunities could be abused by low salaries and poor career structure.
Contributing to the Kingdom’s goal of letting Saudi citizen take over the workforce, the government established ‘Saudization Program’ guides qualified Saudis into professional fields (Tumulty, 2001). As a reward for the Saudi men and women, the Minister of Labor (MOL) issued a decision setting the minimum wage of SR 3,000 for Saudis in all public and private sectors. The salary system in Saudi Arabia is unfair. Such a system created inequality and does not provide justice for the local or foreign nurses. This issue must be addressed to ensure equality.

Conclusion

Saudi Arabia has emerged from being an underdeveloped country to one of the wealthiest nations in the world. A tremendous development commenced. The development of industry, education and healthcare services quickly brought the country towards the standard of industrial countries. Despite the advancements in the healthcare system, the nursing profession is still facing a number of challenges in terms of education, practice and workforce.

Women’s education was once perceived as a social revolution challenging the prevailing tradition in Saudi Arabia. Nevertheless, that has gradually transformed in favor of women. The Saudi government is achieving an outstanding advancement in the state of gender inequality in education and employment. Saudi Arabia set a strategic plan aiming to improve the education opportunities for women to boost them in the workplace. However, that raises the question: is the government relaxing its social norms and breaking down barriers for socio-economic reasons, or are the changes related to the international commitment to woman’s right?
References


1. Title of the submission.
   EATING DISORDERS IN AFRICAN AMERICAN ADOLESCENTS: A SHARED PERSPECTIVE IN CURRENT LITERATURE

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6. Abstract and/or full paper.
   In the United States, “up to 30 million people of all ages and genders suffer from an eating disorder (anorexia, bulimia, and binge eating disorder)” and they are reported to “…have the highest mortality rate of any mental illness,” according to Anad.org (2015). They pose serious systemic health consequences in individuals and can affect an individual’s physical, mental, emotional and social well-being. What has been supported in the literature is that adolescence marks a critical developmental period in the understanding of eating pathology. There is a multitude of studies that focus on eating disorders in the mainstream culture however what remains to be fully understood is the issue of eating disorders in the African American population and their particular impression on African American girls as empirical studies are limited and antecedents may vary. Because race and ethnicity may play powerful roles within the context of eating disorder development in ethnic cultures, this paper seeks to explore the current research of this phenomenon in African American adolescents and identify the socio-cultural variables and other risk factors that may possibly contribute to this affliction.
Abstract

Numerous researchers and educators worldwide have supported the notion of school-based enhancement of social and emotional development of all children throughout their school years. This has resulted in the emergence of a great deal of school-based social and emotional learning (SEL) initiatives around the world. The majority of these SEL programs are based on the Collaborative for Academic, Social, and Emotional Learning (CASEL) conceptual framework that comprises the following five sets of social and emotional competencies: self-awareness, self-management, responsible decision making, social awareness and relationship skills. Whilst the CASEL framework is the most globally recognized conceptualization for raising children’s social and emotional skills, there is another framework with an emphasis on SEL which is worthy of consideration, and that is the Head Start Child Development and the Early Learning Framework. The Head Start Framework addresses not only children’s social and emotional competences, but also includes individual’s distinct personal features, such as self-concept and self-efficacy. In light of the current research evidence, this presentation aims to propose an expansion of the existing CASEL framework by taking into consideration each child’s social, emotional and personal attributes.

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Title of Submission

Recovering Together: Structural Family Therapy Approach with Families Impacted by Drug Addiction

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Abstract and/or full paper

Families are the hidden victims of drug addiction suffered by a family member. The disease affects all members of a family as the family becomes organized by their behavioral and emotional reactions around the drug addict family member. The drug addiction becomes the central organizing principle of the family system, controlling and dictating family members’ assigned family rules and family roles. The aims of this two-phase presentation are to provide workshop participants with a practical understanding of the impact of drug addiction on the family and to conduct group interactive activities (through Structural Family Therapy) to demonstrate two family interventions for working with families.

This presentation provides both a conceptual model (Phase I) and skills approach model (Phase II) to understanding the impact drug addiction has on families and family systems. The presentation will be conducted in two phases: During Phase I, workshop participants will be provided with an understanding of the theoretical overview and characteristics associated with drug addiction in the family. During Phase II, the presenter will demonstrate the use of two family interventions (through Structural Family Therapy) used to treat families impacted by drug addiction.
The first intervention will be the use of a modeled initial session to highlight the techniques and skills in order to conduct an assessment, address typical issues that family members bring into therapy as a result of the impact of addiction on their family and help family members and the addict engage in reparative work on their relationship. Participants will have an opportunity to practice and experience some of the interventions introduced in this presentation.
Title of the submission;

*An Analysis of the Sex Role Traits and Changes in Korean Children*

Topic area of the submission; **Elementary Education**

Presentation format: **Poster Session**

Description of the presentation;

*Korean had stereo type of sex role for a long time because of mono-culture. But nowadays, Korea has changed into multi-cultural society rapidly. This study investigated the change and traits of sex role which are associated with development in Korean children.*

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**The aims.** There is a great deal of information available about the development of sex role concepts and identity in youth, few investigations have extended to sex role developmental changes. This study investigates the changes of sex role which are associated with development in Korean children.

**Subjects and Instrument.** Subjects for this study consisted of 42 elementary school children (1st, 2nd grade) and 32 nursery school children (5-6 years old) who live in GyeongGi and ChungBuk provinces. Bem(1974) developed the Bem Sex Role Inventory as a method of assessing a person's sex role identity. The inventory consists of 10 masculine adjectives, 10 feminine adjectives, and 10 neutral adjectives, each of which is rated on a scale of 1 to 7 (from never or almost never true to always or almost always true), reflecting each of these adjectives is characteristic of how the subject feels about himself or herself.

**Result and Discussion.** There were significant differences between the gender groups. The male children means (5.13) were higher than female children means (2.90) in masculine aspect and the difference has significance, t\(_{(97)}\)=11.98, p< .001. The female children means(5.65) were higher than male children means(2.67) in feminine aspect and the difference has significance, t\(_{(97)}\)=-15.54, p< .001. There was a significant difference between the age groups. Especially, result shows the significant difference between 5 year old children and 6 year old children for the neutral scores, F\(_{(3, 95)}\)= 5.313, p< .01. Younger children have more neutral tendency than older children. Traditional sex role orientation is based on the premise that family responsibility is a woman’s first priority. Younger children with working parents should be less sex role stereotyped, since these mothers serve as models who are themselves less stereotyped.
A. Title: A Study on Korean Children’s Mental Model of Media Environment and the Media Use

B. Topic area of the submission: Other areas of education

C. Representation format: Paper Session

D. Description: This paper shows Korean children’s mental model of media environment and the media use. For this, this study conducted several qualitative methods with 7 elementary school students. With the results, some educational implications were suggested.

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The purpose of this study is to analyze Korean children’s mental model of media environment and the media use under the hypothesis that the children’s mental model on media strongly affects children’s practical media use. For this purpose, seven Korean parents of fourth-graders sampled in elementary schools were interviewed with four activities such as a word-association experiment, a sentence completion task, picture drawing and an in-depth interview. A qualitative analysis on the data collected from these activities above shows that firstly, the children possess a positive media mental model in which there are competence, usability, and pleasure of communication while they have a sense of fear about addiction as well. Secondly, the children show an ambivalent understanding on media use in terms of the negative and positive effects and long for a way to control the strong desire for the excessive use. Another finding is the fact that the Korean children understand digital media as a representation of both connection and disconnection with others. Also, the children tend to recognize media as a kind of cause of conflict and as a place for reconciliation as well. Finally, it is showed that if modern media includes books, they would better take such books as an alternative rather than electronic media. Based on these findings, some educational implications are provided based on Meyrowitz(1998; 1999)”s three perspectives on media.

Keyword: media mental model, media environment, children’s media use, qualitative analysis.
1. Title of the submission.
   A case study of NYU’s Methods for Tracking the Free Range Distance Education Student & the Traditional Student for State Authorization Compliance

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   State authorization is a recipe of equal parts. Part 1: understanding state regulations. Part 2: understanding your institution’s out-of-state footprint. One without the other is a map with no legend. The ability to know the location of your students and track when they move or go to another state to complete a portion of their studies is not an easy task. When the option of tagging students ears with implantable tracking devices is an unacceptable practice, alternative options must be explored. In this case study of New York University, we will explore why knowing your institution’s footprint is important, how to get a handle on it, best practices on the initial ‘mapping’ of your institution and maintenance tools for a well-kept institutional footprint map. NYU’s Office of Academic Program Review has successfully implemented three similar systems to track where their distance education students are located and where their traditional students are physically going to complete non-classroom experiences like internships, clinicals, etc. The impermanent landscapes of regulatory policies related to state authorization compliance make tracking where students are and what they are doing more important than such tracking has ever been before.
1. **Title of the submission:** Lessons learned: Connecting the arts with agriculture to reach and teach across the curriculum in grades 3 through 5
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**Abstract**

As states adopt the Common Core State Standards in English Language Arts and Mathematics, pedagogical shifts must be made in K-12 classrooms. The pedagogical shifts provide teachers an opportunity to embrace creativity in the curriculum in new and innovative ways. The marriage of the arts and agriculture permits teachers to reach across the curriculum to engage students in meaningful learning experiences. Using the Studio Habits of Mind as the theoretical underpinning, the aim of the workshop is to provide teachers with field-tested, Common Core State Standards-aligned lessons that can be used in the classroom. These lessons promote the Four Cs of the standards (i.e., collaboration, communication, critical thinking, and creativity/innovation) through integration of the arts and agriculture in grades 3 through 5. Findings from the field tests suggest an increase in student interest and a nonthreatening way to engage English learners in text-dependent inquiries. In the workshop, participants will engage in the field-tested lessons.
Cross-Cultural Experiential Learning Excursion: The story of Awakening and Awareness: A Case Study

Article title:

Cross-Cultural Experiential Learning Excursion: How Experiences Influence Learning and Creates Awareness: A Phenomenological Study,

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Abstract:

Despite the success of some universities many are still struggling to identify the characteristics of a healthy diversified campus as evidenced by the constant scrutiny of higher education accreditation bodies. The scrutiny stems from a wide range of issues including: aspects of institutional life, student enrollment and retention, faculty engagement, curriculum development and institutional outcomes. Perhaps the most important challenge facing many universities is the need to improve the effectiveness of their diversity initiatives. In fact, many universities are feeling a heightened sense of urgency to improve their initiatives as well as generate positive diversity outcomes. The Cross-Cultural Experiential Learning Excursion (C-CELE) is not an initiative designed to improve student recruitment; it is an initiative that provides a profound experience that places agents of change throughout the institution and around key faculties.

Keywords

Diversity, Experiential Learning, Pedagogy, Higher Education, Diversity Initiatives, Education, Inclusivity
Introduction

There is a broad assumption that heightened levels of awareness might perpetuate cultural understanding across a university campus; however, many educational institutions still struggle with the diversity goals of higher education accreditation bodies and governmental policy that advocates change toward more inclusive environments (Boyd & Owens, 2012).

American colleges and universities ought to be multilayered culturally sophisticated institutions that propagate critical thought and emotional reflection knowing that critical thought and emotional reflection will lead to positive relationships and enhanced awareness (Antonio et al., 2004) and that enhanced awareness might lead to change.

The assumption that drove this study is that critical thought and emotional reflection within the larger context of experiential learning might influence the establishment and maintenance of positive relationships and lead to increased awareness between diverse people at the university.

Unfortunately critical thought and emotional reflection may not always translate into positive relationships across campus, but it does challenge traditional assumptions by creating a learning community that fosters discourse (Giroux, 2003). Consequently universities ought to invest in something that creates discourse.

The question that encouraged this study is, “Can a three day Cross-Cultural Experiential Learning Excursion (C-CELE), focused on American Indian culture,
challenge traditional assumptions and help inspire the cultural awareness of its participants?” In addition, “what happens to self in the context of increased awareness?”

The researcher gathered formal data from 2 focus groups, conversations with participants and informal data from question and answer periods and classroom discussion. Feedback was collected, analyzed, coded, categorized and put into a comprehensive narrative that could become part of a larger body of research that might creatively enhance cultural awareness.

**Cross-Cultural Experiential Learning Excursion**

Participants volunteered to partake in a 3-day, facilitator led bus excursion (rolling classroom) through American Indian reservations and other historically, culturally, politically, and spiritually significant sites in South Dakota, Nebraska and Wyoming. The C-CELE was designed to intellectually, emotionally and spiritually challenge participants by exposing them to some of the complicated realizations of American Indian culture and circumstance. Participants were asked to gauge their levels of awareness when they started the excursion, compare it with their levels of awareness at various points during the C-CELE, and report on the findings through focus group discussions that were held during the C-CELE.

The C-CELE was designed to focus strictly on building awareness. An important objective was to avoid having the C-CELE devolve into an anthropological fishbowl thus; participants were constantly reminded to utilize experiential learning techniques, critical thinking and reflective thought to foster transformative learning (Duffy & Jonassen, 1992).
Facilitator

The facilitator was acutely aware of the C-CELE’s sensitive nature. He was not an “Indian guru” but a culturally traditional Native man who teaches a variety of American Indian and Social Justice courses using experiential, critical and Indigenous pedagogies.

A successful learning experience was contingent on the facilitator’s ability to effectively transform experience using diverse pedagogies and relevant content (Atkinson & Murrell, 1988; Itin, 1999; Kayes, 2002; Kolb, 1984; Piaget, 1962; Stutsky & Laschinger, 1999). The facilitator consistently used informal assessment techniques to gather the data necessary in understanding the learning challenges of the participants. The feedback allowed the participants and facilitator to collaborate in the creation of a communicative process that enhanced understanding and the foundation of a critical learning environment.

It was the facilitator’s responsibility to encourage the participants to think critically about their dissonance and other emotional states of being. The facilitator needed the participants to “think about what they were thinking about” and then ask themselves “why am I thinking this way.”

Literature review

Diversity is complex and defining it is challenging. This study broadly defined and based its definition on the critical thinking theories rooted in the concepts of social equality. A broad definition of diversity is necessary when teaching about cultural difference because it ought to allow for the explorative examination of inequality, in
depth discussion, and multiple perspectives. This definition is consistent with educational definitions found in several similar studies (Bowen & Hackett, 2010; Watts, 2010).

Campus diversity enhances student success (Jayakumar, 2008) and disseminates cultural engagement and critical thought by challenging people to move beyond cultural isolation (Jarvis, 2006). In short, educational diversification is designed to perpetuate a philosophy of equal opportunity (Antonio, Chang, Hakuta, Kenny, Levin, & Milem, 2004; Bourdieu, 1999).

A well-documented higher education objective is to create a critical mass of underrepresented people to attain and retain a healthy interchange of ideas (Smith, 2009) that ensure the civic mission of the country (Brown & Bell, 2008), an objective that many campuses are unable to achieve (Solorzano, Ceja, & Yosso, 2000). Consequently, many diverse students, faculty and staff find themselves in an unbearable environment filled with social alienation, academic disengagement and self-doubt that could lead to poor performance (Giroux, 2003).

There have been many attempts to use a variety of techniques to diversify colleges and universities in the United States (Laird, Engberg, & Hurtado, 2005). Some attempts have been interactive, others comprehensive, and others critically reflective (LaNasa, et al., 2007). Interactive initiatives occasionally referred to as “low hanging fruit” are (Nelson- Lairad, 2005) culturally scripted informational, academic and social events designed to congregate culturally diverse people. They are generally well suited for settings where people work with others of even standing (Antonio, 2001; Bocian, 1997).
A second more comprehensive level of diversity initiative introduces students to social actualities such as privilege, power, empathy and equality (Brooks & Ward, 2007; Delgado & Stefancic, 2001; Hytten, & Warren, J., 2003). This level could incite higher levels of cognitive dissonance because it address sensitive issues that assign culpability. Educators at this level may encounter complex classroom situations, guilt and cognitive dissonance (Hytten, & Warren, J., 2003). A third level, critical reflection, helps students recognize the divergent relationship between privilege and underrepresentation by illuminating the signs, symbols and processes associated with the dominions of oppression. Critical reflection enables students the opportunity to test and apply theoretical perspectives that scrutinize those dominions (Wenger, 1998) by exposing the inequitable aspects of the student’s own cultural icons. Students might gain a deeper understanding of how oppression affects the disenfranchised across society in a variety of ways.

**Learning Through Experience**

The supporting assumptions of this study are that people learn better from experience and that teachers ought to create an environment in which better learning can occur (Dewey, 1938; Wurdinger, 2005).

Experiential learning is rooted in the discipline of social psychology and the theories of experiential philosophy and cognitive pragmatism. This study emphasized the theoretical constructs of Joplin (2008) and Kolb (1984), both of whom believe that much of what we learn occurs through environmental change. Both Joplin, (2008) and Kolb
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(1984) argue that experiential learning is about using the physical presence to holistically enhance the learning process and recognize the cognitive process of transforming experience into knowledge.

The transformation of experience into knowledge is an important part of understanding and doing anything well. Experiential learning is pragmatic in nature and a necessary component of the learning process (Kolb, et al., 2007). Kolb (1984) described experiential learning as a series of steps within a process that ultimately forms a learning cycle and that learners can enter the cycle at any step. Kolb (1984) broke down the steps into two paradigms. Kolb called the first paradigm concrete experience and abstract conceptualization, which occurs after learners understand the experience. Kolb (1984) called the Second paradigm reflective observation and active experimentation, which enables the learner to convert an experience into knowledge.

Experiential learning, in its most basic form is described in two ways. The first is informal and the other is when the learner is formally exposed to a particular set of circumstances. The second type of experiential learning is that in which the C-CELE is patterned. However both are present and allowed to flourish.

Experiential learning is cumulative and over time allows for enhanced interaction and reflective understanding (Rea, 2006). In addition research shows that experiential learning enhances cognitive recall (Vygotsky, 1978), fosters powerful learning transmissions (Piaget, 1962) and inspires reflection and peer-to-peer communication, something often missing within the classroom. In other words, experiential learning allows for the formulation of one’s own story.
Storytelling

Stories allow people to awaken their natural curiosity and desire for information and experience personal images, descriptions and feelings. Stories provide an opportunity to build personal relationships across diverse domains and to build and retain the meaning of community, truth and purpose. Stories are universally told and allow access to the future and the past as they assist in the process of enjoying life.

In this study the researcher wanted to reveal the true essence of how the participants felt throughout the C-CELE. The qualitative nature of storytelling allows for opportunities to articulate sophisticated interpretations of experiential events in personal ways.

Qualitative Analysis

Storytelling is closely associated with the theories of qualitative research. The theoretical perspectives associated with qualitative research are: Constructivist, Critical, Post-positivist, Postmodern and Feminism (Creswell, 2008) all of which examine the human experience through indiscriminate, subjective, multifaceted methods of analysis (Borbasi and Jackson 2012); all of which extract data from the human experience as it is articulated through story. Qualitative analysis is behavior based and supports human understanding (Borbasi and Jackson 2012) by producing data that helps understand the complexities of diversity through discussion. Qualitative analysis does not over simplify or diminish data into a number (Creswell, 2008). Within this study the researcher used
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qualitative exploration to follow a subjective pathway (storytelling) through a particular methodology (case study) (Creswell, 2008).

Case Study

The researcher used a “Social Case Study” method to guide the research process. A case study refers to the collection of detailed information (Creswell, 2008) in this case the study of data extracted from a small group of people that participated in a diversity initiative. This case study looked closely at conclusions that only apply to a specific context; in this case did participation in the C-CELE increase awareness. This research did not concentrate on the discovery of a comprehensive actuality and it was not seeking to discover cause-effect relationships. This study was designed to formulate an explorative description of heightened awareness.

Case studies are ideal when the researcher is asking questions that cannot be explained by a chart or table. It is also preferred when the researcher’s focus is within the context of real life. Case studies use inductive logic and require a question that seeks out a holistic interpretation of a particular event or condition.

Research Design

Participants

This study consisted of 14 female and 10 male participants. Of the 14 females; 7 had terminal degrees, 2 were master students and two had undergraduate degrees. Of the females with terminal degrees; 3 were professors, 2 were librarians and 2 were university administrators. Of the 10 males 7 had terminal degrees; 2 had master degrees, and 1 had
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an undergraduate degree. Of the 7 males with terminal degrees, 4 were professors and 3 were administrators. The average female age was 39 with an average 8 year higher education tenure. The average male age was 40 with an average 13 year higher education tenure. Of the female participants 13 identified as “Caucasian” and 1 as African American. Of the 10 male participants; 7 identified as “Caucasian,” 1 as African, one as African American, and 1 as Latina.

The questions were designed to extract the profound meaning of the participant’s experiences. The researcher was interested in particular comments that might signify changes in opinion or challenges to traditional beliefs.

Data collection questions

The following are the questions and statements used within the focus groups: 1) Speak about any aspect of the excursion that may have physically, intellectually, emotionally, or spiritually stimulated you either negatively or positively. 2) Explain why you may or may not have been stimulated by particular events. 3) Describe the educational value of the excursion. 4) Speak about your own personal learning experiences. 5) Is there anything else you want to say about your C-CELE experience?

Data Collection

Bracketing

The researcher was extremely conscious of personal bias. Bracketing helped the researcher avoid personal prejudices throughout the process of data collection and analysis (Creswell, 2008; Moustakas, 1994).
Focus Groups

Focus Group Facilitator

Creswell (2008) suggests that effective, experienced facilitators enable participants to tell their own often-intimate story within the context of the research theme. The focus group facilitator has conducted more than 35 focus groups sessions and is a professional mediator. He met the group at both locations to conduct the focus group sessions. The facilitator guided the conversation and observed the verbal and non-verbal behaviors of the participants.

Focus group method and procedure

Focus groups capture unique perspectives by converging on important data and is often more comprehensive and consequential than other methodologies (Morgan & Krueger 1998). Focus groups suit the phenomenological theory well because they inspire participants to tell their story.

The facilitator explained the objectives of the focus groups. Participants indicated that they understood and were eager to share their perspectives. Participants sat in a circle for both focus groups each of which lasted about 75 minutes. Both focus groups were recorded for accuracy.

Data

Analysis
To ensure reliability the researcher transcribed every statement twice. Discrepancies were analyzed and corrected and then matched against a third transcription to ensure accuracy. Next, the transcribed data were analyzed for relevant themes; the process was then repeated to ensure accuracy. The researcher then began the tenuous coding process. After the data was coded, the researcher set it aside for several days and then repeated the process to ensure reliability. The coding revealed potential categories and after a great deal of consideration and analysis, thematic categories began to take shape. The researcher repeated the process and reexamined discrepancies before beginning to develop an objective summary using the learner’s exact words (individual textual descriptions). The researcher developed two types of interpretative summative descriptions – the first for the individual participant, which evolved into the second across the experiences of all participants. The researcher interpreted the meanings of the experience (Moustakas, 1994) and summarized the experiences of the study’s participants.

**Data revealed**

The data revealed that participant responses were rooted primarily in emotional descriptors. For the purposes of accuracy and reliability, the researcher categorized the data using the participants’ own descriptors.

**Guilt.** This participant’s response was indicative of five others. “I always seem to go to the same place; I know I feel guilty and I wish they [Natives] could have all the privileges that I have, but I feel as if I am still looking at it through my Western eyes.”
Other participants used synonyms like “regretful,” “ashamed,” and “humble” to describe their feelings of guilt.

This participant seemed sympathetic to Natives as he spoke about the divergence of two cultural perspectives; “I am not walking in the same shoes and not seeing [life] in the same way as Indian people. I am seeing what I saw for the past two days from my point of view; you know how to fix those that were wronged. I feel very regretful.”

This participant resorted to his instincts; interestingly he seemed to recognize what those instincts were. “I want to see the loose ends tied up, but I also know after seeing what I saw on this trip, I know that white people are not going to fix the complications. I am ashamed to think that white people feel that they can fix the world’s problems.”

**Upset.** Some participants were upset with what they saw. This participant and nine others saw unexpected levels of poverty. “I was upset with the general poverty and the lack of infrastructure; I had heard that it was bad but didn’t expect it to be that bad.”

Other participants used emotionally identifying words like “ashamed,” “unhappy,” “sad,” and “helpless” to align themselves with feelings of being upset.

The C-CELE exposed participants to the issues of absolute poverty, causing many to think about being more conscientious while others felt helpless. This participant struggled with the complex ramifications of poverty and the effects it has on the Native population. “I saw something different…the different side-effects of poverty on the reservations like how it all mixes with cultural issues; things like wanting to stay with the
families. I don’t know if there is a way to escape it as you can in some other cultures. It makes me unhappy.

Other participants, familiar with the effects of poverty indicated that they came from poverty and were surprised that they saw it in the middle of America. This participant spoke about his experience: “I was born and raised in Texas about ten miles from the Mexican border; the neighborhoods that we saw today were not a surprise because I grew up in that kind of poverty. I am sad that I feel so helpless and that we allow this to exist.”

This participant expressed the feelings of others, “I guess what is most bothersome is this feeling of helplessness. It’s one thing to know about the reality of other places in the world but what we saw today, sheer poverty, is hard to swallow.”

This participant expanded, “I believe that we come from the most advanced culture and the poverty, the extreme poverty, is right here and I feel helpless.”

This participant also expressed feelings of helplessness, “I was thinking about this notion of helplessness because I know that I am helpless in terms of putting myself in [American Indians’] position; I am not Native.”

Other participants indicated the same feelings, “I don’t know how to resolve these feelings of helplessness… I feel sad… I want to understand.”

This participant worked with Native Elders in various addiction programs on the reservation. Seeing White Clay reminded her of those experiences. “I was saddened by what I saw but I am glad that I saw it. With time you tend to forget and this experience enabled me to refresh what I should have been thinking about for a while.”
This participant worked with Native children for a summer and explained her unique perspective:

I worked with a lot of native students last summer and spent a lot of time getting to know a lot of people on the reservation. I saw some kids that were in trouble and that’s their reality; just like what we live is our reality and some of the things that they had to deal with were heart breaking.

Seeing White Clay tugged at me at a very emotional level.

Anger. Seven of the participants were feeling angry by what they saw. Some phraseology associated with anger included “outrage” and “irritation.” This participant reiterated what others said:

I am still having a hard time processing all my thoughts; White Clay had such an impact because I have studied the poverty of the world; especially in other countries but I don’t think I have ever seen poverty so severely compounded by all the other issues on the reservations. It’s an outrage.

With tears in his eyes this participant spoke about his reaction to White clay, Nebraska:

The thing that affected me most and irritates me most is still affecting me is, I began to realize how we as human beings prey on other people’s misfortune. I saw on one side of the street how two people were drinking out of brown paper bags and on the other side of the street I saw this middle aged man laying down in front of a building in broad daylight, clearly intoxicated. I could only extrapolate that he is just a young man
and that ten years down the line he will be in an even more difficult situation.

This participant elaborated on his feelings about the Wounded Knee Memorial in Wounded Knee, South Dakota, “The thing that irritated me the most after talking to [Native people at Wounded Knee] was that they seem to be in a constant struggle, and they were so nice.”

Inadequateness. Many of the participants questioned the effort to improve conditions on the reservations; six participants spoke about struggles using identifying words such as “inferior,” “ineffective,” and “useless.” This participant summed up what several others said, “It seems to me that there have been plans that have been [on the reservation] for a while; some of which should have succeeded by now. Something about the whole thing seems incomplete.”

This participant measured what he saw based on solidified pre-conceived notions and not hearing about the many success stories on the reservations.

I thought I would see all kinds of success stories there and I know there is, but there should be more. It seems that there has been plenty of time. If people keep trying, well if they are like me, it would make the effort feel like a waste of time; it would all be useless.

This participant spoke about cultural paternalism, “Historically we haven’t been very effective and we are responsible for messing up [American Indian] culture. We have been trying to help out Native people ever since we arrived on the Mayflower, and it seems like we haven’t done anything right.”
**Caring.** Participants were emotional throughout the C-CELE. Seven participants exposed dichotomous perspectives and used phraseology such as “sympathy,” “respect,” and “beauty.” This participant spoke about his personal feelings, “If you look around at the beauty of the land…it made me feel at peace, but… it was also emotionally trying.”

Fighting tears, this participant attempted to explain his anxiety, “The unrest that I know exists there and the extreme poverty class with…I mean I have such respect for [American Indians] and their culture but it brings up more questions than can be answered; I don’t think we white people have the answers anyway.”

This participant, like many others who spoke about life on the reservations, wanted to help, “I wish there was something I could do to help out and make life on the reservation better. It seemed to me that the people that I talked to were happy and very grateful.”

**Confusion.** Many participants were confused throughout the C-CELE and expressed it during the focus groups. Some of the statements contained key words and phrases such as “wondering,” “taken aback,” and “confused.” This participant was hearing information that he did not expect:

I am a veteran and actually standing in the Wounded Knee graveyard was saddening. I am wondering how or why someone from the Indian community would ever participate in the armed services. I am wondering if American Indian people believe in service to their country especially after the political turmoil that this government has caused Indian people.
This participant wanted to share what she knows about military service and her experience in Indian country:

If you go to Indian powwows they spend an immense amount of time celebrating the veterans. They spend time honoring people that have gone to war so think about their ability to overcome and how unwilling we are to overcome. Participating in the ceremony at Wounded Knee reminded me of how much Natives have overcome and how much they still celebrate life. I will be forever thankful.

This participant was confounded by one of the elder looking people at Wounded Knee:

What really hit me was when the gentleman was talking right before the ceremony that we did at Wounded Knee. He spoke about the issue of identity and he used the term “strongman.” He asked me if I was a strongman and I was really taken aback. He asked me if I ever got a passport. I told him I had and then the man asked me if I knew who I was based on the fact that I was able to get a passport. Then the man looked at me and asked, "But what are you? I am Lakota I remember who I am, what are you?" That sense of indifference or identity is one sense I sort of feel as I looked at the Wounded Knee memorial. It seems to be one of those things that the U.S. doesn’t want to remember.
Another participant spoke about the issue of identity and self-validity, “Being a white person I don’t often understand the reason for clinging to identity; I know that Natives know the reason.”

Grateful. The final emotion that emerged from the C-CELE was that participants felt fortunate to have had the learning opportunity.

This participant’s statement was profound because she realized that being on the C-CELE helped her understand herself, “Being white is hard [at Wounded Knee]. Standing in the graveyard made me think about my own identity, something I never think about. I suppose because I don’t really have to.”

This participant and six others spoke about seeing things from a different perspective. The researcher is not convinced that all of the learners reached levels of empathy, but many seem more sympathetic to or aware of the issues of American Indian people.

I think I am at a place where I think I am seeing things a little different. Kind of from another culture’s perspective thanks to this experience; but that barrier is still there and I think that education, especially this type of education, is the key, and I wish that this sort of thing [C-CELE] could be expanded in a way that more people can experience other cultures and start opening the door so more people can feel the kind of emotion that we are feeling and see beyond the way they still see things.

This participant along with three others emphasized the need to see it (Native culture) in order to understand this culture and truly understand empathy.
For me it is about not being so theoretical when we are in the classroom where it’s about statistics and formulated conjecture, where we might have a couple of slides or a PowerPoint or be made to take the class online and get nothing out of it or see some pictures of what it could be and stuff, but right now we are actually seeing it and it is helping me relate and I am for one very grateful.

This participant and one other spoke from a more pragmatic perspective: Maybe we need more practicality. Maybe we need to see it and that is where the change comes from and that is really nice for me because I am a really tactile and visual learner.

This participant and three others on the C-CELE spoke about how they need to interact with students better. They feel as if they gained some tools that will enable them to better meet their students’ needs:

I am happy that I have a better context of what is happening out there, and I feel as if I have a better understanding of the Native students that I deal with. Sometimes they have to leave because they know someone who committed suicide or there may be problems with the family and they have to leave. I have seen one Native female with a full ride. She had to go home and ended up losing her ride, so there you go; we are struggling trying to keep our Native students; that makes this a great thing.

This learner added, “The emotion we are all feeling is interesting. I don’t think I have ever thought at such a deep level; I am glad I had the opportunity to participate.”
Discussion

The C-CELE is a learning community (Lave & Wenger, 1991) invested in the acquisition of knowledge (Gray & Gibbons, 2002; Rocha, 2007) using diverse pedagogies such as storytelling, demonstration, critical analysis and location (Eraut, 1994).

According to the data, participants indicated that they were heavily engaged and motivated by experiential epistemology. Their exchange of stories and ideas shaped the larger narrative and become the story of the excursion. The melding of their stories created ownership of the process and deep learning.

The participants indicated that critical thinking promoted inquisitive learning throughout the process. The C-CELE emphasized four criterion: recognizing and investigating assumptions, seeking multiple perspectives on a given subject, building rapport through communication, and fostering active involvement. The participants indicated that when they focused on these principles they began to incorporate and synthesize information through critique.

Participants were asked to continuously reflect on the learning process, an important goal of the C-CELE (Loughran, 2002). The concept of reflection is popular in education and a necessary aspect of the C-CELE. Participants were reminded that reflecting on the experience is what leads to profound levels of learning (Loughran, 2002). The facilitator was constantly reminding the participants to think reflectively and informally discuss their feelings with him. It was through informal discussion that 4
important factors were identified as important to the learning and imperative to the acquisition of awareness.

**Factor 1.** The rolling classroom as well as the sites provided a theater were a wealth of information was easily accessible. Participants were able to effectively use the plentiful learning spaces and allow the experiences to occur. It was at the point of occurrence were participants indicated that they felt “awake” to the issues at hand.

**Factor 2.** The participants indicated that they always felt safe and included and that the establishment of an affective learning community would not have been possible without feeling safe. Many of the participants indicated that becoming aware could only be possible in an environment in which they felt “safe enough” to internally explore.

**Factor 3.** Most of the participants indicated that they appreciated the space to think for themselves. It was important that the learning environment encouraged critical thinking skills and individual analysis. Nearly every participant spoke about how important it was to step out of his or her comfort zone and think critically about the issues at hand. A few indicated that they never thought about thinking before and that thinking about issues is what made them aware.

**Factor 4.** Participants needed to have fun in the process. Nearly every participant commented on the C-CELE’s wide variety of experiences and that even though the days were long and extremely emotional at times, they were able to keep the learning process meaningful and in context. It was important that the participants had the opportunity to laugh. Many indicated that the C-CELE would be far too intense without the laughter.
Scholars like to think of universities as institutions that inspire free thinking and critical thought. Historically universities have led the charge toward social change in the United States; however, many still struggle with the remnants of preservationist ideologies that inhibit healthy progressive deliberation and social inspiration.

This study originated in a state with little diversity but a significant American Indian population. The university at the center of this study (The U) has little diversity and few American Indian students.

The U has struggled to sustain successful diversity initiatives. Designed to be both innovative and profound, the C-CELE was an attempt to investigate whether a progressive approach would work to dispel the barriers that restrict awareness by bringing participants face to face with what they do not know or perhaps with what they fear.

Revealing data emerged from the focus groups. Most poignantly the data indicated that the participants were cognizant and emotionally engaged in the phenomenon and nearly every participant perceived a heightened sense of emotional vigilance; which according to their testimony, enhanced their levels of cultural awareness. Participants also indicated that they better understood American Indian people. Nearly all of the participants denoted that the experience was more than a personal struggle or epistemological diversion. For some, the C-CELE reshaped their sociocultural context.

This study’s findings correlated with Baer, Smith, and Allen (2004), who revealed that experiential situations heighten emotional reaction and that emotional reaction
toward content in association with experience generated profound levels of knowledge acquisition, which, according to the data from this study, had positive repercussions that transferred into awareness.

**Conclusion**

In the end, this study is just the beginning. The C-CELE is an awakening but merely a snapshot of a particular event at a particular time. There is much work to be done. For example, research on the concept of emotional learning and research on the pedagogical processes of experiential learning, both would be logical extensions of this project.

Although the research from this study is not transferable, it does point out that new initiatives can have a profound affect on understanding that might lead to awareness.

The other prevalent issue is that participants volunteered to participate in the C-CELE; it would be interesting to facilitate a group who were mandated to partake. The research plan is to follow-up on the different phases with a longitudinal study to investigate how the case study affected participants over time as well as changes to the campus climate.
Cross-Cultural Experiential Learning Excursion: The story of Awakening and Awareness: A Case Study

References


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Cross-Cultural Experiential Learning Excursion: The story of Awakening and Awareness: A Case Study


Miss Congeniality Girls (MCG) Pilot Program Goes to Chicago: The Call to Culturally Responsive Social and Emotional Literacy Learning

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Abstract: Many educators are beginning to realize that Social and Emotional Learning, the process of learning fundamental life skills such as self-awareness, self-management, social awareness, responsible decision making, and relationship skills, is a catalyst to the missing link of the education with our youth, especially our inner city youth. There is a plethora of research that supports the premise that Social and Emotional learning has been linked to students having enhanced academic performance, empathy, grit, and overall a better well-being and self-efficacy. Additionally, there is extensive research that posits that culturally responsive, analytic teaching and learning is a major vehicle for generating the pillars of social and emotional learning; enhanced self-esteem, empathy, self-awareness and social awareness. As a result, students are empowered with an intrinsic motivation to learn. Social and Emotional Learning, which includes, Emotional Literacy, being able to perceive, understand, manage, and use your emotions, was the catalyst for the development of Miss Congeniality Girls (MCG), a comprehensive, culturally responsive, social and emotional literacy program, for girls of color. Understanding that there are often times a cultural divide, particularly with inner city youth, Miss Congeniality Girls affords the girls an opportunity to connect on a socio-cultural level. This experience is fostered by incorporating a culturally relevant, pedagogical approach that is sensitive to those cultural nuances that exist with girls of color, thus allowing Miss Congeniality Girls to better “connect” with the girls.

This article reports on baseline research to support the variables associated with the development and application of a Miss Congeniality Girls program in an inner city school in Chicago. The challenges and successes with Miss Congeniality Girls, as it relates to analytic culturally responsive Social and Emotional Literacy Learning, will be highlighted. Topics to be addressed on during the poster presentation will include the problem statement, overview of MCG, culturally responsive curriculum development, fitting the program into the school culture, observations, where MCG stands today.
Social and Emotional Learning, the process of learning fundamental life skills such as self-awareness, self-management, social awareness, responsible decision making, and relationship skills, embraces emotional literacy (being able to perceive, understand, manage, and use your emotions). When we think of literacy, we tend to think of it in a traditional sense of acquiring and applying knowledge via language acquisition and application by reading, writing, thinking, viewing and communication. However, literacy also includes the acquisition and application of knowledge about our own selves. (Figueroa-Sanchez 2008).

**Problem Statement**

Being an educator (teacher, administrator, literacy coach and university professor) for over 20 years in Chicago, has given me many “eye openers” and “aha moments”. I began to see a trend of perfectly, capable and willing to learn children who were socially and emotionally weak from collateral correlates, environment, personal, home, and community factors that hinder literacy acquisition, thus PARALYZING them from going from good to GREAT!!

Consequently, students were ill-equipped to deal with the challenges of life; they lacked critical strategies to recognize and manage their emotions which became an eye opener. As a result, I witnessed students who were obese, relational aggressive and lacking abilities to think, reason, and make responsible decisions. They also lacked soft-skills and etiquette sophistication, and many times exhibited an overall low self-worth and self-efficacy, a real “aha” moment.

Many researchers postulate that the social and well-being development in a child has a direct correlation in their academic learning success. Research conducted by Durlak, Dymnicki, Taylor, & Schellinger, (2011), state:

Teaching and learning in schools have strong social, emotional, and academic components. Students typically do not learn alone but rather in collaboration with their teachers, in the
company of their peers, and with the encouragement of their families. Emotions can facilitate or impede children’s academic engagement, work ethic, commitment, and ultimate school success. Because relationships and emotional processes affect how and what we learn, schools and families must effectively address these aspects of the educational process for the benefit of all students (p. 1).

The first mission to answer this call was opening a children’s fitness center. I had a small clientele with a great number of referrals from pediatricians since obesity was on the rise with our youth. However, I felt there was still something missing that was needed; something more focused; something more for girls.

**The Missing Link**

With the demands on high stakes testing and to be “book smart”, our students, what Abraham Maslow refers to as our deficiency needs are overlooked. These include love, safety, health, self-esteem, and mutual respect, what I consider to be the missing links. According to Maslow Hierarchy of Needs, if the deficiency needs are not met, then one may never yearn the second level or higher order needs, such as personal and professional attainment, things that better ourselves and allow us to reach our full potential. Many educators are beginning to realize that Social and Emotional Learning is a catalyst to the missing link of the education with our youth, especially our inner city youth. Masari (2011) clearly states:

Recognizing that our schools need a more intrinsic change, where individuals innately prefer to engage in peaceful interactions and where all students find bullying unacceptable, researchers are doing more to get to the heart of the matter. According to SEL theory, culture not only creates, but also often condones. Many concerned stakeholders are beginning to assert that schools can, and must, be doing more. Among those carrying the torch is Education Secretary Arne Duncan, who embraced SEL as a top priority toward helping schools meet the challenge (p 2).

The premise that educational institutions are becoming aware that Social and Emotional Learning (SEL) is a necessity for the well-being of students is furthered supported by Kress
(2006) in stating that learning is a process closely linked to students’ social and emotional needs and that SEL strengthens students’ preparedness for learning and promotes the development of pro-social attitudes and behavior that mediate school performance.

To answer the call of some of these problems, I was given a vision and a mission to push the boundaries and offer social and emotional learning (SEL) with a twist and hence, Miss Congeniality Girls was born (MCG).

Overview of MCG

Miss Congeniality Girls (MCG) is a present-day approach to social and emotional learning (SEL) of branded programs and products, with a focus on girls of Color. Research suggests that adolescents of color, in particular, are challenged by contextual stressors that put them at risk for poor psychological and behavioral health outcomes. (Thomas, Davidson, & McAdoo, 2008). Moreover, African-American adolescent girls are challenged with additional stressors. African-American girls have to manage and negotiate racial injustices, issues resulting from poor economic scarcity, neighborhoods and school systems, while navigating through adolescence marked by incredible challenges and changes such as puberty, cognitive maturation, identity formation, and role negotiation in family (Thomas, et al., 2008).

Understanding that there are often times a cultural divide, particularly with inner city girls of color adolescents, MCG affords these girls an opportunity to connect on a socio-cultural level. This experience is further enriched by incorporating a culturally, relevant, pedagogical approach that is sensitive to those cultural nuances that exist with girls of color thus allowing MCG to better “connect” with the girls.
Thomas et al., (2008) research supports youth development programs that are culturally relevant by being sensitive to ethnic identity, awareness to racism, collectivism, and liberatory youth activism can be a catalyst through which resiliency is cultivated in adolescents by helping them to develop psychological, behavioral, and social competence to resist adversity and preparing them for environmental and psychosocial stressors.

According to Masari (2011), students that benefit from intentional social and emotional stands out in that they have the ability to empathize, solve problems, exhibit grit and resiliency in adversity, communicate more effectively, set and achieve goals and overall make get better grades and do better on standardized test compared to their peers that have not benefited from social and emotional learning.

With this in mind, Miss Congeniality Girls represents the face of the rising “lotus flower” whose congenial spirits, personalities, traits and behaviors have not blossomed and still trying to rise above the muddy stream just like the “lotus flower”. MCG’s mission is to emerge these flowers to “rise above” so that they become budding flowers and spread their precious and vibrant petals that will add beauty and balance for themselves and the world.

We wanted our program to be different and a game changer to what a more common or traditional social and emotional programs offer. Therefore, in addition to social and emotional learning, we added etiquette comportment and soft skill refinement, yoga and mindfulness awareness, nutritional culinary and financial literacy via social entrepreneurship. We believe by integrating these elements with social and emotional learning as the premise, the girls will have the tools needed to be better socially and emotionally balanced for themselves and the world.

Realizing that using current trends to connect with children is paramount, Miss Congeniality Girls has embraced the phrase “keep calm”, modeled after the iconic catchphrase “stay calm”. The rationale for
adopting the “keep calm” theory is to remind girls to calmly think and react in everyday life’s moments. As a result, we created a full line of “Stay Calm” services, programs, and products.

Stay Calm and Stride On is suggested as Phase I in the Miss Congeniality Girls Stay Calm Series and focuses on social and emotional learning. Girls learn to perceive and manage their emotions, learn empathy and social awareness and acceptance, responsible decision making, delay gratification, and develop grit and self-esteem/efficacy, and relationship skills.

This program is especially beneficial for girls who are relational aggressive (bullying and "mean girl" syndrome), exhibit low self-esteem and self-efficacy, anxious, disruptive, exhibit overwhelming emotions and lack academic motivation. Many researchers support the notion that effective mastery of social and emotional competencies is associated with greater well-being and better school performance whereas the failure to achieve competence in these areas can lead to a variety of personal, social, and academic difficulties (Durlak, Weissberg, Dymnicki, Taylor, Schellinger, 2011).

Stay Calm and Be Mindful is suggested as Phase II in the Miss Congeniality Girls Stay Calm Series. With yoga as a catalyst, Miss Congeniality Girls calming and mindfulness techniques are explored and applied in this program; as they learn to stay calm and respond to situations as opposed to react to them. This innovative program reinforces social and emotional learning by helping the girls to center and connect the body and mind for maximum balance and harmony; it gives them a deeper sense of awareness, inner peace and taps into their creative abilities.

Research supports yoga and mindfulness in urban schools to be a factor to release stress associated with urban settings and transform education. Mendelson, et al., 2010 postulate that
urban schools are confronted with difficult challenges such as teacher attrition and mobility, student behavior problems, overall all poor academic outcomes. Menelson et al., goes on to say:

Mindfulness based programs are one potentially promising approach to help buffer effects of chronic stress exposure and improve the interpersonal learning environments in urban schools serving disadvantaged youth. The few research studies on mindfulness-based programs targeting urban youth have found positive effects on hostility, interpersonal relationships, school achievement and physical health as well as emotion-regulatory outcomes (p. 2).

Stay Calm and Cook Healthy is suggested as Phase III in the Miss Congeniality Girls Stay Calm Series; it is another step as they start to become balanced and complete. Yoga and healthy cooking choices maximize their potential, for ultimate wellness. This puts them on track for a life-long health and wellness habit.

This is a hands-on cooking class that fosters cultural diversity, healthy cooking choices, dining etiquette and an overall appreciation for culinary. Opportunities for parents to co-cook with the students are encouraged to strengthen family involvement, engagement, and bonding. The curriculum supports interdisciplinary learning in literacy, math, geography, music, art, and nutrition; while gaining a deeper understanding of world diversity. Stay Calm and Cook Healthy includes a variety of culinary themes, each fashioned so that the girls will experience a culturally and socially relevant experience, complete with our yoga and mindfulness awareness component.

Social and emotional learning is supported as students learn to become more socially-aware about cultural and global etiquette, dining and cuisine. They learn to strengthen healthy relationships with family, co-chefs and tapping into the art of cuisine to build relationships. They learn to make responsible decisions as it relates healthy food choices and understanding the connections in eating healthy and being well and complete. They learn to be in tune with self to
know and be aware of emotions that triggers unhealthy eating disorders and patterns such as binge and stress eating and how to manage them.

The idea students become more socially aware about themselves and others throughout the social interaction and exposure of food is supported in Mann’s (2008) dissertation. Mann asserts that using IV in the Miss Congeniality Girls Stay Calm Series; it is the last step to polish and have their petals bloom as we send them off into the world.

Social and Emotional Well-Being is just the beginning of being a Miss Congeniality Girl. world cuisine cooking classes removes layers of intolerance while contributing to one’s cultural background. Bayless (2004) states:

"the soul of a culture is revealed in its flavor. When you have the opportunity to share these flavors with the folks who created them, there's potential for real understanding" (p. 157). Stay Calm and Dazzle our Etiquette Comportment and soft skill refinement series and is suggested as Phase. Once you know how to perceive and manage your emotions, make responsible choices, build healthy relationships and respect and care for others, now what? Why empower them with inner strength and they do not know how to properly display it to the world? Those emotional intelligence skills need to be transformed into etiquette protocol (social graces) and soft-skills refinement. This is as simple as saying "please" and "thank you". These skills are not only pertinent to display in public but they are indispensable to compete in a global society. This etiquette and soft-skill decorum series is critical when it comes to daily discourse and will give Miss Congeniality Girls the competing edge.

There is a plethora of research that argue that social and business etiquette and soft skills are pertinent for the 21\textsuperscript{st} century and puts students at the forefront to compete in a global market. The National Business Education Association (NBEA) stated that the shortage of skills confronting today’s dynamic workforce goes beyond academic and hands-on occupational skills
(Mitchell, Skinner, & White 2010). They go on to say that found that soft skills are so important that employers identify them as “the number one differentiator” for job applicants in all types of industries.

Our Stay Calm and Innovate program aims to teach children about world issues, and how they can make a difference. This program is the last phase of the series, giving the students an opportunity for application, from the other programs, by empowering them to become social entrepreneurs, making a difference for themselves and the world.

The "Stay Calm and Innovate" Curriculum requires the students to identify real social issues, develop a business to either directly or indirectly address it, and then partner with a local organization to donate a portion of the proceeds. What better way to instill social and emotional competencies, such as empathy and responsible decision making. The students learn what it is like to become a global citizen, by instilling values of financial responsibility, personal initiative, global awareness, and giving back. Philanthropic and Social Awareness skills are instilled, cultivated, and applied in this engaging and innovative series. This unique curriculum allows the students to be creative and use ingenuity to solve real life issues.

Researchers postulate that one of the main distinguishing factors of traditional entrepreneurs and social entrepreneurs is “innovation”. Researchers Shaw and Carter( 2007) states the following:

Social entrepreneurs identify under-utilized resources – people, buildings, equipment, and find ways of putting them to use to satisfy unmet social needs. They innovate new welfare services and new ways of delivering existing services (p. 422).

Miss Congeniality Girls offers several products, which are incorporated in the programs that support emotional literacy and are culturally relevant. These products assist girls with empathy, and knowing and managing emotions, and expressing feelings appropriately as an option to relational aggressive behavior and language.
Intrinsic motivation is a direct correlate in literacy and learning. Using high quality, authentic images on our products builds self-esteem and have the power for the girls to transform their vision of themselves and their culture and therefore provide additional opportunities for intrinsic motivation. McClellan and Fields (2004) speaks on the importance of authenticity, when it comes to images and context, in children’s literature. They posit that the curriculum used in our schools will be more effective and engaging when the experience of African-American children is reflected in the materials.

Additionally, when it is antithetic, the use of stereotypical images and text are eliminated. With this in mind, Miss Congeniality Girls products embrace today’s girl of color with images, circumstances, and popular expressions that are culturally relevant, and yet relatable, for this generation of savvy girls. Depicting images that are free of stereotypes and misrepresentations is further supported in McClellan and Fields (2004) suggested questions to reflect upon when determining the authenticity of African-American literacy products to teach literacy. Two of the criteria to ponder are: 1). Do the books actually depict the real experiences of African-Americans or are the stories only about European Americans with the characters colored black? 2). Are the illustrations subtly stereotypical? For example, the drawings of African-American children should depict recognizable unique individuals and who all have the same stereotypical Negroid features.

Journal Writing and Emotional Literacy

Journal Writing is used for many reasons, such as to gather, process, and organize thoughts. The self-awareness reflection journals used in the Miss Congeniality Girls program was used to not only gather, process, and organize thoughts, but as a means to have cathartic release. In the
Stay Calm and Stride on program, the SEL curriculum, the girls used the journal before, during, and after lessons. They journals are visually stimulating, depicting authentic girls of color and incorporate bright colors that research shows girls are typically drawn. The journals are fashioned in such a way to allow the girls to become self-aware by capturing and connecting with the present moment’s thoughts, feelings, challenges, ideas, fears, passions, strengths, confidence and values through writing. Wood (2014) describes gives states:

Self-reflection can be described as an ongoing process of regular, deliberate investigation into issues that arise from experience. Self-reflection is ongoing and the purpose is to explore the inner motivations, attitudes, beliefs or assumptions in order to increase self-knowledge and make appropriate changes for the future. Honest self-reflection leads to self-improvement, which enhances both professional and personal life (p. 59).

Furthermore, Stevens & Coopers (2009) research on Bob Kegans Constructive Developmental Theory, asserts:

People (adults) construct reality by making meaning of their experience. He argues that cognition and emotion are inextricably tied to each other and when there is developmental change, there is tension and frustration trying to balance subject and objects, and self and others, to name a few. Since his theory ties individuals to being social beings, it the balancing of cognition and emotion which ties us to “self”. Journal writing is a strategy to assist individuals in the balancing act of identifying these two parts as well as seeking balance and handling the tensions inherent in development (p. 35).

Providing the girls with opportunities to reflect in their journals before, during, and after curriculum and yoga lessons offered a powerful a lens to look within, thus enhancing self-awareness. Wood (2014) contends that reflection can take place before, during or after action. With reflection before the event, options are considered and plans are made; during the event, minor or major adjustments are continuously made in relation to what is perceived; and afterwards there is a process of looking back and learning from the event.
Conclusion

In Short, there is a plethora of research that supports the need for social and emotionally literacy learning and educators are responding to the call. However, if we are going to reach all children with their social and emotional literacy learning, then analytic culturally responsive curriculum and pedagogy must be considered. We must recognize that gender, race, and class level play a major role when selecting strategies, curriculum, and pedagogy to reach adolescents.

When making the choice to teach social and emotional literacy learning for girls of color, keep in mind the following: 1). Curriculum that considers correct cultural context and ethnic identity, 2). Images and illustrations that are authentic and free from stereotypes and depict recognizable unique individuals, 3). Collectivism, and 4). Culturally relevant reflection journals to enhance self-awareness and self-pride.

Miss Congeniality Girls gives girls an opportunity to explore what it means to transition from a girl to a confident young woman. Through yoga, mindfulness awareness teaching, discussions and themed activities, Miss Congeniality Girls acquire the confidence, poise, resiliency and introspection on the journey to becoming emotionally and socially well-balanced and to becoming a Miss Congeniality Girl.
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Abstract: This doctoral dissertation summary explores how multilingual middle school students make connections with academic language and content through affordances for Language Awareness. Affordances for Language Awareness represent possibilities available to students for accessing relevant information to make meaning of language within a classroom. As an ecologically inspired account, the goals of this study explored how students construct meaning, what resources they draw on, and what external policy measures influence language choices in the classroom.

This study is an investigation of language learning in a California middle school. The policy context, when the study was initiated, had been described as a “perfect storm,” (Gándara & Baca, 2008) in which students deemed to be English learners experienced limited opportunities to learn. Due to a convergence of restrictive policy initiatives, schools had become places where children could not access their multiple language resources for learning. California’s Proposition 227, which passed in 1998, had eliminated bilingual education as an instructional option available to the vast majority of California’s school-age population. Plus features of the federal government’s “No Child Left Behind” (NCLB), enacted in 2001, had further constrained children’s opportunities to use their native languages in instructional settings.
The social environment of California’s rich multilingual and multicultural communities seemed at odds with the language education policies which were all aimed to enforce a mono-lingual policy context (Gándara & Baca, 2008).

As an educational linguist and researcher, I sought to investigate an apparent dichotomy: Given that children are using and developing a range of language resources within their communities to make meaning outside of schooling, what is happening within the school context where they are limited to using one language: English? How are these multilingual children making meaningful connections with language when restricted by the monolingual climate in California schools? To examine these questions, I turned to the work of the late Leo van Lier (1944-2012) whose sociocultural approach to language awareness provides a lens for understanding the opportunities available to children for language learning.

**Why language awareness?**

Van Lier’s (1995) book, *Introducing Language Awareness*, built on a movement, which had begun in the United Kingdom in the 1960s and 1970s. The Language Awareness movement sought to address a growing concern among linguists and teachers (both foreign and English language) that students need to engage more deeply in language and develop “…a conscious awareness of how language is used in human life” (Svalberg, 2007, p. 278). The language awareness movement centered on three principle concerns: 1. To engage students in a conversation about how language use is symbolic in power relationships and class conflict in society. 2. To engage students in literacy as a means of navigating social structures. 3. To engage students in language study as a means of developing cross-cultural communication (Svalberg, 2007). Since that time, language awareness as a theoretical construct has taken many directions
influencing both form focused language instruction, and cognitivist perspectives on language learning in the 1990s. However, van Lier, drawing on Bronfenbrenner’s (1979) ecological theory of human development, presented a sociocultural perspective, considering the various language ecologies, which might provide affordances for language awareness. Recognizing that making connections with language occurs through language activity or “action”, he argued that cognitivist views of language awareness had “sidestep[ed] the basic question of how language perception develops, how it intertwines with action, and how it is internalized” (van Lier, 2007, p. 55). In van Lier’s ecological account, the aim is to consider interaction in its totality; the researcher focuses upon the actions of emerging learning, “the location of learning opportunities, the pedagogical value of various interactional contexts, the processes and the effectiveness of the pedagogical strategies” (2000, p. 250). van Lier’s ecological perspective on language learning calls for a necessarily situated and socio-cultural account of language awareness.

The current study aims to operationalize affordances for language awareness, i.e. affordances or possibilities available to students for accessing relevant information to make meaning of language within a classroom. This lens allows me to examine how students use and learn language in classroom settings. At the same time, this ecologically inspired account also examines how the macro level language education policy contexts, within which a community and school operate, influence everyday micro level interaction within the language classroom. The research questions in this study focus on how affordances for language awareness are constructed within the school context by multi-competent first and second language users. A second goal of this study is to understand what factors mediate potential affordances for language awareness. A third goal of this study is to consider how the broader ecology of the school, district, state, and federal government language education policy influence classroom
language learning. To achieve these goals, I elected to study a middle school English Language Arts classroom, where eighth grade students, in 2010, had experienced the totality of their education within a policy context of both California’s Proposition 227 and the Federal Government’s No Child Left Behind.

**Context and design of the study**

The site of this study was a California middle school where nearly 80% of the students receive Free/Reduced Price Meals (a general marker for the relative poverty within a school). The demographic make-up of the school in 2010 was roughly 70% Hispanic or Latino, fewer than 10% African American and Caucasian respectively, and the remaining 10% of the student population comprised students of Filipino, Native Hawaiian, Pacific Islander and Asian or mixed race descent. The multilingual community within which the school serves is reflected in the designation of 35% of the students identified as English language learners, and 33% as Re-designated Fully English proficient (Ed-Data, 2013). Thus roughly 68% of the students appear to have some exposure to languages other than English.

The study concentrates on classroom language exchanges in a transitional English Language Arts class where 2/3 of the students were designated English Learners (EL) according to the California English Language Test (CELT) (California Department of Education, 2013). The make-up of the other 1/3 of the class was mostly Re-designated Fully English Proficient (RFEP), two identified as Initially English Proficient (IFEP), and two English Only (EO) (Ed-Data, 2013). This class was particularly interesting to study because success in the transitional English class would grant students the opportunity to take core English in high school, as well as access to college preparation courses (California State University, 2013). Secondly, the
instructor in the study who has a Masters degree in Teaching English to Speakers of Other Languages (TESOL) and speaks several languages, drew on her diverse language resources and presented unique language awareness herself (Gage-Serio, 2014).

To examine the language exchanges constituting affordances for language awareness, I employed a qualitative design, collecting data in two phases over a six-month period. In the first phase, I spent approximately 3 months drawing on ethnographic methods, recording language exchanges during whole class dialogs. In the second phase, I narrowed my focus examining the practices of six case study students for two months. The unit of analysis in this study is Language Awareness Related Episodes (LAREs), defined as episodes of conversational exchanges containing ideas contributing to students’ language awareness in the construction of meaning. The LAREs were inductively coded, revealing four emerging categories. Evaluation of the contexts within which LAREs occur provide insights which address the research questions.

**Finding affordances for language awareness**

The first and most frequently occurring LARE category is metalinguistic awareness, or talk related to polysemy, morphology, and cross-linguistic awareness. In these LARE exchanges, the students and their teacher discussed multiple meanings in language. Interestingly, LAREs dealing with polysemy often constituted meanings, which students may have erroneously misapplied, thus creating confusion. For instance, when the instructor discussed the need for students to visit the “guidance counselor” to identify classes for high school, a student asked, “I thought a counselor helps you with your problems.” This classroom exchange created an affordance for metalinguistic awareness in which the polysemic meaning of “counselor” was extended and refined for the potential benefit of the entire class. Furthermore, several examples
drew from morphology where students and their teacher made comparisons between English and Latinate morphemes. In this way, the instructor frequently wove cross-linguistic comparisons between English and Spanish into the conversations encouraging students to, “flex their bilingual biceps”, by drawing on their multiple language resources (Gage-Serio, 2014). In particular, one of the case study students, who was a more recent immigrant, often distinguished his ability to make cross-linguistic connections, and in doing so, made rich contributions to class discussions.

The second LARE category is affordances for anaphoric awareness or co-constructed “flashbacks” connecting meaning to a prior experience. Anaphoric reference relies on shared experience to enter into an affordance for language awareness (van Lier, 2004). Affordances for anaphoric awareness distinguish a specific type of scaffolding in which a connection to meaning is made by drawing on shared experiences. In particular, one example from the data centered around a discussion of the school’s mural as an example of a “façade.” Affordances for anaphoric awareness created a bridge between the class’s shared knowledge of a school mural and a new term “façade within the text.

The third LARE category is affordances for proleptic awareness. Affordances for proleptic awareness occurred within scaffolding which differed from affordances for analeptic awareness. Affordances for proleptic awareness demanded greater intellectual reach than simply a shared experience. In these instances, interlocutors co-constructed opportunities for understanding inference by inviting the learners to “stepping into” shared meaning space (van Lier, 2004). Affordances for proleptic awareness often occurred as hints in meaning or small puzzles presented by the instructor and guessed at by the students. For example, in analyzing highly metaphoric text language such as, *born on the wind*, the instructor provided a paraphrase, “…you can barely hear it, it was…”, to which a student responded with a synonym, “soft”.

Affordances for proleptic awareness were opportunities in which students with the instructor drew on analogy to interpret inferences.

Finally, the forth LARE category is affordances for awareness of register shift in which students shifted register to achieve different norms of language use for different audiences and purposes. Affordances for awareness of register shift appeared in two contexts in the data: One was a more formulaic shift in register through the production of sentence frame exercises of “academic language” as recommended by an outside consultant. These activities were implemented as required for English Language Development within the district; yet, both the students and instructor found the exercises tedious. The instructor complained that the exercises were thematically unrelated to the grade level anthology readings adopted by the State, and as such, did not engage students’ interest. While the instructor complied with the district demand to incorporate the consultant’s activities into her class, she did so by leveraging student buy-in through the promise of reading novels thematically related to the text anthologies. In particular, the instructor had developed a rich unit which began with the play, *The Secret Annex*, and extended to a study of World War II and its impact on Europe. Students’ interest in exploring themes related to World War II created the buy-in to work through the tedious academic language sentence frame manipulation required by the district.

Another example of affordances for awareness of register shift occurred when students would interject opinions, taking on both the gestural posture and language used by the instructor. In essence, students would imitate the instructor—although not in mockery, but by appropriating a stance of authority when putting forth a conjecture. For example, a student offered, “I can infer that she was a happy lady” said with lowered voiced and authoritative stance. This affordance
for awareness of register shift occurred more frequently with one of the case study students who had been with the instructor for two consecutive years.

In total, findings of this study are intriguing: First, the LAREs episodes reveal that both students AND teachers are resources for affordances for language awareness. Students contribute to co-constructing meaning for themselves and their peers. An essential role of the instructor is in listening to students understanding and using a variety of mediating factors to both contextualize and connecting meaning to language practices. Secondly, students’ heritage languages are respected and heritage language knowledge is one vehicle around which students engage in affordances for language awareness. Both the instructor’s willingness to listen to students and her own knowledge of and respect for language diversity in the classroom contribute to affordances for language awareness. Finally, in this middle school classroom narrative text is a resource in exploring meaning in context.

Connections with language and areas of future research

The analysis presented in this study showed that affordances for language awareness were bidirectional semiotic activities; both students and their instructor contributed connections with classroom language. There were several mediating factors connecting meaning to language: 1. The students’ own contributions or responses to their experiences, while engaged in the process of reading text, mediated connections with language. 2. The instructor’s purposeful extension of these experiences, by adding thematically related realia and inviting feedback from the students, also mediated connections with language. 3. The instructor’s commitment to listening to students’ responses, musings, and other feedback was essential in her ability to
formulate the responses to students’ needs. For example, she asked questions which revealed
students’ metalinguistic and cross-linguistic awareness; she asked questions relating information
to commonly understood or analeptic discourse; and she paused or asked questions which
allowed students to fill in the space to determine their understanding of implied or proleptic
awareness.

Although this study provided insights into students’ connections with language, it also
had limitations. As a qualitative study, the findings provide insights but cannot be extended to
other classrooms, age groups, or teachers. While qualitative research does not have the
explanatory power to examine and compare large data sets or make large generalizations, it does
provide the researcher the tools to look more deeply at the social contexts of generalizations
made by large quantitative data sets. As California schools have become increasingly segregated
(Noguchi, 2014), the ideological underpinnings of policies like NCLB and Prop 227 which
stigmatize the use of languages other than English, are not without impact. Teachers, such as the
one in the study, who possess multilingual abilities to facilitate students’ connections with
language, must identify ways to resist the discriminatory ideological message of English-only
policies. It is noteworthy to consider that the ideological underpinnings of NCLB had been in
effect for 7 years prior to this study (and throughout the school experience of these 8th graders).
This teacher sought to defend and encourage students’ multilingual abilities; however, the impact
of her effort in contrast to the larger policy message is beyond the scope of this study.

In closing, this study presents a novel approach to the study of classroom language
learning and suggests many other areas for future investigation. What other affordances for
language awareness might be identified beyond those identified in this study? What do
affordances for language awareness look like at other developmental levels?
affordances for language awareness look like in elementary, secondary or post-secondary schools? Would more cross-linguistic learning environments, such as immersion schools, provide greater access for affordances for language awareness to occur?

In closing, this portrait provides some insights around what an affordance for language awareness might look like within the context of a language classroom and some of the factors which contribute to affordances for Language Awareness so that others may draw on this work.


Parental Perceptions of Chromosomal Microarray Genetic Testing for Autism Spectrum Disorders: Cultural Views

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ABSTRACT:
Chromosomal Microarray Testing is increasingly utilized to detect copy number variants among children and families affected with autism spectrum disorders and a few other developmental anomalies. However, CMA is controversial due to the test characteristics, for instance, the ambiguous test findings, the uncertain clinical implications and the inability to test severity level. There is an urgent need of providing pre-test counseling and education to parents of children with ASD, to help parents of children with ASD to make informed decisions about taking their children to undergo CMA. This study contributes to the understanding of the ELSI aspects and cultural influences towards adoption of genetic testing for ASD in clinical practice. Genetic education can help ensure more informed decision making related to autism genetic testing and reproductive decision making.

Individual, face-to-face interviews were used to identify parental perceptions of CMA genetic testing. Participants (n=45) were parents of children with at least one child diagnosed with ASD who resided in North Eastern part of North Carolina. Participants represented both English and Hispanic residents. Results were generated across five major themes. Most parents were not aware of the CMA test however the majority postulated positive attitudes toward it. Parents’ interest in the test can be attributed to the following reasons: early intervention, better preparation for having another affected child and help with autism research. Parents perceived barriers include: cost, confidentiality and no perceived value. Results will be shared.
Title: Multigenre Literacy Autobiography & Multimodal Self-Portrait: The role of art integration in transforming complex and critical thinking in secondary English/Language Arts classrooms

Topic area/s: Secondary Education and Teacher Education

Presentation format: Workshop

Description: Participants in this workshop session will explore the power of integrating art into English/language arts curriculum by creating their own multigenre and multimodal artifacts. Participants will write about their personal literacy practices and create an artistic representation of those practices. The three presenters will share how the instructional engagements were implemented in their individual high school and university classrooms, and how the engagements influenced teacher and adolescent literacy identity transformation, and complex/critical thinking development.

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Multigenre Literacy Autobiography & Multimodal Self-Portrait: 
The role of art integration in transforming complex and critical thinking in secondary 
English/Language Arts classrooms

“The symbolic systems that individuals [use] in constructing meaning [are] systems that 
were already in place, already ‘there,’ deeply entrenched in culture and language. They 
constitute a very special kind of communal tool kit whose tools, once used, made the user 
a reflection of the community” (Bruner, 1990, p. 11).

PURPOSE

The purpose of this workshop session is to involve participants in multigenre and 
multimodal instructional engagements (Short, Harste, & Burke, 1996) that open space for 
an autobiographical exploration of literacy [reading, writing, speaking, visually 
representing] practices (Moje, 2000) paired with a multimodal [artistic and symbolic] 
representation of those practices. Writing and art materials will be provided by the 
presenters. The writing and creating portion of the session will be followed by 
participants sharing their autobiographies and self-portraits, and the three presenters 
sharing Presenters will provide participants with handouts of the instructional 
engagements, illustrating the differences in the implementation in the three classrooms.

Art, perceived as a cultural/social artifact for meaning making and communication, is 
also viewed as a mediating tool (Vygotsky, 1978) for literacy identity and critical 
thinking transformation, and for constructing learning communities of practice that 
establish and nurture equitable access to literacy development. Multimodal texts, or 
multiple forms of representation, are symbolic systems (Bruner, 1990) and cultural 
artifacts that are produced by a society to make sense of and illustrate the world. The 
creation of multigenre and multimodal texts in secondary and university 
English/language arts classrooms provide a canvas to extend understandings of the 
academic language/topic under study, and are crucial aspects of learning in the 21st 
century. When used in learning spaces organized and orchestrated to support literacy 
identity and critical thinking transformation, this power of creation can guide an 
analytical deconstruction of a subject providing critical insight into a view of self, 
developing and supporting complex thinking, literacy development, and a rich analysis of 
academic content that would not exist in the absence of such opportunities. In essence, 
autobiographical and artistic engagements emerge as influential for both teacher and 
adolescent literacy identity transformation, and for complex and critical thinking 
development.

Critical thinking is a concept widely used to describe how students should learn to think, 
as well as an instructional goal throughout a student’s educational journey. However, “if 
we are charged with teaching students to think critically, then we need to clarify the 
concept; otherwise we will be shooting arrows at a target that we cannot see” (Mulnix, 
2013, p. 464). Moreover, critical thinking encourages important dialogues within social
and cultural learning spaces, and is grounded in metacognition, or “making thinking visible...to help people learn about the cognitive processes that underlie their own abilities to learn and solve problems” (Bransford, Derry, Berliner, Hammerness, & Beckett, 2005, p. 57).

The research project described here begins with recognizing critical thinking as a concept with specific critical attributes that serve as both qualifiers of its construction, and a process adolescents and secondary teachers must traverse on the path of literacy development, and the role art plays when designing and facilitating critical thinking engagements in two high school and one university English/language arts classrooms. The parameters of our researched focused on: (1) the role of multigenre composition and artistic representation as a symbolic system for representing “authoring” (meaning making) practices and the influences of those engagements on complex academic understandings, (2) an exploration of critical thinking as a construct, and the cognitive process of constructing critical thinking consciously, and (3) an exploration of two secondary ELA teachers’ and adolescents’ understandings/definitions of critical thinking as a construct with specific attributes and processes, and the transformation of those understandings.

The research questions for our inquiry of critical thinking consciousness and the role of art for literacy development include:

1. What are ELA secondary teachers’ and adolescents’ understandings of the concept critical thinking, its critical components and the process of critical thinking before, during and after literacy instruction designed to support and guide critical thinking consciousness and transformation?
2. How does the specific design and implementation of a multigenre composition and a multimodal artistic representation support adolescents’ transforming critical thinking consciousness, confidence and literacy development?

METHODS AND/OR TECHNIQUES

Formative experiment methodology (Reinking & Bradley, 2008) was carefully selected to guide the collaboration between a university professor and two secondary English/language arts classroom teachers as it is “uniquely suited to the ultimate goals of education research, particularly to reducing the gap between research and practice” (p. 1), and is “aimed at discovering workable instruction and relevant theory in the real world” (p. 8). The theory to practice attribute of formative experiment methods are powerfully supported by the two classroom teachers who are partners (not participants or agents) in the research, and are honored as “valued informants and team members” (p. 26). Retrospective analysis utilizing the constant comparative method (Bogdan & Biklen, 2007) provides the framework for the researchers to draw conclusions from the various data sources and make practical recommendations.
DATA SOURCES

The data sources are designed to “produce rich explanatory descriptions that link interdependent variables in an authentic educational context to pedagogical outcomes in ways that inform theory” (Reinking & Bradley, 2008, p. 46). The sources include:

- Written pre- and post-assessments [student and teacher] definitions of critical thinking as a concept, and the process and critical attributes of critical thinking;
- Metacognitive reflection writing [student and teacher] exploring the role of multigenre composition and multimodal artistic engagements;
- Interviews of each classroom teacher conducted by university professor regarding implementation of art integration and critical thinking instruction;
- Field notes during classroom observations, and debriefing meetings with the teachers.

PERSPECTIVES OR THEORETICAL FRAMEWORK

Eisner (2002) argues, “Work in the arts…is a way of creating our lives by expanding our consciousness, shaping our dispositions, satisfying our quest for meaning, establishing contact with others, and sharing a culture” (p. 3). Pedagogical practices incorporating art as a mediating tool (Vygotsky, 1978) to establish and build communities of practice (Lave & Wenger, 1991) can directly guide and extend the thinking of cultural and social membership—powerfully supporting the transformation of critically literate people.

Further, Sanders and Albers (2010) posit that “within multimodality inherently lies a critical perspective enacted when examining the textmaker’s choices regarding the materials used, how those materials are framed and designed and how such decisions are realized and situated within the creator’s beliefs” (p. 9). We assert that literacy instruction that incorporates an art component is a potent opportunity for critical thinking consciousness and transformation (Kress, 2003, 2006), one that powerfully supports the ways teachers (pre- and inservice) and students read the word and the world (Freire & Macedo, 1987).

EDUCATIONAL IMPORTANCE

Langer (2011) asks, “What is knowledge? How do we gain it? How do we teach it?” (p. 1). She answers with the assertion that “knowledge is crafted and honed. It requires an understanding of social and disciplinary conventions surrounding the ideas. What we think about, and the ways we think” (p. 1). More detailed explanations can be discovered when the focus falls on critical thinking as a concept with specific attributes and processes, and is deconstructed, critically analyzed, and studied as a framework for learning in explicit ways and that support literacy development. Explicit and conscious literacy instruction in support of critical thinking, which includes art integration and metacognitive processes can become the norms in educational spaces “in order to help (students) learn about the cognitive processes that underlie their own abilities to learn and solve problems” (Bransford, Derry, Berliner, Hammerness & Beckett, 2005, p. 57).
Gee (2003, 2008) and others (e.g., Dewey, 1934; Eisner, 2002; Kress & van Leeuwen, 2006, 2007) explain that multimodal texts, or multiple forms of representation, are cultural artifacts that are produced by a society to make sense of and illustrate the world. As the learner re-presents her or himself, and/or English/language arts ideas framed in multimodality, new and subtle understandings and complexities emerge. Furthermore, Vygotsky explained, “Art is the social technique of emotion, a tool of society which brings the most intimate and personal aspects of our being into the circle of social life” (as cited in Moran & John-Steiner, 2003, p. 62).

INTEREST/CONNECTION TO THE AUDIENCE

This study strives to make an important contribution to the conversation surrounding critical thinking as more than a concept to be generically used, with metacognition as a critical attribute of that higher order thinking, and the artful instructional strategies and processes in which secondary teachers and adolescents can engage to meet those significant goals. Educators must strive to provide students with significant and transformative learning opportunities in support of rich classroom spaces that provide authentic and artistic explorations of English/language arts content, and art should be viewed as a powerful tool to support and guide this process. We assert that the process of multigenre composition and multimodal artistic creation are instrumental for developing and supporting complex thinking, literacy development, and a rich analysis of self and academic content that would not exist in the absence of such opportunities (Eisner, 2002; Moje, 2000).

REFERENCES

Description: This mixed methods study was designed to determine what factors characterize adequate support and preparation for Master’s level students for both native English speakers and second-language learners. The study measured perceptions of graduate level success in the areas of support, study and research skills, undergraduate preparation, and the role of mentoring and advising. The purpose of this research was to strengthen Master’s level programs in the social sciences to increase overall student success.
Setting the Stage for Master’s Level Success

By Donna Roberts, Ed.D.,
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_Donna Roberts is the Department Chair of Graduate Studies at Humphreys College in Stockton, California. She has spent several years working as an educator and administrator in the P-12 system as well as in higher education. She is dedicated to supporting student success for all learners, including second-language learners. The following text is a summary of her 2015 dissertation. It was defended at CSU Stanislaus in April 2015._

**Introduction**

Comprehensive reading, writing, research, and study skills play a critical role in a graduate student’s success and ability to contribute to a field of study effectively. How well are students being prepared to transition from baccalaureate to Master’s level programs? _Summer Bridge_ programs are often found in place and well supported in colleges to transition high school students successfully to the college world. There are also often steps put in place by a four year university to support an incoming transfer student. However, it is rare to see a program in place that bridges baccalaureate students to graduate studies. Many assume that after four or more years of study for a Bachelor’s degree, a student is fully prepared and skilled to handle a graduate world filled with research, time-management, and the ability to be an analytic thinker as well as a proficient writer.

The landscape of graduate education continues to become increasingly diverse. This creates a challenge for instructors to support a diverse population of students effectively in graduate courses that maximize student performance and contribute towards fostering equitable learning experiences for each student. For instance, Hoffer, et.al (2003) noted that first-generation graduate students are more likely to be female, individuals of color, report debt upon degree completion, and have attended a community college at some point during their academic career. This is a very different type of demographic than of graduate students decades ago. Furthermore, ethnic diversity is also increasing in graduate education. Research indicated that the number of first-generation Hispanic graduate level students is growing; however, Hispanic
students earned only 5.9% of the total 625,023 master’s degrees awarded in the United States in the academic year 2007-2008 (U.S. Department of Education, 2010). Are needs being met for the full range of learners including those who are native English speakers and those that are second-language learners at the Master’s level?

The world of baccalaureate studies and graduate studies are very different from one another. At the master’s level, student are expected to build relationships with their professors, actively engage in and contribute to critical discussion, fieldwork, and research and to fluently be independent learners, presenters, and proficient writers. Cohen and Brawer (2013) noted that this compounds even further for a second language learner whose barriers can include but are not limited to language issues, not having a network of support within or outside the college, and/or being a first generation college student unsure of how to navigate the system.

Too often, there is no mentoring system in place to reduce these obstacles. These gaps need to be closed. Support mechanisms need to be put in place to ensure academic success and to build confidence for all students. The purpose of this Mixed Methods study was to determine what factors characterize adequate preparation and support for success in Master’s level programs for all students, in an effort to expand their educational experiences and achieve success in graduate-level education.

**Definition of Terms**

For purposes of this article, the following terms are defined:

*Graduate level success.* The fulfillment of requirements that leads to a Master’s degree in the field of education or the social sciences.

*Perceived Graduate-level success.* Student perceptions of a myriad of factors including support, mentoring, levels of confidence, and feelings of connectedness within a graduate-level experience.

*Mentoring.* The act of a person taking on the role of coaching, giving advice, or serving as a guide to someone who is less experienced.

*Second-Language Learner.* A Master’s level student who receives instruction in English but is still in the process of fine-tuning his or her reading, writing, speaking, listening, and/or other
communication skills in English. He or she may or may not be fluent in reading, writing, and speaking in the primary language.

**Research Questions**

The following research question emerged as a result of reflection on the research: What factors characterize adequate preparation and support for success in Master’s level programs?

1a. What is the impact of mentoring on native English speakers and second-language learners regarding perceptions of confidence and academic performance in Master’s level programs?

1b. How do second-language learner (EL) experiences compare with those of native speakers in Master’s level programs?

**Transformational Learning Framework**

The framework of transformational learning serves as a foundation to this study. Transformative learning is defined as “the process by which people examine problematic frames of reference to make them more inclusive, discriminating, open, reflective, and emotionally able to change” (Cranton, 2006, p. 36). These experiences are the keys to fostering social justice, equity, and change in the educational system. Only through collaborative dialogue and critical reflection, in the setting of problem-posed learning, can one come to put meaning to his or her words through this organic process. This can only happen through dialogue, and without this present, there is no communication or education. For dialogue, Freire (2012) noted that there must be love, humility, intense faith in humankind, hope, and critical thinking. It is essential that an instructor not present his or her perceptions of reality and instead let students investigate their own “thematic universe--the complex of their generative themes--inaugurates the dialogues of education as the practice of freedom” (Freire, 2012, p. 96).

Mezirow (1997) noted, “transformative learning is the process of effecting change in a frame of reference. Adults have acquired a coherent body of experience- associations, concepts, values, feelings, conditioned responses- frames of references that define their life world” (p. 5). Technical knowledge in relation to the Master’s level experience occurs when students learn how to conduct and read graduate-level writing and research as well as understand roles, expectations,
and workload. This includes the technical skills that are needed to be a highly qualified and successful practitioner in one’s field. Students often feel challenged during this period of learning and question if this is a goal in their lives that can be achieved.

Practical or communicative knowledge is constructivist-based and focuses in on the deep understanding and meaning to one’s pursuit. In relation to the graduate level experience, students come to terms with why they need to perform at such a high level meeting rigorous demands and expectations. Time management and study skills often strengthen during this phase and content reading for understanding is pursued. It becomes a time where students often thrive on group consensus and shared interpretation (Cranton, 2006). She also noted that “leadership training, interpersonal skills, teamwork, conflict resolution, communication skills, and the new emphasis on emotional intelligence illustrate the importance of communicative learning in these settings” (Cranton, 2006, p. 12).

Finally, emancipatory learning allows Master’s level students to do something with their learning such as applied project or thesis. There is an emerging openness to ideas as well as the desire to help others through one’s field of study. Students are acting in a different way because they see themselves in a different way from when they started the program experience. They are now contributing to their field, engaging in self-reflection, self-determination, and personal growth. Habermas’s idea of emancipatory knowledge stated,

The goal of adult education is to help adult learners become more critically reflective, participate more fully and freely in rational discourse and action, and advance developmentally by moving toward meaning perspectives that are more inclusive, discriminating, permeable, and integrative of experience. (1984, p. 224-225)

**Brief Review of the Literature**

Preparing students for proficiency in contributing to educational research as well as academic achievement through carefully articulated preparation and ongoing support can help ensure that a college’s goals of student successful performance are met. Additionally, over the past decade, the number of nonnative English speakers enrolled in higher education continues to climb in all levels of education. In an ever-changing and diverse educational field, including that of higher-education, it is imperative to examine how instructors and institutions can provide continued support in academics as well as from the social-emotional perspective, which ensures the success of all students.
Kuh, Kinzie, Schuh, Whitt, and Associates (2005) noted that based on the Documenting Effective Educational Practice (DEEP) project from the Center for Postsecondary Research at Indiana University, keys to promoting high levels of achievement in all levels of college are fostered by setting high expectations and emphasizing the importance of academic effort. Kuh, et al. (2005) affirmed that:

colleges and universities have demonstrated high rates of student success by emphasizing the following: informing students of high expectations from the beginning, expecting significant time-on-task for writing, reading and class preparation, collaborative learning opportunities, and encouraging student to share the results of their work through various forms of scholarship celebration activities, capstone assignments, and rigorous summative experiences such as a comprehensive examination. (p. 192-193)

Graduate-level instructors are then challenged to develop courses in a manner which excel student performance while fostering deep motivation and engagement.

Recommendations were made for policy and practice reform that included having administrators, instructors, and counselors trained and made aware of the specific needs of first-generation students through professional developments. Using hierarchal regression analysis, Tate, Fouad, Marks, Young, Guzman, and Williams (2014) surveyed 170 low-income, first-generations college students in graduate education with five assessment instruments (Graduate Education Self-Efficacy Scale, Family Influence Scale, Perceptions of Barriers Scale, Coping with Barriers, and Indicators of Intent to Attend Graduate School) which resulted in one sub-construct of graduate school self-efficacy (research self-efficacy) and family influences (family values) to be predictive of students’ pursuit of graduate education. The researchers explained,

When family influence was introduced in the second step, an additional 8% of the variance was accounted for, with a significant change in variance ($p = .30$). A large, statistically significant jump in variance accounted for was found when graduate school self-efficacy was entered in the third step (additional 14% variance explained), where there was significant change in variance ($p = .00$), and the model was significant overall ($p = .00$). (Tate, et. al., p. 9)

As a result, when students’ self-efficacy for conducting graduate-level research increased, so did his or her active pursuit of graduate school.
Sinacore, Park-Saltzman, Mikhail, and Wada (2011) conducted a qualitative study in an effort to document immigrant and second-language learner graduate students’ experiences in higher education and how these influence cultural transitioning and social integration. Data collection resulted in 600 pages of interview data where major and minor themes were determined and peer reviewed. They found that a strong mentor fosters success in graduate programs and indicated the extreme importance that a mentor plays for supporting second-language and immigrant graduate students. When a good mentor could not be found, second-language learner students in the study, including international students, would often rely on colleagues for support. Those who received no mentoring were extremely frustrated with their academic experience. They were found to be academically struggling with how to succeed. The interviews also identified that there was a general lack of supportive individuals on campus to help learn the “unwritten rules.” Therefore, negotiating the university system became the greatest challenge (Sinacore, et al., 2011).

**Sample Population and Methodology**

An Explanatory Sequential Design was utilized which included two phases: (1) a collection of quantitative data using a Qualtrics survey and SPSS analysis; and (2) a second collection of qualitative data using semi-structured interviews and Dedoose software.

This study used convenience sampling and included three institutions that offer Master’s level education including a California State University campus, a University of California campus, and a private college in the Northern Central Valley of California in the fields of education, sociology, and social work.

Over 140 Master’s level students participated in the questionnaire that measured perceptions of master’s level success in the areas of support, study and research skills, levels of preparation from the Bachelor’s Degree work, the role of mentoring and counseling, and overall perceptions of student success. After expert review, the questionnaire was sent using Qualtrics to Master’s level students to measure their perceived levels of preparation and support for success in their current graduate programs. Data were collected for approximately two months and then imported into SPSS for analysis. Table 1 and Table 2 summarize demographic data on the participants who completed the Master’s Level Success questionnaire.

**Table 1**

*Summary of Participant Demographics Regarding Type of Institution, Program, and Units Completed*
Table 2
Summary of Participant Demographics Regarding Gender and Student Workload

The participants for the interview portion of the study included three Master’s level students who were native English speakers and three Master’s level students who were second-language learners. Two participants who completed the questionnaire were selected from each institution in order to provide a representative sample of Master’s level programs in the Central Valley of California. Criterion for selection included: (1) the participant marked the box that indicated he or she was willing to participate in an additional interview regarding perceptions of
graduate level success and (2) contact information was provided. If there were more than two students willing to participate from each institution, then the possible participants were numbered separately by college or university and randomly drawn from a box for the opportunity to interview. These students participated in semi-structured interviews that indicated their perceptions of support and the role of mentoring in their graduate level experiences.

**Quantitative Analysis**

Confirmatory Factor analysis with principal axis factoring was used in this study to find patterns in correlations among the 30 questionnaire items related to adequate preparation and support for success in Master’s level programs. Three key factors resulted. The first factor, The Need for Sustained Support, accounted for 25% of the item variance. The second factor, Importance of Purposeful Advising and Mentoring, contributed an additional 11%. The third factor, Importance of Strong Undergraduate Preparation in Master’s Level Success, contributed an additional 8%. Values for which factor loads were greater than .40 were included in the determination of factors.

A 2 X 5 contingency table was run on each Master’s Level Success Questionnaire item that was a significant contributor according to the Factor Analysis. The chi-square test of independence was used to determine if the level of agreeability (strongly agree, agree, neutral, disagree, and strongly disagree) varied based on whether the Master’s level student was a Native English speaker or second-language learner. The results of the analysis indicated that there was a statistically significant difference in the observed proportions of seven responses based on being a native English speaker or a second-language learner in a Master’s level program in the areas of education, sociology, or social work.

Table 3 displayed the overall means for significant items in the first factor, Need for Sustained Support, were higher for second-language learners at the Master’s level with a range of 3.34 to 3.80 on the following: (1) Having instructors provide more language support with writing (2) Benefiting from more writing support in one’s graduate program, (3) Providing more language support with other language communication skills such as speaking and comprehension, and (4) Benefitting from more research skill support in the program.

In contrast, native English speakers had higher perceptions than second-language learners on overall means for the following significant items in the first factor, The Need for Sustained Support: (1) Perceptions of excellent reading and writing skills and (2) Perceptions of excellent
speaking and communication skills. However, all students had stronger-than-weak perceptions of themselves as proficient readers, writers, and researchers.

Furthermore, the overall mean for the significant item in the third factor, Importance of Strong Undergraduate Preparation in Master’s Level Success, was stronger for native English speakers at the Master’s level on the following: If I do not understand the content in a graduate level course, I seek help from instructors, support centers, or tutors to help me ($M_{\text{NativeEng}} = 4.0$, $M_{\text{ELs}} = 3.58$).

Table 3

Chi-Square Analysis of Master’s Level Success Questionnaire Items that Were Significant in the Factor Analysis

<table>
<thead>
<tr>
<th>Item</th>
<th>$M_{\text{NE}}$</th>
<th>$M_{\text{ELs}}$</th>
<th>$\chi^2$</th>
<th>$p$</th>
<th>CV</th>
</tr>
</thead>
<tbody>
<tr>
<td>I would like my instructors to provide more language support with writing during my graduate program.</td>
<td>2.65</td>
<td>3.34</td>
<td>16.59</td>
<td>.02*</td>
<td>.35</td>
</tr>
<tr>
<td>I would benefit from more writing support in my graduate program.</td>
<td>3.08</td>
<td>3.62</td>
<td>10.97</td>
<td>.03*</td>
<td>.28</td>
</tr>
<tr>
<td>I would like my instructors to provide more language support with other language communication skills such as speaking and comprehension.</td>
<td>2.65</td>
<td>3.34</td>
<td>16.60</td>
<td>&lt; .001**</td>
<td>.35</td>
</tr>
<tr>
<td>I would benefit from more research skill support in my graduate program.</td>
<td>3.31</td>
<td>3.80</td>
<td>13.64</td>
<td>.01*</td>
<td>.31</td>
</tr>
<tr>
<td>I have excellent reading and writing skills.</td>
<td>4.17</td>
<td>3.42</td>
<td>24.85</td>
<td>&lt; .001**</td>
<td>.42</td>
</tr>
<tr>
<td>I have excellent speaking and communication skills.</td>
<td>4.06</td>
<td>3.36</td>
<td>21.46</td>
<td>&lt; .001**</td>
<td>.39</td>
</tr>
<tr>
<td>If I do not understand the content in a graduate level course, I seek help from instructors, support centers, or tutors to help me.</td>
<td>4.00</td>
<td>3.58</td>
<td>10.42</td>
<td>.03*</td>
<td>.28</td>
</tr>
</tbody>
</table>

Note. $N = 138$. 
* $p < .05$. ** $p < .01$.

Qualitative Analysis
During Phase II, semi-structured interview questions were developed as a result of the
descriptive data from the quantitative portion of the study and a subset of those Master’s students
from each institution, including those who are English learners, participated in interviews to
describe their perceptions of preparation and experiences in graduate studies.

The coding process was approached in a systematic way by creating a spreadsheet of
descriptors that signified key demographics among the participants such as educational
background, work status, English Language Development (ELD) experiences, among others.
Next, codes were identified that were designated as a topic from the interview transcription text
and that appeared more than once throughout the data set. The coded excerpts produced a
categorization of the shared topics that contributed to the development of thematic framework.
The next phase of the process focused on the development of a code tree. Some codes were
designated as singletons, some were codes with children, while others were weighted on a scale
of 0 to 2 to indicate the degree in which a code had a negative (0), neutral (1), or positive (2)
impact on the participant. The goal was to have each code contribute to the creation of an
overarching thematic framework.

Once the code tree was uploaded to Dedoose, an inter-coder reliability test was applied
using over ten excerpts from the data with another expert knowledgeable in the field and not
involved in the study. The purpose was to establish reliability and trustworthiness of the coding
process by demonstrating the goodness of fit of the code tree to say that there were a reasonable
selection of topics that could be applied by people with similar backgrounds. Miles and
Huberman (1994) suggest that inter-rater reliability should approach .90. Thus, for this research
project, an acceptable score was determined to be 0.80 or above on the Cohen’s Kappa.
Completing this process resulted in confidence with a score of 0.90 on the Cohen’s Kappa.

**Qualitative Results: Top influences on Master’s level students included**

The researcher identified the top six codes or factors that influenced Master’s Level
students in this study: adjusting to Master’s level expectations, areas of frustration and struggle,
perceived keys to success, faculty influence, areas of accomplishment, and peer support (see
Table 4).

Table 4
Influences on Master’s Level Students that Impact Success Rank Order of Code Applications

<table>
<thead>
<tr>
<th>Code Application Rank Order</th>
<th>Influences on Master’s level students that impact success</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Adjusting to Master’s level expectations</td>
</tr>
<tr>
<td>2</td>
<td>Areas of frustration and struggle</td>
</tr>
<tr>
<td>3</td>
<td>Perceived keys to success</td>
</tr>
<tr>
<td>4</td>
<td>Faculty influence</td>
</tr>
<tr>
<td>5</td>
<td>Areas of accomplishment</td>
</tr>
<tr>
<td>6</td>
<td>Peer support</td>
</tr>
</tbody>
</table>

Both native English speakers and second-language learners have similar influences that impact their success as a Master’s level student. According to the Code Application table (see Table 4), adjusting to Master’s level expectations proved most challenging and frustrating, but was mediated by the support and influence of faculty and peers. Also, a well-kept alignment between perceived keys to success and reflecting on areas of accomplishment helped to motivate Master’s level students to persevere. For example, one participant from a private institution noted, “In the Master's program, there is a lot more demanding reading, conversation, and giving of feedback to the students. Students have to participate in the class through class discussion. I think this is good. You have to do a lot more revisions on your work.” Another student from a U.C. explained, “It’s completely different! Bachelor’s work is about studying, listening, and regurgitating information on a mid-term or final. Graduate work is discussion-oriented; taking the information and critiquing it.”

Presentation of Code Co-Occurrences

Utilizing Dedoose software, six code co-occurrences resulted based on the participants’ responses during the interview portion of the study. Code co-occurrence transpires when two or more codes were applied in the same excerpt. The researcher also examined all the excerpts to identify themes that apply to both native English speakers and second-language learners at the Master’s level in the areas of education, social work, and sociology.
The six code co-occurrences were (1) adjusting to Master’s level expectations and cultural norms, (2) adjusting to Master’s level expectations and navigation, (3) peer support and perceptions of social support, (4) areas of frustration and struggle and Master’s level expectations, (5) areas of accomplishment and perceived keys to success, and (6) adjusting to Master’s level expectations and academics.

Table 5

*Rank Order of the Most Frequent Code Co-Occurrences*

<table>
<thead>
<tr>
<th>Rank Order</th>
<th>Code Co-Occurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Adjusting to MA Expectations &amp; Cultural Norms</td>
</tr>
<tr>
<td>2</td>
<td>Adjusting to MA Expectations &amp; Navigation</td>
</tr>
<tr>
<td>3</td>
<td>Peer Support &amp; Perceptions of Social Support</td>
</tr>
<tr>
<td>4</td>
<td>Areas of Frustration and Struggle &amp; Adjusting to MA Expectations</td>
</tr>
<tr>
<td>5</td>
<td>Areas of Accomplishment &amp; Perceived Keys to Success</td>
</tr>
<tr>
<td>6</td>
<td>Adjusting to MA Expectations &amp; Academics</td>
</tr>
</tbody>
</table>

Success in academics, time management, and personal growth were repeatedly identified as significant experiences at the Master’s level. The six code co-occurrences provided evidence as to how students viewed their interactions with their Master’s level experience in the areas of education, social work, or sociology in the Central Valley of California. For instance, one participant from the U.C. commented, “The Master’s level programs across the various universities and even departments are very different. This is also the case for graduate and undergraduate in expectations. There is much more of a culture of "you better take care of it yourself." Another participant at the private college talked about the cohort model, and even though they are a diverse group, they have become friends. They communicate regularly through Facebook and other means, and they support each other every step of the way.

**Overarching Themes that Support Master’s Level Success**

The researcher analyzed the interview data of six Master’s level students in overall code application and thematic findings. Three themes that applied to both native English speakers and second-language learners at the Master’s level resulted: (1) more graduate level language and
writing support, (2) the need for mentoring, and (3) utilizing the influence of faculty on Master’s level student success.

Table 6

Overarching Themes for Both Native English Speakers and Second-Language Learners at the Master’s Level

<table>
<thead>
<tr>
<th>Rank Order</th>
<th>Overarching Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>More Graduate Level Language and Writing Support</td>
</tr>
<tr>
<td>2</td>
<td>Need for Mentoring</td>
</tr>
<tr>
<td>3</td>
<td>Utilizing the Influence of Faculty on Master’s level Student Success</td>
</tr>
</tbody>
</table>

More graduate-level language and writing support is needed from peer tutors who have been educated at the Master’s level or above. There was strong feeling that support personnel who were at the Bachelor’s level couldn’t understand or support them with master’s level writing expectations and that much of the writing support was not in alignment with their program or respective field. Additionally, EL’s requested language and writing workshops be customized just for them that build language skills in the discipline area. Several discussed the need for embedding language and writing skills, particularly research writing using the APA format, within the context of the courses themselves.

Next, there was a need for mentoring, especially for English Learners. Many of the EL’s in this study continue to do just everything on their own and try to find their way through the process.

Finally, institutions must utilize that strong influence of faculty on Master’s level success. Master’s level students repeatedly referred to the one instructor who was an advocate who made all the difference for them.

Conclusions and Further Research

As students openly talked about the process through their Master’s level program, it became evident that they had changed. As reported by students, they experienced cognitive (i.e. approaches to learning and understanding), social, and psychological changes. This is in alignment with the transformational learning framework where students move through stages as
they seek three types of knowledge which result from learning: (1) technical knowledge or instrumental learning which allows people to manipulate and control their environment through principles and skills, (2) practical or communicative knowledge which allows people to understand and interact through language, and (3) emancipatory knowledge in which people are seeking self-knowledge, growth, personal development, and freedom (Cranton, 2006).

As Cranton affirms (2006), education, including that of graduate level, has the power to be taught in a way as to develop and emancipate an individual. Instructors can engage in deliberate actions to disconnect students from status quo thinking and reformat them to develop new characteristics, attributes, behaviors, and perspectives that become new habits of mind. Additionally, students become critical thinkers and skilled practitioners or researchers in their field that contribute to the positive development of society.

**Recommendations for Current Practice**

After examining the results of this study, institutions of higher education that offer Master’s level programs in education and the social sciences need to reflect on current policy and practice in supporting student success. Are the needs of the full range of learners at the Master’s level being met? The informal role of faculty as advocate and mentor needs exploration as well as the levels of language and writing support embedded within program courses. Support services should be evaluated for highly qualified personnel, personalized services based on field of study, as well as services that target the specific needs of both native English and second-language learners at the graduate level. The addition of student success seminars at all levels of the program experience need consideration. Additionally, advisors need to work closely with students to develop clear education plans, to disclose the educational experience to increase transparency and ease of navigation, and to regularly meet with the student to support success every step of the way. Finally, it is recommended that students further along in the program be paired up with incoming students to serve as a peer mentor with shared experiences and valuable advice for program success.

Given the disparities in equality and access for an ever diversifying population of post-baccalaureate students, institutions must seek to continually assess and strengthen their programs to meet the full range of learners and to support students to degree completion. It is the hope of this researcher that the findings from this study will be used to help strengthen the Master’s level
experience for all students.

REFERENCES


Title of Submission:

RECRUITMENT AND RETENTION OF EARLY CHILDHOOD EDUCATORS IN GHANA

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Abstract
The purpose of the study was to determine factors that influence and shape early childhood educators decision to choose early childhood education as a profession, and also to determine their level of job satisfaction and intention to stay at their jobs. As part of the aims of the study, recruitment processes prevalent at the study area with regards to early childhood education was investigated. Random sampling was used where 143 early childhood educators from public and private early childhood centers volunteered to participate in the study. Using a quantitative research method of the survey type, questionnaires were administered to participants. In all, four research questions guided the study with participants in their response ranking love of teaching at the early childhood level and teaching in general as the most important reasons for choosing early childhood as a career, and good salary and job security been the lest of the factors influencing career choice. Also, overall responses by participants reflected job satisfaction though most participants had intentions to leave their jobs. With regards to recruitment processes, ‘word of mouth’ and ‘walk-in’ as opposed to public advertisements served as the most used channel of job advertisement. The need for periodic evaluation of how early childhood educators feel about their jobs, and formal advertisement as procedures for recruitment of early childhood educators were among recommendations of this study.
Title: Exploring the Potential of Employing Metacognitive Strategies and Multi-Media Tools in Flipped, Blended Classrooms

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Introduction of Purpose

“Education, then, beyond all other devices of human origin, is the great equalizer of the conditions of men, — the balance-wheel of the social machinery…The greatest of all the arts in a political economy is to change a consumer into a producer” (Mann, 1848). Well over a century after Senator Mann’s report to the Massachusetts School Board this fundamental need for learning that produces individual empowerment and collective productivity still resonates, but 167 years have had a tremendous impact on our educational culture and our students. Millennials (1982-2002), or digital natives (Prensky, 2001) are no longer a minor novelty in today’s classroom as 2015 marks the year that they became this nation’s largest generation (Fry, 2015) (Figure 1)

![Projected Population by Generation](image)

**Figure 1: Growth of Generations**

This Millennial generation has been reared on rapidly evolving technologies and prefer environments that support multitasking, group activities and multimedia social learning opportunities (McMahon & Pospisil, 2005; Wilson & Gerber, 2008) as they thrive on variety and change (Prensky, 2010). Leveraging the incredible potential of this digital generation lies in empowering their individual learning potential and inspiring their collective development into
ethical sound, civically minded, self-regulated producers for today’s diverse, democratic society. Therefore, the purpose of this study was to examine the effects of employing various multimedia tools in a flipped classroom environment on pre-service teachers’ metacognitive abilities.

**Theoretical Framework**

**Metacognition and Self-Efficacy**

Most researchers have identified metacognitive skills in terms of self-regulated learning, metacognitive knowledge or both (Ellis, Bond, & Denton, 2012; Lenz & Hughes, 1990). Researchers have found that students’ self-efficacy (Bandura, 1997) is closely linked to their self-regulated learning skills because they are more likely to plan, monitor, and regulate (Figure 2) their academic work (Linnenbrink & Pintrich, 2003; Pintrich, 2004; Seifert, 2004) and many studies have found that students’ self-efficacy has a profound impact on their academic achievements (Ferla, Valcke, & Schuyten, 2008; Walker, Greene, & Mansell, 2006).

![Figure 2: Metacognitive Process (Lovett, 2008)](image)

**Flipped Classrooms**

The flipped classroom teaching strategy stems from a large body of literature on student-centered learning such as Piaget’ work (1968) on constructivism and collaborative learning and Vygotsky (1978) on cooperative learning. The flipped classroom model enables students to
acquire information outside the classroom through a wide variety of formats (text book, asynchronous video lectures, online learning modules, etc.) and then apply their acquisition of new knowledge through active, group based, innovative problem solving activities in the classroom. Being able to receive immediate feedback from their peers and instructor enables students’ to learn to re-adjust misconceptions and re-organize the new knowledge for future application (Bergmann & Sams, 2012; Bishop & Verlerger, 2013; Stayer, 2007).

Multimedia in Learning

Recent studies have shown that our brains working memory contains several channels, the visual typically handling less information than the auditory, but when the information is present through both channels the overall cognitive processing capabilities increase (Sweller, 2005). Along these same lines, Mayer (2005) has found that effective multimedia presentations introduce new information in such a way as to utilize students’ existing schemas so as to assist them in incorporating new information into their long-term memory (Figure 3). Research also suggests that activating prior knowledge (Kalyuga, 2005), student directed pacing (Mayer, Dow & Mayer, 2003), visualizing complex information (animation) (Mayer & Chandler, 2001), formal and informal feedback (Gee, 2005) and active engagement with the material (Mayer, 2005) all contribute to improving the effects of multimedia on student learning.

Figure 3: Cognitive Theory of Multimedia Learning (Mayer, 2005)
Research questions

The purpose of this research was to examine the effects of employing various multimedia tools in a flipped classroom on pre-service teachers’ metacognitive abilities. Following a thorough review of the literature on flipped classrooms, metacognition and multi-media this study was guided by three overarching questions:

1. Is there correlation between preservice teachers’ planning and their self-efficacy in a flipped class?
2. Will preservice teachers’ metacognitive skills be influenced through consistent self-reflection?
3. Will the use of the flipped classroom model, as an interactive, student centered learning framework, improve students’ use of metacognitive skills through multimedia instructional tools?

Research Methods

This mixed methods study intentionally integrated two diverse modes of inquiry. Utilizing multiple methodologies increased the researchers’ opportunities to comprehensively explore their study’s constructs through divergent modes of analysis and expand current understandings through transformative dialectical discovery. The quantitative components of this study employed a within-subject design to examine the relationship between pre-service teachers' metacognitive abilities and their application of course information through multi-media tools. The qualitative components utilized case study methodology to emphasize the unique voices of the study participants. The primary source of data collection was weekly reflections, and the secondary sources included: in-depth group discussions, observations, various multi-media, performance based projects and weekly quiz scores.

Participants
The participants were 80 pre-service teachers at a Midwestern university, 44 (29 undergraduates, 15 graduates), were enrolled in a blended (hybrid) technology integration course and 36 (all undergraduates) were enrolled in a language and literacy course.

**Instructional Design (Course Materials)**

Participants received instruction through two different teaching methods: traditional lecture-based method (Phase 1) and a flipped classroom method (Phase 2) over a two month time frame (Table 1).

<table>
<thead>
<tr>
<th>Phase 1 – Traditional Classroom Model – 1st Month</th>
<th>Phase 2 – Flipped Classroom Model – 2nd Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>• large lecture discussion component,</td>
<td>• a large collaborative element for the instructional methodology</td>
</tr>
<tr>
<td>• traditional power point slides,</td>
<td>• various interactive, multimedia activities, which included:</td>
</tr>
<tr>
<td>• individual note taking requirements,</td>
<td>1. <em>Wordpress</em> was used for their weekly metacognitive reflections</td>
</tr>
<tr>
<td>• whole class case study analysis discussion from the chapter in the course text, and</td>
<td>2. <em>Gizmos</em> was used for lesson simulations to help students develop a deeper understanding of challenging concepts through inquiry and exploration.</td>
</tr>
<tr>
<td>• paper based multiple choice quiz developed around the topic of effective instructional strategies and activities for developing fluent readers and writers.</td>
<td>3. <em>Webquest</em> was used to explore a variety of free multimedia resources and apps available to students for use in their own classrooms</td>
</tr>
<tr>
<td></td>
<td>4. <em>Voicethread</em> was used to conduct an interviews of their school practicum teacher regarding to “real-time” challenges in the classroom</td>
</tr>
<tr>
<td></td>
<td>5. <em>Quizlet, Kahoot and Socrative</em> were used as alternatives to paper based quizzes.</td>
</tr>
</tbody>
</table>

**Table 1: Course Materials for Study**

**Research Instruments**

**Metacognitive Awareness Inventory (MAI) (Pre):**

The investigators utilized the MAI (Table 2) adopted from Schraw and Dennison (1994) to collect students’ perception regarding their metacognitive knowledge and metacognitive
regulation (Hammann & Stevens, 1998; Sperling et al., 2004) and it was administered at the beginning of the study. The MAI consists of 52-true or false statements with number one (true) or zero (false). The MAI instrument represents eight component categories of metacognition and were divided as follows: eight declarative questions, four procedural, eight conditional, six evaluation, ten information management strategies, seven comprehension monitoring, five debugging strategies and seven questions in planning strategy. Mean for the total sample M = 41.67, SD = 8.09, range = 32.

Self-Efficacy Questionnaire (Pre and Post):

The self-efficacy questionnaire was designed with 11-point scale ranges from "Cannot do at all" at zero to “Highly certain can do" at 100. The investigators developed the self-efficacy measure based on Bandura’s “Guide to the construction of self-efficacy scales” in Pajares & Urdan (2006).

Metacognitive Reflections (Post):

![Figure 4: Metacognitive Reflection Questions](image-url)
Using the MAI pre-assessment data in Table 4 the instructors designed three specific reflection questions (Figure 4) that would provide opportunities for students to critically reflect on their own learning over the course of the week using WordPress. These metacognitive reflections enabled the students to consistently contemplate their own learning in a specific area that they self-reported as being their weakest (Question #50 – Table 4).

**Study Results**

*Quantitative*

To answer the question, “Is there correlation between students’ metacognitive skills and their test scores in a flipped class” the investigators conducted a Pearson product-moment correlation coefficient to assess the relationship between students’ metacognitive skills and test scores in a flipped class. The results showed that there was no correlation between the two variables, \( r = 0.20, n = 20, p = 0.05 \). Overall, there was no correlation between students’ metacognitive skills and test scores in a flipped class. Table 3 summarizes the correlation analysis.

<table>
<thead>
<tr>
<th>Table 3</th>
<th>Correlations between students’ test scores and their metacognitive skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test scores</td>
<td>Metacognitive skills</td>
</tr>
<tr>
<td>Test scores</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>20</td>
</tr>
</tbody>
</table>

*Note:* Correlation is significant at the 0.05 level (2-tailed).

The findings regarding students’ metacognitive skills and their academic achievement indicate that students’ metacognitive skills do not correlate with students’ test scores in the flipped class setting. A possible interpretation of these results is that students in the flipped class had the
opportunity to learn in a diverse learning environment where they engaged in hands-on learning activities and participated in collaborative learning. Consequently, students had the chance to adjust their learning strategies to match their metacognitive skills and therefore the academic gap between students based on the class projects assessment were minimized or disappeared.

<table>
<thead>
<tr>
<th>Ranking</th>
<th>#</th>
<th>Survey Question</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highest Ranked Score</td>
<td>46</td>
<td>&quot;I learn more when I am interested in the topic.&quot;</td>
<td>3.862</td>
</tr>
<tr>
<td>Lowest Ranked Score</td>
<td>50</td>
<td>&quot;I ask myself if I learned as much as I could have once I finished a task.&quot;</td>
<td>3.448</td>
</tr>
</tbody>
</table>

Table 4: MAI Results

Qualitative

The role of metacognition in improving student outcomes emerged from the literature as one way to influence learning (Schraw, Crippen, & Hartley, 2006; Tanner, 2012), a theory that was supported in the study findings. The findings were as varied as the students themselves, but there were also overarching themes. One common theme that emerged regarding how they learn (Questions #1) was the understanding that it does in fact help to read the chapter before class. In their own words, Student #34 found that, “One thing I have learned is that if I read the chapter well before we start in class I learn the material better…I need to make sure I read the entire chapter and not just read half of it and skim the rest as I have in the past.”

Another common theme regarding how they would improve their learning in the future (Question #3) was to interact with the material in other ways such as “discussing the chapter with a classmate” (Student #3) or “making their own study guide or quiz” (Student #24). Student #12 stated, “I found that sharing in class really helped me understand how to use the strategies…I’m glad that I shared. I feel I got more out of the activity this way…I was more involved in my own learning.”
With regards to student driven, versus teacher directed learning that extends beyond the classroom (#4) what was unexpected was the surprising ingenuity and inspiration that emerged when students realized that they could directly influence their own learning in meaningful and measurable ways. Student #23 found that, “Through my metacognitive tests and reflections I have learned many ways for me to enhance my learning and I do a plethora of things now that I have never done before. I think that for the last couple of chapters this semester I am going to do an experiment. I am going to try to play a certain type of music and chew a certain type of gum every time that I am doing something involving the chapter. I want to see if I can make a stronger connection in my brain.”

The final theme that emerged from the study findings and that concurred with the literature review was the important role multimedia played in providing students opportunities for exploration and expression (Baddeley, 1992; Mayer, 2005; Miler, 2005). Many of the students commented on how much they enjoyed working with their groups to explore the new tools like Socratic and Gizmos how much more interactive and meaningful the class sessions. Nearly a 100% of the students preferred the self-paced opportunities (Mayer, Dow & Mayer, 2003) that Quizlet provided to review the course material and preferred using WordPress to just writing regular journal entries.

Student #31, who had given herself a 6 on the Phase 1 self-efficacy pre-test and an 8 on the post-test earning a 77% on the summative quiz went up to a 7 on the pre-test during Phase 2 and a 9 on the post-test and a 100% on the summative quiz. In her post comments she stated that being able to utilize the multimedia tools, especially Voicethread, “…made the information come alive, I really felt like I could understand the problem more by being able to see and hear the teacher describing it. I loved using this program!”
**Scholarly Significance**

The main conclusion that emerged from the researchers’ interpretation of the study’s findings and their conclusions regarding the relationships to the literature was that student’s metacognitive abilities could be influenced through consistent, critical reflection and that students were more engaged in their own learning when multimedia tools were used in a flipped classroom setting. Two new question that could be analyzed in future studies might include: 1) Which multimedia tools have the greatest influence on student’s metacognition in flipped classrooms and 2) which multimedia tools enable the greatest opportunities to translate metacognitive reflection into meaningful action? (Argyris & Schön, 1997) This research addressed a gap in the literature in identifying how the flipped classroom model is defined, introduced, and employed in conjunction with specific experiential, multimedia learning activities and metacognitive reflective practices. Even though the method and sampling procedures restrict a broad based, general application, the explanatory framework could be conceptually generalizable to a wider audience.

**References**


Bergmann, J., & Sams, A. (2012). Flip your classroom: Reach every student in every class every day. Eugene, OR: International Society for Technology in Education.


Table 2: Metacognitive Awareness Inventory (MAI)

Check True or False as appropriate.

<table>
<thead>
<tr>
<th></th>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I ask myself periodically if I am meeting my goals.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>I consider several alternatives to a problem before I answer.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>I try to use strategies that have worked in the past.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>I pace myself while learning in order to have enough time.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>I understand my intellectual strengths and weaknesses.</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>I think about what I really need to learn before I begin a task</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>I know how well I did once I finish a test.</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>I set specific goals before I begin a task.</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>I slow down when I encounter important information.</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>I know what kind of information is most important to learn.</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>I ask myself if I have considered all options when solving a problem.</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>I am good at organizing information.</td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>I consciously focus my attention on important information.</td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>I have a specific purpose for each strategy I use.</td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>I learn best when I know something about the topic.</td>
<td></td>
</tr>
</tbody>
</table>
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   #
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>46.</td>
<td>I learn more when I am interested in the topic.</td>
</tr>
<tr>
<td>47.</td>
<td>I try to break studying down into smaller steps.</td>
</tr>
<tr>
<td>48.</td>
<td>I focus on overall meaning rather than specifics.</td>
</tr>
<tr>
<td>49.</td>
<td>I ask myself questions about how well I am doing while I am learning something new.</td>
</tr>
<tr>
<td>50.</td>
<td>I ask myself if I learned as much as I could have once I finish a task.</td>
</tr>
<tr>
<td>51.</td>
<td>I stop and go back over new information that is not clear.</td>
</tr>
<tr>
<td>52.</td>
<td>I stop and reread when I get confused.</td>
</tr>
</tbody>
</table>

Title of Submission

Attitudes and Beliefs Held by White Female Teachers and the Impact on Students of Color

Topic Area

Education Policy and Leadership

Presentation Format

Paper Session

Description of Presentation

It becomes imperative to examine all possible avenues that may assist educators in improving student outcomes and advancing current educational practices to better meet the needs of students, particularly students of color. This presentation takes a critical look at the attitudes and beliefs held by White female teachers toward students of color, specifically African American and Latino males, which may be the linchpin in minimizing the disparities in student outcomes between White students and students of color.

Paper Author

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ATTITUDES AND BELIEFS OF WHITE FEMALE TEACHERS

AND THE IMPACT ON STUDENTS OF COLOR

Abstract

The academic disparity between White students and students of color has existed for decades. As a product of White privilege and societal structures, one factor contributing to the disproportionality may be that the attitudes and beliefs held by White female teachers toward students of color, specifically African American and Latino males, may impede building positive relationships between them; and as a result, student academic achievement, social, and emotional growth may be impaired. Through the lens of Critical Whiteness Theory and the methodology of mixed-methods research, a deeper understanding of the cross-cultural teacher-student relationships and the effects on student outcomes are explored.
OBJECTIVE: At high schools in Japan, many young people have been participating in extracurricular sports activities. They can cultivate a foundation for their lifelong health through extracurricular sports activities, under instruction from coaches who are also teachers at their high school. Coaches are regarded as one of the most important human factors affecting students’ adaptation to sports club activities. Shibukura and Sasaki (2014) reported that there were specific factors, such as worries and burdens, that teachers who were engaged in extracurricular sports activities experienced in their daily lives. The purpose of this study was to develop the Burden Scale for high school teachers who are engaged in extracurricular sports activities.

METHOD: Subjects were 430 high school teachers (329 male and 101 female). They were required to complete a questionnaire that consisted of items concerning the burdens of high school teachers who engage in extracurricular sports activities and their stress response.

RESULTS: First, as a result of an exploratory factor analysis, seven factors were extracted: time-dependent burdens, motivations and abilities of the members, lack of leadership abilities, pressure of school work, expectations of others, lack of facilities and equipment, and financial burdens. In this way, the Burden Scale for high school teachers who are engaged in extracurricular sports activities was constructed. Second, the reliability of the scale was examined through the split-half method ($\alpha = .73 - .90$). Finally, correlation analyses were conducted in order to examine the relationship between the teacher’s burdens and their stress response. Results showed a relationship between Burden Scale scores and stress responses, providing support for the scale’s construct validity.

CONCLUSION: The Burden Scale was developed for high school teachers who are engaged in extracurricular sports activities. The measure can be used to increase understanding of the psychological stress involved and the effective management of stress when high school teachers are engaged in extracurricular sports activities.
Title of the submission: Tasks designed as employed by a pre-service elementary school teacher

Topic area of the submission: Mathematics Education

Presentation format: Poster Session
The objective of this study was to explore how a pre-service elementary school teacher learned to tasks designed training and in the process improved her professional knowledge and skills.

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Tasks designed as employed by a pre-service elementary school teacher

The objective of this study was to explore how a pre-service elementary school teacher learned to tasks designed training and in the process improved her professional knowledge and skills. The research questions include the following: What teaching objectives did she set using task design for teaching multiplication of decimals? What learning trajectories did she conjecture and what mathematical concepts did she analyze? What representations did she employ? How did she conjecture and explain the problem-solving strategies that students adopt using task design for multiplication of decimals? This study obtained the following findings:

1. The teaching objectives set by the pre-service teacher were based on the textbook and capacity indices. They included the following: converting fractions to decimals and decimals to fractions, knowing and estimating the location of decimal points in decimal products, simplifying complex calculations, and providing effective techniques for multiplication of decimals.

2. The learning trajectories conjectured included five learning tasks: measuring and calculating the ratios of integers and decimals, understanding the factors of decimals, understanding the meaning and vertical method of multiplication of integers, understanding the meaning and decimal location changes in multiplication of decimals, multiplying decimals and applying mathematical laws.

3. The pre-service teacher incorporated area, line segments, and numbers into the task design for multiplication of decimals and employed visual representations to present the required concepts and assist students in learning.

4. The pre-service teacher assigned problem-solving activities such as clarifying concepts related to decimals, estimating the location of decimal points, and applying the distributive and associative laws.

Suggestions are presented based on the research findings for future reference in research and teacher education.
1. **Title:** Possibilities of History of Science as a subject of integrated environmental education  
2. **Name of the author(s):** JiHee Lee, Donghee Shin  
3. **Affiliation(s) of the author(s):** Ewha Womans University  
4. **E-mail address(es):** Jihee Lee (dlwlgml7531@naver.com); and Donghee Shin (donghee@ewha.ac.kr).

5. **Abstract**

   History of science (HOS) is suitable for integrated science education because it has connected the knowledge of science, history, technology, sociology, culturology, etc and it has showed the relevance of theme in environmental education. Therefore, we need to investigate the HOS case for integrated environmental education and to explore how to organize it on educational aspect. This study explored the possibilities of HOS as a subject of integrated environmental education. We analyzed integration types of the HOS case and developed education programs with 3 units of HOS. The units include 7 classes of three topics.

   The results showed that we found 3 types of integration on the HOS case (Figure 1). The first is ‘Integrated knowledge creation’, the second is ‘Application of integrated knowledge’, the third is ‘Integration by time’. ‘Integrated knowledge creation’ signifies that new knowledge is formed by diversity of knowledges. ‘Application of integrated knowledge’ signifies that a science knowledge and theory merged into a wide range of disciplines. ‘Knowledge integration by time’ signifies that knowledge interact with other fields of study.

   ![Figure 1: 3 types of integration on the HOS case](image)

Environmental education programs include 7 classes of three topics such as Darwin, science in literature, and climate change (Table 1). The first unit is “Darwin” that consists of two classes named “The Voyage of the Beagle” and “Special issue about Darwin”. Students can learn that Darwin’s evolution theory is a result
of various kinds of fields. By making newspaper, students understand that Darwin’s theory of evolution makes an impact on synthetic theory, Art, Economy, Politics, Environment. The second unit is “Literature and science”. We selected “Jurassic Park” as a textbook. We hope that students can understand scientific facts in this novel and find some examples that have been realized from imagination to real thing. Also there will be a class on writing scenario with scientific imagination. The third unit is "Climate Change". Students can learn about the effect of climate change on civilization by studying and playing TGT game. The results could help us understand the concreteness and organization of integrated case on HOS for integrated environmental education in school.

<Table 1> Units of history of science for integration education

<table>
<thead>
<tr>
<th>theme</th>
<th>unit(hour)</th>
<th>Aspects of integration</th>
<th>Teaching process</th>
</tr>
</thead>
<tbody>
<tr>
<td>Darwin</td>
<td>The Voyage of the Beagle(1)</td>
<td>Geology and biology</td>
<td>Lecture</td>
</tr>
<tr>
<td></td>
<td>Special issue about Darwin(2)</td>
<td>Synthetic theory, Art, Economy, Politics</td>
<td>NIE, Cooperative learning</td>
</tr>
<tr>
<td>Science fiction</td>
<td>Literature and science(2)</td>
<td>Science and Literature</td>
<td>Lecture, Reading, Discussion, Writing Activity</td>
</tr>
<tr>
<td>Climate change</td>
<td>Climate change and civilization(2)</td>
<td>Science, sociology, and history</td>
<td>Lecture, Cooperative learning</td>
</tr>
</tbody>
</table>

Title: Giving Thanks for Gifting Yourself Enjoyable Holidays and Beyond.

Presenter Information:

Karen Walker, Ed.D.

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Abstract for: Giving Thanks for Gifting Yourself Enjoyable Holidays and Beyond

A question that made me stop short and rethink my course syllabi was, “What other profession expects you to give up your holidays, especially from Thanksgiving to Christmas?” Having the bulk of final assignments due at the end of the semester, students often are unable to give it their best, a frustration for everyone. Given the high number of final assignments submitted at the end of the semester, allotting quality time to each is often an impossibility. This creates high stress and exhaustion, especially for professors.

Based on the work of Susan Robison, I restructured my courses dramatically. Having revised due dates, students have thanked me, especially at the end of the semester. They have expressed they were able to give the project their all. In this session participants will: 1) examine how their course assignments are structured so they get the best from students; 2) discuss ways in which, with some assignment modifications, they can gift themselves more time and less stress; 3) share ideas about assignment revisions with participants; and 4) plan for their future, feeling like they are in control of their schedule. Professors’ lives are often out of balance. Moving one’s assignments so that they are submitted at times other than the end of the semester can be quite liberating.

References:


### Educators of Color Speak: Using Positionality to Inform Curriculum in Teacher Education

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Panel Abstract
Teacher educators bring their positionality into the classroom.

Acknowledging the social identities and lived experiences that come to shape positionality are crucial in order to consciously bring theoretical frameworks to bear on both curriculum and pedagogy. In this session, the panelists discussed their unique positionality as women of color and teacher educators, who integrate their epistemological stances into their teaching practice. Specifically, Yvonne El Ashmawi discussed how she has incorporated her positionality as a Muslim feminist of color into both her Multicultural Education courses and her Secondary English Methods course. She has used it to foundation feminist pedagogical practices such as reflexivity and reciprocity. Additionally, she provided examples of learning activities that support students in developing their own theory of the flesh (Moraga, 1983) that will inform their own teaching practices. Xeturah Woodley discussed how she designs online curriculum that challenges existing masculinized models of course design with the use of gynocentric and culturally responsive curriculum design. She provided examples of this framework by sharing from her Social Justice in Education course. This form of course design represents new ways of constructing online education that are both womanist and culturally responsive.

References
Effectiveness of ensemble machine learning over the conventional multivariable linear regression models

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Abstract—This paper demonstrates the effectiveness of ensemble machine learning algorithms over the conventional multivariable linear regression models including Ordinary Least Squares, Robust Linear Model, and Lasso Model. The ensemble machine learning algorithms include Adaboost, Random-Forest, Bagging, Extremely Randomized Trees, Gradient Boosting, and Extra Trees Regressor. With the progress of open sources, a variety of algorithms are available and they can be easily compared by using open source Python libraries from the viewpoint of prediction accuracies using R-squared.

Keywords—big data, ensemble machine learning, OLS, RLM, Lasso

I. INTRODUCTION

A variety of algorithms have been proposed for predicting the correlations between input and output. The conventional multivariable linear regression models have been used for predicting output, for example, sales, with several parameters (input) where the examined models include an Ordinary Least Squares (OLS), a Robust Linear Model (RLM), and a Lasso model from open sources (statsmodels) [1]. With the rapid progress of open source machine learning (sklearn:scikit-learn) [2], ensemble machine learning algorithms including Adaboost, Random-Forest, Bagging, Extremely Randomized Trees, Gradient Boosting, and Extra Trees Regressor can be applied to the input/output correlation problems.

This paper demonstrates the effectiveness of ensemble machine learning algorithms by comparing the conventional multivariable linear regression models using R-squared. In order to evaluate the quality of the algorithms, R-squared is used in this paper to measure goodness-of-fit in regression.

A given problem in this paper is to predict the ice-cream sales by the temperature and the number of pedestrians in the street. The more number of pedestrians, the ice-cream sales increase. The temperature is one of important factors for ice-cream sales. Based on the latest research [3], the ice-cream is the most seasonable food for summer and there is a strong correlation between the ice-cream sales and the temperature. At 18 degrees Celsius, sales soar.

Without such pre-knowledge about the ice-cream sales, the ensemble machine learning models outperform the existing multivariable linear regression models. The data of the ice-cream sales, the number of pedestrians, the temperature are downloadable from:

http://xica-inc.com/adelie/sample/data/ice.zip
or
http://web.sfc.keio.ac.jp/~takefuji/ice.csv

II. MULTIVARIABLE LINEAR REGRESSION MODELS

A. Ordinary Least Squares (OLS)

Ordinary Least Squares (OLS) model is a classical multivariable linear regression model. OLS is a statistical method which attempts to find the function which most closely approximates the data, so called a best fit. The Least Squares method is used to fit a straight line through a set of data-points, so that the sum of the squared vertical distances from the actual data-points is minimized. Open source Python library, "statsmodels" is used in this paper.

Downloaded ice.csv data is composed of the ice sales data['ice'], data['temp'] for temperature, and data['street'] for the number of pedestrians. The following important source codes (imported library name, x:input, y:output, p:predicted output) describe the OLS regression Python program where "tem" variable and "st" variable indicate the coefficient of the temperature and that of the number of pedestrians respectively. The pandas library is used for data manipulations.

```python
import statsmodels.api, pandas
data=pandas.read_csv('ice.csv')
x=data[['temp','street']]
x= statsmodels.api.add_constant(x)
y=data['ice']
est=statsmodels.api.OLS(y,x).fit()
const,tem,st=est.params
p= tem*data['temp'] + st*data['street'] + const
```

Fig.1 shows the result of real ice sales (y: dotted line) and OLS predicted sales (p: solid line). The vertical axis indicates the ice-cream sales (Japanese Yen) while the horizontal axis means experimented 31 days for summer. Computed R-squared is 0.45 which shows no-good-fitting. R-squared
indicates a measure of goodness-of-fit in regressions within a range of 0 to 1 where the higher, the better.

The maximum R-squared is 0.45 in examined linear_model methods.

### Table-1 Experimented linear_model methods in sklearn

<table>
<thead>
<tr>
<th>Linear_model methods</th>
<th>R-squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>linear_model.ARDRegression</td>
<td>0.437</td>
</tr>
<tr>
<td>linear_model.BayesianRidge</td>
<td>0.421</td>
</tr>
<tr>
<td>linear_model.ElasticNet</td>
<td>0.45</td>
</tr>
<tr>
<td>linear_model.Lars</td>
<td>0.45</td>
</tr>
<tr>
<td>linear_model.Lasso</td>
<td>0.45</td>
</tr>
<tr>
<td>linear_model.LassoLars</td>
<td>0.45</td>
</tr>
<tr>
<td>linear_model.LinearRegression</td>
<td>0.45</td>
</tr>
<tr>
<td>linear_model.LogisticRegression</td>
<td>0.323</td>
</tr>
<tr>
<td>linear_model.OrthogonalMatchingPursuit</td>
<td>0.421</td>
</tr>
<tr>
<td>linear_model.Ridge</td>
<td>0.45</td>
</tr>
</tbody>
</table>

### III. ENSEMBLE MACHINE LEARNING

11 ensemble machine learning algorithms have been proposed and implemented in open sources including sklearn library (scikit-learn) as shown in Table-2.

### Table-2 Ensemble Methods in sklearn

<table>
<thead>
<tr>
<th>Ensemble methods</th>
<th>details</th>
</tr>
</thead>
<tbody>
<tr>
<td>ensemble.AdaBoostClassifier</td>
<td>An AdaBoost classifier</td>
</tr>
<tr>
<td>ensemble.AdaBoostRegressor</td>
<td>An AdaBoost regressor</td>
</tr>
<tr>
<td>ensemble.BaggingClassifier</td>
<td>A Bagging classifier</td>
</tr>
<tr>
<td>ensemble.BaggingRegressor</td>
<td>A Bagging regressor</td>
</tr>
<tr>
<td>ensemble.ExtraTreesClassifier</td>
<td>An extra-trees classifier</td>
</tr>
<tr>
<td>ensemble.ExtraTreesRegressor</td>
<td>An extra-trees regressor</td>
</tr>
<tr>
<td>ensemble.GradientBoostingClassifier</td>
<td>Gradient Boosting for classification</td>
</tr>
<tr>
<td>ensemble.GradientBoostingRegressor</td>
<td>Gradient Boosting for regression</td>
</tr>
<tr>
<td>ensemble.RandomForestClassifier</td>
<td>A random forest classifier</td>
</tr>
<tr>
<td>ensemble.RandomTreesEmbedding</td>
<td>An ensemble of totally random trees</td>
</tr>
<tr>
<td>ensemble.RandomForestRegressor</td>
<td>A random forest regressor</td>
</tr>
</tbody>
</table>
Adaboost with DecisionTree, Random-Forest, Extremely Randomized Trees, Bagging, Gradient Boosting, and Extra-Trees-Regressor were investigated in this paper [4].

Each ensemble machine learning method uses multiple learning algorithms to obtain better predictive performance than could be obtained from any of the constituent learning algorithms.

In this Section, important codes [imported library name, clf:classifier, p:predicted output, clf.score(x,y): R-squared] of each ensemble machine learning are only shown by the followings:

Adaboost with DecisionTree:
```python
from sklearn.tree import DecisionTreeRegressor
from sklearn.ensemble import AdaBoostRegressor
clf1=DecisionTreeRegressor(max_depth=4)
clf2=AdaBoostRegressor(DecisionTreeRegressor(max_depth=4),n_estimators=300,random_state=rng)
cf1.fit(x,y)
cf2.fit(x,y)
p1=clf1.predict(x)
p2=clf2.predict(x)
print clf1.score(x,y)
print clf2.score(x,y)
```

Random Forest:
```python
from sklearn.ensemble import RandomForestRegressor
clf=RandomForestRegressor(n_estimators=200,
min_samples_split=1)
cf.fit(x,y)
p=clf.predict(x)
print clf.score(x,y)
```

Extremely Randomized Tree:
```python
from sklearn.ensemble import ExtraTreesClassifier
clf = ExtraTreesClassifier(n_estimators=100,
max_depth=None,min_samples_split=1, random_state=0)
cf.fit(x,y)
p=clf.predict(x)
print clf.score(x,y)
```

Bagging with KNeighbors:
```python
from sklearn.ensemble import BaggingClassifier
from sklearn.neighbors import KNeighborsClassifier
cf=BaggingClassifier(KNeighborsClassifier()
n_estimators=1000,max_samples=0.8, max_features=0.5)
cf.fit(x,y)
p=clf.predict(x)
print clf.score(x,y)
```

Gradient Boosting codes:
```python
from sklearn.ensemble import GradientBoostingRegressor
clf=GradientBoostingRegressor(n_estimators=1000,
learning_rate=1.2,max_depth=1, random_state=0)
cf.fit(x,y)
p=clf.predict(x)
print clf.score(x,y)
```

Extra-Trees-Regressor codes:
```python
from sklearn.ensemble import ExtraTreesRegressor
clf=ExtraTreesRegressor()
cf.fit(x,y)
p=clf.predict(x)
print clf.score(x,y)
```

Fig. 2 shows the result of Gradient boosting over the real sales data where both lines are almost fitted with R-squared=0.985.
Computed R-squared data of DecisionTree, Adaboot with DecisionTree, RandomForestRegressor, Bagging with KNeighborsClassifier, Extremely Randomized Tree, Gradient Boosting, and ExtraTreeRegressor are described respectively as shown in Table-3.

All ensemble machine learning algorithms can significantly improve the R-squared data over the conventional linear regression algorithms with R-squared=0.45. Table-3 shows that Gradient Boosting and ExtraTreeRegressor are the best algorithms among all algorithms with R-squared=0.985.

Table-3 R-squared of examined algorithms

<table>
<thead>
<tr>
<th>Algorithms</th>
<th>R-squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>OLS, RLM, Lasso</td>
<td>0.45</td>
</tr>
<tr>
<td>DecisionTree</td>
<td>0.766</td>
</tr>
<tr>
<td>Adaboot with DecisionTree</td>
<td>0.959</td>
</tr>
<tr>
<td>RandomForestRegressor</td>
<td>0.864</td>
</tr>
<tr>
<td>RandomForestClassifier</td>
<td>0.968</td>
</tr>
<tr>
<td>Bagging with KNeighbors</td>
<td>0.935</td>
</tr>
<tr>
<td>ExtremelyRandomizedTree</td>
<td>0.968</td>
</tr>
<tr>
<td>GradientBoosting</td>
<td>0.985</td>
</tr>
<tr>
<td>ExtraTreeRegressor</td>
<td>0.985</td>
</tr>
</tbody>
</table>

A. Implemented Python program

The Python full program for Adaboot with DecisionTree is described in Fig. 4.

```python
import pandas as pd
import numpy as np
import statsmodels.api as sm
from sklearn.tree import DecisionTreeRegressor
from sklearn.ensemble import AdaBoostRegressor
import matplotlib.pyplot as plt

data = pd.read_csv('ice.csv')
x = data[['temp', 'street']]
y = data['ice']
 rng = np.random.RandomState(1)
clf1 = DecisionTreeRegressor(max_depth=4)
clf2 = AdaBoostRegressor(DecisionTreeRegressor(max_depth=4), n_estimators=300, random_state=rng)
clf1.fit(x, y)
clf2.fit(x, y)
p1 = clf1.predict(x)
p2 = clf2.predict(x)
print clf1.score(x, y)
pdf2.score(x, y)
t = np.arange(0.0, 31.0)
plt.plot(t, data['ice'], '--b')
plt.plot(t, p1, ':b')
plt.plot(t, p2, '-b')
plt.legend(('real', 'dtree', 'adaB'))
plt.show()
```

Fig. 4 adaboost.py

B. How to install statsmodels and sklearn libraries on Windows and Linux

This Section shows how to install statsmodels and sklearn Python libraries.

After installing Python on your system, run the following commands in the super user mode:

```
# easily_install statsmodels
```

In order to install sklearn on Windows:

```
# pip install -U scikit-learn
```
or

```
download *.whl from http://www.lfd.uci.edu/~gohlke/pythonlibs/#scikit-learn
# pip install xxx.whl
```

On Linux:

```
# apt-get install build-essential python-dev python-setuptools
python-numpy python-scipy libatlas-dev libatlas3gf-base
```

IV. FUTURE WORKS

There are a variety number of combinations using ensemble machine learning. We should further investigate what combinations will give us the best performance.

V. CONCLUSIONS

We have investigated the performance of ensemble machine learning algorithms over the conventional linear regressions. Ensemble machine learning algorithms including Gradient-Boosting and Extra-Tree-Regressor have generated
the best performance with R-squared=0.985 while the conventional linear regression algorithms have R-squared=0.45.

The ensemble machine learning can significantly improve R-squared, goodness-of-fit in regressions over the existing linear regression algorithms.

REFERENCES.
Submission (Hawaii International Conference On Education) from Yeon-A Son
(University of Hawaii at Manoa) / (Submission ID Number: 1077)

1. **Abstracts** title of the submission: How could ‘Education for Sustainable Development (ESD)’ be practiced in South Korea? : Survey and Instructional Model Development

2. Topic area of the submission: Cross-disciplinary Areas of Education

3. Presentation format: Poster Session

4. 2-3 sentence description of presentation: The purposes of this research were to find out school teachers’ perceptions on ‘Education for Sustainable Development (ESD)’ and to design ‘Social Problem Solving ESD (SPS-ESD) Instructional Models’ that lays special emphasis on experiential learning and addresses community-based contemporary social problems and issues. This research can contribute to educational practice of ESD and ultimately to developing core competencies of elementary, middle, and high school students for sustainable future.

5. **Full Abstracts**

<table>
<thead>
<tr>
<th>How could ‘Education for Sustainable Development (ESD)’ be practiced in South Korea? : Survey and Instructional Model Development</th>
</tr>
</thead>
</table>

Since the time the concept of ‘sustainable development’ was first brought up at the UN Conference on Human and Environment in 1972 and endorsed at the UN General Assembly in 1987, it became apparent that education is the key to achieving sustainable development and education should be reoriented for sustainable future of the Earth. For this, it is important for teachers to embrace the need for ‘Education for Sustainable Development (ESD)’ and to be given training and support including ESD instructional models.

The purposes of this research were to find out teachers’ and school administrators’ perceptions on ‘Education for Sustainable Development (ESD)’ and to design ‘Social Problem Solving ESD (SPS-ESD) Instructional Models’ that lays special emphasis on
experiential learning and addresses community-based contemporary social problems and issues.

The survey research involved 255 teachers and 108 school administrators (i.e., principals & vice-principals) of elementary and secondary schools in the whole country. The survey questionnaire was consisted of four subcategories: necessity of ESD, willingness to implement ESD, educational effects and condition of ESD, and the role of ESD in overcoming limitations of public education. Statistical analyses were performed to find out followings: First, the influence of ESD in-service teacher training and teaching practice on teachers’ ESD perceptions was analyzed. Second, the correlation between ESD related condition (e.g., school policies, culture, curriculum, environment, and support) and teachers’ and school administrators’ perceptions was analyzed. Third, difficulties in and educational effects of implementing ESD were analyzed from responses of teachers who had experience of practicing ESD at schools. Based on the survey and literature review, SPS-ESD instructional models were developed. The experts with different backgrounds from different areas were involved in the process of development including six university professors, seventeen elementary and secondary school teachers and one school inspector. As a result, one-hundred SPS-ESD instructional models were developed, which addressed over fifty ESD topics such as ethical consumerism, global warming, local governance, future energy, and appropriate technology. This research can contribute to educational practice of ESD in schools and ultimately to develop core competencies of elementary, middle, and high school students for sustainable future.

* We acknowledge a valuable contribution of many other teachers who participated in developing, implementing and evaluating the ESD instructional models, although we could not include all of them as authors of this paper. This research was funded by Korea Foundation for the Advancement of Science and Creativity in 2014.

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Hee Lee, Insook Lee

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Radical love as Commitment to Comradery: Revolutionary Organic Writing in the Borderland.

The purpose of this presentation is to introduce the concept of organic writing as a powerful tool that can be used for teachers and students to awake their radical love. Based on a case study, this proposal seeks to examine how teachers are motivated to be empowered using their literacy skills to create organic writing and to build a matriachial library in their classroom and communities. This presentation will also discuss how radical love, when implemented properly, has the power to change minds, hearts, and communities. The focus of this study covers various perspectives: trust, literacy, organic writing, teachers as transformative intellectuals and leaders, love as a creative force directed to organic writing, love as a new political/citizen identity, action research for reflection and action: a tool to reduce violence, cruel immigration, and racism.

Love as a radical theory/practice will cause change in our educational and community systems. What happens to a society when war is declared in the name of peace? What happens to its citizens when they live in constant fear, what if matriachy practices can be part of the solution? During 2008-2012 the border town of Ciudad Juarez/El Paso suffered the worst violence of its history. How are its citizens surviving and what is the role of love, writers and educators during and after violent times?
**Trust.** Trust is fundamental to manifest love and construct solid networks with members of a community. Most classrooms and teacher preparation programs, nation wide and in the borderland of Mexico/US, faced challenging circumstances.

**Literacy: Teachers as transformative intellectual leaders.** Teachers as transformative intellectual leaders can be insightful about community struggles as well as aspirations, someone who can think with the local community and is recognized by it as a visionary. *Mujeres Cósmicas* by Sotelo (2011) is one example of empowerment for educators during war time in the borderland. Sotelo wrote it from the trenches of a hostile environment where neither the state, nor educational systems were interested in legitimizing Mexican borderlands creative voices. Sotelo opens her heart to say other women stories and her own, she uses the same words but changed Spanish syntaxes and grammar, to create different approaches to concepts such as feminism, homosexuality, lesbianism, activism, motherhood, marriage, religion, and indigenous knowledge. Being a daughter of a farmer worker, she uses her literacy social capital to honor her heritage in her native language.

**Organic Writing.** Organic Writing a derivative of organic intellectuals, is a pedagogical approach that allows students and teachers to use their own knowledge as well as the community to generate new knowledge about the world and at the same time deconstruct it, redefine it, and reconstruct it rather than simply reproducing it.

**Matriarchal library.** Teachers and community members work together to build walking library using matriarchal approach; serious books that address the issue of racism, violence, sexual diversity and gender equity.
Reference


(Noboa, J. Personal communication November 29, 2013)


Title: Strategic Advancement of the Arts

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ABSTRACT

ArtsNow: Teaching and Learning Across the Curriculum is an Atlanta-based organization dedicated to improving education by equipping teachers with professional development and resources to bring creativity and the arts into daily instruction so all students succeed academically, socially, and artistically. ArtsNow and its collaborating partners, work as a strategic partner with schools and school systems to support and advance arts in education in direct alignment with district and local school priorities. Having served schools in 21 different school districts across Georgia, one of the most unique and impactful district-wide partnerships is with Clayton County Public Schools.

Clayton County Public Schools is the fifth largest school district in Georgia. The district provides educational services to its students in the following manner: 36 elementary schools, 14 middle schools, a K-8 academy, a 6-12 public charter academy, 10 high schools, 1 alternative school/technical center, and three special education program schools. Clayton County Public Schools serves approximately 54,000 students where 100% of the students enrolled are eligible for the free/reduced lunch program. Jackson Elementary and M.D. Roberts Middle School operate as a school within a school; both schools have a traditional setting along with a fine arts magnet program. M. E. Stilwell School of the arts is a whole school magnet school serving grades nine through twelve.

Clayton County Public Schools, in partnership with ArtsNow, has strategically approached the advancement of the arts in local schools, within a K-12 magnet continuum, and at a system-wide level. Using arts integration as best practice, students have the opportunity to demonstrate mastery of specific learning targets and objectives. The three magnet schools have visionary leaders and teacher leaders that effectively transform the teaching and learning environment through the arts to improve student achievement.

The intentional collaboration, across schools with ArtsNow, supports and enhances student achievement, teacher efficacy, leadership development and school-wide transformation. Arts integration has supported school improvement efforts and the approach in selecting master teachers and leaders for the arts. The K-12 continuum is currently in its second year, and does not have sufficient data to report. Reliable data will be reported and analyze within the next two years. The school district will use 2014-2015 school year as a baseline, and begin reviewing and analyzing data to track increases in student achievement from 5th to 6th grade and 8th to 9th grades. The high school SAT, ACT, and AP scores will also be analyzed to hopefully show increases in students’ college readiness. However, while the district continues to collect valid and reliable data, the three magnet programs continue to outperform other schools within the district on the state, national and international assessments. M.E. Stilwell School of the Arts boasts a 100% graduation rate.

It is the K-12 strategic planning process that has given the district the opportunity to advance arts programming and professional learning opportunities with local school and system-wide priorities. Although there is need for further research in the efforts of the district, the
district continues to effectively facilitate K-12 collaborative planning of school reform with the arts. Reliable data will be reported and analyze within the next two years.
ABSTRACT

Public schools across the country are facing a critical shortage of licensed special education teachers. For many reasons, paraeducators have been considered strong teacher candidates and have been recruited into the teaching profession intermittently for decades. Paraeducators who decide to obtain their teaching license often experience obstacles to this endeavor: money, time, family obligations, navigating the university system, and academics.

This research study examined and analyzed Minnesota paraeducators’ perceptions of the barriers to obtaining their special education teaching license. It also assessed the perceptual differences between Minnesota paraeducators who have completed at least a bachelor’s degree and those who have not. In addition, the study sought to determine a relationship between the paraeducators’ demographic information and their perceptions to the barriers of obtaining their special education teaching license. The findings of this study revealed that Minnesota paraeducators perceived the barrier of time to be the most problematic, followed by the money barrier. The barrier of academics was the least concerning to them. Quantitative analyses indicated there was no evidence of a difference between those with at least their bachelor’s degree and those without, in terms of their perceptions of the barriers. In addition, none of the demographic variables was a strong predictor of the barrier index, although the standardized coefficients were found to be higher for several of the factors.

Based on the findings, two broad-based conclusions were made. First, paraeducators in Minnesota are a strong potential source of future special education
Burris

teachers. Second, paraeducators face several significant barriers while on their pathway to obtaining their special education teaching license.
Title: Evaluating Internet Resources for Faculty and Student Researchers to Identify Valid and Reliable Humanities Resources.

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Abstract: C. P. Snow maintained in 1959 that the division between the two cultures, science and the humanities, involving subject matter, methodology, temperament, social attitudes and politics seemed unbridgeable (Snow, 1993). Many changes have occurred since 1959 that have narrowed the division between the two cultures. The differing cultures’ research needs and information seeking behaviors, does create competition for different types of resources. Differences do exist still but Humanities teachers, students, and scholars increasingly use information and material from electronic mediums that include Internet websites. Gary Olson asserts that, “We need a process to certify sites so that we all can distinguish between one that contains reliable material and one that may have been slapped together by a dilettante. We need to be able to ascertain if we can rely on a site for our own scholarship and whether we should give credit toward a colleague’s tenure and promotion for a given site. Internet sites, in contrast, have no such mechanism to quality control, and that is precisely why some kind of official recognition is necessary” (Chronicle 2008). Websites included in this article were evaluated for their value for Humanities faculty, student, and scholars. They were identified by replicating a model described by the author in 2008. Descriptions of the websites are included.

Evaluating Internet Resources for Faculty and Student Researchers to Identify Valid and Reliable Humanities Resources.

By Eileen McElrath

Introduction:

C. P. Snow maintained in 1959 that the division between the two cultures, science and the humanities, involving subject matter, methodology, temperament, social attitudes and politics seemed unbridgeable (Snow, 1993). Many changes have occurred since 1959 that have narrowed the division between the two cultures. The differing cultures’ research needs and information seeking behaviors, does create competition for different types of resources. Humanities researchers are more likely to prefer print sources because it is the text and the images that provide the basis of their studies. And, some find it a disadvantage to read text on a screen and are unable to take notes or annotate using electronic medium (Kachaluba, et al, 2014, 94). It is the difference in research methodologies that have an impact on choice of mediums. Dr. Ronald Blazek and Dr. Elizabeth Aversa tell us in their book, The Humanities-A Selective Guide to Information Resources, that Humanities’ scholars conduct research differently from other researchers, including researchers in the Social Sciences and especially the Science and Technology scholars (4-5). Stephen Wiberley shares the view in his 2009 article, “Humanities Literatures and Their Users, that “all scholarship is a continuum from the sciences to the social sciences to the humanities. There is overlap between the social sciences and humanities but clear differences between the core of each area” (2198). Differences do exist still but Humanities teachers, students, and scholars increasingly use information and material from electronic mediums that include Internet websites.
Importance of the Study

Technology and the Internet has developed since their beginnings resulting in information resources with tremendous value that are freely available on the Internet. Humanities students, scholars, and teachers partake of the incredible buffet of selections to inform their work. Unfortunately, there is not a valid system to review Internet resources similar to what exists for books and journal articles. The result is that it is up to the user to determine if a website, for example, is reliable with valid information and material. Often, tens of thousands of websites are returned from a simple Internet search. Just “Googling it” does not help much to find the true website diamonds. Gary Olson says this best when he tells us, “The digital revolution has substantially improved scholarly work, but it has also brought challenges to those of us charged with overseeing our institution’s tenure, promotion, and rewards processes. While several electronic forms compete for legitimacy, the two most prominent are journals published exclusively online, and Web sites devoted to scholarly subjects. As more and more electronic journals adopt peer-review processes that replicate the rigorous ones employed by established print journals, many e-journals are acquiring reputations for comparable rigor. “Scholarly Web sites, however, present a unique set of challenges for college administrators.” Olson asserts that, “We need a process to certify sites so that we all can distinguish between one that contains reliable material and one that may have been slapped together by a dilettante. We need to be able to ascertain if we can rely on a site for our own scholarship and whether we should give credit toward a colleague’s tenure and promotion for a given site. Internet sites, in contrast, have no such mechanism to quality control, and that is precisely why some kind of official recognition is necessary” (Chronicle 2008).

Section (MARS) of the Reference and User Services Association (RUSA) of the American Library Association (ALA) developed a method of recognizing outstanding free reference sites on the World Wide Web. Twenty-five sites were nominated, annotated, and voted on by a task force of 13 practicing reference librarians representing academic, public, special and government libraries” (Larson 2008).

*Reference and User Services Quarterly* provides a list of the Best Free Reference Web Sites each fall. These websites include a broad span of interests and are assessed using the following criteria to evaluate the websites:

- Quality, depth, and usefulness of the content
- Ready Reference
- Uniqueness of content
- Currency of content
- Ease of use
- Authority of producer
- Customer service
- Efficiency
- Appropriate use of the web as a medium

Because of the need for a mechanism to determine value for Internet websites for teachers, students, and scholars in the Humanities, this author proposed a model in 2008 to identify websites of value for Humanities teachers, students, and other researchers (McElrath 2008). This current study will replicate the proposed model to select free websites for the Humanities.
Procedure

A content analysis of the annotated lists of best websites that are published in *Reference & User Services Quarterly* from 2010 to 2014 was conducted. Each of the websites included here was originally evaluated and listed in the journal in 2010, 2011, 2012, 2013, or 2014. Websites included in this article were evaluated for their value for Humanities faculty, student, and scholars. They were evaluated by the researcher based on her educational qualifications (MA in English) and her experience teaching a graduate level course, *Information Sources & Services in the Humanities*. For the purposes of this study, fields in the humanities are philosophy, religion, the visual arts, the performing arts, language and literature, and history. Sites were designated as having value for humanities researchers if they provide primary sources, secondary sources, or can be used to answer questions during humanities research. Of the 121 websites listed in during the five year period, 25 were found to be of value to humanities researchers using this study's criteria.

Humanities Websites Selected


**Purpose:** “provides statistics on religious bodies—both in the United States and internationally. Figures for denominations in the United States can be had at the state, county, and zip code level for 1980, 1990, and 2000, while profiles for the entire denomination can include more historic data. GIS Maps are available, and it is possible to cross-reference geographies with practices. A research-oriented site.”

**Resource type:** Secondary and answer questions

**Audience:** High school, College students, teachers, researchers, general public

**Navigation:** Easy

**Author/Creator:** Association of Religion Data Archives, Department of Sociology, The Pennsylvania State University


**Purpose:** “a repository for the archiving and sharing of digitized collections, which can range from nineteenth-century periodicals to historical bicycling to war to hard-to-find government documents and congressional materials. The site's main page allows for general
catalog searching as well as browsing collections or searching within the full text of collections. A limit to ‘Full View Only’ retrieves items freely available online. Result lists can be narrowed by many options including subjects, language, and date, while full records include hotlinks on the author and subject and for similar items.”

**Resource type:** Secondary, Answer questions  
**Audience:** High school, College students Teachers, Researchers  
**Navigation:** Easy to use  
**Author/Creator:** Hathi Trust; A collaboration between the members of the Committee on Institutional Cooperation and institutions in the University of California system


**Purpose:** “a collaborative virtual library of public domain music scores (free music). It currently includes more than twenty thousand works from three thousand composers, with new works added every month. The site boasts the complete works of Johann Sebastian Bach in the Bach-Gesellschaft Ausgabe (1851–99), Ludwig van Beethoven, Frédéric Chopin, Johannes Brahms, Corelli, Faure, Sibelius, Schumann, and a large percentage of Franz Liszt, among others. General keyword and composer name searching is available, as well as browsing by time period, genre, instrumentation, and nationality.”

**Resource type:** Primary, secondary  
**Audience:** Middle school, high school, College students, Teachers, Public  
**Navigation:** Fairly easy; General keyword and composer name searching is available, as well as browsing by time period, genre, instrumentation, and nationality.  
**Author/Creator:** Project Petrucci


**Purpose:** “is much more than an interactive online dictionary of English. Gives definitions from the 2008 American Heritage Dictionary of the English Language and other sources, Provides example sentences showing words in context, information about words’ frequency and use patterns, related words, and more. It allows users to contribute information, such as recorded pronunciations, tags, and suggestions for new words. Flickr images are used to illustrate some words. This is definitely a site for “anyone who wants to know more about a word than they can find out in a traditional dictionary.”

**Resource type:** Answer questions  
**Audience:** Middle school, High school, College students, Teachers, Researchers  
**Navigation:** Easy to use  
**Author/Creator:** CEO and co-founder is Erin McKean, previously editor in chief for American Dictionaries at Oxford University Press.


**Purpose:** “an excellent resource for finding poems in full text and finding articles about poetry and poets. Can be searched or browsed by category, occasion, geographic area, first line, time period, or popularity of a poem. There are articles, hundreds of podcasts, as well as audio versions of poems sometimes read by the author of the poem. College and high school students will find a wealth of information quickly and efficiently.”

**Resource type:** Primary, Answer questions

**Purpose:** “a teaching and research tool for linguists, ESL teachers, and anyone interested in the accents of various English speakers. Provides short audio recordings of native and non-native speakers of English saying the same English paragraph. Basic demographic information, such as age, place of birth, and languages spoken, are provided for each speaker. Phonetic transcriptions and linguistic analysis of the recordings are available.”

**Resource type:** Answer questions

**Audience:** Linguists, ESL teachers, High school, College, Teachers

**Navigation:** Easy. Users need to download a free Apple QuickTime plug-in to hear the recordings.

**Author/Creator:** Steven H. Weinberger, Associate Professor and Director of Linguistics in the Department of English at George Mason University. A project of the Linguistics Program in the Department of English, the College of Arts and Science’s Technology across the Curriculum Program, and the Center for History and New Media at George Mason University.


**Purpose:** “provides cultural treasures from around the world on one site, in a variety of ways. These cultural treasures include, but are not limited to, manuscripts, maps, rare books, musical scores, recordings, films, prints, photographs, and architectural drawings. After selecting a region the user is able to narrow the documents by time period, country, topic, type of item, or institution.”

**Resource type:** Primary

**Audience:** Middle school, High school, College, Teachers, Researchers

**Navigation:** Ease of use encourages exploration.

**Author/Creator:** Hosted by the Library of Congress with the Support of the United Nations Education, Scientific and Cultural Organization (UNESCO).


**Purpose:** “dedicated to providing information to the general public on African American history in the United States and on the history of the more than one billion people of African ancestry around the world.” Over 1,500 encyclopedia entries—written by historians, independent re-searchers, and students—chronicle significant events, places, and people. Other resources include full-text transcripts of speeches and primary source documents, dating back to the 18th century; bibliographies, accompanied by links out to Amazon; and links to digital archives, museums, and other websites about African American and global African history.”

**Resource type:** Primary

**Audience:** Middle school, High school, College, Teachers, Researchers

**Navigation:** the lack of a consistent sidebar can make navigation a little confusing

**Author/Creator:** BlackPast.org


**Purpose:** “offers unfettered, intuitive access to reliable texts, accurate and exhaustive notes, and
the most recently discovered letters and documents. Purpose is to produce a digital critical edition, fully annotated, of everything Mark Twain wrote.” extensive annotations that accompany each letter, text, and document represent the work of scholars for more than four decades. Not all texts are available online yet. An excellent resource”

**Resource type:** Primary  
**Audience:** Middle school students, High school students, College, Teachers, Twain scholars, members of the public.  
**Navigation:** Easy to use; intuitive design  
**Author/Creator:** “MTPO is produced by the Mark Twain Papers and Project of The Bancroft Library in collaboration with the University of California Press; the site is hosted by UC Berkeley's Library Systems Office. During 2005–8 the California Digital Library collaborated in MTPO’s creation and initial development.”

**Purpose:** “was designed so that each entry is maintained and kept up to date by an expert or group of experts in the field. All entries and substantive updates are refereed by the members of distinguished Editorial Board before they are made public. A dynamic reference work maintains academic standards while evolving and adapting in response to new research.”  
**Resource type:** Answers questions  
**Audience:** High school students, College students, Teachers, Anyone interested in Philosophical topics  
**Navigation:** Easy; the “Table of Contents lists entries that are published or assigned. The Projected Table of Contents also lists entries which are currently unassigned but nevertheless projected.”  
**Author/Creator:** Metaphysics Research Lab, CSLI, Stanford University

CitationFox MLA, http://library.albany.edu/cfox?type=mla  
**Purpose:** “these guides for APA & MLA styles have numerous examples for all types of resources, from a chapter/essay in an anthology, to a blog posting, to scholarly articles with a DOI. Examples for government and legal materials can be found under the heading ‘Misc. Print and Online.’ Examples provide the general form. Helpful notes and examples are also included.”  
**Resource type:** Answers questions  
**Audience:** Middle school, High school, College, Teachers  
**Navigation:** Easy but Still in “Beta”  
**Author/Creator:** University at Albany, State University of New York

Art Project / Google, www.googleartproject.com  
**Purpose:** “powered by Google, currently links to more than 1,000 works of art at 70 major art museums around the world... Choose a museum from the homepage and then use Street View technology to virtually explore the museum or click on specific works of art and zoom in to view them in high resolution. Basic information is provided for the featured artwork and, if available, you may also click on links to Media (a YouTube video), Viewing Notes, Tags, Artwork History, Artist Information, More Works by the Artist, and More Works in the Museum (sortable by artwork or artist).”
Resource type: Primary, Answer questions
Audience: Middle school, High school, College, Teachers, Researchers
Navigation: Easy to use
Author/Creator: Google

Forvo: www.forvo.com
Purpose: “the largest word pronunciation dictionary in the world,” is here to help with audio playback clips of word pronunciations by native speakers in over 280 languages. The database was launched in 2008 and now contains over 1,250,000 pronunciations of nearly1,200,000 words. Limit entries to those that can be found in a dictionary. Idioms, short phrases and titles are also included. Choose a language or search for a word to find pronunciations. A Google map of the language and accents used is also provided. Pronunciations are provided by volunteers and they are reviewed by a team of volunteer editors for accuracy. A different language is featured daily with top pronunciations requested. The website can be viewed in several languages including French, Spanish, Italian, Portuguese, German, Japanese among others.”

Resource type: Answers questions
Audience: Middle school, High school, College, Teachers
Navigation: Easy
Author/Creator: Forvo Media SL, from San Sebastián

National Jukebox, www.loc.gov/jukebox
Purpose: “site contains over 10,000 recordings made by the Victor Talking Machine Company between 1901 and 1925. Playlists can be created that allows users to compile and listen to their favorite songs or recordings. There are also playlists compiled by Library of Congress staff and guest experts. Compilations include Ragtime recordings, Civil War music, and George M. Cohan and Irving Berlin songs. Each recording provides details about the record, when and where it was recorded and who composed and sang the song. Since most of these recordings are original they tend to be a bit scratchy— but that's part of their charm. A “Victrola Book of the Opera” which dates from 1919 is also included and provides interesting information on over 100 different operas. This online book also includes photos and audio clips.”

Resource type: Primary
Audience: Middle school, High school, College, Teachers
Navigation: Easy
Author/Creator: Library of Congress

NewspaperCat, http://ufdc.ufl.edu/hnccoll
Purpose: “Large numbers of historical newspapers are digitized every year by libraries, archives, historical societies, and other organizations but they remain under-utilized because they are virtually buried in the web. NewspaperCat, the Catalog of Digital Historical Newspapers, was developed to improve access to this rich primary resource material through one searchable database. The Catalog currently links to over 1,700 freely available digital historical newspapers from across the United States and the Caribbean with the goal of including as many North American newspapers as possible. Search the catalog by keyword, title, or location (city, county, or state) to locate links to these digitized newspapers and a treasure trove of information.”

Resource type: Secondary, Answer questions.”
Audience: Middle school, High school, College, Teachers
**Navigation:** Easy to use  
**Author/Creator:** University of Florida; George A. Smathers Libraries

The Trans Atlantic Slave Trade Database, www.slavevoyages.org/tast/index.faces  
**Purpose:** “an accessible database of 35,000 slaving voyages. Ten million Africans were shipped and this site “offers researchers, students, and the general public a chance to rediscover the reality of one of the largest forced movements of peoples in world history.” Information for each voyage includes names of ships, captains, origin, and destination. The maps section includes information on trade, crops, and ocean currents in addition to the track of the voyages. Information on known Africans includes age, height, and gender, cross-referenced with the ship. Ship’s logs and images, slave portraits, and vintage maps complete the story. Downloadable lesson plans are linked to learning standards and tailored to grade levels. Supporting web sources are linked for educators.”  
**Resource type:** Primary, Secondary  
**Audience:** Middle school, High school, College, Teachers  
**Navigation:** Easy  
**Author/Creator:** Emory University

**Purpose:** “is to increase discoverability of Open Access books. To be included in this directory, a book must be “available under an Open Access license (such as a Creative Commons license)” and “subjected to independent and external peer review before publication.” Currently, there are 1,272 academic books from 35 publishers, almost all published within the last 10 years or less. Both a simple keyword search and advanced search are possible. The advanced search allows the user to specify what to search: Title, ISSN/ISBN, Author, Keyword, Abstract, or Publisher. At time of review, titles in this database are in English, German, Italian, Dutch, or Russian. Books can be downloaded in PDF or read online. This is a growing collection of academic books and freely available ebooks.”  
**Resource type:** Primary  
**Audience:** Middle school, High school, College, Teachers, others  
**Navigation:** Easy  
**Author/Creator:** OAPEN Foundation

Historical Newspapers Online, http://guides.library.upenn.edu/historicalnewspapersonline  
**Purpose:** “collects links to historic U.S. newspapers fully accessible in digital archives, collections and libraries on the web. Familiar resources include Chronicling America (Library of Congress) and Google News. This site is organized by state and contains some lesser-known newspaper titles. Coverage includes the late nineteenth and twentieth century.”  
**Resource type:** Secondary, Answers questions  
**Audience:** Middle school, High school, College, Teachers, others  
**Navigation:** Easy  
**Author/Creator:** University of Pennsylvania Libraries

Purpose: “run by staff and graduate students at the Harvard Kennedy School. It offers access to scholarly reports and papers on a wide range of topics of interest to media practitioners, educators, students and others. To be included, research must generally be empirically based, peer-reviewed, published, and the product of a major university, government body, or nonpartisan research organization. The reference section offers information and links to online tutorials on core journalism skills such as interviewing, style, ethics, and more. offers syllabi for educators.

Resource type: Secondary, Answers questions.”

Audience: Middle school, High school, College, Teachers, others

Navigation: Easy to use

Author/Creator: Joan Shorenstein Center on the Press, Politics and Public Policy-Harvard University

LibriVox, http://librivox.org

Purpose: “provides free access to the audio version of the classics found in the public domain. Most of the texts come from the Project Gutenberg site, and include a variety of authors such as Dickens, Victor Hugo, James Joyce, Mark Twain, and Tolstoy. Volunteers provide the audio to the numerous works founds in this resource. Visitors can search the LibriVox Catalog to search a title or author. They can also view recently added titles or browse the entire collection. There are also audiobooks in other languages including German, French, Italian, Japanese, Chinese, and Spanish just to name a few. All audio files can be accessed on a computer or downloaded to any MP3 or portable audio player. They are available in a variety of MP3 or other audio formats. An entire work or individual chapters can be downloaded. This site should also help individuals who want to improve their foreign language and/or reading skills.”

Resource type: Primary

Audience: Middle school, High school, College, Teachers, others

Navigation: Fairly easy

Author/Creator: LibriVox

Media History Digital Library, http://mediahistoryproject.org

Purpose: “The history of American cinema, broadcasting and recorded sound can be found in trade magazines and other journals. The Media History Digital Library seeks to make these materials in the public domain widely available for free. By digitizing collections of classic media periodicals in the public domain the Media History Digital Library is able to make extensive runs of periodicals available online. The current selection available includes: Business Screen (1938–73), The Film Daily (1918–36), International Photographer (1929–41), Journal of the Society of Motion Picture Engineers (1930–49), Journal of the Society of Motion Picture and Television Engineers (1950–54), The Educational Screen (1922–62), Motion Picture [Magazine] (1914–41), Moving Picture World (1907–19), Photoplay (1914–40), Radio Age: Research, Manufacturing, Communications, Broadcasting, Television (1942–57), Radio Broadcast (1922–30). A list of “Select Holdings” is available on the Collections page (http://mediahistoryproject.org/collections/). Tip: To access the collection click on the icon/ triangle next to the title.”

Resource type: Secondary, Answer questions

Audience: Middle school, High school, College, Teachers, others

Navigation: Fairly easy

Author/Creator: Media History Digital Library

**Purpose:** “a virtual museum and searchable database of European art. It offers information related to art from the Medieval, Renaissance, Baroque, Neoclassicist, Romantic, Realist, and Impressionist periods. It includes over 30,000 images, artist biographies, commentaries, and guided tours. Users can take various “tours” including a European sculptors or an Italian painter’s tour. Accompanying each thumbnail image is the artist, title, year, medium, and owner (museum) information. Thumbnail images often include links to other works by that particular artist.”

**Resource type:** Primary, Secondary

**Audience:** Middle school, High school, College, Teachers, others

**Navigation:** Easy to use

**Author/Creator:** Emil Krén and Dániel Marx

Encyclopedia Iranica, www.iranicaonline.org

**Purpose:** “is a comprehensive research tool dedicated to the study of Iranian civilization in the Middle East, the Caucasus, Central Asia, and the Indian sub-continent.” Entries are lengthy and in-depth, and contain extensive bibliographies. The content is searchable as well as browseable, and the website is easy-to-navigate. This is a collaborative resource; “entries are solicited through invitation only, and are subjected to peer review to ensure factual reliability, scholarly objectivity, and political independence.” A Choice Outstanding Title in 2012, this is an excellent resource for information on Iranian history and culture from prehistoric times through the present.”

**Resource type:** Answers questions

**Audience:** High school, College, Teachers, others

**Navigation:** Fairly easy

**Author/Creator:** Encyclopaedia Iranica / Columbia University Center for Iranian Studies


**Purpose:** “this site offers vocabulary lists, a dictionary, and word challenges. They all work together to set a thorough, practical, and fun grounding in learning new words. Vocabulary lists have been created from items such as popular movies, historical documents, just for fun, political speeches, literature, or test prep. The challenge section quizzes you on word meanings, tracks words missed, and adds them to a list of words being learned. All uses of a word are defined and usage examples given. Create a free account for personalized vocabulary instruction, charts, and graphs showing progress and other features.”

**Resource type:** Answers questions

**Audience:** Middle school, High school, College, Teachers, others

**Navigation:** Easy

**Author/Creator:** Thinkmap, Inc.

**Conclusion**

The described and replicated model to evaluate Humanities websites to find ones that are valid and reliable is one method to do this. It allows us to identify those websites that are free to
all on the Internet. The present study identified 25 websites that meet the criteria as valid and reliable. Use of Internet sites for Humanities research will drive further acceptance of websites for serious research. Future research about evaluating websites that can validate the method used in the study as well as lead to the development of additional methods.


Rieger, Oya Y. “Framing Digital Humanities: The Role of New Media in Humanities Scholarship.” *First Monday* 15:10 (October 4, 2010).


Goal Orientation, Learning Beliefs, Attribution of Success and Study Habits of High-Achieving Chinese-Filipino Secondary Students

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SEE NEXT 3 PAGES
Goal Orientation, Learning Beliefs, Attribution of Success and Study Habits of High-Achieving Chinese-Filipino Secondary Students

By Grace Shangkuan Koo, PhD
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Abstract: This study looks at what make high-achieving Chinese Filipino students tick. Through a series of survey questionnaires and focus group discussions conducted among 175 honor students and their parents, the students' goal orientation factors, learning beliefs, attribution of success and study habits were investigated. The findings show that high motivation + adaptive learning beliefs + self-disciplined study habits + positive parents’ influence = academic success.

PAPER PRESENTATION:

The Chinese in the Philippines, even two generations after their ancestors migrated from China to the Philippines, are still very much influenced by the Confucian teachings which emphasize filial piety in the family and hard work in school and work.

Many schools run by Chinese-Filipinos are thriving because they produce quality graduates who continue to achieve excellence in the universities and further on to employment or graduate schools. Chinese-Filipino schools are strict in discipline, requiring students to achieve high performance not only in the Philippine curriculum, but also in the Chinese subjects. Parents value education highly and are involved in the day-to-day activities in schools. Students imbibe the values in authoritative parenting

Purposes and Methodology

This research is a case study of 175 secondary students in a well-known private Chinese-Filipino school (60% female, 40% male) who are classified “honor students” (i.e. maintaining at least a GPA of 92% and above in the report card each semester). Ninety-one percent of these students are of Chinese ethnicity and 70% of them speak Chinese (Hokkien) at home.

The study is conducted primarily to find out about their motivation in studies – in terms of their goal orientation, learning beliefs, attribution of success, and study habits; and secondarily, on their parents’ motivational and aspirational influences.

It is a blended quantitative- qualitative study. Four sets of survey questionnaires were conducted, two of which with the honor students (1. Learning and motivational beliefs; 2. Study habits;) and the remaining two, with the parents of the honor students (3. Parenting Goals; 4. Chinese Value Survey). Furthermore, two focus group discussions were held separately, one with selected students, and one with selected parents.
Findings

Attribution

While Western students attribute ability as most important to academic success, the results of this study show that 70% of the Chinese students believe in effort as the main reason for their success, while only 13% attributes success to ability, 11% to task, and 6% to luck respectively, as most important.

This strong attribution to effort is translated to daily discipline with about 20% of the sample putting between 3 to 4 hours of work daily to their homework and another 23% putting in between 2-3 hours of daily homework.

Learning Beliefs and Goal Orientation

The students’ learning beliefs are in some ways sophisticated – i.e. believing that ability could be improved, that knowledge is complex and can be acquired gradually, but at the same time, naïve in that they believe that knowledge is certain and can be learned from authority.

As to goal orientation, the study shows the students holding to mastery goal-orientation rather than performance goal-orientation. Among those having performance goal-orientation, there are more girls than boys. The senior class also demonstrated deeper learning strategies than superficial learning strategies.

Parental Factors

Eighty-nine percent of the students believe that their parents motivate them well. The majority of the parents motivate by merely giving encouragements, but at least 30% of them is strict with their children’s use of internet and television, and 15% actually supervise their homework. The concept of “guan” (control) has a positive connotation of “to care, to love, to govern”, such that in this sample, 27% does not watch television on weekdays and 55% doesn’t use the internet for non-academic purposes.

Academic Aspirations

Both students and their parents have high expectations. The parents will be satisfied if the students achieve 94% for Math and English, and 92% in Chinese. The students aim higher. They will be satisfied when they achieve 96% in Math and English, and 94% in Chinese. The Chinese subject is the most difficult for most students who put in the most time reviewing it at home.

The parents’ profile shows that about 40% of the students had both parents who were themselves honor students, and additional 25% who had at least one parent (mostly mothers) who was an honor student. The parents’ high aspiration for their children came from their own high self-aspirations. This high self-expectation is translated to higher academic aspiration in this sample where 39% hopes to get a doctoral degree and 35% at least a master’s degree.
Cultural Values

Parents of these students expect respect and obedience from their children and this is also reflected in the school that has for its administrators ethnic Chinese. For the parents, the top five characteristics of an ideal child are to be respectful, intelligent, obedient, God-fearing and hardworking.

Conclusion

This study reiterates findings of many studies conducted among the Chinese in the Diaspora. The “learning gap” between Americans and Asians and the “Asian ideal student” is not without reason. Discipline and hard work makes one “gifted”. 
Proposal to speak at the Hawaii International Conference  
January 3 – 6th, 2016

Title of my workshop: Maximizing the Development of Teacher Preparation Through Embedded Instruction

Topic this workshop relates to: Higher Education/Teacher Education

Presentation format: Workshop

Description of workshop
When challenged to evaluate the effectiveness of our Early Childhood and Elementary teacher prep programs, a model of embedded instruction and on site supervision proved to greatly enhance student teacher confidence and skill set. School administrators and cooperating teachers reported significant differences in the implementation of our new teacher preparation model. This university model for enriching student preparation can also be applied to school environments working with new teachers.

Author:
Dr. Valerie Ritland
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Abstract
Approximately six years ago Minnesota State University Moorhead closely examined the teacher preparation program for early childhood and elementary students. The intention was to look for ways to evaluate and ensure that courses were adequately preparing students to teach in twenty-first century classrooms. Partnering with two other universities in the surrounding community the three universities submitted and received a 10 million grant from the Bush Foundation. The focus of the grant was to research and implement new strategies addressing recent changes in classroom and school environments. University faculty worked with local school district administrators and teachers to gather their input in targeting the new skills and the new content knowledge necessary for effective teaching.

This workshop presentation will highlight for the audience what changes were made in the Minnesota State University Moorhead teacher preparation programs that resulted in more confident and more competent teacher candidates. Changes highlighted will address embedded coursework and the use of university liaisons assigned to each school where student teacher candidates are assigned.

This successful university teacher preparation model, can also be adapted to work effectively in building the confidence and skills in newly hired teachers in early childhood and elementary level classrooms. The workshop will share with the audience how to use the university principles and practices in school settings to develop highly competent teachers.
Proposal to speak at the Hawaii International Conference on Education  
January 3 – 6th, 2016

Title of Submission: Partnering with Parents to Maximize Student Outcomes

Topic Areas: Early Childhood; Elementary Education; Teacher Education

Presentation format: Workshop

Description of presentation: When parents are involved in their child’s education, research has confirmed that children will do better academically and socially. This knowledge should prompt all educators to be intentional and persistent in our efforts to partner with parents. This workshop session will highlight strategies in building effective partnerships with parents and prepare participants to work through the challenges and conflicts that can arise in our relationships with parents.

Author:
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This presentation is a report on issues relating to teaching. Additional summary:  
With thirty four years of direct service experience as a special education teacher, a Head Start program specialist, and an elementary school principal, the author has collected a wide array of effective strategies that work to build a meaningful relationship with parents. This presentation will present the distinct differences between parent involvement and parent partnership relationships and why building partnerships is what increases our chances of maximizing student academic and social outcomes. The workshop will also present tools for building the parent/teacher relationship; ideas for partnering with parents addressing Joyce Epstein’s six different levels of involvement, and how to manage the issues when a parent teacher partnership becomes a power struggle.

To add additional credibility to the impact of parent partnerships, a number of schools were recently surveyed to collect data on the ways in which parents are involved with teachers or as volunteers in the school environment. The survey was presented to administrators from a variety of different schools, including Montessori schools, preschool centers, and elementary schools. An effort was made to contrast and compare the level of involvement in small schools, large schools, as well as private and public schools. The workshop will share the interesting findings, and challenge participants to shift from a philosophy of parent involvement to a culture of parent partnerships.

*I hope that I have adequately addressed the expectations for the type of presentation that I am offering to your conference and that you find the topic interesting and relevant to your conference.
Title of Workshop: Using Graphic Novels Teaching with All Types of Students

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Abstract:
Professors from two universities describe the multiple uses of graphic novels in classrooms of all kinds. Graphic novels can be used at any age level and most ability levels and in almost any content area instruction. The presenters will give a brief history and overview of graphic novels and provide examples of types of graphic novels. One professor will describe how she has been using the medium in the teaching of a college level literature class. The other presenter will demonstrate the use of graphic novels to enhance the content of a TESOL course entitled “Teaching People of Other Cultures.”

Graphic novels offer opportunities to provide age appropriate content for learners who may need challenging themes or topics but can benefit from having the burden of text reduced. The presenters discuss the use of this medium in the classroom with special attention to the effectiveness of graphic novels in differentiating for all types of learners, including special education, gifted and talented, and English language learners. The presenters will offer multiple ways of differentiating instruction for all types of learners. Attendees will leave with a resource list, a bibliography, and a variety of teaching ideas.
Digital Racism: A Quantitative Analysis of to What Extent Does Perceptions of Student Race Influence Instructors Scoring of Online Posts?

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Digital Racism: A Quantitative Analysis of to What Extent Does Perceptions of Student Race Influence Instructors Scoring of Online Posts?

Distance Education Workshop

As online courses become more prevalent, online instructors need to be aware of proper planning, instruction and assessment techniques. This presentation shares information on a dissertation research project about digital racism in which the study compares two students’ online post submissions and shares the surprising results of how the same online student submission was scored differently solely based on the student’s name.

Dr, Gina Haughton, PhD
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Abstract

The purpose of the research was to investigate the extent in that racism exists or is present in higher education online courses when scoring online posts. The research question was: Digital racism: A quantitative analysis of to what extent does perceptions of student race influence instructors scoring of online posts? The related research sub questions were:
1. Was there a difference in how the student online posts were scored?

2. Were there differences in how the participants in the scoring groups scored?

3. Were there differences in scores based on the name assigned to an online post?

The researcher utilized a quantitative research methodology that employed a 3 x 2 factorial design which incorporated two student online postings, a modified version of the 6+1 Traits Rubric® across three different scoring groups.

The findings of the research suggested that regardless of the sample that scored the student an online post, the same online post was always scored higher regardless of the student name that was assigned to the post. However, each time an online post was assigned the name DeShawn, the online post was scored higher. There was a statistically significant difference. This finding suggests that perhaps instructors have lower expectations for a student of color when assessing student work online. The implications for online scoring are to ensure that all instructors are well informed on best practices in multiculturalism and that instructors create high expectations for all students.
Teacher, nurse or both: How to plan, instruct and assess an education course for nursing students.

Gina Haughton, PhD

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Teacher, nurse or both: How to plan, instruct and assess an education course for nursing students.

Health Education

Workshop

This presentation is designed for nursing instructors who work in higher education who are interested in creating an education course for nurses that incorporates an interdisciplinary approach to planning, instruction and assessment. The course created addresses the conceptual framework that guides the art and science of teaching as it relates to nursing content.

Dr. Gina Haughton, PhD
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Research Paper

What is the value of interdisciplinary planning, teaching, and assessment? Too often colleges and the programs within the colleges, focus their time and efforts on their own respective work. While this is important for the viability of the programs, it does not allow for learning to fully develop nor does it lend itself well to providing rich learning experiences for students. According to Jacobs (2009) in 2007 the University of Michigan at Ann Arbor has intentions of hiring 100 faculty members all of whom had experience in areas that advance interdisciplinary teaching and research. This paper outlines the way in which an interdisciplinary course was created to meet the teaching needs of nursing students.

The initial step in creating the course was to planning for student learning. This course was first created by examining the content in the nursing program and attempt to identify gaps. Data was also gathered from students in the program to ascertain how prepared students felt in terms of teaching patients during consolations. After the data was analyzed, course outcomes were developed and faculty from both the college of educational leadership and the college of nursing engaged in strategic conversations to discover the similarities in the content and program outcomes that were currently being delivered to students. This process allowed faculty to examine cross-curriculum to pinpoint where concepts were being taught or not. The course could then be written and offered to students.

While it may seem as though teaching the content created is the easy part because we teach all the time, but there are challenges when teaching in interdisciplinary courses. Because interdisciplinary teaching is not necessarily team teaching, faculty may be teaching the course without the physical support of the faculty in the dominant course content. The lack of being a content expert can be difficult when instructors are unable to provide clear examples and build
upon students prior and background knowledge in the students’ specific content area. Asking for
the content experts to remain involved in the pedagogy after the initial course planning has been
completed will help eliminate potential pitfalls. Frequent check-ins between the faculty should
continue even after the course has begun.
Likewise, while planning and instruction continue throughout the process of creating an
interdisciplinary course, assessment should follow suit. Contrary to popular belief, assessment
should not only be implemented at the end of the course. In the nursing interdisciplinary course
that was created last year (2014), a research study is in the process of being completed to
examine student perception of learning that occurred, as well as measuring the cultural
competency of the students. The study will include a student focus group to discuss additional
themes and student perceptions. The study is in hopes of creating an assessment tool which will
aid in faculty in interdisciplinary planning, instruction, and assessment.
Cross-disciplinary Pilot Project with Organizational Psychology and Art Therapy: “Lunch and Learns”

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Abstract: A pilot project of “Lunch and Learns” at Adler University, Vancouver BC Canada demonstrates the effectiveness of cross-disciplinary graduate education for MA Organizational Psychology and Master of Counseling: Art Therapy students. In this leading edge educational initiative, students provided onsite interactive learning events to organizations and presented business professionals with practical take-aways, tools and techniques for enhancing well-being and performance at work. Including graphic recording as part of the presentations provided businesses exposure to innovative visual ways to enhance imagination, creativity and productivity in the workplace. The pilot project, its background and rationale are described in the paper, as are first pilot-testing and evaluation results regarding its benefits and improvement needs. We conclude the paper by outlining future implications particularly for education in organizational psychology and art therapy-based organizational consultancy.

INTRODUCTION

The basis of this pilot project conducted at Adler University, Vancouver, Canada was to provide a cross-disciplinary educational experience for students in the Master of Arts in Organizational Psychology (MAOP) program and the Master of Counselling: Art Therapy Program (MCP:AT). The intent was to operationalize the Adlerian value of community by giving students from the different programs a project to partner on in order to foster communication and connections on campus. Alfred Adler wrote about people maintaining healthy functioning as centering around the ideas that fundamentally humans all have a need to belong (Ferguson, 2010) and that a sense of cohesive community is crucial to Well-Being (King & Shelley, 2008). Thus the importance of a positive community atmosphere on campus and creating living connections between students in different programs has always been valued at Adler University.

The students were linked through a “Lunch and Learn” project which provided onsite interactive learning events to organizations and presented business professionals with practical take-aways, tools and techniques for enhancing well-being and performance at work. Including graphic recording as part of the presentations provided businesses exposure to innovative visual ways to enhance imagination, creativity and productivity in the workplace. The need for 21st century organizations to open to innovative
strategies as a way of engaging employees and exploring new ways of thinking (Adler, 2006) made graphic recording the ideal link between the disciplines. The student teams learned how to join knowledge in their fields into a creative combination that meets the need for change in the way organizational consultancy is delivered.

**Connections to the Research:** Education for organizational psychology and counseling/art therapy students at this time in history when there are dramatic and constant changes in the economy, technology and our way of life requires a forward looking vision which includes the decompartmentalization of our graduate education structure.

Research is showing that an increasing number of companies are including creative processes in their strategies for management (Adler, 2006) in order to increase engagement and effectiveness in meetings and workplace wellness (Smith, 2014). The effectiveness of working with visual techniques to deliver engaging and memorable training and developmental experiences for employees is also being increasingly recognized (Bailey, 2011).

Hands-on, experiential learning with particular attention to the visual component is being worked with as a tool to enhance visioning (Sibbet, 2012) and transform productivity in the workplace (Sibbet, 2010). As art therapy-based organizational consultancy becomes more recognized (Huet, 2011) the need for cross-program education to meet the unique training requirements becomes more vital than ever.

**PROJECT DESCRIPTION**

**Who:** Graduate students in the MAOP and MCP: AT programs were crossed trained by Program Directors and faculty in each department. Consultants were invited into the training process to bring in the community perspective.

**Educational Objective:** Program Directors wanted to increase “workplace wellness” within the organization of the University by aligning with Adlerian values of community in order to create for students a “sense of belonging” to a greater community than just their individual program of study. It was recognized that such an atmosphere of increased connection and conversation could give rise to innovative and creative educational
experiences. The experience was “made real” by including the local business community who also served our educational mission of training socially responsible practitioners.

**Initial Training Workshop:** MAOP and MCP: AT students came together for the first time in a 3 hour workshop to train in: a) the basic skills of graphic recording; b) dynamic presentation skills; and c) professionalism.

**Student Involvement:** Students from the MAOP and MCP: AT programs were engaged to deliver a majority of the Initial Training Workshop in order to maximize their feeling of ownership of the project. A senior MAOP student prepared a PowerPoint presentation to teach her peers the following information:

- a) an overview of the project;
- b) how to make and deliver effective presentations;
- c) an introduction to graphic recording;
- d) an introduction to the topics that would be the focus of the presentations.

Four MCP: AT students were engaged to graphically record the Initial Training Workshop in real time, as a live demonstration of what would be taking place when the students presented the Lunch and Learns to different community organizations.

The four graphic recorder students were situated at the front of the room alongside the MAOP student presenter. Each recorder worked in his/her own artistic style to create a visual image of the content of the presentation. The MAOP student presented the pilot project concept, the outline of what the students would be expected to do and the basic framework for a powerful presentation to a company while the graphic recorders worked to highlight specific facts, concepts and ideas using visual images drawn on an easel. This innovative and engaging learning experience provided the foundation for what was to come for the students over the next few weeks.

**Topic Creation:** MAOP students were asked to generate presentation topics that: a) they were most passionate about; b) would be most relevant to business leaders and working professionals; and c) they saw as a potential niche area in their field. This initial list was presented to organizations who
were asked to choose topics immediately relevant to their organization and directly applicable to the work the company performs.

Companies were allowed to choose from the following list of topic ideas:

• The 21 day happiness challenge: Building the five pillars of well-being at work
• Job crafting: Shaping the future of your work
• Finding “Flow”: The art and science of mindfulness
• Building high-performing work teams
• Leading from the field: Navigating the collective emotions of a room
• Gratitude and Appreciative Inquiry: Creating an upward spiral
• Creating and sustaining positive habits: Bridging science and practice
• A leader’s guide to Co-Active coaching
• Developing a blended value proposition: People, planet and profit
• Transforming your survey data into sustainable change
• Design thinking and practice: Innovating in a corporate context
• Investing in strengths: Leveraging your signature strengths at work
• Resilience at work: Building resilience in the face of change and uncertainty
• Creating from conflict: Finding the eye of the storm
• The envisioning lab: Creating and living into a shared vision

**Positive Psychology:** The topics chosen were all in line with the current trend towards incorporating positive psychology concepts and practices within the workplace to promote wellness and productivity. Positive psychology is defined here as “a science of positive subjective experience, positive individual traits and positive institutions” (Seligman & Csikszentmihalyi, 2000, p. 5). Positive psychology seeks to compliment, rather than displace, the historical focus of clinical psychology on mental illness by emphasizing “states of optimal human functioning and fulfilment, and the facilitation and promotion of well-being” (Emmons, 2006, p. 3).

The most popular topic requested by almost every organization was the “21 day happiness challenge”, which is in line with the positive psychology movement. The students ended up presenting on "Resilience at work”, "Job crafting", "Gratitude and Appreciative Inquiry”, "Creating from Conflict", "Finding Flow” and "Investing in Strengths”.
**Team Selection Process:** After the Initial Training Workshop students from each program were asked to team up so that there were two MAOP presenters paired with one MCP: AT student who would be their graphic recorder. Many students chose to pair up based on mutual interest in a particular presentation topic. Others paired up based on what they thought would be a good organic fit between personalities. The team selection process was a learning experience for the students from both programs since building effective teams and working with different personalities was a major part of this project. Students in the MCP: AT program learned how to speak the “MAOP language” of Organizational Psychology and the MAOP students learned to speak in metaphors and symbols – a more “artistic visual language”. Both groups of students ultimately had to adjust and adapt their styles to create a new presentation together for the benefit of the organization they would present to.

**Preparation of the Presentations:** Once the teams were formed, the students were responsible for meeting and practicing their presentations. Areas for evaluating their performance were provided and each team was instructed to ensure that their presentation met all criteria. For the pilot project, the students were given one week to put their presentations together and polish their performances before presenting to a team of evaluators at the Dress Rehearsals.

**Dress Rehearsals:** The Dress Rehearsals were conducted at the Adler University campus in several different rooms. Each room had a team of evaluators consisting of a Community Consultant, one MAOP and one MCP: AT faculty member who provided written and verbal feedback to the students immediately after their presentations. An evaluation form was created that included feedback on the content of the presentation, the style of the presenters, the presenter characteristics and the use of graphic recording to enhance the experience. Students were expected to come to the Dress Rehearsal fully prepared and appropriately dressed “as if” they were presenting to their actual organization.

Many of the teams struggled through the Dress Rehearsal. This was due to: a) the lack of practice time; b) unfamiliarity with subject matter; and c) teammates working in differing modalities. However, the Dress Rehearsals were an enormous part of the learning experience for everyone involved in the project. The students learned how to work under ‘real life’ pressure and discovered what it takes to be mindfully prepared to present in the moment.
The project coordinators learned valuable lessons about coaching students and giving effective feedback.

**Delivery in the Community:** After the Dress Rehearsals students were asked to polish their performances before going out to present to the business community. The students then delivered their presentations as onsite learning events through complimentary “Lunch and Learn” sessions. These sessions were interactive and engaging, presenting business professionals with practical take-aways, tools and techniques for enhancing well-being and performance at work.

The organizations themselves represented a heterogeneous sample of for profit and non-profit organizations throughout the lower mainland. Teams were responsible for tailoring their presentations to the individual organization that they were presenting to. Despite the short notice to the participating organizations, there was overwhelming demand for student teams to present and each team was eventually matched to two different organizations.

**The Organizations:** The organizations covered a range of industries, including business consulting, banking, professional sport, health care, social enterprise, and the public service. Marketing for the event was minimal. Within a week of sending out our invitation to the British Columbia Organizational Development Network and our practicum partners more than enough participating organizations were identified for each pair of students to be matched to two organizations. In order to meet the demand, we needed to recruit Alumni to present as well.

The participating organizations are listed below:

- HiVE Society
- Homewood Health
- Parkgate Community Services Society
- Blue Shore Financial
- The Vancouver Whitecaps
- The City of Vancouver
- Whitewater West Ltd.
- South Granville Senior’s Centre
- Health Services BC
- Spark Expansion Consulting
Evaluation: Each participating organization was provided with a Lunch and Learn Workshop Evaluation Form (See Appendix A) to supply the students, faculty and organization feedback about the experience. Each team received the written feedback from their site and this feedback was collected and analyzed by the project coordinators. Both quantitative and qualitative evaluations of student performance were gathered from the perspective of participants.

Participant Evaluation Measure: A 26-item Deeper Learning Assessment Instrument (DLAI) was developed to measure the extent to which the intended objective of creating a contextually-based, experientially driven, transformative learning experience was achieved from the perspective of participants (see Appendix A). Participants were first asked to assess each of the items on a five point Likert scale from “strongly disagree” to “strongly agree” followed by a series of open ended questions where participants could provide feedback on the strengths and developmental areas of each co-facilitator. The instrument was derived from the grading guide provided to students to guide their preparation (see Appendix B).

Results: An analysis of descriptive statistics for the DLAI and qualitative comments from participants for the first and second learning event was conducted to determine student performance on each of the learning criteria, identify strengths and opportunities for development, and ascertain whether performance improved between the first and second workshop.

Average scores on overall satisfaction (4.5) indicate that participants were generally satisfied with the learning experience. Results further indicated that in all of the pairs, mean scores for each of the learning criteria increased between the first and second learning event. Students attributed this increase to a “practice effect” noting an increase in confidence both with the content and facilitation skills (e.g., powerful questions, active listening), a willingness to rely less on notes and slides, incorporate more of their own authentic personality into the learning experience, and adapt their content and process to meet the needs of participants.

Contextually based: An average score of 4.3 for the contextually based learning scale indicates that participants found the learning event to be tailored to the needs of participants (4.6), meaningful, and relevant to the
working lives of participants (4.5), and walked away from the experience with new knowledge (3.8) and valuable resources (4.3) they could immediately put into practice. Several participants reported a deeper level of self awareness, which was reinforced in some cases by self assessments of, for instance, personal resilience and work related well-being. An expanded awareness of the organization’s collective capacity was also reported by participants.

Examples of practical resources students developed for participants included a USB key with videos, websites, PowerPoint slides, publically available articles and a bibliography of additional references. Other pairs of students prepared websites or blogs where participants could go to access additional resources and participate in discussion threads to continue the dialogue and expand their learning community. Several participants expressed a desire to keep the graphic representation of the group’s learning experience on display as a “practical resource to remind us of our creative capacity”, “an anchor we can always return to” and a “symbol of our community”.

**Experientially Driven:** Results indicated that, overall, participants were emotionally and intellectually engaged by the learning events (4.1) and felt that the students reached an appropriate balance between the presentation and experiential components (4.3). While participants expressed an appreciation for the research findings and conceptual frameworks presented, the majority of the comments focused on the value gained from the experiential activities such as a mindfulness meditation, the “opportunity to share with and learn from co-workers and others”.

A common theme that emerged across host organizations was a desire to engage in “open and authentic discussion rather than a lecture”. The opportunity to engage in open discussion combined with personal reflection enabled a realization among participants that “I know more than I thought on [the topic] and there are others who care about it as much as I do”. A number of participants expressed a felt sense of community that stemmed from “knowing that others struggle with the same challenges I face with this topic [resilience]”.

Opportunities for development focused on a similar theme where participants felt that some workshops would have benefited from more experiential exercises and collaboration among participants. Additional feedback suggested that the time constraints prevented the group from
engaging in a deeper, more meaningful discussion and application of the topic to their working lives. Participants further reported that students could develop their skills in debriefing experiential activities to internalize the principles and tactics covered, explore potential action steps, uncover opportunities and challenges participants may encounter, and come up with collective strategies to overcome them.

**Transformative:** The average score on the transformative learning scale for the first (3.4) and second (3.9) events with a high standard deviation (2.4; 2.1, respectively) suggests that participants were varied in the extent to which they experienced a significant shift in their beliefs, values and/or assumptions about the topic (3.5) and left the workshop committing to a meaningful change in some aspect of their lives (3.8). Below is a representative sample of comments that indicate a significant shift took place in beliefs, values and assumptions and commitment to action.

“I’m leaving with a new definition of resilience I can own.”

“I’m determined to use the information from positive psychology to improve my day to day working life.”

“I leave with a renewed appreciation of my own strengths and the strengths of this organization.”

Interestingly, these comments came from workshops where there was a closing activity requiring participants to commit to taking a meaningful action step following the workshop to improve their personal or professional lives. They were then asked to follow up with the presenters letting them know what step they took and any impact this new behaviour had on themselves and others in their lives. Some students chose to set up an exclusive online discussion thread for participants and co-facilitators where they can share their action steps and support each other as they face current and future transitions.

**Co-facilitation:** Average scores on co-facilitation for the first (3.8) and second (4.3) learning event suggest that the students demonstrated the competencies covered in rehearsal and that these skills improved with practice. The highest rated competencies for both events were demonstrating curious inquiry, powerful questions and active listening (4.5) and complimenting each other’s presentation style presenting in a complimentary, cohesive and mutually supportive partnership (4.3). While
recognizing and shifting the emotional energy of the group (3.4) and adapting the presentation content and process (3.7) to achieve the desired learning objectives were the lowest rated competencies for the first event, notable improvements were made in the second event (3.7 and 4.2, respectively). The following comments highlight the competency strengths of the co-facilitators from the perspective of participants:

“The flow of the presenters conducting workshop was excellent.”
“Both facilitators were great listeners and encouraged participants to speak up.”
“Excellent job bringing everyone into discussion - listening and reforming answers and respecting the participants.”
“Facilitators created an open-minded environment where it was easy to learn.”

Participants also highlighted opportunities to improve the co-facilitation by “engaging the audience more”, “relaxing, breathing and pausing”, and “providing more specific examples relevant to the working context rather than high level examples.”

**Presentation:** With respect to the presentation style, participants strongly agreed that visual aids were well prepared, informative, engaging and not distracting (4.2) and that the co-leaders brought their authentic personality, artistry and creativity (4.4). These scores were fairly consistent across the two learning events (4.0 and 4.5, respectively). Evidence of authentic expression can be found in qualitative comments where participants noted the unique qualities of the facilitators, such as “a good sense of humour”, “great story teller”, “talking from personal experience”, and a “calm demeanor”.

Participant comments related to student creativity and artistry highlighted the impact of graphic facilitation on participant learning:

“The image capture piece was really creative and compelling. I've never seen that before and the visual/spatial element brought the words to life. So much better than just plain text.”

“The graphic display created an accessible and imaginative aspect that pulled all components together.”
“The visual images helped get us out of our heads”.

For the most highly rated graphic facilitators, participants noted the importance of “explaining the purpose of the graphic facilitator and ongoing explanation of imagery rather than silent participation.” For a number of events, participants would have wanted “a more thorough debrief and explanation of the graphics” in order to fully appreciate its value. To the extent that these elements were missing from the workshop, graphic facilitation was more likely to be seen to distract rather than contribute to participant learning.

**Debrief Meeting:** Students were invited to attend a Debrief Meeting after each team had presented to their chosen organization and after the evaluations were done. In these meetings teams shared their experiences about what worked and what did not with each other and staff at Adler University.

Many interesting insights came out of the Debrief Meetings. For example, several teams shared that the graphic recording during the actual presentation was distracting for participants and therefore they chose to move their graphic recorder to the back of the presentation room thereby minimizing the distraction. For these teams the graphic recorder presented the organization with the completed visual image at the end of the presentation. Other teams decided to keep their graphic recorder front and center but have him/her focus on highlighting just a few key points they wanted to make.

In order for these insights to come to light teams had to experiment, take some intellectual risks and learn to communicate openly and honestly with each other throughout the project. The Debrief Meetings also served as informal celebrations of the hard work and effort that went into the project. Students left the session feeling a sense of accomplishment and knowing that they had some very valuable presentation skills and connections with other professionals that they did not have prior to participating.

**IMPLICATIONS**

This pilot project has implications for the field of education, the Adler students, Adler University and the organizations involved.
Implication for the Field of Education:
For both the field of art therapy education and organizational psychology the need to develop and research the impact of cross-disciplinary training specific to art therapy-based organizational consultancy is indicated particularly given current challenges in graduate education. Innovative organizational explorations are indicated with regard to working with art therapy to strengthen the other half of our brains and bring the practice of psychology back into alignment with the origins of our field – the psyche or “animated spirit”.

Implication for the Participating Students: There are research implications with regard to students expanding their social and professional network and profile to differentiate themselves in a competitive labour market emphasizing professional experience. This project provided a “real life” opportunity for the students to not only learn from the faculty and staff but from each other across departments. MCP: AT students became familiar with how their skills could be utilized in the business world and MOAP students gained more insight into how the world of visual representation can make the “invisible visible” in a way that connects ideas and people. The seeds of new opportunities have been sown in the students through gaining experience of how it feels to partner with people in other fields of knowledge in order to engage in socially responsible practice.

Implication for Adler University: Areas for further research include the impact the lunch and learns have had on program enrolment and local recognition of the University and participating programs.

Adler University with its emphasis on community values and training socially responsible practitioners is in a unique position to provide cross-program education which spurs the training of a whole new breed of professionals equipped to meet the needs of the working world. As long as the University continues to “walk its talk” and operationalize the values of community and connection on campus in order to achieve the ideal of optimal functioning for students, creative and leading edge Alumni will continue to graduate and make a real difference in the world.

The Lunch and Learn project created an atmosphere of collaboration and community that has stayed with the student population at Adler University long since the project itself finished. Many of the MCP:AT – MOAP students have continued to work together on other school initiatives and
projects. Several teams have forged meaningful collegial partnerships that will see them through the rest of their education at Adler University and into their careers after. The project fostered a true spirit of team work among all who participated including the faculty members who have continued to collaborate and develop this project for the future.

It is creative intersections like these that contribute to the public perception of Adler University as a dynamic and student centered institution that provides outstanding educational experiences for its students, staff, faculty, Alumni and Community Partners.

**Implication for the Organizations:** Future research is needed with regard to bringing the science and principles of psychology to the organizations and the broader community in a way that is compelling, accessible, and of immediate use. A community partnership with a University who keeps up with the leading edge of thought and research is a powerful alliance for any business organization with a vision to keep up with the constantly changing times.

**Implications for Future Projects:** For future projects of this nature the following is recommended:

1. That suggestions from participants on future topics of interest be incorporated to maintain the relevance of the content.
2. That consideration is given to making online discussion threads on the organization’s intranet a standard offering to deepen the learning, create a community of support, and forward action on participant goals.
3. That a Deeper Learning Assessment Instrument be developed including action to:
   a) Establish the validity and reliability of our participant evaluation form as a student thesis project.
   b) Re-administer the transformative scale to participants to determine whether personal and organizational change has been sustained over time.
   c) Have co-facilitators self rate their own performance using the instrument to compare their perceptions with those of participants.
4. That the Debrief Meetings be kept and **amplified** particularly because of the need to identify subtleties due to the newness of the experience.

5. That the Project be incorporated into credit courses. The MCP: AT students could be offered instruction on the basics of Graphic Recording and Graphic Facilitation (two separate but similar disciplines) where they could be taught graphic recording skills such as developing a visual short hand specifically for common terms in the business world. Specific emphasis would be on provision of graphic recording within the context of a lunch and learn designed to enhance the learning experience.

6. That more time be devoted to practice sessions for the teams so that the dress rehearsal portion of the project is a much more professional presentation experience for the students. Specific attention would be paid to teaching:
   a) Facilitating debriefs;
   b) Recognizing and shifting the emotional energy of a group;
   c) Adapting presentation content and process in real time (i.e., “dancing in the moment”);
   d) Designing an alliance between co-facilitators;
   e) “getting present” prior to the event;
   f) Reducing the content covered to allow more time for group interaction and discussion.

7. That with regard to marketing:
   a) More time be given to market the joint venture;
   b) That the contact person be someone who is involved in the event so that potential participants can get answers to their questions immediately. (Vezina, M.)

8. That the University ensures enough students to cover interest and high demand.

9. That the “Star Framework” (O’Neill & Eleniak, 2015) for co-active facilitation continued to be developed as an educational tool for other educators interested in cross-disciplinary training.

CONCLUSION
Choosing to visually represent the group dynamics that happened during presentations at the “Lunch and Learns” was an innovative, cross-disciplinary addition which contributed significantly to providing memorable workshops for the business community and forging relationships between them and the University, connections which will serve everyone well into the future. The results of this pilot project indicate the need for continued exploration into crossing the educational fields of art therapy and organizational psychology in order to train dynamically effective teams of art therapy-based organizational consultants. It is this “new breed” of graduates who can meet the increasingly recognized need for creative, innovative and imaginative practices in organizations for the optimization of productivity and workplace wellness.

REFERENCES


Psychology and Counselling/Art Therapy. *Workshop presented at 2016 International Conference on Education, Honolulu Hawaii, USA.*


*The authors would like to honor the contributions of all those who contributed to this project: Michelle Vezina, Alexandra Dobre, MCP:AT students, MAOP students, community partners, staff, faculty, family and friends.*
**LUNCH AND LEARN WORKSHOP EVALUATION**

We would greatly appreciate your feedback on the “Lunch & Learn” workshop you have just completed. Your opinions are important as they will help us to identify our strengths and growth areas as facilitators. For each statement below, please circle the number that best describes the extent to which you agree or disagree with that following statements. If you do not agree with a statement, please clarify this issue further in the “Other Comments” section at the end.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree Nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
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<tbody>
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<td>1. I learned something new that I can put into practice right away.</td>
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<td>2. The learning event has equipped me with valuable tools and resources for my professional practice.</td>
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<td>3. The learning event was tailored to the needs of participants.</td>
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<td>4. The content was meaningful and relevant to my working life.</td>
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<td>5. The objectives of the learning event were clear.</td>
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<td>6. The learning event started and ended on time.</td>
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<td>7. There was an appropriate balance between the presentation, participant involvement, and exercise components.</td>
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<td>8. I was intellectually and emotionally engaged.</td>
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<td>9. As a result of this learning event, a significant shift occurred in my beliefs/values/assumptions about the topic.</td>
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<td>10. As a result of this learning event, I have committed to a meaningful change in some aspect of my life.</td>
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<td>11. The facilitators were skillful in their use of curious inquiry (e.g., powerful questions) to draw the wisdom from participants.</td>
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<td>12. The co-facilitators complimented each other’s presentation style.</td>
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<td>13. The co-facilitator’s presented in a cohesive, mutually supportive partnership.</td>
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<td>14. The co-facilitator’s were able to recognize and shift the emotional energy of the group to achieve the desired learning objectives.</td>
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<td>15. The co-facilitators were able to adapt their content and process in the moment to meet the needs of participants.</td>
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<td>16. Visual aids were well prepared, informative, engaging and not distracting.</td>
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<td>17. Co-facilitators brought their authentic personality, artistry and creativity into the learning experience.</td>
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<td>18. Overall, I the Lunch and Learn session achieved its intended objectives.</td>
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<td>What from this workshop was most valuable to you?</td>
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<td>What did you value most about how ____________________________________ (insert co-facilitator 1’s name) facilitated the learning event?</td>
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<td>What would you like to see more of from _________________________________ (insert co-facilitator’s 1’s name)?</td>
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<td>What did you value most about how ____________________________________ (insert co-facilitator 2’s name) facilitated the learning event?</td>
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<td>What would you like to see more of from _________________________________ (insert co-facilitator’s 2’s name)?</td>
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<td>What did you value most about how ____________________________________ (insert art therapy</td>
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<td>student’s name) contributed to the learning event?</td>
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<td>What would you like to see more of from _______________________________ (insert art therapy student’s name)?</td>
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<td>What topics are you interested in learning more about for future Lunch &amp; Learns?</td>
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<tr>
<td>Other comments:</td>
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1. Utilizing Online Databases to Streamline and Improve Academic Advising

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6. Abstract

   The purpose of this poster presentation is to provide a model of how two professional colleges introduced and utilized online advising management tools in response to increasing inquiries, applications, and enrollment.

   To help better serve the student population as well as the staff, the Shidler College of Business responded by devising an efficient, cost-effective approach, which utilized the combination of a Microsoft Access database and an online application website. This resulted in a streamlined admissions process and easier data accessibility for the college when evaluating, notifying, and advising prospective and current students.

   In response to accepting direct admission of students, the College of Education developed and employed an online admissions website. This approach provided the college with a much needed system to differentiate between pre-education students and students applying for teacher licensure. This online database allowed college advisors to be kept apprised of student records and enabled them to provide information to students in an online environment.

   As a result of utilizing online management tools, both colleges are better prepared to respond to student inquiries. The creation of an online database provides the first step to better organization and easier access to a student’s status, as well as, verifying any completed or missing requirements for admission and graduation. Advisors spend less time logging in data and generating reports, and it allows them to provide consistent advising to all student inquiries. The online databases collect student admissions data, while also connecting students’ records to their course equivalency petitions and contributes to the mandatory advising policy at our institution. This enables advisors to access up-to-date information and properly advise students if they have any missing requirements. Additionally, the online
application enables students to easily apply from anywhere, and eliminates the time and effort of data entry for staff. This allows the advisors to evaluate applications and records quickly, thus creating a faster turnaround time in responding to students.

The learning objectives of this poster presentation are:
1. To provide background about the colleges’ shift towards online advising management;
2. To share challenges and successes of employing online database tools; and
3. To share future objectives and the plan to develop the use of the online databases.
The Effects of Mentorship on Recruitment & Retention

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Abstract

Retention can be defined as the act of keeping someone or something; in this case, it is the act of keeping someone (mostly incoming first, full time freshman) in school for all four years. According to past literature, there are a variety of tools useful for increasing retention (e.g., Jamelske, 2009; Gold & Albert, 2013; The Vindicator, ND). Retention and recruitment are related to one another as the competition for the most qualified students has increased in recent times (Jamelske, 2009). The current paper aims to assess the effects of student ambassadors and faculty mentoring on retention rates.

Retention.

There are many factors that affect retention (e.g., Rickinson & Rutherford, 1995; Wetzel, O’Toole, & Peterson, 1999; Friedman & Mandel, 2011; Roderick, Coca, & Nagaoka, 2011; Gold & Albert, 2013), such as full time status, academic preparation, income, race and ethnicity, feeling unprepared academically and emotionally, degree of loyalty to the institution, and poor academic performance. These factors are consistently tracked and updated to give a better picture of what retention at an institution is. Jamelske (2009) noted that having a college degree has become a necessity for young adults, in order to be competitive in the job market.

Previous research finds that prior to a student’s senior year of high school, the aspirations of the student are influenced primarily by their parents, but during the senior year, the student is primarily influenced by their peers, teachers, and counselors during the application and school decision process (Bell, Rowan-Kenyon, and Perna, 2009; Hossler et al., 1999). Wetzel, O’Toole, and Peterson (1999) suggested that retention could be influenced by the development of an explicit five year program that restricted a student’s course load to 12-credit hours, unless the student could 1) demonstrate superior background prior to enrollment or 2) demonstrate superior
academic performance such as at least a 2.5 or better GPA. Further, Gold and Albert (2013) stated that 9 states have actually found a way to improve performance in areas of retention and completion by providing financial incentives for colleges and universities. Specifically, Tennessee provides opportunities to earn a financial supplement of 5.45% of education/general budget. In order to earn this supplement, the institution must 1) obtain accreditation; 2) test graduating students in their major fields, in their general education content, and demonstrate that student performance is at or above national averages on these standardized tests; 3) conduct multiple satisfaction surveys; 4) peer review their academic programs; and 5) implement successful assessment activities for students.

**Approaches.**

As previously mentioned, there are a variety of ways to recruit and retain students. A study by Wilson, Mason, and Ewing (1997) showed that 561 Iowa State students receiving psychological counseling had a 14% higher retention advantage over their non-counseled counterparts. Jamelske (2009) conducted a study which advocated for a first year experience (FYE) program, which was designed to strengthen the connection between the university and student, by providing opportunities for students to interact with a small group of peers. The primary focus of the study was to assess the degree to which the FYE program positively impacted student retention and GPA after 1 year, while controlling for factors related to retention and academic performance. The results showed that having a higher high school rank, entering college with existing credits, living on campus, and being a male increased the probability of retention, whereas having an undeclared major, being a first generation college student, and being an older student were associated with a lower likelihood of returning after the first year.
UNC Charlotte recommended creating mentoring programs to increase peer relationships to increase retention. Mentoring programs could link upperclassmen and freshmen and new transfers. *On Point for College* suggested using successful college students to lead campus tours for prospective students. *50 Creative Ways Colleges Are Recruiting Students Today* stated that student ambassadors and showcasing activities are useful tools to reach out to recruits and to impact retention. Crosby (2008) further established this claim by suggesting peer mentors play a major role in programs, with the mentors working up to 12 hours per week with students (e.g., taking them to social or athletic events, study sessions, etc.) The Vindicator (2014) even presented Lee College’s use of showcasing programs. Lee College used hands-on demonstrations, exhibits, and one-on-one conversations with instructors to help students learn about the wide variety of programs available at the college.

**So what’s the Common Denominator?**

Mentorship is a common factor within the above models of recruitment and retention. This proposed study will look at mentorship for both an undergraduate face to face program and an online master’s program. The face to face program utilizes student ambassadors for retention and the online program utilizes faculty mentoring for retention.

According to Rhodes, Sherwin, and Smith (2006), student ambassadors act as good role models, are mature and successful, and can recite their own experiences to potential recruits and colleagues. This study will look at a student ambassadors program and a faculty “care” program that has been established at two different institutions, and evaluate if these methods have had an impact on students relative to recruitment or retention.
**Student and Faculty Mentoring**

The purpose of a student ambassador program that will be evaluated in this study is to promote the school through various recruiting/retention activities. In order to become a student ambassador, students must have completed their first semester, attend a training session at beginning of each semester, attend 1 of 2 Showcase meetings where external parties come to view the campus, attend an Advisory Board Meeting (so students are familiar with external advisory board members), attend Convocation, attend a student forum, set up a meeting with admissions to go through overall campus tours, sign up for two Fridays a year to be available to conduct tours of the school and be available for other events hosted by the school. The student ambassador program is promoted to develop a student ambassador’s recognition, networking-skills, development of interpersonal skills, and improve their job potential.

The faculty mentoring that will be evaluated in this study includes an 1) online orientation, 2) an acceptance packet sent to students that includes friendly items to perk students’ interest such as an eraser (for making mistakes), a rubber band (to help remember to be flexible) etc., 3) virtual participation in an honors assembly with faculty, and 3) a regular school newsletter as well as 4) continual communication to students from faculty and directors.

**Limitations**

While faculty mentoring and the use of ambassadors are helpful in obtaining higher retention rates, there are still situations that are unavoidable. Lau (2003) stated that freshmen might be overwhelmed with the transition from high school to college life. They can become so overly stressed by the dramatic changes that they may not finish their first year of college. In a study by Rickinson and Rutherford (1995), the researchers found that homesickness was a primary issue that blocked the student’s ability to make a commitment to the new environment
(institution), which in turn affected the retention and completion rates. There is even the possibility of having poor ambassadors. In Chimes and Gordon’s study (2008), the student ambassador at Gill St. Bernard’s School noted that many of the guides he encountered were unpolished, misinformed, somewhat socially inept and not particularly persuasive.

Disadvantages related to faculty mentoring can include overdependence on the mentor by students or negative halo from the faculty mentor who fails. In addition, mentoring requires a time and energy commitment and there can also be a negative halo effect from a student who fails (APA, 2015).

**Practicality**

Ashburn (2007) stated that fewer than 10% of high school students used Facebook, or YouTube, to gather information about colleges; 84% of high school graduates used college websites and 64% of high school students used campus visits most heavily in their research. Seventy one percent (71%) of those students believed the campus visit to be the most trusted source. Additionally, the report suggested colleges should design recruitment materials and campus tours to be more catered to a student’s expected field. It would stand to reason that by implementing a student ambassador program, retention rates could be increased. And, by implementing a targeted faculty mentoring program retention rates could be increased.

This study will survey existing students to see if either the ambassador (with face to face college students) or faculty mentoring (with on line college students) does indeed have an impact on retention.
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A CLASSIC GROUNDED THEORY STUDY
ON THE LEADERSHIP-SPIRITUALITY CONNECTION
AMONG ACADEMIC LEADERS OF DE LA SALLE UNIVERSITY- PHILIPPINES

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Abstract

The proposed topic for presentation draws from a dissertation project which is still a work in progress. It is about the academic leaders of De La Salle University (DLSU) - Manila, a premier Catholic institute of higher learning in the Philippines, and how spirituality interfaces with their leadership roles and functions. Considered the engines of growth for DLSU, they are responsible for academic innovations and reforms that keep DLSU in the forefronts of the academic endeavor. Using the grounded theory methodology, the study will specifically look at the contribution of spirituality in the exercise of their roles and functions and how it enhances the leadership knowledge, skills and competence they already possess. The paper presentation will then have a three-fold foci (1) a sharing of experience about the process of investigation of the study; (2) the challenges encountered by the dissertation writer and; (3) the initial findings regarding the leadership-spirituality nexus among DLSU academic leaders.
Abstract

Finnish education has been a widely discussed topic in recent years due to the country’s high scores in reading, mathematics, and science on international standardized assessments. Using narrative inquiry as a research method, this study goes beyond the existing quantitative data to explore Finnish education through the personal narratives of six Finnish educators. Participants’ lived experiences in connection with the University of Helsinki’s elementary teacher education program highlight the importance and reality of research-based approaches.
Abstract

Throughout the past decade, Finland’s educational system has been in the international limelight due to its consistently high scores on standardized assessments, such as the Program for International Student Assessment (PISA), Trends in International Mathematics and Science Study (TIMSS) and the Progress in International Reading Literacy (PIRLS). The plethora of quantitative information about Finnish students’ achievement in reading, mathematics and science such assessments provide contributes to the perception that we know a lot about Finnish education. A deeper look into the country’s educational system, however, reveals that teacher education programs focus heavily on research-based approaches (Lauriala, 2013; Toom et al., 2010; Westbury, Hansén, Kansanen, & Björkvist, 2005; Jyrhämä et al., 2008; Sahlberg, 2011; Jakku-Sihvonen, Tissari, Ots, & Uusiautti, 2012), and Finns have a different perspective on “quality teaching” compared to Americans (Rice, 2003; Goldhaber, Liddle, & Theobald, 2013; Parpala & Lindblom-Ylänne, 2007). The purpose of this study is to burrow into Finnish educators’ personal narratives to ultimately discover the Finnish educational system—including specifically how elementary educators are prepared—from their unique perspectives and in their own words. Through this narrative inquiry research, professors, preservice teachers, and classroom teachers share their lived experiences to shed light on the existing quantitative data.

Research Objectives

The primary focus of this study is to gain insight into how Finland trains its elementary teachers. To better understand Finnish teacher education, we burrow into the
nuances of how its programs are structured as well as how Finnish educators perceive assessment. Additionally, because teacher quality and research-based approaches are presumed to be quite different in Finland and the United States, these issues are addressed with the participants.

Figure 1. Primary and secondary research questions.

Methodology

Connelly and Clandinin’s (2000) commonplaces provide the theoretical framework for this narrative inquiry. The temporality involves the past, present, and future of participants’ lives, as well as the University of Helsinki’s Department of Behavioral Sciences. Participants’ internal conditions and relationships among participants and the researcher form the sociality. The University of Helsinki, nestled in Helsinki, Finland, comprises the place of this narrative.
Figure 2. Commonplaces in narrative inquiry.

Using the story constellations (Craig, 2007) approach to narrative inquiry (Clandinin & Connelly, 2000), this study draws upon the experiences of educators from the University of Helsinki’s Department of Teacher Education. Both classroom teachers, both professors, and one of the preservice teachers are female; all six participants are Caucasian and Finnish citizens. With these individuals, this study contains a female to male ratio of 5:1 or 83%, which is similar to the actual female to male ratio of 79% of teachers in primary schools in Finland (Corselli-Nordblad, 2013; Deretchin & Craig, 2007). The participants shared their stories of experience (Connelly & Clandinin, 1990) through electronic email during the fall of 2014 and the spring of 2015, as well as a focus
group, interviews, and shadowing experiences that took place during February 2015 in Helsinki.

In Figure 3, below, the circle represents a community, and each star represents an individual educator and his or her narrative. My task as the narrative inquirer was to interpret and re-interpret participants’ stories alongside them. Narratives were then burrowed into within the broader context of Finland’s outstanding performance on international assessments. Part of the distinctiveness of this narrative inquiry is that it seeks to share the stories of individuals, juxtaposed in a unique period of time when there is much debate surrounding the topic of international assessments.
Figure 3. Story constellation.
Outcomes and Implications

The analysis of the constellation of participant narratives highlights how the University of Helsinki’s elementary teacher education program is structured, how it employs research-based methods, and what Finnish educators have come to believe about quality teaching and assessment.

An in-depth, comprehensive curriculum, limited practicum experiences, and research-based approaches emerged as a few of the commonalities among narratives. The narrow gap between theory and practice is evident through Finland’s teacher training schools and emphasis on research at the undergraduate and graduate levels. Varying views on assessment are an example of how narratives diverge. International standardized assessments do not impact educators’ daily lives; however, some elementary educators value formative classroom assessments more than others do.

Ultimately, some aspects of the existing literature are confirmed. This includes how research-based approaches are a critical component of elementary teacher education programs (Lauriala, 2013; Toom et al., 2010; Westbury, Hansén, Kansanen, & Björkvist, 2005; Jyrhämä et al., 2008; Sahlberg, 2011; Jakku-Sihvonen, Tissari, Ots, & Uusiautti, 2012), and how, generally speaking, the alignment between teaching and assessment are viewed as quality teaching (Parpala & Lindblom-Ylänne, 2007). Other areas, though—both strengths and challenges—are disconfirmed through the unfurling of participants’ narratives of experiences in the University of Helsinki’s elementary teacher education program. For example, increasing preservice teachers’ practicum experiences would be a much-welcomed change.
This study allowed me to experience Finnish teacher education programs firsthand, which is quite different from learning from a distance. There was no better way to learn about education in Finland than through developing meaningful, personal relationships with those who have lived it firsthand. Conducting this research also allowed me to reflect upon and better understand our American educational system and my own experiences within it.

In terms of the social implications for this research, what we learn from this research will have some degree of portability. While no educational system should be grafted onto another due to the complex cultural minutia, a study of Finland’s teacher education programs through the eyes of six educators certainly provides insight. Lastly, much of our knowledge about Finnish education comes from experienced educators, professors and researchers, and policy advisers. This study gives voice to often underrepresented teachers.
References


1. **Title of the submission:** Development of science education program by using natural monuments

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   Development of science education program by using natural heritage

   In Korea, highly-valued animals, plants, their habitats and geological heritages have been designated as natural monuments and protected by law. Beside their natural and environmental values, they also have a value as a part of Korean culture with history and lives. Subject of natural heritage as natural objects with given value has its educational meaning in terms of seeking sustainability of life and the environment. This study develops integrated education programs by using natural monuments, thus expanding the contents of science education and exploring possibility of popular science culture.

   First, “Is it possible that limestone cave looks like this can exist in the real world?” program is developed for more ‘authentic’ understanding on creating process of limestone cave. In this program, students compare geological elements of exhibits (model of limestone cave) with the real limestone caves. Then, they relate the reasons why models and real limestone caves are different in the context of creation of limestone cave. By doing this, students can elaborate scientific concept more contextually.

   Second, ‘Click! All about Jindogae and Sapsalgae’ program aims to improve convergence literacy about ‘Dog=Gae’, having a value as natural heritage, by inquiring the scientific, historical significance of Jindogae and Sapsalgae in depth which are indigenous dogs of South Korea. In this program, students explore the historical/cultural values of two indigenous dogs in comparison through the origin of name, nickname, related anecdotes about Jindogae and Sapsalgae. And students also can study the biological characteristics of Jindogae and Sapsalgae by doing students-directed game activities that can utilize the basic inquiry skills such as observation, measurement, reasoning, expectations, and communication.

   Third, “Future of extinction, the present of mammoth” program’s subject is an animal character-now an extincted but existed animal: fossil-mammoth. It is a story about mammoth restored by de-extinction technology. She manages to return to her ancestor’s homeland-Siberia with the help of
human friends and a baby elephant. Through joining this story, students can understand the value of sustainability related to human and nature as well as the concepts of climate change, life evolution and adaption, and science technology today.

Fourth, goal of 'The Culture and Map of Jeju Island through Miniature' program is for the students to learn about the beautiful landscapes of Jeju Island and the culture behind them. Also, students will use the information to interpret and create their own maps. By these activities, students will study the concepts of map, such as bearing, coordinate, scale and the ability to transform the data.

Fifth, clues for finding geologic events: the Orbicular Granite Gneiss program is for students to observe the Orbicular Granite Gneiss and based on their observed data, they explain the geological events of the Korean Peninsula at the period of Precambrian. Since the abductive learning has characteristics of basic scientific observation and reasoning, not only geological knowledge but students can also develop scientific literacy which is the goal of science education.

All developed programs are based on subject of natural monuments. Educational programs with natural heritage are significant since they broaden the horizons of science education by relating their value.
ABSTRACT

Teaching in the maritime sector is distinctive to other industries across the globe because it enjoys an international nature as most of the maritime activities lay outside the normal jurisdictions of countries. To create global harmony and prevent chaos, there are international standards for different sectors of this domain, which includes education, training, and certification systems. Specifically, maritime teaching across the world is governed and regulated by the Standards of Training, Certification, and Watchkeeping (STCW), an international code that defines and describes the minimum mandatory requirements for the “training and education of seafarers throughout the world by placing an emphasis on quality control and competence-based training.

In the Philippine context, maritime education consists of four-year baccalaureate programs that lead to a career as merchant marine officers. The Bachelor of Science in Marine Transportation (BSMT) is a four-year diploma course leading to a career as a Marine Deck Officer (i.e., Third Officer, Second Officer, Chief Officer and finally, Master Mariner or Captain). On the other hand, the Bachelor of Science in Marine Engineering (BSMarE) is for those who wish to become a Marine Engine Officer (i.e., Fourth Engineer, Third Engineer, Second Engineer, and finally, Chief Engineer).
The Commission on Higher Education (CHED), the government agency that monitors and regulates the conduct of tertiary education in the country including the maritime course programs, describes the country’s maritime education as a program that produce Filipino graduates that possess and demonstrate the “knowledge, skills, and attitudes” as specified by the STCW Code and other international laws, and conventions (Sections 3 and 4, CMO 51 series 1997).

Despite the growing number of studies about on maritime education in the Philippines, experiences of maritime faculty have only been minimally examined. The researcher believes that having a deeper understanding on this aspect; maritime faculty can be more effectively prepared, precepted, and mentored. Educational leaders and managers who make decisions in MHEIs will have greater understanding on the educational process distinct to the maritime domain. As a result, the quality of the quality of teaching and learning for students and faculty will increase.

This study on the experiences of maritime faculty is a qualitative research that will employ descriptive phenomenology. The researcher will explore, describe, and reflect on the lived experiences of active merchant mariners while teaching in MHEIs. It also hoped that the teachers’ narratives will provide an understanding of the relationships between the maritime faculty and their students, colleagues, parents, and the evolving sense of self that occurs during the teaching stint.

This study analyzes the data that will be gathered through the Van Kaam method which is a “detailed, specific approach to phenomenological analysis” that guides the researcher through the process of phenomenological inquiry and reduction through a rigorous systematic method (Smith, 2009).
The Influence of Family Engagement on Hispanic Youth Science Education

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Abstract
As with many rural and western states in the U.S., Idaho is seeing a dramatic increase in Hispanic youth in the schools, in fact, Hispanic students are the fastest growing demographic in Idaho’s school system. Between the years 2000 and 2001, K-12 public schools in Idaho saw a 75% growth in enrollment by Hispanic students compared to only 8% growth in non-Hispanic students. However, results from the annual Idaho Standards and Achievement Test for 2013 demonstrate lower proficiency among Hispanic students in all subjects, especially science. The University of Idaho, with a generous gift from the Micron Foundation, conducted a 5 year study to investigate the attitudes and perceptions of parents, teachers, and elementary and secondary students with respect to science and STEM education. The research revealed significant differences in attitudes toward science and math between Hispanic and non-Hispanic participants, which provides insight into possible contributors to poor student achievement in science, as well as potential approaches to intervention. Research showed that Hispanic community members had a high level of distrust for scientists and found it difficult to navigate the educational system. Since family engagement appears to be essential to the interest and pursuit of science education, and early engagement of children may help overcome many barriers, a pilot program offering a bilingual pre-school STEM camp to Hispanic children and their parents was conducted and assessed. This program highlighted the importance of family involvement in student learning and has led to the development of future lines of investigation of the interaction between cultural diversity and student engagement. This paper will describe the research that was conducted investigating participants’ attitudes, the results for Hispanic participants, and the pilot intervention and assessment, and will pose hypotheses for future research.

Keywords
Hispanic students, family involvement, STEM interest and engagement, first-generation students,

Introduction and Background
Hispanic students are the fastest growing demographic in Idaho’s public school system. Southern Idaho, in particular, has a relatively large Hispanic population due to the migrant and seasonal farm workers. The 2014 census reported Idaho’s population just over 1.6 million, with 12% Hispanic or Latino. However, Northern Idaho includes only 5% and Southern Idaho maintains 16% of the Hispanic population. Some counties, such as Jerome (34%), have three times more Hispanic population compared to the Idaho’s average. In addition, the Hispanic population is characteristically young. For example, in Jerome County the median age is 22 years (Idaho 35) (Pew Research Center, 2015), suggesting a future increase in the Hispanic population. Although the number is increasing, the unemployment and poverty levels are also higher. Pew Research Center (2015) put Hispanic poverty rate at 40% and a median income close to three times lower than the Idaho average. Research shows that poverty had a negative influence on STEM performance, especially among underrepresented minorities (Capra, 2009; Laorenza, Pacheco, and Hardeek, 2012), and can also be an impediment to educational reforms (Capra, 2009).

In spite of the economic downturn, in Idaho STEM skills have stayed in demand. Change the Equation reports that in 2011 there were 3.7 unemployed people for every 1 non-STEM job while there were 2.4 STEM jobs for every 1 unemployed person. However, low completion rates for post-secondary education remain a hurdle in Idaho. For low-income and Hispanic communities, failure to complete high school contributes to this low postsecondary completion rate. Approximately sixty percent (60%) of Hispanic students leave high school early (Northern Idaho Agency, Bureau of Indian Affairs, 2009).
Education is clearly linked to economic prosperity. Unemployment has spiked in Idaho’s rural areas, exceeding 10% for those over 25 years of age as compared to the U.S. rate of 8.9% (Bureau of Labor Statistics – Local Area Unemployment Statistics, February 2011 – January 2012 Averages). The Idaho Department of Employment reports that 63% of those applying for unemployment lack higher education experience. Severe underemployment and unemployment throughout the region, low educational achievement (U.S. Census, 2009), and limited access/exposure to technology characterize much of the workforce. For many Latinos, such as those living in the Jerome region, language and cultural barriers create additional impediments to educational and economic achievement. This growing and challenged population continues to underperform academically, particularly in science and math.

There is an urgency to better understand the factors that contribute to this educational crisis among the Hispanic community, and the ones that may help solve it. The 2011 report from the National Research Council notes that current STEM education research lacks a focus on cultural and contextual factors that shape youth experiences and opportunities even with the abundance of evidence that early childhood experiences are linked to learning. For example, research shows that critical aspects of brain architecture are shaped by experiences in the first few years of life and taking advantage of these early stages can help develop children’s learning capacities (National Scientific Council on the Developing Child, 2007). This is because between ages 1 and 4, the brain seems to be particularly receptive to learning math and logic (National Association of Child Care Resource and Referral Agencies, 1998). While inquiry and exploration are known to be the foundations for math and science, they have also been shown to be the foundations of early learning (Massachusetts Department of Early Education and Care, 2003). Such findings suggest a need to better understand key cultural dimensions that serve as important contexts for understanding students’ experiences and attitudes towards science, STEM education, and education in general.

The University of Idaho, with a grant from the Micron Foundation, undertook the UI-Micron STEM Education Research Initiative, a five-year study designed to investigate the complexity of cultural dimensions that shape STEM educational outcomes in Idaho with a focus on local contexts. The study explores STEM attitudes, scientific literacy, and educational aspirations.

Two aspects of cultural complexity of particular interest when looking at STEM education for Hispanic students are the attitudes of Hispanic adults regarding science and education and the role of the primary caregiver in early education. We suggest that the attitudes and perceptions of family and community members, particularly with respect to science and STEM education influence student interest in and achievement in STEM education. Apart from K-12 academic experiences, Crisp & Nora (2012) found that cognitive factors and socio-cultural factors influence Hispanic students’ decisions to pursue STEM in college. Further, it is likely that cultural factors impact the adult’s role in their student’s education and may contribute to their students’ attitudes, aspirations, and achievement. There is sufficient research to demonstrate that parents and teachers are both fundamental parts of the students’ learning environment as they play a vital role in their educational achievement and success (LaRocque et al., 2011). If addressed early, interventions may have a long term positive impact on educational achievement and interest in science. Research has demonstrated that low-income children who attended high-quality early education programs on average outperformed those who did not on mathematics tests throughout childhood and young adulthood (Campbell et al, 2002). A New Jersey preschool program has shown significant effects on children’s science and math outcomes through fourth grade and fifth grade, respectively (science test only administered in 4th grade). Effects are strongest for children who experienced two years of preschool, and are the equivalent of closing 20-40% of the achievement gap between white and minority students (Barnett et. al, 2014). Based on the results of the UI-Micron STEM Education Research Initiative findings, a University of Idaho (UI) team composed of Spanish and Environmental Science instructors and faculty conducted a pilot study to investigate the impact of preschool STEM education and parent involvement on Hispanic student achievement in math in science.

**Methods**

**Statewide and Community Surveys:**
Thirty nine focus groups comprised of parents, teachers, and community members were conducted in 12 communities across the state of Idaho in order to provide an understanding of local context for STEM education.
Twelve communities from different counties in Idaho were selected to provide data given the regional differences in economic base, geography, and population demographics. This was followed by a statewide survey in which these 12 counties were oversampled in order to measure STEM attitudes, experiences and science orientations. The results reported here are based on two survey samples.

The first survey sample was drawn from the entire state of Idaho through random selection of phone numbers, both from landlines and wireless phones. We randomly sampled 900 household landlines and 1,500 wireless phone numbers. Out of these sampled phone numbers, we completed a total of 407 telephone interviews across the state, for a response rate of 22.5 percent. The second survey sample was drawn from Idahoans with phone numbers (either landlines or wireless phones) from the counties of the twelve communities selected to participate in this study (Storrs et.al, 2012).

In 2013, more detailed surveys were administered to students, their parents, and teachers in the 12 communities. Surveys were conducted by the research team in each of the twelve districts with children in grades four, seven, and ten. Within each school district, a nested cluster sample design was used. To select schools (the first level of the cluster sample), we randomly selected a high school in each district from the available mainstream/non-charter schools. Next, a middle school/junior high which was a feeder school to the selected high school was randomly selected from the available feeder schools for the seventh grade sample. Finally, we selected an elementary school from the available feeder schools for that middle school for the fourth grade sample. Some districts have only one school at each level, in which case that school was selected by default. Once the schools were selected, the second level of cluster sampling were classrooms within schools. In order to facilitate survey administration logistics, this level of selection was not purely random. In the smaller districts (with less than 250 students), the survey was administered to all the students in the three grade levels that consented and were present. In the larger districts, surveys were administered during classes that were required of all students in that grade level. Parents of these students were contacted by phone and Spanish speaking calls were also made. To increase response rate, hard copy surveys were mailed to those that did not respond to the phone surveys. The final sample size was 1559 complete surveys for a response rate of 62 percent. Teachers in the 12 counties were surveyed by phone and follow-up mail surveys as well. A sampling frame of potential Idaho teachers was obtained through LIte (Low Incidence Targeting), with a total of 3,183 names. Retired teachers, college professors, and preschool teachers as well as individuals who were never teachers that responded to the survey were considered ineligible. Due to the unusually high proportion of eligibles, as a result of frame limitations, and the high amount of non-responses, the best representation of the final disposition rates includes an estimation of the proportion of cases of unknown eligibility that are eligible. This estimate is based on the proportion of eligible units among all units in the sample for which a definitive determination of status was obtained (a conservative estimate). In this case our estimated proportion of cases of unknown eligibility is 17.7 percent. The final response rate including this estimation was 47.5 percent.

Pilot Intervention:
Based on the results from Hispanic respondents in the statewide surveys, a pilot intervention was developed and conducted in Jerome, Idaho located in Jerome County. Hispanics comprise 34.3% of the total population in Jerome County, which has increased by 40% from 2000 (U.S. Census Website). Jerome is located in the Magic Valley that comprises almost half of the Hispanic population in the Southern Idaho (Map 1). This significant change to the city’s ethnic composition has been coupled with a lowering of the median age, a trend that adds complexity to understanding cultural factors in youth STEM education experiences. This project’s purpose was to increase...
the participation of the Hispanic population in STEM education by introducing bilingual (English and Spanish) math and science hands-on activities to Head Start children through a three-day summer camp in Jerome County, Idaho, and including parents and other caregivers in the activities. Project leaders hypothesized that introducing STEM education at an early age and involving parents would enable school age children as well as community members to view science and math as integral parts of their natural lives rather than the seemingly complex subjects and prerogative fields of study that conflict with their beliefs and values.

The UI team developed the curriculum that was used in the camp. This involved researching practical and relatable best-practices, modifying, and developing new ones. To ensure full immersion, avoid confusion, and enhance understanding of mathematical and science concepts, the curriculum was developed around three themes: measurements, germs, and experimentation. On each day of the camp, the children learned different concepts surrounding these themes. The end product was 27 hands-on activities, nine activities per theme. The activities were planned so the children would be able to think, experiment, and find their own solutions. The hands-on activities allowed the children to actively explore and interact, and at the same time understand the targeted concept. Additional activities were given to parents to do at home with their children.

The team used a mixture of direct observation, child interviews, surveys, and external assessment to assess the effectiveness of the project during and immediately after the camp, followed by another assessment one year later with the Head Start teachers of the participants. The project assessed the children’s interest and engagement in the hands-on activities and parents’ confidence in participating in their children’s education and their experience with the camp.

Results

Statewide and Community Surveys:
In the statewide survey we found that the level of educational attainment among Hispanic parents was significantly lower than the other two racial-ethnic groups considered in the study regardless of gender (Figures 1 and 2). Not surprisingly, a much larger percentage of Hispanic parents reported income below the poverty level (63%) compared to white parents (Figure 3). It is important to consider how these factors may impact parental influence and student career and educational choices.

Figure 1: Male parents' educational attainment by racial-ethnic group
However, when all parents of 10th grade students were asked about their aspirations for their student’s future, regardless of their educational attainment, 90% of the respondents wanted at least a 4-year degree for their students (Figure 4). Aspirations, however, did not necessarily translate into parents’ ability to help students reach those goals. Parents, both male and female, with lower educational attainment, felt they would like

Figure 2: Female Parents’ Educational Attainment by Racial-Ethnic Group

Figure 3: Percent of households earning below-poverty incomes
Figure 4: 10th graders’ parents’ educational attainment and level of attainment they would like their child to have more time to be involved in their student’s education (Figure 5.) Parents experiencing poverty were significantly more likely to feel their financial situation constrained their involvement in their child’s education than parents who were not experiencing poverty. Approximately half of the parents considered to be above poverty, and also reported that being involved in the students’ education was difficult due to their financial situation (Figure 6).

![Figure 4: 10th graders’ parents’ educational attainment and level of attainment they would like their child to have more time to be involved in their student’s education (Figure 5.)](image)

In the statewide surveys, students (4th, 7th, and 10th grades) were queried about their specific interests in science and math. Differences between Hispanic and white respondents were noted. White students reported liking math and science more than Hispanic students in both seventh and tenth grades (Figure 7.) High school students were also queried about their concerns for future education. The most important considerations reported were: high school grades, scores on college entrance exams, availability of financial aid, and the cost of college. Where differences exist, Hispanic students and parents are more likely to say these factors are “very important” to their college-going decision.
Jerome County:
In our sample from Jerome County (n=208) women were significantly overrepresented, with 65% of county respondents being women when compared to 2010 U.S. Census statistics (50%). Hispanics in the survey were underrepresented, comprising 2% of the Jerome County survey sample, compared to 34% of the population. However, this was the highest percentage of Hispanics participating in the county surveys across the state in this study.

Almost 30% of the Jerome County’s respondents had one or more children in K-12 education, and another 4% had children who were not yet in the K-12 system. Of these parents, 86% were sending their children to traditional public schools, 7% had children in private schools, a small number (2%) had children in a charter school, and the remaining 5% of parents were homeschooling their children. Over 73% of K-12 parents said they volunteered at least once a year at their schools. Our 2011 focus group with Latino parents revealed their commitment to their children’s education though they struggled with how to support their children academically due to language and cultural barriers.

A large number of K-12 Jerome County parents (77%) felt they had the appropriate skills to help their children with homework in general, yet almost as many (71%) said that they at least occasionally felt their math and science knowledge made it difficult to help their children with math and science homework. About half of the parents (53%) did not have as much time as they would like to be involved with their children’s education. Even though a good number of parents wished they could do more to support their children’s education, a large number of them (79%) said their children performed “above average” or “excellent” in math. However, Jerome County was among the rural communities where individuals were less knowledgeable about college preparation. Most notably, Jerome County’s respondents were less confident than respondents from other counties on which classes a student should take to be successful in college and less sure of how to help someone apply to a four-year college. Jerome County’s respondents were also asked to agree or disagree with the statement, “Science can come into conflict with my religious beliefs.” Of the respondent types, 88% of those with no children and 63% of those with children not yet in school were more likely to disagree with this statement. Parents with K-12 children (62%) and parents whose children completed K-12 (54%) were more likely to agree with the statement. When tested with the “culture of science” questions, gender proved to have a significant effect on two of the “culture of science” questions. Men held less trust in science, were less likely to support schools’ discussing humans’ impact on global climate change, and were more likely to agree that community members rely too much on science and not enough on religion. When Jerome County’s respondents were asked to what extent they agreed or disagreed with the statement, “Scientific knowledge changes so rapidly, it is hard to know what to trust,” a majority (68%) agreed.

![Figure 7: Students' interest in math and science](image-url)
Pilot Intervention

Interest and Engagement

Direct assessment (observation) during camp activities demonstrated 100% child engagement and 92% understanding of the hands-on activities that were non experimental in nature. For measurement and experimentation themes there was some levels of disengagement. The lowest engagement and understanding was observed with the lessons on predicting, measuring, and comparing weights of marshmallow and marbles, which had a 75% engagement and the lesson on container shape and liquid volume which had only 50% engagement. These lessons belonged to the experimentation theme. Reduced engagement in these two activities may be partially explained by the limited supplies for each child to experiment with allowing for distractions. For example, 5 to 8 children shared one balancing scale and two measuring jars; thus, some of the children participated in this activity by observing rather than actually doing it.

Parents were asked to indicate the level of their children’s interest in math and science before and after the camp. About 74% of the parents reported that their children were very interested in math and science before the camp and the percentage increased to 80% after the camp (Figure 9). Similarly, when parents were asked to indicate their children’s level of excitement before and after the camp, almost 63% reported very excited before the camp compared to 87% after the camp, however, the differences in responses before and after the camp were not statistically significant. Ninety three percent of the parents reported feeling that the math and science activities were helpful to their children’s learning.

Of the 27 activities conducted, more than half of the children preferred the following hands-on activities: measuring temperature and weight in the measurement theme; demonstrating the speed of germ spread and identifying different types of germs in the germ theme; and demonstrating float and sink and evaporation in the experimentation theme. Overall, all of the children preferred four activities out of 27, and of those four, almost half the children preferred the “Germ Speed” activity. The “Germ Speed” lesson involved filling balloons with confetti and glitter, pumping air into the balloons, and popping them to release the glitter into the air to demonstrate what happens when someone coughs without covering their mouth. This activity took place outside and each child had a balloon. More than a 25% of the children preferred the “Composite Color” activity, which involved making secondary and tertiary colors from primary ones. “Sink and Float” and “Germ Matching” received equal preference (Figure 10).
Figure 9: Level of children’s interest in math and science before and after the camp as perceived by the parents.

Figure 10: Overall math and science activities as preferred by the preschoolers.

**Parental Experience**

Out of 37 parents/guardians that sent their children to the camp, 30 responded to the survey. All surveys were offered in both English and Spanish so that language would not be a barrier to responding. Eighty percent of the parents were mothers and the rest were father figures. In two situations (7%), both parents were involved and in two situations the male figure was a boyfriend or an uncle. More than half of the male parents (57%) had no high school diploma, compared to 47% of female parents. More than 30% of the parents were single, either never having been married (27%) or separated (6%). The average number of people per household was 5, and the number ranged from 2 to 9 people. This is almost twice Idaho’s average household size according to the 2007-2011 censuses (United State Census Bureau, 2012). Despite large family sizes, only 23% of the households had fulltime jobs. In addition, the majority (54%) of these families made between $10,999 - 24,999, which is 2 to 4 times less than the Idaho median household income of $46,890, based on U.S. Census of 2012. Seventy percent of the parents were Hispanic, which

"Sometimes it’s hard [to support your children in school] because a lot of parents do not speak English, or teachers don’t speak Spanish. But one should keep an eye and educate their children. If your child likes math, or likes another course, in whatever they like, even if it costs you _me (it is hard) or costs money you have to do it for your child and find a way to help them._”

Quote from the Latino parent focus group discussion in Jerome
is higher that the state average of 11.6% Hispanic population. Sixty seven percent of the respondents were Catholics.

When asked in surveys about camp activities with their children, about 80% of the parents said they learned a lot, 17% percent said they learned a little bit, and only 1 out of 27 parents responded that they learned nothing (Figure 11).

![Pie chart showing parents' learning levels](image)

Figure 11: How much parents learned from the camp.

Pre and post-camp surveys indicated that 44% of the parents’ confidence level increased from somewhat confident to very confident and this difference was statistically significant ($p = 0.003$). When asked if they are likely to send their children to another camp, 93% of the parents responded very likely.

![Bar chart showing parents' confidence levels](image)

Figure 12: Parents' confidence level before and after the Summer camp.

One year follow up surveys
One year after the summer camp, the Head Start teachers reported that 20% of the children still remembered the math and science concepts from the camp, 33% somewhat remembered, and 46% remembered them extensively. Of those who still remembered math and science concepts extensively, 80%, 40%, and 20% remembered germ, measurement, and experimentation concepts, respectively. The teachers also observed a large increase in the participation of parents in the Head Start program. While some parents joined the Head Start policy council and extensively volunteered in classroom activities such as dental hygiene, others participated in education-related conversations with school staff.
Discussion
Hispanics comprise the fastest growing demographic among school age children in the U.S. and the same trend is occurring in Idaho. In addition to cultural differences, Hispanic families in Idaho also experience greater poverty levels and lower educational attainment than their white counterparts. This means that more Hispanic students are First-Generation College Students (FGCS). Education is clearly linked to economic prosperity, and with STEM jobs in demand, science and math education are critical to improving the socio-economic status of communities with high Hispanic populations. However, Hispanic students underperform in math and science in Idaho. Each year, Idaho’s public school students take the Idaho Standards Achievement Test (ISAT). ISAT scores show lower proficiency among Hispanic students in all subjects, especially science. Only 43% of Hispanic 5th, 7th, and 10th graders are proficient or advanced in science, compared to 72% of non-Hispanics. Only 66% of Hispanic 3rd - 10th graders are proficient compared to 82% of non-Hispanics (Idaho State Department of Education).

These students face challenges that white students with higher socio-economic status may not. According to a report released by ACT/COE (the Council for Opportunity in Education (COE) (2013) and ACT/CEO (2014), about a quarter of high-school graduates who took the ACT in 2013 met all four of its college-readiness benchmarks, in English, reading, mathematics, and science. But students whose parents did not go to college fared quite a bit worse: only 9 percent of them met all four benchmarks. Ramos-Sanchez and Nichols (2007) report that first-generation students are more concerned about their finances, feel less prepared for entering college, and overall lack a basic understanding about the expectations of college than do their non-first-generation peers. Engle and O’Brien (2006) report that lack of financial resources and family encouragement negatively affects first-generation students from going to college.

This appears to be true for Hispanic parents in our study. While they have high aspirations for their students’ academic future, they expressed concern with time to help them, their own abilities in math and science, and the financial burdens of college. These obstacles result in FGCS students deciding not to pursue higher education or arriving at college underprepared and overly committed such that a large number of these students do not complete a bachelor’s degree. Those who do complete the degree are less likely to complete a degree in a STEM field.

Additionally, Hispanic students may have to deal with cultural conflicts when considering STEM careers. In our study, Jerome County parents with children K-12 or older tended to feel more conflict between science and their religious beliefs and a large percentage of the sample indicated a certain degree of distrust in scientific knowledge. This suggests a need to further investigate what aspects of scientific knowledge seem most at odds with their beliefs and values in order to address these in any proposed interventions. At the same time, identify cultural elements that can be instrumental in increasing the understanding of scientific knowledge.

We hypothesized that introducing children to science and math concepts early would provide lasting benefits in terms of their understanding of concepts and their interest and comfort level with science and math. Initial evidence from the pilot intervention suggest that interest of Hispanic children in science and math can be increased early in their childhood and that the concepts are retained to some extent. However, longitudinal studies are needed to assess the lasting benefits of this approach. Future interventions would likely be more effective if sufficient resources were available to keep all students occupied rather than having to alternate working with the materials. Literature suggests that one-time events without follow up activities throughout the academic year may not have lasting effects. The UI team collaborated with Head Start teachers to develop and deliver hands-on bilingual STEM activities to the children, actively involving the teachers in the development of science and math materials and camp activities. Involving the teachers throughout the process was done with the understanding that they would likely continue to use these materials during the academic year and disseminate the activities to other preschools in the area. We are proposing future pre-school interventions in Hispanic communities that occur more frequently and have curriculum intentionally infused in the pre-school academic year activities. Assessment of this approach should include teacher observations, parent observations, and student achievement in science and math in grades K-3.
From our studies and other research, we suggest that involving parents in Hispanic youth education could help them feel more comfortable helping their students with science and math and could improve their level of comfort overall with science and scientists. In addition to engaging the parents in the camp activities, the pilot intervention was intentionally conducted with Head Start teachers at the Head Start facility in Jerome. There already exists a sense of trust between parents/guardians and the Head Start school because of the partnership that exists between the two and the Head Start teachers speak Spanish. This likely contributed to the positive effects seen with parental engagement and continued participation in their children’s education throughout the school year. We know that the parent-teacher communication gap interferes with students’ of color’s academic experience and achievement. Attempts by both teachers and parents to close the gap are met with different challenges. Teachers lack the knowledge to integrate parents in their children’s education, have received little training in strategies for working with diverse parents, and possess skills that are limited to handling what they perceive as difficult parents (LaRocque et al., 2011). On the other hand, parents are constrained by cultural mores, linguistic barriers, and a lack of understanding practices, procedures, and policies that govern school and education systems in general. Understanding and closing this gap would benefit from research that explores avenues for parent integration into the school system and cultural relevancy training for educators.

**Conclusion**

Parent involvement and early childhood experiences can positively impact a student’s interest in and achievement in science and math. These factors appear to be especially important for Hispanic students who are facing additional barriers such as poverty, language, and cultural differences. Programs that address parental engagement and early learning for Hispanic students need to consider the cultural context of the families and the perceptions of the community about science and scientists in order to be relevant and effective. Working with already established and trusted organizations can reduce the trust issues when delivering interventions. Longitudinal studies that track student interest and achievement and parental involvement throughout elementary school and research that investigates cultural values that conflict with traditional education systems are logical next steps.

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Open Art Therapy Studios on Campus: A Case Study

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Abstract: A case study of Open Art Therapy Studios at Adler University, Vancouver BC Canada campus demonstrates the effectiveness of creating community and connection to increase Well-being of students, staff, faculty, alumni and community partners. Open Studios, their background and rationale are described in the paper, as is the story of one way that the University realizes its mission of training socially responsible practitioners. New ways of evaluating educational programs teaching meta-verbal skills whose curriculum is based on relating with creativity and imagination are encouraged within a new Worldview which allows subjectivity its rightful place and which honors the illogical and irrational as valid and critical elements.

INTRODUCTION

Alfred Adler’s key ideas about maintaining healthy functioning center around the ideas that fundamentally humans all have a need to belong (Ferguson, 2010) and that a sense of cohesive community is crucial to Well-Being (King & Shelley, 2008). Thus the importance of a positive community atmosphere on campus has always been valued at Adler University.

When the Masters of Counselling Psychology:Art Therapy (MCP:AT) program began on the Vancouver, British Columbia Canada campus in 2014 it was decided that the value of ‘community’ would be enhanced by exploring the role of art making in campus community development.

Studio One, the new classroom for the counselling art therapy program, was opened during non-class times to students from all programs, staff, faculty, Alumni and community partners. The MCP: Art Therapy students were trained to provide Open Art Therapy Studios and shifts in community feeling and connectedness began to be realized almost immediately.

In this paper the Open Art Therapy Studios held on campus will be described. Following will be a description of the key positive results experienced. Finally, areas for exploration and further research will be identified.

OPEN ART THERAPY STUDIOS ON CAMPUS

For MCP: Art Therapy Students at Adler University in Vancouver, Canada training begins ‘at home’ in Studio One, the classroom that became an art studio for students in the dual degree graduate program in counseling and art therapy.

As part of their initial training, students in the program learn to serve the community by doing a Social Justice Practicum (SJP). They go into agencies and countries in need and provide whatever help is necessary. When the MCP: Art Therapy program began, the Dean, Dr. Larry
Axelrod, thought it would be a good idea to offer a SJP and service to our very own school community by opening Studio One to our staff, faculty, alumni and students from all of the programs. And thus began our commitment to community service and community building on campus. Little did we know when we began what absolute wonders this idea would bring to our school and to the field of art therapy education.

**An Atmosphere of Peace:** I will always remember walking into Studio One during the winter holiday Season the very first year it opened when the students created ‘Winter White’ (Eleniak, 2014). My heart overflowed with joy when I realized that these incredible students had worked with aesthetics – line, shape and color- in order to create an environment which induced a feeling of PEACE that was palpable to the experience of all who entered the space. It was a rainy Vancouver day and the light coming through the floor to ceiling windows was minimal at best. Everything inside the room was white. The tablecloths were white, the art materials were white; even all of the food on the side buffet was white.

As I relaxed into the vibration that the students and their brilliant site supervisor had set, I realized that I was getting the same feeling that I got when I walked at night in the moonlight in fresh fallen snow. There was a pregnant hush in the air. There was a softening and stillness in the world they had created which gave me the feeling of pure peace! Love coursed through me as I realized (as only a proud teacher can) that my students had “got it”. They had deeply integrated all of the teachings on the importance of creating a therapeutic environment to a profound level. My work as teacher felt complete. They were becoming ‘healers’.

**A Place of Refuge:** I will never forget another miracle I witnessed during those magical hours at Winter White which happened when a student who had just experienced a powerful event in her personal life wandered into the Open Studio in shock. It was as if she had been hit by a truck, and it was just moments before she had to write her final exams. I watched the beauty in action (wishing I could record it for Youtube) as the MCP: Art Therapy students sat the student down and began a dance behind and to the side of her. As the student sat and spoke of her woes, the MCP: Art Therapy students placed by her hand a cup of tea, in front of her some paper, by the other side of her some pens and paints. They placed her in a healing bubble with everything that she needed to calm and ground herself literally at her fingertips. I watched the MCP: Art Therapy students move in silent knowing providing the tools of relief. I saw the color come back into the student’s face as she talked and created and allowed the healing energy of Winter White to soothe her very being. As the student left, now ready to take her final exams, I marveled at this profound scene of community and connection that I had been honored to witness.

**An Opportunity to Share:** And finally, I love to remember when the Admissions staff came through Winter White with a group of prospective students and their families who were on a tour of the school after attending the Open House. I watched as the MCP: Art Therapy students (who had been prepared that such a tour was going to happen) worked as a team to
make these people feel welcome. The MCP: Art Therapy student who had been elected prior to the tour coming in to act as ‘leader’ for the experience got up out of her seat and encouraged the group forward to have all of them totally enter the space. Very often people will simply stand at the door or come in only a little way and gentle encouragement is needed to bring them forward into the experience. In her “Winter White” fur hat (and with the large gestures that only a counselor interested in movement and art therapy can do), Leanne Bird directed the groups attention to the 2014 Cohort Mandala which the students created on their very first day of their program only months earlier. With ease and in the spirit of fun, the MCP: Art Therapy students shared their experience of the program with these newcomers who were ‘peeking’ into this world of Adler University and art therapy. These prospective students gained valuable answers to their questions of what life was like as a student in the MCP: Art Therapy program. Even more importantly, just by being in that Open Studio environment they gained a full body experience of what our students are capable of doing and what our Adler community in the school is all about!

**Open Studio Description:** For Open Studio MCP: AT students create a space where art materials are available for the Campus community to engage in art-making. The student facilitators are there to provide inspiration and assist participants in their creative process. The facilitators strive to ensure the Studio remains a safe and positive space for all who enter. Whenever the Studio is open, simple art materials are available and student counselling/art therapists serve as artists in residence greeting everyone who enters with an attitude of “radical hospitality.” There may also be special events in the studio, such as classes, workshops, and guest speakers.

Open Studios are accessible to students across all programs, staff, faculty, alumni, and community partners. The groups are drop-in. Participants can come and go and make as much or as little use of the time, support, and art materials offered as they like. New participants are welcomed warmly to have an experience of therapeutic art.

**The Approach:** The Open Studio approach is based on the Adlerian values of cooperation, compassion for others, and contribution to the good of society. It is grounded in Adler’s concept of *Gemeinschaftsgefühl*, which can be roughly translated into two separate terms: community feeling and social interest. Community feeling refers to “the warm, empathic bond people have with one another and with the world they live in—the feeling of being connected to others” (Mosak & Maniaci, 1999, p. 113). Social interest is action-based and refers to “what individuals are driven to do by the sense of community and belonging they feel” (Mosak & Maniaci, 1999, p. 113). In Open Studio, both community feeling and social interest are emphasized. Action is taken by the MCP:AT students to ensure an environment where community feeling is present.

**The Focus on Environment:** MCP: AT students are trained in the philosophy of Dr. Marie-Jose Dhaese (2011) who asserts that the environment contributes to 80% of healing. The Open Studio environment is intentionally focused on acceptance. Student facilitators are trained to create an atmosphere that promotes a sense of peace and safety. Many participants view the Open Studio as a safe haven on campus where they can go to relax and rejuvenate.

There is a focus on esthetics every time MCP:AT students set up an Open Studio. Lighting is intentionally adjusted to set the mood and tone for the day. Shape is considered in the positioning
of desks, easels, and display of materials. Sound is emphasized by either creating an atmosphere in which silence is honored or by playing soft non-lyrical music. Attention is given to smell through light aromatherapy scents. The temperature in the room is adjusted if it feels too hot or cool. Every sense is given careful thought.

**The Tea and Cookies:** In Open Studio, there is a tradition of “breaking bread together.” Tea and cookies draw people into the studio and facilitate conversation. This is often how the creative process starts. Participants sit down and are immediately offered a cup of tea and something to eat. They can sit and relax over a cup of tea while they consider what art materials are calling out to them that day. The array of delicate china teacups with mismatched patterns is a signature element of the Open Studio at Adler University.

**Encouragement:** One of Adler’s key concepts is encouragement, and this is given great weight by MCP: AT students in their facilitation of Open Studios. Watts and Pietrzak (2000) note several important elements of the emphasis on encouragement in Adlerian therapy:

> The encouragement-focused process helps build hope and the expectancy of success in clients by demonstrating concern, active listening, and empathy; communicating respect and confidence; focusing on strengths, assets, and resources; helping clients generate perceptual and behavioral alternatives; focusing on efforts and progress; and helping clients see the humor in life experiences. (as cited in Carlson, Watts, & Maniaci, 2006, p. 39)

In Open Studio, this may take the form of encouraging a community member in distress from issues in his or her personal life, encouraging a student who is highly stressed because of academic expectations or encouraging hesitant artists as they delve into the creative process. There are endless ways one can encourage another, and Open Studio is an environment in which MCP:AT students do just that.

**Attitude:** Attitude is everything. MCP:AT students are trained to maintain a positive and productive space for every person who enters. As mentioned previously, Open Studios operate with an attitude of “radical hospitality.” MCP:AT students are there to enthusiastically serve the community, whether this means providing support, offering instruction in various forms of art-making, or simply pouring a hot cup of tea. When people walk by the studio, it is common for MCP: AT students to usher them in and simply offer them five minutes to sip some tea and unwind. Participants may pick up a pencil and begin to draw, or they may leave when their teacup is empty. Either way, radical hospitality has been offered and a welcoming space has been experienced creating an effect on community.

**Location:** Open Studios at Adler University’s Vancouver campus take place in Studio One, the classroom for the MCP: AT program. Studio One is a space that was designed with the creation of art and community in mind. Tabletops and easels are available to work on and the cupboards are full of art supplies. There are also shelves for art storage. Each MCP: AT student has their own labelled space. The uncarpeted floors can easily be cleaned, and there is a sink in the room. There is ample natural light with an entire wall of floor-to-ceiling windows. Studio One is located next to the student lounge, so students often pass by Studio One on their breaks from class.
Format. Open Studios are held during weekdays when students, staff and faculty are on campus. The schedule is subject to change based on student availability and requests from community members.

Number of MCP: AT Students Co-facilitators: This number is dependent on the number of participants. Two to four students facilitate the majority of Open Studios. This number may be lower on slow days and higher on busy days.

Supervision: MCP: AT students are supervised while learning how to facilitate Open Studios. Students are required one hour of supervision for every five hours of direct work with participants in Open Studios. Weekly group supervision and individual supervision is provided. Group supervision is an opportunity for MCP:AT students to gather and enhance their learning with the valuable input of a qualified supervisor. Students may work in this time to run ideas by the group, as well as to talk about the benefits and rewards of hosting Open Studios.

Required reading: In preparation for running Open Studios, students are required to read Cathy Moon’s (2002) book, *Studio Art Therapy: Cultivating the Artist Identity in the Art Therapist*. Moon (2002) writes of a model rooted in the studio environment and delves into several key topics, including: the importance of the art therapist cultivating his or her identity as an artist; envisioning and constructing the studio space; the relational aesthetic; and the social responsibility entailed in being an art therapist. According to Moon (2002), “to consider our work environments as works of art brings an intentional focus to the creation of therapeutic space and engages our artist identity in the process” (p. 83).

Pat Allen’s (2001) chapter in *Approaches to Art Therapy: Theory and Technique* (2nd ed.) is also a useful source for information regarding an Open Studio approach. Allen (2001) discusses the spiritual elements involved in the Open Studio process.

**KEY POSITIVE IMPACTS ON THE UNIVERSITY COMMUNITY**

Providing a community art space on campus has resulted in the following key positive impacts:

1. **Social Support**: Open Studios provided campus community members a place where they could go to get to know each other. They could share their common experiences as graduate students. They could enjoy getting to know each other outside of their formal roles as faculty, staff and students made art together. The social support experienced allowed for enhanced Well-Being on campus.

2. **Emotional Support**: The enhanced engagement between students, staff, faculty, alumni and community partners allowed a sense of community belonging to evolve: “*This sense of belonging ... can only be won by being involved, by cooperating, and experiencing, and being useful to others. Out of this emerges a lasting, genuine feeling of worthiness.*” (Adler, 1926)

**Promotion of Relaxation**: Having a community art space where MCP:AT students consciously created a physical environment promoting relaxation impacted outcomes such as reduction of student anxiety. Students would come before their exams to color a quick mandala, have a cup of tea and center. They reported doing better on their exams because they took a moment to be still, breathe and relax before going in. They also
reported enjoying having a place to go to debrief during particularly anxious times, after exams, during periods where lots of assignments were due or after particularly difficult experiences in the field.

**Increased Caring for others:** Boundaries between programs of study dissolved as people got to know each other. There was a perceived increase in harmony between students, faculty and staff that participated. A spirit of cooperation on campus was fostered.

**Increased Sense of Hope and Positivity:** The increased sense of belonging to an accepting community of shared experience focusing on positive interests assisted to help campus community members improve their sense of personal well-being, a quality that they reported flowed into their personal lives and their ability to do homework more effectively.

**Empowerment:** As the shared sense of community increased Open Studios became a safe space where members took ownership and created the kind of campus atmosphere of the University that they wanted to ‘belong’ to.

3. **Opportunity to Engage as Socially Responsible Practitioners:** The “home-like” environment created in Studio One fostered an atmosphere which drew people together in conversations, many of which focused around shared interests of social justice and social change. The atmosphere was conducive to contemplation as the campus community imagined new initiatives in the larger universal community. It became an arena of development in becoming a socially responsible practitioner.

It is also important to note that the conscious creation of a connected community in the educational environment models the importance of self-care for students, a lesson that will hopefully flow over to their work when they graduate.

4. **Promotion of Creative Thought, Conversations and Community Art Making:** Having a “public home” space on campus allowed people to drop in, share, work, play and enjoy each other’s company. In the peace and sense of ease that ensued, community members opened to their creative life force and began to act from a place of inspiration. Enhanced creativity fostered inspiration on campus that effused the atmosphere and enhanced learning capacity.

5. **Integration of Adler University’s Strategic Plan:** On a larger organizational level, Adler University has a 2015-2020 Strategic Plan which “charts the direction for realizing our mission and our vision to be the leading academic institution advancing socially responsible practice, healthy communities, and a more just society.” With such a grand plan it becomes even more important that we begin by increasing Well-Being and health with our own community.
**Innovation in Education and Community Engagement:** Having Open Studios on campus integrates into one of the plans Key Strategies: “Create *Excellence* and innovation in education and community engagement”. The Open Art Therapy Studios are an innovative initiative which begins with community engagement at home, on our campus.

**Wellness of Students and Improved Support of the Learning Environment:** Open Art Therapy Studios integrates with the goals of Adler University Strategic Plan which includes “the development of Excellence Plans in ten areas, addressing the wellness of students and the improved support of the learning and work environment”. Open Studios allow us to maintain a healthy campus community ready to move into the community at large to continue the pioneering work of Alfred Adler.

**Enhanced Adlerian Experience:** While surrounded with an ‘Adlerian” atmosphere amidst peers committed to social justice and social change, students at Adler University actually study all of the traditional theoretical approaches in psychology and are able to choose their personal theoretical orientation from among them. Students have only one course specifically dedicated to teaching Adlerian principles.

This has been identified as an area which needed to be fortified if we were to be able to ensure our commitment to training socially responsible practitioners. Open Art Therapy Studios are one of the ways that students are able to experience Adlerian values at a deeper level by working with art. They do this through our most popular Open Studio special workshop called *Cows Can Be Purple*. This is an 8-week experiential Adlerian art therapy group following the way of Sadie (Tee) Dreikurs, author of *Cows Can Be Purple* (1986). Participants learn tools for personal development and work with traditional Adlerian art therapy methods including early recollections, birth order, and lifestyle work.

A donation is requested to attend this special Open Art Therapy Studio. All the money collected is used to buy art supplies for community practicum sites who have no budget to buy their own. This element further reinforces the idea of social responsibility for our campus community and allows for direct community outreach.

The program has become very popular with students from the other counselling programs who express their appreciation of experiencing work with meta-verbal methods.

**AREAS FOR FUTURE FOCUS/RESEARCH**
1. Ferguson’s (2010) research can be expanded upon if the connections between the enhancement of concern for campus community members and the strengthening of cognitive restructuring procedures were explored.

2. Reilly’s (Flood & Coleman, 2015) research on arts-based learning in non-arts classrooms and creating multiple ways of knowing and increasing creative thinking in graduate education could be expanded upon particularly as teachers from other programs at Adler University continue to invite the MCP: Art Therapy students into their classrooms after experiencing the enhanced Well-being of community feeling in Open Studios.

3. The evaluation of education programs in which meta-verbal skills are taught require research paradigms which can allow for subjectivity and which appreciate the illogical and irrational components of creativity and imagination. We recommend that future research be focused on the creation and development of this type of program evaluation. We assert that these program evaluations need to be created outside of the current Newtonian Paradigm, the worldview which is sometimes referred to as “Scientific Materialism” (Mack, 2002). This worldview honors the “scientific method” which is based in the assumption of ‘objectivity’, a concept which quantum physics has disputed. The ‘evidence’ supporting such educational programs’ efficacy would need to be based in the subjective experience and ‘real life’ differences that happen for all those involved in the transformative effects of an educational program whose curriculum is based in teaching relationship with creativity and imagination. This Open Studio story provides context:

Towards A New Vision of Program “Evaluation”: As Program Director I was graced to be in the right place at the right time as two students from another program at Adler University poked their heads in the door during the special Open Studio held during the holiday season at the same time all of the final exams and projects are due for students on campus. I watched as the MCP: Art Therapy students moved into action. Working with their well honed Adlerian skills of encouragement, I witnessed them “draw” the two students into the space.

The students had been burning the midnight oil for days as they did their studying and completed their papers for semester end. They began as most people do, by saying why they could not come into the studio for even a moment. They had studying to do. They had too much work. They were too “stressed out”. And as they resisted I watched the MCP: Art Therapy students work their “magic”. They listened to them and their woes while at the same time moving with intentionality and sureness. It was their job in Open Studio to provide a moment’s relief for these students and to assist them in self-care knowing how hard it is to remember to take care of oneself especially in “crunch times” like semester end in a graduate program!

It brought a tear to my eye to see these MCP: Art Therapy students take such gentle care of their campus colleagues. I thought, “It is at school where we must learn to take care of each other. It is at school where we must remember to teach ourselves and our colleagues to take care of ourselves. It is at school where we must have an experience of being reminded to take a moment for self-care.”
I listened to the student’s words and could hear them as mine especially at times when I have a mountain of work to accomplish. I heard them give all the good reasons why they had no time. No time for fun. For interesting conversation. For a cup of tea. To take care of themselves. To relax. To enjoy. To love life. To regenerate. To imagine. To be peaceful. Just no time!

I watched and participated as several of us stood up to match the students in their standing posture just inside the door of Studio One. They told us how their life was as students in their program and how they needed to just work and focus on getting back to their studies. We listened while we moved with our knowing that their studies were about to go so much better for them because they actually were taking 5 minutes to stand in the atmosphere of peace the MCP: Art Therapy students had consciously created in Studio One. They were at that very moment standing in, breathing in, relaxing in and absorbing the peace of Winter White.

We gave oranges and our “free range eggs” for them to take as they went back to the student lounge to study. We listened as they de-briefed about the lack of sleep they were getting and the level of pressure they were feeling as they moved through academia. As counselors we listened deeply. In a most natural way the MCP: Art Therapy students practiced the microskills of counseling and the students returned to their work refreshed.

Days later I bumped into these same two students by the elevators. I had just interviewed a prospective new MCP: Art Therapy student so I introduced them to her. I cannot even describe in words the love that welled up in my heart as these same two students told the prospective student how wonderful the MCP: Art Therapy program is and how much the Open Studios do for them and for their fellow students in the Adler U campus community. Then one of the students turned to look directly at me in the eye and she said with the utmost of conviction “Those Open Studios are a life-saver!” I was moved beyond words! How I appreciated that encounter. It affirmed all we were doing as faculty, staff and students in the brand new program. Who could ask for any better of a program evaluation?! (Now how do you capture that quantitatively?)

CONCLUSION

Having Open Studios on Adler University campus is an important component for training Masters in Counselling Psychology/Art Therapy in engagement skills, basic counselling micro-skills, the creation of healing physical environments, and to assist people to move through creative blocks. Having a public home space on campus for students from all programs, staff, faculty, Alumni and community partners assists to foster a strong sense of belonging which, according to Adler is essential to healthy functioning for human beings. Open Studios help to provide the campus community with social and emotional support as well the opportunity to explore becoming a socially responsible practitioner beginning in one’s own community. Through community art making creativity among community members was enhanced. Open Studios are a living way that elements of Adler University’s overall five year strategic plan are operationalized in order to remain a leading edge institution committed to walking its talk about the provision of innovative education within a supportive community committed to social justice.
REFERENCES


For Ferguson and Nation: Justice and Education via Anti-Biased Reform

Dannielle Joy Davis

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Abstract

U.S. society continues to experience inequities, stratification, and segregation within its educational and social systems. This work explores these injustices by employing the Christian based theory, The Matthew Effect, as a framework for education and anti-biased police reform. The Bible’s Book of Matthew reads, “For unto everyone that hath shall be given, and he shall have abundance. But from him that hath not shall be taken away even that which he hath” (Matthew 25:29). Use of The Matthew Effect as a conceptual framework in understanding social outcomes reveals how shifting perspectives or expectations of others may influence police reform, educational policy, practice, and the subsequent outcomes of citizens’ lives.

Introduction

The Bible’s Book of Matthew states “For unto everyone that hath shall be given, and he shall have abundance. But from him that hath not shall be taken away even that which he hath” (Matthew 25:29). This verse inspired sociologist Robert K. Merton to describe the phenomenon of advantage resulting in further advantage and disadvantage, which yields continued circumstances described as The Matthew Effect. In the book, The Matthew Effect: How Advantage Begets Further Advantage, author Daniel Rigney explains:

The study of Matthew effects…is concerned less with the sources of inequity than with how these inequities persist and grow through time. It explores the mechanisms of processes through which inequities, once they come into existence, become self-
perpetuating and self-amplifying in the absence of intervention, widening the gap between those who have more and those who have less. No theory of stratification is complete without attention to such processes. (Rigney, 2010, p. 1)

In other words, those who have more opportunities may have an expectation that such opportunities and benefits, whether economic or otherwise, continue. Even if individuals have modest expectations, they at least know of the possibility of opportunity. Hence, they look for or anticipate potential opportunity, and it often finds them. When in college, the author regularly examined university bulletin boards seeking information. As a young African American woman, examining bulletin boards was critical, as she benefitted greatly from the practice which included: Gaining information on scholarships and awards that were later received; opportunities to travel throughout Africa and Europe, as well as employment. Knowing others who traveled globally and won scholarships, she knew opportunities were out there and sought them out, thereby benefitting both economically and intellectually.

Likewise, an individual who has no vision of possibilities may have challenges in making choices that yield future opportunities. For instance, an individual in poverty with a gifted child attending an under-resourced, low performing school may not know steps to take to ensure cultivation of the child’s gifts. How might the parent advocate for and succeed in ensuring her child is identified by gifted programs? Often times, such parents don’t realize the extent to which actions on behalf of their children result in economic and educational benefits. They may experience limitation due to lack of information and communication with other parents of gifted children or don’t know what questions to ask authorities with power to influence their experiences positively. Just as The Matthew Effect suggests, they may feel powerless about a current impoverished condition, yielding less future benefits than more connected and informed
families of the same socioeconomic background. In some cases, this lack of information may lead to continued intergenerational poverty.

The Matthew Effect similarly can be applied to the underlying dogma of how social groups are perceived. KIPP Academy schools demonstrate how moving away from a deficit mentality of poor minority youth facilitates success. Similarly, efforts to reform the recruitment, hiring, and training of police officers center upon: Identifying recruits who served minority communities in the past; focus upon community service in hiring processes in efforts to develop a more empathetic police force; and prioritizing diversity training by hiring Diversity Officers in charge of continuous anti-biased and anti-racism training for police forces. This work intends to explore The Matthew Effect and Freire’s description of social justice as they relate to these reform efforts, particularly as they regard anti-biased police reform.

**Freire, Bias, and Social Justice**

Our vocation, Freire argues, centers upon humanization. Oppression, exploitation, injustice, and oppressive violence thwarts this vocation (1993). Dehumanization distorts the vocation of becoming more human for both the oppressor and the oppressed. An interesting component of the theory includes the assertion of the mutuality of liberation. Freire describes liberation as a mutual process where those seeking liberation “must perceive the reality of oppression not as a closed world from which there is no exit, but a limiting situation that they can transform” (Freire, p. 49). Activists who work towards anti-biased police reform understand that the current state of police relationships with Black communities can be ameliorated and improved.

However, dwelling in the duality of wanting to be like those with power, and acknowledging that being like those in power means being oppressive, hinders progress towards
liberation for those without it (Freire, 1993). Within such duality, “the oppressed do not see the “new man” as the person to be born from the resolution…as oppression gives way to liberation” (Freire, 1993, p. 46). Rather, the oppressed may become oppressors themselves (1993). An individualistic vantage point and identification with the oppressive system, fosters false consciousness, where they do not affiliate themselves with the oppressed group despite economic similarities, as the case of police officers from poor, isolated White backgrounds. In essence, the combination of racism, lack of education, and sparse exposure to racial and cultural others fosters White mental oppression. Freire offers as an example a peasant, who once becoming an overseer, behaves harsher towards people than the land owner himself (1993). Hence, when viewed from the lens of Freire, White racism can be viewed as a form of White mental oppression. This form of oppression perniciously chips away at White humanity and their ability to interact rationally with humankind as a whole.

Similarly, individualism can counter democratic collective efforts towards positive change. Individualism fails to draw upon external and internal networks that inform improvements and foster excellence. Isolation and failure to learn from networks may stifle transformation resulting in stagnation. Stagnation may take place at individual, meso, and organizational levels. Thus, in applying the principle of The Matthew Effect, the peasant Freire refers to accumulates more power via force over others, similar to a White police officer holding racial bias. What is taken away is the individual’s own humanity and inability to transform to higher levels of being, knowing, and behaving. Such a lack of transformation reflects a form of stagnation and oppression that hinders emotional, intellectual development and subsequent unification efforts with others, thereby truncating the social and interpersonal strength derived from healthy cross-racial collaboration and community.
Discussion

Biased behavior often breeds abuse in both professional and personal lives. When used to promote justice and equity, The Matthew Effect as a framework counters negative effects of biased behavior and decision making. Positive and negative influences are formed both within and beyond institutional walls and may yield a Matthew Effect for organizations. Anti-biased police reform measures, such as recruitment and hiring centered upon prior social service, and implementing Diversity Directors to shift police culture to value anti-biased and anti-racist training, illustrate positive mindsets that may yield corresponding favorable outcomes for police-community relations.

Fear comprises a primary element of psychological distress. Fear of moving forward, fear of change, or fear of lost resources and opportunities may fuel mental conditions including depression, anxiety, racism, and sexism. Acting out of fear may not only influence individuals’ personal lives, but their professional lives as well. Fear, in the form of racism and bias, may emerge in the workplace, influencing decision making, response to change, organizational climate, morale, and productivity.

Despite being a negative emotion, fear may or may not result in unfavorable results. However, certain factors such as power differentials and racial bias, increases the likelihood of it hindering rather than enhancing outcomes. Fear coupled with power and a separatist outlook yields discriminatory behavior, including racism, sexism, ageism, and ableism. Officers holding such thoughts do not view subordinates nor constituents as equal members of society, but as separate independent “problems.” Similarly, viewing an organization as separate pieces rather than as a whole thwarts vision towards growth. Holistic change via anti-biased police reform
promises to influence various facets of police culture, to promote officers who view racial
minority communities as valuable extensions of themselves that matter.

References

Group.


Biography

Dr. Dannielle Joy Davis is an Associate Professor of Higher Education at Saint Louis University. A graduate of the University of Illinois at Urbana-Champaign, she has studied and conducted research in Ghana, South Africa, Senegal, Egypt, Germany, the Netherlands, and Belgium. Her interdisciplinary research examines the experiences of marginalized groups in educational settings, the role of organizational policy and practice in the promotion or inhibition of egalitarian academic and occupational outcomes, and spirituality in the workplace and other learning environments. She has published over 40 refereed journal articles, book chapters, academic commentaries, volumes, and reviews. She is Co-editor of the books *Black Women in Leadership: Their Historical and Contemporary Contributions* (Peter Lang Publishing), *Social Justice Issues and Race in the College Classroom: Learning from Different Voices* (Emerald Group Publishing Ltd.), and *Intersectionality in Education Research* (Stylus Publishing). Dr. Davis has served as an Associate Editor for *Learning for Democracy: An International Journal of Thought and Practice* and *The International Journal of Religion and Spirituality in Society*. She currently is a member of the Editorial Board for the *Journal of Colorism Studies*. 
Title: Developing an Aspiring Leaders Skills Assessment

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Abstract:

Brandman University, part of the Chapman University system, commenced an innovative re-design of their Master of Arts in Educational Leadership and Administration with Preliminary Administrative Services Credential Program in 2014-2015 with the vision to be a leader in the state of California in preparing “leaders of the future” who are prepared to transform schools in the 21st century. This dynamic poster session will present the development of an Aspiring Leaders Skills Assessment (ALSA) based on the newly adopted California Administrator Performance Assessment Expectations (CAPEs) and California Administrator Content Expectations. The six overarching leadership domains assessed include; Instructional Leadership, School Improvement Leadership, Organizational and Systems Leadership, Community Leadership, Professional Learning and Growth Leadership, and Visionary Leadership. Corresponding assessment items in each domain will be shared. Further, the session will describe how the ALSA is being utilized in the program to measure individual leadership growth longitudinally and for program assessment.
Submission: 1174

Title: Preparing Leaders of the Future

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Abstract:

Brandman University, part of the Chapman University system, commenced an innovative re-design of their Master of Arts in Educational Leadership and Administration with Preliminary Administrative Services Credential Program in 2014-2015 with the vision to be a leader in the state of California in preparing “leaders of the future” who are prepared to transform schools in the 21st century. Principals who are 21st century technology leaders model technology use and integrate it in their day-to-day leadership practice on a regular basis. This session will highlight the collaborative development of custom technology badges and the system created to recognize students who achieve mastery in the use of educational technology through their successful integration of technology. Mastery is demonstrated through authentic applied leadership assignments based on the International Society of Technology in Education (ISTE) Standards for Administrators. Technology Badges are awarded in seven distinct domains; Animated Media, Collaboration, Data Collection, E-Publishing, Learning Management, Print Media and Research & Organization. Students who earn all required technology badges are awarded the “21st Century Leader” badge which is a requirement for successful completion of the program.
Investment in human resources development via study abroad programs: Is it worth it?

Topic area: Human Resource Development

Presentation format: Paper session

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Investment in human resources development via study abroad programs: Is it worth it?

There is vast literature that underscores the importance of education and training on human capital development for the benefit of a nation (Aghion, 2008; Ginzberg, 1958; Tkachenko, & Ardichvili, 2013). At present, governments, non-governmental organizations, regional institutions, and global communities are investing substantial financial resources in the development of human resources via formal education, informal education, vocational trainings, and other services. In the midst of the initiatives, investment in human resource development (HRD) via study abroad programs has been recognized an increasingly popular trend. According to the Institute of International Education (2014), Chinese students studying in the United States account for 31% of all international students, while the number of students from India and The Republic of South Korea account for 12% and 8% respectively. While the number of study-abroad students keeps increasing every year (e.g., from 2013 to 2014 the number of international students studying in the US has grown by 8%), the impact of study-abroad programs is attracting more attention among scholars from various fields (eDee & Stewart, 2003; Paige et al., 2009; Pietro, 2015; Kuchinke, & Ardichvili, 2014). While there is some evidence on the positive impact of study-abroad programs on graduates’ intercultural competence, cross-cultural awareness, and employability, there is still lack of understanding of how a person’s participation in a study-abroad program impacts the economic and social well-being not only of the participant, but also his/her larger social systems, e.g., family, organization, community, or even a nation. In other words, given the significant investment in HRD via study-abroad initiatives, there is little knowledge on their return on investment: Is it worth it? And, if it does, what makes it worthwhile?

The proposed study design aims to investigate this problem. In particular, the study aims to explore various predictor variables of the perceived impact of participation in both short-term and long-term international student exchange programs on the economic and social well-being of the participants, their family, organization, community and country. In particular, the following independent variables are currently considered in the study design: (a) types of programs (semester exchange, Master’s, Doctoral, and Post doctoral), (b) types of fields (e.g., science, business, public policy-affairs, other social science), (c) time after
participation, (d) prior career path, and (e) gender. We are planning to obtain data by surveying alumni of the three exchange programs, graduated over the period of 2000-2012, in the country of Cambodia. The three study-abroad programs are Fulbright, Australia Awards, and Japanese Grant Aid for Human Resource Development Scholarship (JDS).

This study aims to make a number of contributions. First of all, this paper addresses a gap in the literature by empirically examining the relationships between participation in study-abroad program and the participant’s (perceived) impacts on social and economic well-being of family, organization, community, and country. Secondly, this paper will provide a more insightful view of study abroad programs to Cambodian students who plan to apply for the programs. We hope students will become more informed candidates for the programs in which they are interested. Thirdly, on a more practical level, we hope that the findings of the study will benefit the key stakeholders engaged in the study-abroad initiatives in Cambodia (program staff, donors, policy makers) and will be useful to inform a broader audience, academics and policy makers, studying the impact of study abroad.

At present, the design of the study is being further developed. We expect to be able to elaborate on the study design in details and present the survey instrument at the conference.
References:


Kuchinke, K. P., & Ardichvili, A. (2014). Developing Cross-Cultural Awareness through Foreign Immersion Programs: Implications of University Study Abroad Research for Expatriate Development


Establishing a National Pipeline Model for Underrepresented Student Success in Engineering: Best Practices

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Abstract

The proposed research examined through this report is a systematic review of best practices in student success across multiple colleges of engineering. The focus will be on underrepresented populations, however, it is expected that the results will be applicable across other populations of students as well. Mixed method analysis of several retention and intervention programs will be applied at the following institutions: Purdue University, Pennsylvania State University, Arizona State University, Kansas State University, Virginia Tech, and the University of Texas at Austin. In addition, it is proposed to examine how effectively each of the institutions utilize the following external intervention programs: Guaranteed 4.0 Learning Systems, and The National GEM Consortium.

The research objectives are to explore the effects of the utilization of brain-based learning, academic coaching, standardized engineering student organization support, and standardized transition programs to improve academic success and retention in engineering across several institutions. Outcomes expected include increased definition of factors contribute to student success in engineering, and the creation of a model of collaboration across institutions in pipeline development, transition to college, and transition to graduate school.

The National Association of Multicultural Engineering Program Advocates (NAMEPA) is a collection of universities across the United States that focuses on under-represented student success throughout the pipeline. NAMEPA is at the beginning stages of research to explore best practices in using brain-based learning for academic success, academic advising, successful transition programs and increasing graduate studies across six universities and two external organizations. The NAMEPA organization would like to share the results of institutional best practices, results, and plans for collaborative research.
Introduction

This document reflects preliminary discussion for broad research on best practices for retention and graduation of racially underrepresented students in engineering. Underrepresented populations in this study are defined as citizens and permanent residents of the United States who are of African, Native, Hispanic or Latin American descent. This population is severely underrepresented in engineering colleges at 16.5% (ASEE, 2015), even though they compose 32% of the nation (US Census Bureau, 2014). The proposed study will examine how the dependent variables, academic performance, retention, graduation, and graduate school entrance, are affected by the independent variables composed of those factors which render successful transition and retention programming.

While the institutions utilize several similar best practices to address these factors, the goal of further research is to examine a few single strategies and define the variables that yield the highest likelihood of student success. For example, the first year summer bridge is a common strategy designed to increase academic success. This research would seek to examine several summer bridge programs across institutions, and identify factors that are correlated with retention and graduation, through both quantitative data (such as time spent in academic review or group average GPAs and retention rates) as well as qualitative data (collecting a record of the students’ perspectives on factors that they believe have contributed to their success). By utilizing multiple institutions, and multiple cohorts, a large data set can be evaluated.

Theory and Research Literature

Preliminary studies could be conducted using quantitative secondary data reflecting retention and graduation rates of student cohorts that began six to ten years ago and tracking each student through well-defined retention program participation, scholarship awards, entrance to the engineering major, dropout rates or graduation with a baccalaureate degree in engineering over the past five years. Those factors that are most strongly correlated with graduation would be significant in forming a strong model for intervention programming. This is similar to the method used by Freeman (2009) who examined five cohorts of underrepresented engineers who completed their bachelor’s degree and compared their first year records of Standard Aptitude Test (SAT) scores, high school grade point averages (GPAs), community economic index, and the college entrance math placement scores when they applied. Upon comparing those who graduated in engineering with those who changed majors or dropped out of college, a multinomial logistic regression showed that the combined effect of these variables explained 75.6% of the variance in graduation outcome (or, predict4d the likelihood of graduation in engineering with a
75.6% accuracy). The same model could be used to examine the correlation of other variables associated with retention intervention programming.

Quantitative data would reveal what worked, however, qualitative data would be needed to explain why it worked, and what the students perceive as being the most effective factors in their success, or decisions to continue on to graduate school. This data could be collected from focus groups of more recent cohorts as they progress towards graduation. Many of the successful strategies identified through this study would be useful to institutions seeking to increase the numbers of engineering and other STEM professionals, especially those students that are marginalized or underrepresented in the academy based on gender, race, socio-economic status, and the first generation college experience.

While the study is still in planning stages, following in this report, several institutions provide examples of current programs that have proven to be best practices at each college over several years. All programs are based on research proven methods of retention including Tinto’s research in effective learning communities (Tinto, 2007; Tinto & Love, 1995), the effectiveness of math-intensive summer bridges (Tyson, Lee, Borman and Hanson, 2007; Maton, Hrabowski and Schmitt, 2000; Hrabowski & Maton, 1995), scholarship support (Engstrom & Tinto, 2008), successful transition programming between two year and four year campuses (Cohan, Yin, Freeman, et al., 2014; Berger & Malaney, 2003), and the importance of undergraduate research and engagement as factor correlated with student’s likelihood of continuing on to seek a graduate degree (Hirst, Bolduc, & Liotta, et al., 2014; Eagan, Hurtado, & Chang, et al., 2013).

An additional factor which may lend more uniformity to the methods of retaining students include the external systems that each of the institutions participate in at varying levels. These would include the Guaranteed 4.0 system created by Dr. Donna O. Johnson, and the GEM Consortium. The Guaranteed 4.0 system is designed primarily for undergraduates providing them with a system for how to study effectively. The system includes, a workshop series presentation by Dr. Johnson, books, worksheets and online tools that assist students in reinforcing that methodology throughout the semester (Guaranteed 4.0 Learning System, 2015; Johnson, D.O., & Chen, Y.C. 2004). It is often provided in conjunction with first year seminars, summer bridges, or offered broadly at the beginning of any given semester on an annual basis. Students who follow this method of studying report better academic performance.

The GEM Consortium focuses on providing funding and success strategies to racially underrepresented STEM students seeking graduate degrees (M.S. or Ph.D.). Members of the GEM Consortium include
corporate partners, universities and the GEM organization which coordinates student applications for fellowship funding with resources available through the corporate supporters and universities. Students applying are required to apply to graduate school with member universities. Those selected as GEM Fellows receive fellowship funding through the corporate supporter and the member university (The National GEM Consortium, 2015).

Most of the institutions included in this report have utilized the services of the GEM Consortium and the Guaranteed 4.0 system. Further study of how these organizations apply these external resources, and which method is most successful could result in best practices that can be applied in a more uniform and effective manner across a variety of educational systems.

Institutions involved in student retention programming are listed below with examples of a best practices and the current outcomes of those programs or processes. Most of the institutions have some version of all of the best practices below, however, each institution is unique and utilizes its own measure of success. The advantage of a study involving multiple institutions would be to streamline the measures of success so that comparisons can be made between them, and clear solutions can be designed for implementation by a broader audience.

Successful programming below includes:

- a first year summer bridge to address academic performance and advising of first year students
- A first year summer bridge and a three-day orientation to address academic performance of a wider audience of students
- a living-learning community for students who transition from first year to graduating seniors at a single institution
- transitional retention program for students whose continuation includes changing campuses
- research experience for undergraduates and international education to encourage students to consider graduate school and expose them to global collaboration.

All of these are described below with each institution’s assessment of the problem addressed, methodology and description of the program, data indicating success, and limitations of the program.
Gaps in first year retention rates and academic performance between underrepresented minority (URM) students and majority students persist in undergraduate engineering programs at predominantly white universities. While the academic rigor and new post-secondary environment present a difficult transition for students in general, underrepresented minorities may face additional obstacles such as academic and social isolation and negative stereotypes. These high ability students certainly have the potential to successfully complete undergraduate studies in engineering at a high level. However, the transition at this particular leverage point remains a primary challenge to student success.

**Program Description: Engineering Academic Boot Camp**

In the summer of 2005, the *Engineering Academic Boot Camp* at Purdue University was launched to improve the transition of underrepresented engineering students into the majority campus culture and to provide students a framework for approaching the new academic challenges associated with undergraduate engineering studies.

The *Engineering Academic Boot Camp* is structured as a non-credit bearing five-week simulation of the first semester engineering experience at Purdue. Calculus, Chemistry, Physics, MATLAB, English, and an engineering design project at its core. Students received instruction on how to learn through the *Guaranteed 4.0* system. Additionally, students are engaged in mentoring from peers and professionals, corporate tours, time management, team building, and social activities. Embracing the best practices of learning communities, engineering students are required to live, study, and have classes together in preparation for global competition.

**Limitations**

The *Engineering Academic Boot Camp* costs $4000 per student to execute. The Purdue MEP currently relies on corporate and individual gifts to underwrite the program. As a result, attendance to the program is limited.

**Outcomes**

After a three-year pilot period, the *Engineering Academic Boot Camp* has demonstrated the importance of transition of URMs into a majority institution in achieving higher first semester performance and first year retention in engineering.
20% increase in retention of underrepresented minority students in engineering over the past decade

Average first year retention 93.5% over the last 7 years
  - 12.2% better than URMs that did not participate
  - 6.1% better than the rest of the engineering cohort

Summer Bridge and First Year Orientation Program
Kansas State University
Multicultural Engineering Program

There is a need to strengthen cumulative GPA to effect retention in the college of engineering for multicultural students and prepare students to be competitive for internships and scholarships. The 6-week Multicultural Academic Program Success (MAPS) Summer Bridge Program was beyond capacity, could only accept 30 students with more than 100 applicants annually from the colleges of engineering, agriculture and business. To accommodate additional students, the 3-day program, Kompass: Navigating your way to a 4.0 GPA, was implemented. Both are Project IMPACT programs.

Program Description: MAPS and Kompass

The implementation of the best practice of MAPS and Kompass accomplished the same goal of strengthening the GPA. MAPS is a math intensive 6-week summer bridge program, and Kompass is a 3-day extended orientation program to support students not admitted into the summer bridge program and/or those who did not apply to the 6-week program. MAPS and Kompass both implement mentors, academic preparation through the Guaranteed 4.0 Program, first year scholarships, and corporate executive contact during the program for students in engineering, agriculture or business. The 6-week program students come into their first year with a GPA from the summer and have financial support for the Fall and Spring semesters, but have a small amount of follow up during the school year. The 3-day Kompass program students have a zero GPA upon entering KSU, are awarded a non-renewable $1,000 scholarship, have weekly mentor meetings and monthly professional development activities.

Limitations:

Needed are:
  - Sustained funding for a MAPS Coordinator, Kompass Coordinator and scholarships for continuing Project IMPACT students.
  - Funding for peer-to –peer mentors for a full year of interaction in the Kompass program.
Sustained participation of students in implementing the Guaranteed 4.0 principles.

Outcomes:

Summer 2014 MAPS:
- 34 Summer students in the MAPS Program
- 80% or 27/34 obtained a 4.0 during the summer (5 or 6 credit hours in 6 weeks)
- Average GPA was 3.926 for the 9 engineering students

Fall 2014
- Average Fall SEMESTER GPA was 3.41 for the 9 engineering students from Summer 2014

Spring 2015
- Average CUMULATIVE GPA was 3.40 for the 9 engineering students from Summer 2014
- One of the nine students did not use the Guaranteed 4.0 principles
  - The Average CUMULATIVE GPA was 3.53 for the 8 participating engineering students

Summer 2015 MAPS
- 30 Summer students in the MAPS Program
- 87% or 26/30 obtained a 4.0 during the summer (5 or 6 credit hours in 6 weeks)
- Average GPA was 3.926 for 10 engineering students

Summer 2015 Kompass
- 26 students trained in the Guaranteed 4.0 Program
- 15 of them are engineering students

Fall 2015
- A total of 56 freshmen trained in the Guaranteed 4.0 program are brought into Project IMPACT
  - We are looking forward to seeing first semester GPAs for these students

Living-Learning Communities

Virginia Tech
Center for the Enhancement of Engineering Diversity (CEED)

Learning Communities have long been part of higher education’s approaches to academic enrichment, and they have taken on many forms and versions as the years have passed. Such programs that have a residential component are typically called Living-Learning Communities, or LLCs, and usually involve housing the participants in the same residence hall or portion of a residence hall. The usual expected participant outcomes from learning community implementation are improvements in academic success.
and persistence, an enhanced sense of community among the participants, and more engagement in the campus environment, including stronger connections to academic units.

The implementations of *Hypatia* and *Galileo Living-Learning Communities* were done with these expected outcomes in mind, particularly persistence. It is recognized that first-to-second year attrition in engineering programs is most severe, and that intervention at the freshman level is paramount to increasing persistence to graduation in engineering degree programs. Thus, freshman living-learning communities for engineering students seem to offer a very viable means to improve retention in engineering, especially at institutions that require, or strongly encourage, on-campus residence for freshman students. Assessment of the *Hypatia* and *Galileo* living-learning communities includes longitudinal tracking of cumulative grade point average and retention. We also document community demographics and survey the residents on program satisfaction and on the impetus to participate.

**Program Description: Hypatia and Galileo Living-Learning Communities**

*Hypatia* is a living-learning community for women in engineering that currently contains 173 freshmen. It was established in fall 2001 for female freshmen entering Virginia Tech in the College of Engineering. The community was implemented through the then Office of Minority Engineering Programs (now the Center for the Enhancement of Engineering Diversity, CEED), with additional associated costs provided largely through industrial sponsorship. *Galileo* is the male counterpart to *Hypatia* and has 273 male freshman engineering students. This men’s community was established in fall 2005 as part of an expansion of freshman intervention programs to improve retention in the College of Engineering. The expansion effort was made possible through the award of a STEP (STEM Talent Expansion Program) grant from the National Science Foundation. Both communities are physically located in Lee Hall.

Outside of size, and sex of the participants, the community structures are essentially the same. The RAs in both communities often join forces to implement the programming activities that Residence Life requires of RAs, and these activities often have an engineering theme. Other community activities are implemented by CEED and STEP grant staff, with assistance from the RAs, and these are both engineering and social events. Both communities have a required academic component for the fall semester in the form of a seminar course. Course content is focused on personal, professional and academic skill development. Topics include

- Resume creation and career fair participation
- Learning to write cover letters and thank you notes to interviewers
• Developing a four-year academic plan, charting classes
• Learning methods of tracking grades in order to have a successful semester from the beginning
• Interviewing professional engineers about their path
• Participating in community events led by upper class committees
• Completing 10 hours of community service during fall semester and one event per month during spring semester

Beginning in 2004, a select group of 1st year students were allowed to remain within the community to serve in various capacities (mentors, committee leaders). As the communities grew in size, it was decided that a student leadership component could be added that would both benefit the upper class students as well as assist in providing support for the 1st year students. In 2009 the Galipatia Leadership Team was created comprised of 3rd and 4th year students who remained committed to the success of the community. 2nd year students serve in the following capacities

In addition to mentoring, the second year students also organize and lead the following committees for the communities:

• Academic support – holding regular study hours to help students with homework, leading and organizing review sessions, hosting events to help with study skills, etc.
• Social – planning and organizing events for students to interact and meet each other outside of class
• Service learning – planning and organizing community service activities
• Outreach – planning and organizing K-12 efforts, including hands-on activities for students to learn about engineering and hosting school visits to campus
• Professional development - planning and organizing events with corporate partners and campus partners, such as Smith Career Center, to assist students in preparing for internships and future work skills
• Communications – collecting information from the other committees to distribute to first-year students in a weekly email, weekly newsletter, and Facebook page

Limitations
The physical space limits the overall size of the community. Lee Residence Hall is shared with the College of Science residential communities resulting in approximately 600 beds for Hypatia and Galileo.
Outcomes

The retention and graduation rates for the community are tracked and compared to a matching control group. Over the lifetime of the communities the participants are graduating at a higher rate.

Cumulative Galileo Overview for Fall 2015, 2005-2006 to 2014-2015

<table>
<thead>
<tr>
<th></th>
<th>Graduated VT Engineering</th>
<th>Graduated VT Other</th>
<th>Still Enrolled in Engineering</th>
<th>Still Enrolled in VT Other</th>
<th>Not Enrolled at VT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Students</td>
<td>#</td>
<td>%</td>
<td>#</td>
<td>%</td>
<td>#</td>
</tr>
<tr>
<td>2005-2006 to 2015-2016 Participants</td>
<td>2145</td>
<td>876</td>
<td>41%</td>
<td>136</td>
<td>6%</td>
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<tr>
<td>Control Group</td>
<td>2145</td>
<td>879</td>
<td>41%</td>
<td>155</td>
<td>7%</td>
</tr>
</tbody>
</table>

Source: Enterprise Reporting System. Downloaded on Sept. 21, 2015

Cumulative Hypatia Overview for Fall 2015, 2001-2002 to 2015-2016

<table>
<thead>
<tr>
<th></th>
<th>Graduated VT Engineering</th>
<th>Graduated VT Other</th>
<th>Still Enrolled in Engineering</th>
<th>Still Enrolled in VT Other</th>
<th>Not Enrolled at VT</th>
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<tbody>
<tr>
<td>Number of Students</td>
<td>#</td>
<td>%</td>
<td>#</td>
<td>%</td>
<td>#</td>
</tr>
<tr>
<td>2001-2002 to 2015-2016 Participants</td>
<td>1384</td>
<td>578</td>
<td>42%</td>
<td>88</td>
<td>6%</td>
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<tr>
<td>Control Group</td>
<td>1384</td>
<td>481</td>
<td>35%</td>
<td>136</td>
<td>10%</td>
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</tbody>
</table>

Source: Enterprise Reporting System. Downloaded on Sept. 21, 2015

Campus Transition Programming

Arizona State University

Academic Success Programs

There are several factors that contribute to the attrition rate of marginalized populations in engineering. These include lack of recruitment, encouragement, and support of engineering and computer science upper division transfer students, especially women and underrepresented students (African American, Hispanic/Latino, or Native American) with unmet financial need in non-metropolitan community colleges.

The state of Arizona has 22 community colleges (CC), three state, and one private university. Most of the students attending a CC do so because the college has lower tuition (about 1/3) than a university and further the student can save on room, board, and gas since the school is not far from their home. “Transfer shock” is very real. This term describes not only the half to full grade point decrease usually experienced the first semester at a large university, but also all of the changes from free parking, small classes, night
classes (to accommodate working), and many opportunities to interact with the class professor.

Historically, the Ira A. Fulton Schools of Engineering (including Computer Science) did not have any special programs to support students once they transferred. In 2002 an upper division Academic Success and Professional Development seminar and scholarship program was begun with funding from the NSF S-STEM program. This program, with an emphasis on females and underrepresented minority students with unmet financial need has developed and been refined during the past 14 years.

**Program and Process Descriptions**
The process of guiding a student from a community college through to graduation in engineering at a four year institution is managed in three stages:

1. Recruitment with preparation for transfer
   - University professor classroom visits to CCs
   - Transfer Course Pathways
   - Open House Visits by CC students to the university

2. Academic and financial support
   - Transfer Center for students
   - Academic Success and Professional Development, a 2-credit repeatable class
   - Guaranteed 4.0 Plan
   - Scholarships

3. Encouragement to go on to graduate school
   - Nuts & Bolts of Graduate School
   - Graduate Student Panel
   - Industry Speakers with graduate degrees

This process is based on ground theory, Social Cognitive Career Theory, and Tinto’s formula for what colleges need to do to retain and to graduate students (Tinto, 2007; Tinto & Love, 1995).

**Recruitment with Preparation for Transfer**
The United States needs more engineers. The community college system is a largely untapped resource for more engineers, especially females and underrepresented minority students. Engineering is not on the career horizon for most CC students. The goal of professors visiting mathematics, science, and engineering classes is to create a desire in the students to consider if engineering or computer science might be the career for them. The CC students are also told about the importance of applying early to be eligible for scholarships. Other tips include spending most of their time on campus, to get into a study
group right away for each class, and to have their classes scattered during the week if possible. A large lesson for new transfer is that the classes are now harder and the pace faster, so they will not be able to duplicate working half to full-time and taking a full academic load, as many did in the CC.

**Academic and Financial Support**

The equivalency of all CC and state university classes is available and course map pathways from CC to university to graduation have been developed for most majors. A two credit Academic Success and Professional Development class has been developed for scholarship students (class is required) and is also open to other students, who attend due to word of mouth or at the suggestion of an academic advisor. The class is not remedial, but does build up the students with skills that are not ordinarily addressed in the regular classroom. Topics include: success tips for transfers built on 14 years of working with transfer students, the resume, the elevator speech, how to work a career fair, writing an interest paper, the value of participating in student organizations, internships, research, and graduate school. Also included in the topics is networking with other students and professors. Most importantly, underlying this course is the “Guaranteed 4.0 Plan” created by Donna O. Johnson. This plan includes a detailed time management schedule, as well as a method on how to “learn how to learn.” This research-proven plan gives students a program that they can use to do well in their academics. Mentoring of the newer students is encouraged for the students farther along in their studies.

In addition to the “Guaranteed 4.0 Plan” introductory session, the class meets seven times per semester. Each of the seven meetings is held four times to keep the meetings small, from 10-25. The students can choose which of the four times is most convenient for them for each meeting.

**Graduation and Professional Development**

Transfer students are encouraged to use the Motivated Engineering Transfer Students (METS) Center for homework assignments and projects, asking questions, and networking. The homework assignments each semester are designed to make the students do what they should be doing to be good students. For example, at the beginning of each semester, each student has to update their resume and make out a detailed time management schedule for the semester. Several meetings are devoted each year to research and graduate school. Most undergraduate students do not know what research really is, nor that it is important to have a Master’s degree for industry in order to have a better chance to work in their area of interest such as design or development. Many challenging industrial problems are limited to engineers or computer scientists with graduate degrees. Also, many students only find their real interest while pursuing a Master’s degree. A higher starting salary by $10-15,000 for a Master’s degree is an extra bonus.
Limitations:
Space for a dedicated Transfer Center for students to use to do homework, ask questions, and network is key. Sustained funding for a METS Director (with engineering degrees) and scholarships is essential, as well as dedicated faculty who are willing to drive long distances to visit non-metropolitan CCs and who are passionate in working with and encouraging students to graduate and to go to graduate school.
Providing the students with a $4,000 scholarship per academic year covers a little less than 40% of tuition costs and allows students to work less or not at all, which greatly helps their academics. Knowing that they need to maintain a 3.0 GPA and get an A in the Academic Success Class motivates the scholarship student to do the assignments required and to do well in their academics.

Outcomes:
- The METS Center space has been institutionalized, as well as transfer student funding to staff the Center
- A one credit Academic Success Class is now provided by the Dean's Office for all new transfer students (required of most majors and in lieu of the introductory ASU 101 for freshmen)
- Over half of the Academic Success Class do not have scholarships. They enrolled due to the encouragement of another student who told them how good the class is or at the suggestion of an academic advisor
- The graduation rate of program scholarship students is 95% (vs. 70% for all upper division transfer students both nationally and in the Fulton Schools of Engineering)
- 50% of the graduated scholarship students go right on to graduate school (vs. <20% nationally for all students, <12% for all upper division transfer students in Fulton).
- Sixty percent of all scholarship students are females and/or underrepresented minorities and all have unmet financial need.

Research Experiences for Undergraduates (REU) and International Education

*Pennsylvania State University*

*Center for Engineering Outreach and Inclusion*

Increasing the numbers of underrepresented engineers who complete the M.S. or the Ph.D. is a national challenge. Students who participate in undergraduate research have a higher likelihood of continuing on to graduate school. Typical REU program experiences often involve the student applying to study with a
professor at another university location. All students are not accepted and it is safe to say that there are not enough REUs to accommodate all applicants, and more are always needed. Penn State College of Engineering provided two REU programs that had a high concentration of Penn State underrepresented students. Both were presented very differently from typical REU programs, but the goal was to encourage more Penn State students to pursue research. The two programs are the College of Engineering Research Initiative (CERI) and Summers by Design: Peru

**Program Description: College of Engineering Research Initiative (CERI)**
The College of Engineering Research Initiative (CERI) targeted the general undergraduate engineering population, but diverse students were directed towards it and formed 22% of the REU participant population with 14 out of 61 students participating in 2014.

CERI is an REU program was designed to support Penn State undergraduate engineering students in conducting research with Penn State faculty. The program provided a stipend to each student selected to conduct and complete their proposed engineering research project in conjunction with a PSU faculty member and that faculty member’s associated research group. Included in this program were a series of processional development workshops, including information on applying to graduate school, laboratory visits to pique student’s interest in a wide array of technical topics, a paper, and a required public presentation of findings (whether poster or symposium presentation). Students received summer stipends of $5000. Faculty received $1000 for expenses associated with supervising the student’s project.

**Outcomes**
While the project was open to 8500 engineering students at University Park campus, underrepresented groups were actively encouraged to apply, with the Multicultural Engineering Program (MEP) director conducting workshops to assist students in understanding how to write a simple research proposal when approaching faculty. These students formed community along with other students in the program, and performed well. The total research group of 61 was intentionally balanced with a composition of 14 international students, 48 majority students, 14 underrepresented students, 15 first year students, 14 women, and each of the thirteen undergraduate majors in the college were represented. For the whole, the retention a year later was at 93%, and at 100% for underrepresented students participating.

**Limitations:**
Funding (solely through the Dean’s office) is not continuing in the future for the research program to be repeated at the same level of participation. While it began at 61 participants in summer of 2014, and did
continue through summer 2015 with 46 participants, summer 2016 is not anticipated unless additional funding is forthcoming. CERI will continue through the academic year with 35 students or so. Sustainability is a challenge.

**Program Description: Summers by Design: Peru**

Engineering Pathways involves ten Penn State engineering students who traveled with Dr. Amy Freeman and Dr. Julio Urbina to the Universidad Nacionial de Ingeriera in Lima, Peru. This research and international education program that was designed for them is called, Summers by Design: Peru. It was a part of an existing series of international experiences available to engineering students traveling to study in a number of countries. Drs. Freeman and Urbina are Co-Principal Investigators for the National Science Foundation (NSF) award for Scholarships in Science Technology, Engineering and Math project (S-STEM award #1154473), entitled, *Engineering Pathways: An Undergraduate Scholars Program*. The project focuses on renewable scholarship funding and educational retention programming for underrepresented, women, and first generation engineering students, ten of whom form a cohort of Pathways Fellows, a group that continues to form community for four years until graduation.

The 2015-16 academic year is the third year for this project. In Spring of 2015, these students were rising juniors and expressed an interest in traveling abroad. This project was the focus of biweekly meetings for the upcoming year as they prepared to interact with students in Peru, and learn more about the importance of being globally articulate and engaged. The average cumulative GPA for Pathways Fellows at the time of the international trip was at 3.31. The group met biweekly throughout the year with faculty to prepare for the trip. This project provided a research opportunity and international exposure to students who statistically are less likely to travel abroad.

**Outcomes**

All of the Pathways Fellows entered Penn State as Engineering students, and all have participated in continuing retention programming such as the 6-week PreFirst Year in Science and Engineering summer bridge, a living and learning community called First Year in Science and Engineering (FISE) House, biweekly meetings with the faculty and group reading and discussion of the book, *The Power of Habit*, by Duhigg. The group is composed of 4 women, 6 men, 8 racially underrepresented students.

The project, Summers By Design: Peru, included several components: a collaborative engineering research project involving the informal housing in Peru, and how these structures could be more efficient, preliminary study of the country and culture of Peru, faculty and student travel to Peru, interactive
learning with Peruvian students, tours of engineering projects in Peru, and student presentation of their solutions regarding the informal settlements, including a model of housing and improvements. Students presented to the presidents and officials of the hosting institutions, and the Dean’s Advisory Board for Engineering Diversity. Pathways Fellows are retained at 100% with 8 majoring in engineering, and 2 in other STEM fields.

Limitations
Funding remains an issue. This was an outstanding experience for these students, however, we do not foresee it happening at the same international magnitude for future students, in that the NSF grant is finite, and was combined with funding from the engineering Dean’s office.

Summary
While all the institutions utilize programs that are effective and fit each campus culture and designated funding parameters, a uniform guide would be useful to others seeking to implement these best practices. Multiple cohorts who have completed programming at each campus would present a large data set to refine accurate outcomes and predictors of success. Ideally, this would ensure the completion of more engineering degrees with in underrepresented groups and broaden participation in the profession.

References


Increasing STEM Freshmen Retention: creating an academic bridge and research program

Fewer than 40% of students who enter college intending to major in a STEM field graduate with a STEM degree. To address this issue, an innovative retention program focusing on academic readiness and freshmen research opportunities was developed and implemented. Program innovation, goals, outcomes and three years of retention data will be presented.

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Abstract:

Fewer than 40% of students who enter college intending to major in a STEM field graduate with a STEM degree. This lack of retention is one factor that has led the United States to lag behind other countries in STEM workforce development. To address this issue, an innovative retention program focusing on freshmen academic readiness and research opportunities was developed and implemented. Program innovation, goals, outcomes and three years of retention data will be presented.

To increase retention of freshmen STEM majors, a two-prong program was developed to improve academic readiness and provide research experience. A fall semester academic bridge program (which morphed into a week-long summer program immediately preceding freshmen orientation) was implemented. The goals were to: (1) increase student competency in skills necessary for successful STEM undergraduate education as well as STEM careers; (2) increase retention of students in STEM majors from freshman to sophomore year through an academic bridge; (3) foster a social support network of peers; and (4) encourage undergraduate student interest in STEM related disciplines and increase awareness of available STEM careers. The bridge program was led by a variety of STEM faculty and designed so that necessary academic skills were learned within a context of hands-on applications with minimal lecturing. Upperclass peer mentors were also available to assist with the program, act as mentors throughout the academic year, and plan social activities for the group. An unassessed by-product of upperclassmen participation was the development of skills such as time management, organization, and mentoring techniques.

The second-prong of the program was a semester-long freshmen research experience. The goals were to: (1) increase retention of students in STEM disciplines from freshman to sophomore years through undergraduate research experiences and (2) encourage students to present the results of their research at the SJC Undergraduate Colloquium. The research experience was designed such that one-on-one weekly faculty mentoring created an environment conducive for confidence building and success.

Program specifics and data will be presented to show student success and retention rates. Students who self-selected to participate in the program had a higher ACT score than the students who chose not to participate. From first to second semester, 91.7% of participants choose to remain in the STEM majors whereas 72.9% of the non-participants remained. Overall, students with weaker backgrounds benefitted most from the program.
Pathways of STEM Indigenous Women from Degree Programs into the Workforce

Higher Education / Indigenous Education

Paper Session

The lack of women in STEM has been discussed for years and progress has been made to address this disparity. However, little research has focused on indigenous (Native American, Native Hawaiian, Alaska Native) women. This group is disproportionately small, and hence typically overlooked in large data discussions. This study will focus on indigenous women in STEM to identify attrition points in the pipeline and impact factors of successful women at those same points.

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Abstract:

It is widely known that diverse teams are more creative and produce more innovative results. Unfortunately, creating diverse teams in science, technology, engineering and mathematics (STEM) fields continues to be a challenge. One reason is the lack of women in, and the loss of women from, STEM degree programs from undergraduate through the doctorate. It has also been found that a surprisingly large number of women who do earn STEM degrees choose not to continue on in the STEM workforce. This disparity has been studied for several years and many factors are believed to contribute, such as: a lack of female role models, inadequate mentoring, gender pay gap, gender stereotyping, and lack of flexibility to care of family obligations, to name a few. The majority of studies in this arena examine women as a group. However two landmark studies on STEM women of color, Shirley Malcom’s 1976 paper entitled ‘The Double Bind: The Price of Being a Minority Woman in Science’ and a follow-up 35 years later by Dr. Malcom and her daughter, Dr. Lindsey Malcom provided critical insights. They found that women of color are facing different challenges today: "Now it is less about rights versus wrongs and more about support versus neglect; less about the behavior of individuals and a culture that was accepting of bias as the 'natural order of things' and more about the responsibilities and action (or inaction) of institutions."

This study aims to investigate an oft-neglected subset of women of color, namely indigenous (Native American, Native Hawaiian, and Alaska Native) women. Their numbers are often lost in the compilation of data, and hence their pathways into STEM degrees and the STEM workforce are overlooked. This project will investigate the pipeline of indigenous women in STEM over the past several years, and discuss factors that may influence persistence in STEM areas.

A numerical study of data from the National Center for Science and Engineering Statistics will be presented to examine the persistence of indigenous women through undergraduate and graduate STEM degree programs, and the transition into the STEM
workforce. We expect to identify points of attrition through this pipeline. We will then attempt to align attrition points with insights gathered from interview data of women self-identified as Native American, Native Hawaiian, and/or Alaska Native with earned Ph.D.s in STEM disciplines working in academia. This qualitative study focused on an examination of the intersection of one’s education and career path with cultural identity. We expect to be able to identify the major attrition points of indigenous women from the STEM pipeline and the major impact factors of successful indigenous women at those same points. Our end goal is to provide useful insights on the success of STEM indigenous women that can be used to facilitate recruitment and retention programs and policies in higher education.
Presentation Title: Career Preparation for Online Learners: A Model for Experiential Learning in the Online Classroom

Topic Area: Higher Education

Presentation Format: Paper Session

Presentation Description:
As online learning becomes more prevalent in higher education, students are challenged in their ability to engage in experiential learning opportunities that prepare them for their future careers. Traditional universities found success in campus based opportunities, but such prospects are non-existent in the online learning environment. Therefore, the objective of this presentation is to introduce a 3-tiered co-curricular model for higher education experiential learning in the online classroom for virtual learners.

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Full Abstract:

This paper seeks to resolve the following problem: colleges and universities have left employers concerned with the educational systems’ ability to provide online students with real world experience for practical workforce application (Allen & Seaman, 2014). In a recent study conducted by the Babson Survey Research Group, survey results indicated that, “Academic leaders selected “Workforce development / Gainful employment” second most often, with 20.4% picking it as the most important factor and 64.4% as one of their top three factors” (Allen & Seaman, 2014, p. 37). This is not a novice notion, as career preparation is uncommon at universities where online learning is the primary modality of instruction (Heckman, Østerlund, & Saltz, 2015). Institutions of higher education prepare students to apply knowledge to various positions across different disciplines, but do not afford students the opportunity to gain real world practice, which has been determined by employers as a top desired behavior for students to gain experience and become career ready (Benson, Johnson, Taylor, Treat, Shinkareva, & Duncan, 2004).

Traditional brick and mortar institutions, have struggled for many years to produce the next generation of quality future faculty in the higher education industry (Bogle, Blondin, Miller, & the PFF Staff, 1997). In 1993, the Council of Graduate Schools (CGS) and the Association of American Colleges and Universities (AAC&U) partnered together to launch the Preparing Future Faculty (PFF) program. This program prepares campus graduate students interested in embarking upon a career in higher education with concrete experience in the higher education field, while simultaneously completing a graduate degree. The experiences typically include acquiring skills in teaching, researching, presenting, lecturing, and/or publishing (Bogle, Blondin, Miller, & the PFF Staff, 1997). The PFF program has found success with providing experiential learning
opportunities to students in order to increase their readiness for a career in higher education (Bogle, Blondin, Miller, & the PFF Staff, 1997).

This paper seeks to utilize the framework of experiential learning activities utilized in the PFF program and incorporate them into the online learning environment for virtual students. Upon completion of an online degree program, students enter into the fierce and competitive job market with little to no experience in their respective industry (Heckman, Østerlund, & Saltz, 2015). The same is true for the higher education industry, as the field is steadily becoming more and more competitive annually (Duderstadt, 2001). Therefore, this paper will explore the concept of piloting a three tiered co-curricular virtual internship program in the areas of teaching, researching, and graduate internships, as “there is real-world, applied knowledge acquired through an experiential learning process” (Hansen, 2008, p. 95).

The virtual internship program uses Kolb’s Experiential Learning Theory to combine his Experiential Learning Cycle with applied higher education career experiences for graduate students at an online university. Kolb asserts that, “learning is the process whereby knowledge is created through the transformation of experience” (Kolb, 1984, p. 38). Thus, the pilot internship program will provide graduate students with palpable experience in the higher education industry in the areas of teaching, research, presenting, and publishing. In conclusion, this pilot will answer two questions: (1) Is a graduate internship model sustainable and desired in the online environment? (2) Will virtual teaching, researching, presenting, and lecturing experiential learning opportunities better prepare students to enter a career in higher education?
References:


Using High-Engagement Strategies in a College Classroom

Peiyong Yu¹ and Jason Levy²

Abstract: Many students have expressed frustration learning technical materials and abstract concepts in economics and public administration courses. This study explores the high-engagement strategies to incentivize student interactivity with their instructors and peers in a college classroom and to increase their abilities to articulate difficult concepts in their own words. By applying the herein proposed original teaching strategies, improvements in student enrollment, academic performance, and course satisfaction are documented. While these results apply only to economics and public administration courses over a period of one year, plans are in place to use the most successful approaches in other courses at University of Hawaii – West Oahu in the future.

Introduction

This paper seeks to increase student performance and satisfaction in economics and public administration courses. Creative solutions are put forth to increase students’ abilities to master technical materials and abstract concepts in these courses. We began with a basic question born out of our students’ frustration with learning difficult concepts from economics and public administration courses: how do faculties make the classroom more fun and engaging so that students will improve their learning outcomes? Studies show that those students’ family lives, extracurricular intellectual activities, and opportunities for classroom participation all influence their academic achievement, and these factors will also influence students’ behavioral engagement (Robinson and Mueller 2014). How do we faculties provide ample opportunities for students to engage with their peers and instructors? Let us explore some of our strategies here:

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Strategy one: Present and Prepared Technique

Students have to be in the classroom to engage with each other. People respond to incentives. The traditional incentive is to reward students with grades on exams, homework and quizzes. Interested students usually learn the best, and there are three major students’ interests such as passing the course, finding a good job and making money. In order to help students realize their goals, instructors have to incentivize the students to come to the classroom to participate. Our incentive strategy for students to come is by using “Present and Prepared” technique. There is a paper with three columns: the first column includes their names, the second column named ‘present’, and the third column named ‘prepared’. Students who mark both present and prepared will get three points if they actively participate in the class discussion, think-pair-share activities, etc. in each of the class. Students will get 0 point if they are not present. This takes about 10% of their final grades. The other format of this strategy is to assign students YouTube videos as homework, which is related to the class topic that is due before the lecture. They will get 2 points for being prepared if they submit the discussion questions on time, and another point if they are present in the class. Extra bonus point(s) will be given to students who participate actively or provide insightful comments, etc.

Strategy two: using polleverywhere.com

We asked students to install PollEv App on their smartphones so that they can actively participate in the class polling. The polling can be multiple choice or open-box questions. For example, we asked students to use that App to guess which country is the richest nation in the world. You can see all the answers popping up on the screen: US, Luxembourg, Switzerland, China, Qatar, etc. there are also some funny answers there. When each group of our students finishes their presentation, we will use polleverywhere.com to collect their peers’ evaluations and count them as half of the presenters’ scores.

Strategy three: multi-functional slides
Student perception of interest depended so heavily on the colors, design, movement, sound, and even the number of slides shown, although, most important, PowerPoint was deemed effective only when it was used by competent and interesting lecturers (Clark 2008). My slides are very colorful and each slide has its own unique movement. Short and fun clips are embedded in the slides, such as video clips from the Big Bang Theory, Grey’s Anatomy, Simpsons, etc. Those short clips are from criticalcommons.org. Students commented that those short videos are closely related to economic concepts that under discussions and helping them to absorb the new ideas such as price discriminations, consumer surplus, price elasticity, etc. Interesting pictures are also embedded in my slides, such as the image of Elsa standing behind her palace from the “Frozen” movie under the question: what is the opportunity cost of Elsa to choose to live in the Icy Palace all by herself? Another example: an interesting question is posed under the picture of the movie poster “The Interview”: what is the tradeoff of North Korea to use billions of dollars on nuclear weapons while borrowing millions of dollars from the UN to feed their own people? Students show interests in discussing popular topics that are related to their lives.

Strategy four: various games in the class

In the beginning of the class, we will ask five or six students to be judges to each read one different sentence (either true or false) related to the previous lecture. All the students will decide which judge or judges that claimed the false statements. I brought small white boards for each two students to write down their answers. This “Judge” game helps to excite students in the beginning of the class and incentivize students to review the important concepts beforehand.

The other classroom game is to give each group a different concept to allow them to write their own scripts to play out and elaborate the concepts. For example, we taught 10 different forms of price discriminations and we also had 10 groups. Each group chose randomly from the 10 cards indicating what kind of price discrimination they were experiencing. After they finish writing the scripts, they have to play out like a short skit in front of the class. Students commented that
playing out the concepts give them lasting memories and also help them apply theories to their real lives.

Voki assignments allow students to create their own avatar and narrate the 3-2-1 assignment within 90 seconds. 3-2-1 assignment refers to 3 concepts they have learned in this chapter, 2 applications they can apply in their lives, and 1 question. In the review session before the exam, I will write down each student’s questions (4 chapters) from the Voki and then ask Row one to face Row two, and Row three to face Row four; it is like speed date. I give them 3 minutes to answer each other’s questions and then rotate. So each student has a chance to talk to the rest of his/her classmates to learn from their perspectives. They will elect who is the best answerer in the end. Group exercises/games nurture attachment relationships in the classroom, which also incentivize students to be eager to be present with their group members/friends. Attachment provides feelings of security, so that students can explore freely (Bergin, C. and Bergin, D. 2009).

Finally, the game for students to prepare for the exam is called “Jeopardy Game”. There are jeopardy game templates downloadable online; instructors can make jeopardy questions under different groups such as Chapter 1, Chapter 2, etc. Students can work as a group to answer each chapter’s questions. In my class, there are 10 groups, so I have to make 2 sets of jeopardy games. Five groups will compete for the first set of game, and the rest of five groups will compete for the second set of game. Within each set, there is ranking based on their grades. Extra bonus points will be added to their exam based on their jeopardy rankings within the five groups. Students have to study hard to earn the bonus points.

**Strategy five: Problem-Based-Learning (PBL)**

Lam (2004) stated in her work:” The fact that the acquisition of theories and field experience are often scheduled independently creates a gap. Students often fail to relate the practice situation to relevant theories, even though such theories have been covered in class. The linkage between the two is not automatic. The real situation is often much more complex than what is illustrated in class, and students have to make decisions that require them to consider all kinds of factors within a limited time” (p. 372). In dealing with social dimensions of disaster
recover problems, a whole range of theories from macro to micro and from business to individual could be relevant. So we create all sorts of real life scenarios, and students will group themselves to discover a recover plan for the society, business or individuals, and then share the plan with the rest of the class. It is rewarding to see our students learning efficiently and exploring freely in the classroom. When we watch our students performing their scripts about different government forms (Socialism, Capitalism, Nazism, Representative Democracy, Pure Democracy, Autocracy, and Anarchism, etc.), we also learned something from our students: their creativity, free spirits, and teamwork!

Evaluation

The e-café form allowed students to express opinions about the course and the instructor. Positive comments relating directly to the engaging strategies included the following:

“good course, good PowerPoint slides, interesting videos”

“... gives great power point lectures and uses different media often to keep microeconomics interesting.”

“...teaching style is very effective and the course material was taught in a way that was easy to understand.”

“...the strong point[s] of this course is how she provides videos and songs for examples to help us understand each section better...”

“...her lecture style is entertaining and effective. She made economics interesting; sometimes I believe is very hard to do.”

“I walked into microeconomics not knowing what to expect. What can I say, all I read is food magazines all day, I couldn’t even tell you the difference between an economy and ecology before I took this course. All in all, the knowledge I gained in this class tied to concepts learned in accounting and marketing, both classes that I have taken this semester. I can only say I wish I took the class before I started the others, especially marketing, because it
helped me understand what was to be expected from certain activities and what the response would be.”

These comments support the notion that students prefer engaging materials that make the subjects fun and learning strategies that relate course concepts to their own professional goals.

Discussion

Segal (2008) explained that the noncognitive skills such as interpersonal interactions, behavior in the classroom, and various personality traits like aggression, externality, self-esteem, and friendliness are closely related to labor market success. When planning the course, faculties need to take the interpersonal interactions skills into consideration. Using the high-engaging strategies help students develop various noncognitive and cognitive skills to help them succeed in their current or future careers. These strategies can be reliant on technological innovations such as PollEv App, “incentives” to learners such as “Present and Prepared” technique, novel homework designs such as Voki assignments, spicy classroom activities such as skits, plays and scripts or multi-media uses during the lectures. The enrollment data indicates positive growth of students’ interests in courses utilizing engaging strategies.

References:


Innovations in Distance Education to Engage Students Online

Peiyong Yu\textsuperscript{1} and Jason Levy\textsuperscript{2}

\textbf{Abstract:} Distance education plays an essential role in giving students flexible time to both work and study, especially in a high-cost living state such as Hawaii. Both educational and professional successes are important to students with jobs and children. How to provide quality instruction with engaging strategies is very important in providing educational access and higher educational opportunities to our island students. This study explores the technology use, course design and online assignments to engage students online.

\textbf{Introduction}

Distance education, the process of learning through either videoconferencing or the interactive use of the World Wide Web, has become a major force in higher education in the United States (JBHE Foundation, Inc 2004). According to the U.S. Department of Education, there were 21,147,055 students enrolled in distance education courses at Title IV institutions. Based on the National Center for Education Statistics using fall 2012’s data, 27\% of all students in Hawaii State have either enrolled exclusively in distance education courses or partially enrolled in some distance courses. This percentage is larger than many other states such as California (17\%), New York (15\%), Texas (25\%) and Illinois (20\%). The reasons why Hawaiian students are more eager to take online courses include geographical constraints (it is hard to drive to another island), family accountability (high costs of living in Hawaii force students to take multiple jobs), and time constraints (many of the students here are nontraditional students such as military families, and traffic congestion problems on islands). This paper explores different online engaging strategies to help improve students’ retentions and performances.

\textbf{Distance Education}

Distance education has three features: 1. educational communication between instructor and participant is separated by a geographical distance, 2. communication is two-way and interactive, and 3. a form of technology is used to facilitate the learning process (Thach and Murphy 1995). How effective are the distance educations? Some studies conclude the following: blended and purely online learning conditions implemented within a single study generally result in similar student learning outcomes; elements such as video or online quizzes do not appear to influence

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the amount that students learn in online classes; online learning can be enhanced by giving learners control of their interactions with media and prompting learner reflection, and providing guidance for learning for groups of students appears less successful than does using such mechanism with individual learners (Means, et al.). This study agrees partially with those findings.

Delivery Systems

University of Hawaii uses Laulima as the online course management system, which is used for traditional face-to-face, online, and hybrid classes. There are several steps to allow students to use Laulima to watch the lecture videos. First step, we use HoverCam to deliver the content. Students will see our faces when we open the camera; warm greetings allow students to feel connected. Then we switch to the computer camera, so students can see the PowerPoints. If any documents need to be shown, we can switch the document camera to show students, for example, how to draw supply and demand curves or perfectly elastic curve. Second step, we download the video from the HoverCam site to the moviemaker, which helps to edit the video with titles, introduction music and other modifications. Third step, the edited videos are uploaded to the YouTube site (faculties can establish their own YouTube channels). The last step, embed the YouTube video on Laulima’s Modules. Students now can just clip the Modules on Laulima to watch all the lecture videos. Students spoke highly of those high-quality videos, which allow them to get connected with us and also see different formats of teaching (document camera, embedded videos on PowerPoints, and faculties interacting with the students by showing their faces).

Engagement Strategies

There is a world of distance education with its own dynamics, issues, discussion forum, organizational support, and collaborative projects (Valcke and Thorpe 1995). According to Kearsley (2000), the most significant applications of computer-mediated communication in E-learning environments are discussion forums (Shana 2009). The closest interaction place on Laulima is the Discussion and Private Messages Forums, which include General Questions area, Class Discussions forum, and Student Lounge. The first discussion assignment for the students is to introduce themselves there by posting their profile pictures and sharing their hobbies, talents, favorite TV shows, movies, jobs, dreams, and life anecdotes, etc. Students love interacting with their peers on this forum. One student shared that: “…my major is Business Administration. A fun fact about me is that I have a[n] identical twin sister but unfortunately, you guys won’t be able to witness that in person. Shucks! One of my favorite things to do that I do as a job is being a hairstylist for weddings. I recently just got into it a year ago and I really love doing it…” We encourage students replying at least one of their classmates. Faculties do have to reply each of the students to welcome them to this online class. After reading one student’s comments on his passion in video games, I commented that: “…I started playing Clash of Kings on my phone and experienced the core issue of economics -- scarcity. I have to get gold to purchase wood, iron,
and wheat to build my castle and feed the soldiers. When enemies attacked my castle, I have to get enough resources to heal the wounded troops. Gaming industry is very lucrative and promising…” Students can easily connect with the faculties if they have similar experiences or languages. Effective communication between teacher and learner is essential to sophisticated learning experiences and distance learners cultivate a host of faculty relationships (Muirhead 2000). This interaction builds real connections online in the beginning of the semester.

In addition to the weekly comments for online discussion forums, we also encouraged students to write on subjects that were relevant to economics or public administration subjects. First, the weekly online discussion questions can only be found through watching the lecture videos in the Modules on Laulima. This incentivizes students to finish the discussion homework after watching the lectures, which include the discussion questions in the middle or in the end. For example, when interesting subjects such as price gouging or the role of government was mentioned, we will raise the weekly discussion questions as, “what do you think about price gouging? Is price gouging moral or immoral? Is it good for the consumers?” or “what is the link between the Animal Farm (an allegorical novel written by George Orwell in 1945) and the role of government?” Students have to at least open the lecture video to locate where the homework questions are, which gives students’ strong incentives to follow up the class progress. Faculties have to address the divergent comments related to those controversial topics. For example, students may prefer the communist system enjoying the pig figure (Napoleon) in the Animal Farm representing an undisputed tyrant, while the others may prefer the democratic system. Some students abhor the price gouging, while the others see the underlying benefits of price gouging as a function of the invisible hand of the market mechanism. When divergences came, faculties need to be patient and creative to lead the students out of the superficial thinking loops. Critical thinking and deeper understandings are essential to the distance learners too. It is also a good idea to ask all your online students to give you their phone numbers in order to keep some of the important dialogs timely. The communication problems that occur during online courses reveal that both teachers and students must be active participants who are consistently involved in relevant academic dialog (Muirhead 2000).

The other way to engage with online student is through this Voki assignment. We had 2 year subscription ($49.95/2 years) of Voki Classroom to try with students. It is free for students to create fun and unique Voki characters that can talk. It is a creative, easy-to-use tool that helps motivate students and improve lesson comprehension and student participation online. For each chapter, there is a 3-2-1 assignment for students to use Voki to articulate 3 concepts they have learned in this chapter, 2 applications and 1 question. Faculty need to make sure that they understand the solutions to their questions in the end. This Voki assignment also trains students’ spoken skills. There are four basic skills that are necessary for online students including computer skills, literacy/discussion skills, time management skills and interactive skills (Rowntree 1995). The discussion role through this Voki assignment is reflected on their self-reflections: either through discussing the concepts/applications to a Voki character or acting like
a Voki character. The micro time management skills can be reflected on Voki recording’s 90 seconds limit. Our students manage to elaborate the 3-2-1 homework within the time frame. There might be some confusions of Voki registration or homework submission through students’ computers, but this is a great opportunity to engage with students to improve their computer skills by giving detailed instructions.

The links between online class and in-person class can also be explored to expand distance learners’ resource uses. There are two major ways to help connect two lecture formats especially when faculties teaching one same course with two sections (one section is online and the other one is in-person): 1. Invite guest speakers to your in-person class and also include your online students; 2. Record your games played out in your in-person class and share the videos with your online students. The games include in-person class debates, script and plays, and other online games. Creativity can be trained through game-playing and interactivity in the class. Creativity is the ability to imagine or invent something new with the attitude to accept change and newness, a willingness to play with ideas and possibilities, a flexibility of outlook, the habit of enjoying the good, while looking for ways to improve it; and creative people work hard and continually to improve ideas and solutions, by making gradual alternations and refinements to their work (Harris 1998). Students’ imaginations run wild while they are collaborating with their partners to write scripts and play them out in front of their peers, or cooperating with group members to finish the game tasks. When the games cannot be played with distance learners, faculties can record the in-person activities and share the resources with distance learners. Jeopardy games can be played in additional time periods with the distance learners before the exam to help students review the content.

What are other strategies that you can engage with your online students? Six general strategies based on Amabile (1999) can be revised to guide us towards a better online learning ambience: 1. Challenge – creating learning activities that stretch the students but do not overwhelm them. The individual should be effectively tested beyond their current knowledge and skills. For our case, we create learning activities in both discussion and essay homework. For example, one activity is to ask students to visit the Henry Loui’s Restaurant in Honolulu and talk to its manager and write an essay about fixed costs, variable costs, economies of scale and profit-maximization rule. 2. Freedom – instructor can enhance reflective skills by having clearly defined goals that give students the opportunity to complete an assignment in a variety ways (eg. PowerPoint slides or a detailed outline) foster self-directed learning. Our PowerPoint slides include many funny but thought-provoking pictures and embedded video links. Students commented that those short videos from the criticalcommons.org are really interesting and helping them digest the concepts better when they go back to play the videos again. It is very flexible for the students to review the materials shown in the lecture videos at any time. 3. Resources – this can involve the quality of interpersonal relationships between students and between students and their instructors. Other YouTube videos that help students digest specific abstract concepts are embedded in the Modules on Laulima. All other kinds of resources such as Voki registration information,
individual project template, lecture notes, etc. are stored in the Resource folder on Laulima. 4. Work-group features – learning teams who have a diversity of cognitive skills, professional, cultural and education experiences can enhance creativity. Teachers who create online learning teams can use information from personal biographies at the start of their classes to integrate a degree of diversity into their learning teams. Group project allows a group with different majors including business administration, public administration, marketing, finance, mathematics, anthropology, economics, and others to work together and contribute to the project in different perspectives. 5. Supervisory encouragement – teachers play a vital role in helping students work through anxiety when tackling difficult assignments. Professional judgement is needed to know when to give more detailed instructions to students who are struggling because part of the process is learning to be patient when working through complex problem solving issues. In our case, we can download students’ contact info from MyUH services. From the ‘Statistics’ tab on Laulima, we can find out which students are lagging behind without logging on Laulima for more than a week. Faculties are encouraged to call students or their family to make sure that they are keeping up with the course’s progress and they submit their homework on time. 6. Organizational support – teacher and students need to feel that their work is important. Teachers can become discouraged about integrating innovative instructional methods into their online classes if his work is rarely affirmed by their organization leaders. Distance educators can feel isolated at times and it is wise for them to develop professional relationships with other educators to cultivate best teaching practices. In our case, we have the Center for Teaching and Learning Excellence (CTLE) serving as a resource for UH West Oahu faculty to develop effective, innovative teaching through learning. The center promotes online teaching research and assessment driven by faculty interests and motivated by faculty desires. They also provide us support for the sharing of ideas, the evolution of existing teaching methods, and the exploration of new pedagogical strategies.

Discussion

Black and Mcclintock (1995) devised seven steps to the Interpretation Construction (ICON) Design Model: 1. Observation – students make observations of authentic artifacts anchored in authentic situations. They learn better from the real-world examples. 2. Interpretation construction – students construct interpretations of observations and construct arguments for the validity of their interpretations. The 3-2-1 assignment allows students to interpret their own understanding of the concepts and articulate two different applications through the Voki Classroom. 3. Contextualization – students access background and contextual materials of various sorts to aid interpretation and argumentation. The individual project assignment allows students to research the background of crucial economic or public issues and provide argument toward specific solutions to those chosen issues. 4. Cognitive apprenticeship – students serve as apprentices to teachers to master observation, interpretation and contextualization. Distance learners tend to lose their focus on academia, so the masters need to keep eyes on their apprentices. Getting students’ contact information in the beginning of the semester is very
helpful to keep track of the students. 5. Multiple interpretations – students gain cognitive flexibility by being exposed to multiple interpretations. The discussion forum allows students to exchange their different perspectives on controversial issues, which incentivize students to interact with their peers by debating or discussing. 6. Multiple manifestations – students gain transferability by seeing multiple manifestations of the same interpretations. Cartoons, pictures, videos, games, active learning slides, etc. are embedded on the Power Point slides. The in-person class materials are sometimes transferable to the online class such as recorded video of classroom debates, role-plays, games or invited guest speakers, etc.

We briefly touched upon the subject of integrating innovative engagement strategies into online teaching in this study. Online students are very volatile and they tend to lose concentrations on school duties; thus, incentivizing them to keep up with the online lecture is very important. Student curiosity should be continually encouraged by developing an interesting, highly engaged learning climate that excites students’ intellectual activities. Csikszentmihalyi (1996) commented that, “if the next generation is to face the future with zest and self-confidence, we must educate them to be original as well as competent”.

References


ABSTRACT
Student comprehensible notions, language, and taxonomy of environmental and cultural sustainability were needed; for student affairs educational efforts and for the development of early-career student affairs professionals. A grounded theory research and curriculum development approach with those professionals yielded, affirmed, and refined the notions, language, and taxonomy that developed and satisfied these professionals. The grounded theory research and curriculum development approach is presented.

Grounding a Taxonomy for Teaching Environmental and Cultural Sustainability

Introduction
The author researched environmental and cultural sustainability theories and models with a view to teach them to early-career American student affairs professionals. The outcome of his research was a determination that most related sustainability theories and models were more sophisticated in notions, language, and taxonomies than the early-career student affairs professionals would find effective when educating students via student affairs functions.

- There was little sustainability language that was comprehensible for most undergraduate students and early-career student affairs professionals.
- There was little sustainability language commonly defined and utilized in higher education and student affairs publications.
- There was no taxonomy to define, distinguish, and assess improvement of environments from lower to higher orders of “sustainability” that would be well-suited for educating students via student affairs functions.

Thus determined, it became necessary to ground a theory and model, including taxonomy, fitting for these early career professionals’ development and their educational work in student affairs.

How could this be done and could early-career student affairs professionals find it appropriate for sustainability educational efforts via student affairs functional areas?
Initial Grounding Process, Analysis, and Taxonomy

Participants and Data Collection

Over a span of two years, a total of 60 early-career professionals in student affairs participated in conversations about sustainability with the author. Those conversations were in groups that averaged 10 participants. Each conversation lasted two and one-half hours.

The 60 participants were working in student affairs functional areas at 11 colleges and universities. Each was completing a graduate degree in either higher education administration or college student personnel at a common institution. Most of the participants’ undergraduate experiences were at different colleges and universities from most of the United States, and they represented a high level of human diversity. Their baccalaureate degrees were from numerous fields and disciplines across the arts, sciences, and professions. No more than two participants expressed an academic expertise in environmental or cultural sustainability.

Prior to the participants’ conversations about sustainability, each early-career professional in student affairs was provided with identical literature from higher education and student affairs publications (see References; other than, Gullahorn & Gullahorn, 1963, and Strange & Banning 2001 & 2015). Prior to reading the literature, the participants were told the articles addressed principles and practices of environmental and cultural “sustainability” as considered and implemented by leaders and educators in American higher education institutions. The participants then read the literature no sooner than a week prior to the conversations.

Questions, Analysis, Findings

Each of the conversations was guided by four questions. The constant comparative approach to analyzing the early-career professionals in student affairs responses was utilized. The following paragraphs contain the questions and findings from analysis organized by themes.

Conversations began with the question, “What is ‘sustainability’?” The participants’ offered definitions were varied and the following themes emerged.

- The primary definition was preservation and/or wise consumption of the physical and natural environment itself.
- The secondary definition linked preservation and/or wise consumption of the physical and natural environment to availability of resources for the next generation.
- The tertiary definition was preservation and/or wise consumption of the physical and natural environment resources for reasons of economics.
- Missing from offered definitions were notions related to
  - improving the environment,
  - “sustainability” education,
  - application of “sustainability” to cultures, and
  - application of “sustainability” to communities.

The next question was focused on “sustainability” language. “How could the ‘sustainability’ terminology used in the literature you read be improved?” The young professionals noted the following.
Approximately 10 terms like “sustainability” were synonymously utilized between and within the articles. None of those utilized terms was defined in the articles. As captured by one early-career professional participant, “these seem to be ‘buzz words’ that no longer have a clear meaning.” There was frustration regarding the “sustainability” language presented to/used with higher education and student affairs professionals.

- Though the respondents were committed to some aspect of “sustainability” being part of the professional and educational outcomes of their work, they were not interested in scientific/technical/scholarly “sustainability” language for their work in higher education and student affairs, and
- The participants were not satisfied that the “sustainability” language they encountered in the higher education and student affairs articles was beneficial for achieving the educational and professional outcomes of their work.

The third and fourth questions related to the early-career professionals’ educational work in higher education. “How do you nurture students to learn, grow, and develop in regard to ‘sustainability’?” and “How do you measure ‘sustainability’ improvement?”

Regarding nurturing student learning, growth, and development in regard to “sustainability,” responses clustered into two themes.

- The second most supported theme was a combination of passive modeling of “sustainability” behaviors (carrying reusable water bottles, reducing printing, etc.) and indirect “sustainability” communications (posters, recycling containers).
- The theme generated by most early-career professionals was “I do not know enough about ‘sustainability,’ had not thought of ‘sustainability’ as an outcome I could nurture through my work in student affairs, and/or I would not know how to nurture student learning, growth, and development in regard to ‘sustainability.’”

Though each early-career professional had a common scholarly knowledge of assessment (and some had hands-on experience), none had suggestions regarding “How do you measure ‘sustainability’ improvement?” In follow-up, the early-career professionals contributed these themes about why they did not know.

- An inability to discern the meaning of the word “sustainability.”
- An inability to operationalize the “sustainability” notion and/or value for measurement, evaluation, and decisions relative to accomplishments and improvements.
- Lacking a non-scientific/non-technical/non-scholarly “sustainability” taxonomy fit for their work in higher education and student affairs, an inability to define and distinguish lower and higher orders of “sustainability.”

**Refining Grounding Process and Proposed Taxonomy**

With the above provided by the first group of early-career professionals in student affairs (and each subsequent group), the participants were provided with a working taxonomy (in hard copy) and a verbal explanation (presentation and dialog) of it.
The taxonomy itself is described in full in a forthcoming publication. Concisely presented in this paper and proceedings, the notions and language of environmental and cultural sustainability, in ascending order of lower-to-higher order are arranged below.

“Thrive”

“Survive”

“Alive”

Participants were asked, “Does the taxonomy contain notions of sustainability (environmental and cultural) and language that all undergraduates could comprehend?” Also, “Do the lower and higher orders of sustainability (environmental and cultural) make sense within the educational contexts of student affairs functional areas?”

Responses to both questions were overwhelmingly affirming of the notions, language, and the ordering of them from low-to-high. Also, these elements of the taxonomy were considered appropriate for environmental and cultural sustainability educational efforts via student affairs functional areas.

Participants’ recommendation for improvement to the taxonomy itself was the addition of a fourth level. That suggested level would be situated between “survive” and “thrive.” [It has subsequently been inserted and labeled “strive” and is also addressed in the forthcoming publication.]

“Thrive”

“Strive”

“Survive”

“Alive”

Participants also encouraged that definitions of each level be linked to actions of those who lead environmental and cultural sustainability educational efforts via student affairs functions: This work remains in progress. Also, given that overall growth and progress toward a next level of development sometimes comes through periods of “regression,” “resting,” and “or “rebuilding,” respondents suggested the taxonomy must also incorporate those periods as developmental processes.

“Rebuilding”

“Resting”

“Regression”

This notion of non-linear sequential progress is not unlike John E. Gullahorn and Jeanne E. Gullahorn’s extension of the U-Curve Hypothesis, the W-Curve Hypothesis Model, as it relates to culture shock and change (1963).
Conclusion

The author determined that student comprehendible notions, language, and taxonomy of environmental and cultural sustainability for educational efforts via student affairs functional areas was needed for the development and work of early-career student affairs professionals. The use of a grounded theory research and development approach with those professionals yielded, affirmed, and refined student comprehendible notions, language, and a taxonomy. While still a scholarly work in process, these early-career professionals are satisfied that this is a valuable tool for their sustainability educational efforts in student affairs. The grounded theory and development approach was successful.

References


Title: Influence of the Language of Mathematics on Instructional Approaches, within a Secondary School Environment.

Topic Areas: Mathematics Education; Teacher Education

Presentation Format: Paper Session

Description: This session is designed to examine assessment results of students attempting to demonstrate competence meeting state mandated mathematics standards, to complete graduation requirements. The research includes a comparison of baseline to final data, for a diverse sample of secondary students in an urban school system in the Northeastern part of the United States. Qualitative factors will guide the discussion as profiles will add structure to the presentation and discussion. Perspectives of practitioner, researcher and teacher educator are essential elements of this session.

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Abstract

Research Objectives: The purpose of this research is to identify the most effective approaches to mathematics instruction on the secondary level. Examination of the research will guide the discussion as the strategies are used to provide pre-service graduate students with the tools to study their students, and engage in customized instructional design.

Large urban school systems have experienced a multitude of transformations during the 21st century, one of which involves transitioning target populations. As educators, our responsibility is to ensure thorough understanding of how our students learn, and address their academic and co-curricular needs. A sample of data from a small urban high school gives breadth to understanding the unique academic needs of all students. Comparisons of baseline and final data demonstrated that 62 out of 70 secondary students showed between 5% and 300% growth on state mathematics assessments. The purpose of this research was to examine the approaches, most effective in positive student performance outcomes on the secondary level. Once identified, the approaches can be incorporated by pre-service teachers to implement effective instructional practices.
Student Model of Acquiring Scientific Method, Ways of Viewing and Thinking, and Domain-specific Knowledge for Simulated Teaching Games

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ABSTRACT

Matsuda (2005) developed a Simulated Teaching Game (STG) that simulates a virtual lesson based on plan data for each lesson, in order to replace the microteaching approach of Allen and Ryan (1969). Lesson situations in the STG are updated by a set of rules in a game board. In those, rules to change learners’ situations are important, and in order to improve the rule for Mathematics and Information Study education, student models were proposed. In this study, we propose a new student model for usual science lessons with reference to student models for the STG of Mathematics and Information Studies. During this process, we extend the model based on the latest model of problem-solving activities, the “Warp and Woof model,” because no previous student model has been developed based on this. In addition, our new model focuses on cultivation of the ability to self-learn for problem solving in daily life.

Key Words: science education, student model, simulated teaching game, problem-solving ability, ways of viewing and thinking, warp and woof model.

INTRODUCTION

Simulated Teaching Game comprising the Instructional Activities Game

Matsuda has been in charge of the teacher promotion program in Tokyo Institute of Technology. In order to teach the instructional design method in this program, he developed an instructional activities model (Matsuda et al. 1992) as well as a training system for lesson design, “Kyou-an Koubou” (Matsuda et al. 1999), and the Instructional Activities Game (IAG) system (Matsuda 2005) according to the model. This study is concerned with the Simulated Teaching Game (STG), which is a game type of the IAG system.

The STG was developed to simulate a virtual lesson on the basis of plan data for each lesson, in order to replace the microteaching approach of Allen and Ryan (1969). An STG game board is represented as a set of production rules. Every rule of the game board is described by a combination of the following: (1) rule ID, (2)
conditions for rule activation, (3) questions for the user, (4) dialogue interface and options, (5) rules for updating variables, and (6) rules for providing feedback. The game flow is controlled by a lesson plan that comprises a sequence of steps. At each step, the system saves the data obtained in that step along with the variables, which are used to represent the lesson situation or retain the user’s responses, in its working memory. These are then compared with (2), the conditions for rule activation, for every rule, and if any rule is activated, its corresponding action that consists of (3) to (6) is executed. Although lesson plans executed in the STG can be created by a user in the DMG, it is also possible to manually create more complicated lesson plan data embedded with several pieces of content and methods of instruction that are used for conducting discussions with users in order to change their concept of what constitutes good lessons.

Necessity of an Appropriate Student Model of Simulated Teaching Games

Lesson situations in the STG are updated by a set of rules on the game board; particularly, a rule-set that included rules to change learners’ situations. However, these rules tended to become large and difficult to manage while trying to pay attention to the consistency and priority of execution among varieties of rules. Therefore, Matsuda and Ohgami (2011) developed learner-agents as a Java applet that could represent learners’ situations as well as rules to update them. However, the model was very poor and lacked the versatility to represent cognitive aspects, i.e., understanding and utilization of knowledge. Therefore, Matsuda (2013a) designed a student model of a virtual lesson game for mathematics teaching and extended it to informatics education (Matsuda 2013b).

According to Bruer’s (1993) statement that domain-specific knowledge, meta-cognitive skills, and general strategies are all elements of human intelligence and expert performance, Matsuda’s (2013a, b) student model consists of domain-specific knowledge, views and ways of thinking, and knowledge of problem-solving scripts. Views and ways of thinking help students control the direction of problem-solving activities and self-learning, which are then associated with meta-cognitive skills, although these remain distinct from one another. Though the Japanese National Course of Studies includes the utilization of views and ways of thinking as objectives in each subject area, it does not show their concrete items or contents. On the other hand, Matsuda (2012) proposed each set of items in Mathematics, Science, and Information Studies. Bruer (1993) illustrated a variety of different strategies ranging from study skills to means-end analysis (Newell & Simon 1972). On the other hand, Matsuda adopted Matsuda et al.’s (2012) problem-solving processes as a framework for instructional gaming materials for Information Studies as a problem-solving script. Although the design framework was extended to the “Warp and Woof model” of Problem-solving (Matsuda 2015) by considering commonalities of problem-solving activities in varieties of subject areas, none of the STG student models has been extended yet.

The Need to Develop a Student Model of Simulated Teaching Games for Science Education

The latest STG game board for science education has developed as a minor revision of that for mathematics education (Matsuda & Noda 2004). The difference between those of science and mathematics is the addition of rules concerned with scientific ways of viewing and thinking as opposed to those of mathematics. In contrast, the student model of problem-solving processes has not been taken into consideration. In addition, there are no rules to evaluate the appropriateness of contents of instruction that should depend on features of domain-specific knowledge, but rules to evaluate general features, such as higher-lower relationships among objectives and types of objectives (Bloom et al. 1956) achieved by instruction of each content point. Of course, it is not appropriate if the game board works well for a specific content type, like Matsuda and Ohgami (2011), it is necessary to develop a student model that can simulate and evaluate a lesson that reflects features of the specific subject area.
while having flexibility within the subject.

**PURPOSE**

In this paper, we propose a new student model for the STG of Science education with reference to student models for the STG of Mathematics and Information Studies. During this process, we extend the model based on the latest model of problem-solving activities, the “Warp and Woof” model because no previous student model has been developed based on this.

**IMPORTANT EVALUATION POINTS IN MICROTEACHING OF SCIENCE**

*Choice of Units to Design a Student Model of Simulated Teaching Games for Science Education*

As mentioned previously, it is necessary to develop a student model that can simulate and evaluate varieties of lessons in Science. However, it is necessary to develop a model based on some specific content. As an alternative of the content unit for it, “Boyle and Charles's law” that was chosen for the previous STG can be picked up. This topic also has the advantage of being content that is common to both physics and chemistry. However, in order to discuss a model, it is important to analyze the lesson plans written by the students in order to obtain the clues of evaluation points and appropriate feedback generated as student's reactions. To this end, the lesson plans written about this unit are not suitable. Since those lesson plans were written on the lesson design training system that offers choices in menu form, even when the description is insufficient, it is difficult to identify whether it was caused by restrictions of the system or a student's insufficient consideration.

On the other hand, in the course of the teaching methods for science, all students write lesson plans for both physics and chemistry about the unit that they will take charge of during their practice teaching in June or September. The lesson plans are written or typed on the lesson plan templates provided. Therefore, when the contents are insufficient or inappropriate, this can be attributed to the students’ lack of consideration or knowledge. The practice teaching in September is ongoing; as a result, it will offer clues to help analyze the lesson plans. We include “Balance of force” in physics, and “Acids and bases” in chemistry, as examples of units in the practice teaching in September.

*Analysis of Students’ Lesson Plans of “Balance of Force” in Physics*

The main contents of the series of lessons are composition and decomposition of a force(s) and balance of forces, and the law of action and reaction. Before and after these lessons, various forces and the law of movement are learned respectively. The “Basic Physics” textbook contains around 240 pages, which is studied over 70 school hours. Therefore, every lesson needs to progress about three pages per school hour; it is necessary to design instruction to prompt learners to understand the essence and to utilize learning outcomes well after selecting the important contents that should be mastered. In addition, the balance of two forces, the method of composition and decomposition of a force(s) based on it, the law of action and reaction, and the fact that a force changes movement have already been learned at junior high school level.

The question typically seen in the content is “Which is the relation between the force A and B, a relation of balance or a relation of an action and reaction?” For example, forces A and B typically correspond to the gravity on an object and the force in which an object pulls the earth. There is a similar question, such as “What balanced
force is generated by the force A?” Although these questions are asked with the intention of reducing students’ misunderstanding, the opposite is sometimes the case. The purpose of a series of lessons including this one is to clarify forces working on an object, to seek resultant force, to formulate an equation of motion based on it, and to determine direction and value of acceleration. As a method of finding out the forces working on an object, balance of force, and the law of action and reaction are all utilized. However, the former is used, not to overlook, but to find a force by using the fact that the resultant force working on the object is zero when an object follows the law of inertia. On the other hand, the latter serves as a method to find out the force that works on an object regardless of its state of movement as a fundamental mechanism that generates a force. Although the above-mentioned questions ask to distinguish difference between them, because they are used for different purposes, these questions have the possibility of inviting confusion and misunderstanding.

Therefore, it is important in this lesson to clarify the context where learning outcomes should be utilized. Moreover, it is also important to specify the difference from the contents already studied in junior high school, and to advance the lesson/topic efficiently. For that purpose, it is meaningful to advance a lesson/topic along with the framework of problem solving. In order to clarify the aim of study, it is necessary to show the relationship among lessons and the issues to be resolved as an advanced organizer. Moreover, it is necessary to use an instructional method like the hypothesis-and-experiment teaching method (Kasetsu Jikken Jugyo Kenkyukai 2008) in order to cultivate scientific thinking after showing typical problem situations and examples of misunderstanding.

**Analysis of Students’ Lesson Plans of “Acids and Bases” in Chemistry**

This lesson is the introduction of “Acid-base” reactions and explains the extension of the acid-base definition from Arrhenius to Brønsted-Lowry. In subsequent lessons, students learn the valence of acids and bases and neutralization reactions. The pace of lesson advance is the same as that of physics. Although textbooks include the definition of pH in this unit, in practice teaching, it will be taught after neutralization reaction; thus, changing the prescribed order. The nature of acid and alkali and the fact that neutralization reactions generate water and salt have already been learned in junior high school science, means those quantitative relations are the main themes in high school science (MEXT 2009).

However, science lessons should differ from mathematics lessons. Both in physics and chemistry it is important to solve the reasons why phenomena arise, and to formulize quantitative relations based on this. The point of instruction is not to make lessons only about solving numerical calculation problems. Considering this point, it is important to establish the appropriate criteria for taking up examples, including relationships with the examples to review knowledge learned at junior high school level and the consideration of time efficiency.

The first point to improve the lesson plans written by past students is the necessity to specify the prospect and usefulness of study, similar to the case of physics. The second point is the inappropriateness of taking up the example (NaCl), when reviewing ionization because the relationship between it and the topic of this lesson is not clear. The third point is inappropriateness is explaining the change to from calling bases in high school science from alkali at junior high school science as mere paraphrasing. In order to prepare for the extension of the acid-base definition, a change of focus from classification of substances to their roles in neutralization reactions should be emphasized in the change of names from alkali to bases. In addition, although Arrhenius's definition only explains phenomena about reactions in aqueous solution and pays attention to both H⁺ and OH⁻, similar phenomena occur in the air then the generalized definition by Brønsted-Lowry that pays attention simply to H⁺ is necessary. An important example here is NH₃ + H₂O ⇌ NH₄⁺ + OH⁻. Although NH₃ does not have OH⁻, if NH₃ proofs into water, some reacts to water and generates OH⁻. This example is just suitable for extending a definition. Although some lesson plans used this example, they only explained that water is used as an acid, and
do not prompt learners to regard acids and bases anything but a role of the substance in a reaction. This might cause students to misunderstand that water is acid and that acidity is a property of a substance.

In addition, there are some more detailed points that require improvement. First, although taste or tactile senses were assumed as learner’s reactions about properties of acids and alkalis, they learned that to lick or touch a substance recklessly is dangerous from the viewpoint of safety education. It is possible that a few learners have actually licked the substances referred to frequently when they learn about acids and bases. Therefore, it is better to emphasize experienced facts in the experiment at junior high schools level, such as the change of color of litmus paper, and the generation of hydrogen. In addition, explaining explicitly or postponing explanations, such as the “⇔” sign, particularly in the case of hydrogen is something to be considered.

Treatment of Ways of Viewing and Thinking in Other Subject Areas

The contents of science education changes from qualitative at junior high school level to quantitative at high school level. Therefore, in the high school science, mathematical formulization of phenomena is introduced. Moreover, in order to investigate deep principles that can explain more phenomena generally whilst utilizing conceptual extension, analogy, and induction as mathematical ways of viewing and thinking. That is the reason why mathematical ways of viewing and thinking were left in the previous STG for science education while rules about scientific ways of viewing and thinking (Table 1) have been added.

Table 1: Matsuda’s (2012) Scientific Ways of Viewing and Thinking

| a) | Examine hypotheses by means of experiments or observations. |
| b) | Consider a special case in which one of the factors is ignored or added. |
| c) | Deconstruct an experimental condition into various factors. |
| d) | Estimate the results of an experiment quantitatively by using hypothetical function. |
| e) | Examine whether the same results can be repeated. |
| f) | Plan an experiment focusing on examining a specific hypothesis. |
| g) | Examine consistency with known laws and facts. |
| h) | Consider the results that can confirm a hypothesis. |
| i) | Consider methods to change a specific factor of experimental conditions. |
| j) | Summarize the conditions or characteristics of phenomena focusing on their spatial properties. |
| k) | Summarize the conditions or characteristics of phenomena focusing on their timing of occurrence. |
| l) | Consider phenomena from the viewpoints of retention, transformation, and balance. |
| m) | Consider phenomena from the viewpoints of (dis)continuity and (ir) reversibility. |
| n) | Consider phenomena from the viewpoints of energy transaction and electrical property. |
| o) | Consider phenomena from the viewpoints of the structure of atoms and electron configuration. |

Furthermore, Taguchi and Matsuda (2015) pointed out that it is better to utilize ICT for finding data collected by another person than to conduct observations or experiments independently when developing a design framework of gaming instructional materials for “Exploration Activities” in Science. To this end, they required the utilization of informatical and systematical ways of viewing and thinking that should be cultivated in informatics education. This study follows their policy in order to cultivate the ability to self-learn by collecting and utilizing information resources, such as textbooks, teacher’s explanations, and web pages.

DISCUSSION FOR DESIGNING A STUDENT MODEL

Elements of Model and Principles of Design

We assume that a student model for Science consists of script knowledge (problem-solving procedure), ways of viewing and thinking, and domain-specific knowledge like those for Mathematics and Information
Study. Because a student model of STG is designed to simulate student’s responses, it should be able to represent, not only desirable or adequate states of mastery, but also incorrect or unexpected states of understanding. As a result, overlay model and bug model are typically used. This study assumes that student teachers have learnt “Dimensional Analysis (Sakamoto 1979)” that is an instructional design method designed to classify reasons for misunderstanding and errors, and that they are familiar with the bug model. Our model aims to mix these two models.

Because script knowledge corresponds to general strategies stated in Bruer (1993) as one of three elements necessary for human intelligence and expert performance, it needs to have commonality beyond subject areas or contents. In Japanese schools, cooperation between subject areas and cultivation of general strategies were seldom taken into consideration in subject education (Task Force for Discussing Policy of the Next National Curriculum, 2014), and the framework of problem solving as general strategies is not explicitly taught in the present education system (Matsuda 2015). Moreover, because problem solving is considered as an activity to utilize acquired knowledge, the framework to perform problem solving while acquiring new knowledge is not taken into consideration. However, Matsuda’s (2015) model of problem solving includes the woof activities, collecting => processing => summarizing information, in all the processes of warp activities. The woof activities include a mechanism to acquire new knowledge. Therefore, if this script knowledge can be utilized without being associated to the quality and appropriateness of the teachers’ instructions, students can become active learners, and gain understanding and utilize their knowledge by themselves.

However, the details of the “warp and woof” model of problem solving have only been considered for Information Studies. Therefore, I examine the necessary activities for cultivating self-learning abilities in usual science lessons, i.e., not for cultivating problem-solving abilities in Exploration Activities of science, based on the “warp and the woof” model of problem solving (Figure 1). The tasks in the warp activities are the same as those of Information Studies, and the woof activities are those that should be performed in the usual lessons of science instead those of Information Studies.

The purpose of the first task of the Goal Setting process is to recognize the purpose and method for using learning outcomes of science study, as well as to clarify one’s own policy of learning in the lesson. Learners collect the information such as, the contents learned already, phenomena, and problems dealt with in the lesson, and then based on the differences among them they guess the points of learning and necessary scientific thinking in this lesson. Moreover, they need to have a prospect of what should they learn and how should they reconstruct their own knowledge. However, in textbooks, it is sometimes unclear which aspects of the contents are pre-requisite knowledge. For example, although two definitions appear in “Acids and bases,” it is unclear for students whether the first one is new or not and what the purpose of learning the first one is.

The purpose of the second task is to make a plan of study. Learners need to prepare not only for listening to their teacher’s explanations passively but also for understanding it positively by recalling the known phenomena and similar problems concerned with lesson contents, and applying the explanation to them deductively, or inducing and using analogy from them conversely. Moreover, learners need to plan their utilization of study skills in the lesson. Probably, the point of flipped learning is at the root of this task.

Script Knowledge of Problem-solving Procedure

In the ‘Generate Alternatives’ process and the ‘Rational Judgment’ process, learners need to think as in the lesson of a hypothetical experiment, not by group style but individually. They choose a phenomenon that should be verified by themselves, and induce its reason by acquiring and applying new domain-specific knowledge if necessary. In order to verify the hypothesis, the experiment can be performed actually, but they may look for data or description on web. In the ‘Rational Judgment’ process, logic induced in the ‘Generate Alternatives’
reasons for errors and typical examples of misunderstanding, useful to analogical thinking as internal
pointed out that the “warp and woof” model of problem-solving suggested that if the difference among purposes
priorities. The script knowledge at this time consisted of only warp activities. Conversely, Matsuda (2014) also
pre-acquired knowledge and reconstructing a schema.

Although what was described above is the ideal script knowledge, it is also required to model the situation
of not mastering it. To this end, Matsuda (2013a, b) assumed that the model that has two or more script
knowledge aspects other than ideal number, such as a trial-and-error problem-solving script changes their
priorities. The script knowledge at this time consisted of only warp activities. Conversely, Matsuda (2014) also
pointed out that the “warp and woof” model of problem-solving suggested that if the difference among purposes
of warp activities is not clearly paid attention to, useless circularity, i.e., trial-and-error, might occur. This
statement suggests that mastery of the appropriate procedure is understood by the strength of relationship between the elements of the script knowledge and whether the necessary elements can be activated in problem solving contexts.

**Ways of Viewing and Thinking**

Matsuda (2014) supposes that ways of viewing and thinking have two functions, making problem solving easy and supporting acquisition of a domain-specific knowledge. Based on the assumption that when the domain-specific knowledge is memorized it is chunked as the form of a frame (Barr and Feigenbaum 1981), and the mechanism to perform these functions is explained as follows. As shown in Figure 1, a way of viewing and thinking is activated in the specific context of script knowledge, which then activates the associated internal knowledge. It refers to the value of a specific slot, or associates its value to the value of another slot or another piece of knowledge in order to get a conclusion. In this process, if there is a slot that has no value, the learning program for filling the slot value automatically is activated, and it will support acquisition of another value.

In the case of "Exploration Activities" in science, Taguchi and Matsuda (2015) examined where each scientific way of viewing and thinking, shown in Table 1, should be utilized in the warp activities of Figure 1. This paper conducted similar discussions in the case of performing self-study in a regular science lesson while referring to Taguchi and Matsuda’s result (Figure 1). At that time, we premised using mathematical, informational, and systematical ways of viewing and thinking together.

In the ‘Goal Setting’ process, symbolization, generalization, and abstraction of the mathematical ways of viewing and thinking are assigned to collecting information activities and g), j), and k) of scientific ways of viewing and thinking are assigned to processing information activities as concrete methods of performing informational and systematical ways of viewing and thinking “analyzing a problem systematically.” For example, the target lessons of both physics and chemistry, take up familiar phenomena as problems, and abstract and symbolize them using a domain-specific knowledge. In many cases, a more complicated phenomenon is a more general phenomenon, for example no constraints about the number of forces involved, which requires paying attention to the differences of factors and results among phenomena by using j) and k). In addition, considering consistency with a known law, phenomena, etc., two or more candidates of possible hypothesis should be generated.

In the ‘Generate Alternatives’ process, the logic for explaining the formulized problem as far as one can be convinced is constituted. Because this study emphasizes the importance of cultivating students’ scientific ability of thinking and problem solving, we give priority to utilization of information resources, such as textbooks, teacher’s instructions, and the web rather than doing experiments and observations oneself. Considering consistency with a known law and phenomena, reliable information should be chosen. Then learners constitute the logic to explain a hypothesis by deduction, induction, and analogy, using information as clues. At this time, it is necessary to constitute the explanation, paying attention to the scientifically important concept, and then using scientific ways of viewing and thinking l), m), n), and o) in high school science. In the ‘Rational Judgment’ process, it is necessary to examine the constituted logic critically and pay attention to the possibility that the logic will be rejected. For this end, we prepare the following viewpoints in the framework of rational judgment, the possibility of a broad interpretation or excessive generalization, the existence of an anti-example and the existence of inconsistency with the fact, and existence of unnecessary explanation. These should be memorized as internal knowledge.

In the ‘Derivation of Optimized Solution’ process, learners need to check e) in Table 1 while unifying new knowledge with the pre-acquired knowledge and applying renewed knowledge to a new problem.
Domain-specific Knowledge: Internal and External Knowledge

As mentioned previously, domain-specific knowledge is memorized in the form of a frame. At this time, Matsuda (2013a, b) assumes that domain-specific knowledge has common slots for each subject area. According to this assumption, this study assumes that there are common slots for Science as shown in Table 2. Hereafter, we explain roles, necessity, and their relation to ways of viewing and thinking for these slots, using examples in Table 2. In addition, we need to explain a different type of domain-specific knowledge not concerned with specific contents as shown in Figure 1.

In the ‘Goal Setting’ process, learners need to define the aim of studying this lesson by themselves. For example, they need to compare new contents, such as “balance of three or more forces” and “an example of an acid-base reaction other than in aqueous solution,” to learned contents, such as “balance of two forces” and “definition of acids and alkalis in aqueous solution,” and notice those relations, such as generalization and quantification. If these relations are explicitly explained by the teacher or in the textbook, a question that prompts learners to pay attention to these relationships is made, or learners can utilize the ways of viewing and thinking mentioned above, i.e., those that would support their understanding of the relationships better. Moreover, if they have a special domain-specific knowledge, independent of the contents, about the meaning and the purpose of the science study, they can find out the purpose appropriate in this context. If the purpose slot is filled through such a process, its importance goes up and will be activated in the required scene of problem solving more preferentially than old knowledge.

Table 2: Slots necessary for domain-specific knowledge in science education and relations among them.

<table>
<thead>
<tr>
<th>Slot Name</th>
<th>Examples of Slot Values</th>
<th>Ways of Self-learning to Set the Slot Vaules</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>[ Decompose a force / compound forces ][component of force / resultant force ]</td>
<td>Related knowledge + relations to them (used by/for, generalization/specialization, etc.)</td>
</tr>
<tr>
<td>Purpose</td>
<td>Any force(s) can be [ decompose/compound ] according to the rule in order to explain movement of object easily.</td>
<td>Compare new contents to learned contents and notice those relations, or refer the meaning and the purpose of the science study</td>
</tr>
<tr>
<td>Meaning</td>
<td>To [ divide a force into multi-forces / sum up multi-forces in a force ] that [ are / is ] equivalent to the [ force / forces ]</td>
<td>Explain meaning with referring examples, purpose, usage, and rule</td>
</tr>
<tr>
<td>Factors</td>
<td>Forces in the same [ straight line → plane → space ], two forces → three or more forces</td>
<td>Clarify what have been studied in each factor and what are the points of this lesson</td>
</tr>
<tr>
<td>Rule</td>
<td>A resultant of two forces is summed up as diagonal line of parallelogram of which edges are correspond to two forces, and components of a force are divided as edges of parallelogram of which diagonal line is correspond to the force</td>
<td>Find usage of rule from typical cases (such as Before compounding forces, it is efficient to decompose each force to x-y directions) Find a factor in miss-use of rule from cases</td>
</tr>
<tr>
<td>Mathematical expression</td>
<td>If decompose to x-y directions, ( F_x = F \cos \theta ), ( F_y = F \sin \theta ) where ( F = \sqrt{F_x^2 + F_y^2} )</td>
<td>Understand meaning of the factors in formula and condition with corresponding to examples</td>
</tr>
<tr>
<td>Examples</td>
<td>Decompose a force to x-y directions by using rectangle, typically ( \theta = 30, 45, ) or 60 degrees Compound two bisect/counter forces that has the same power</td>
<td>Choose useful examples for understanding a new example analogically, meaning of rule and mathematical expression, etc.</td>
</tr>
<tr>
<td>Usage/ Situations</td>
<td>To judge forces working on a object are balance and formulate an equation of motion about the object</td>
<td>Clarify purposes and situations where this knowledge should be activated</td>
</tr>
</tbody>
</table>

It is important to choose a typical example to be memorized from two or more examples for understanding a new example analogically. In order to grasp the relationship of two or more examples, it is necessary to decompose the factors constituting examples. The factor related to the purpose of studying new content also has a high possibility of being related to the purpose of studying the new contents that follow. If the connection to the other slots or knowledge is strong, such as the clarifying factor related to choosing the law and procedure necessary to apply it, knowledge can be activated and focused. The relationship with a factor and induced misunderstandings concerned with it helps critical examination in the ‘Rational Judgment’ process effectively.
For example, when compounding three or more forces, it is more efficient to compute resultants about each x and y direction after decomposing all the force in the direction of x-y rather than compounding every two forces gradually. The former method is also useful in understanding equations of motion. Therefore, it is necessary to relate the purpose of studying decomposition of force with the situation of problem solving, and to memorize it. Moreover, it is necessary to relate the method of decomposing in the direction of x-y with a real problem-solving situation as a typical example, and to memorize it. The figure showing the balance of gravity and the force created by a pulled thread, and the figure showing the relationship between action and reaction when a spring is pulled by hand are looked at, and there is a possibility of mixing these up. Therefore, it is necessary to relate these two examples with the difference in the situation in problem solving, and to memorize them.

SUMMARY AND FUTURE DIRECTIONS

In order to improve STG for Science education, we propose a new student model for usual science lessons with reference to student models for the STG of Mathematics and Information Studies. During this process, we extend the model based on the latest model of problem-solving activities, the “Warp and Woof model,” because no previous student model is developed on the basis of this problem-solving activities model. In addition, our new model focuses on the cultivation of ability to self-learn as problem-solving in daily life.

However, our model is not concrete enough and too conceptual to implement as learner-agent in the STG. Therefore, we need to design a learner-agent function based on this model while describing domain-specific knowledge of the lessons completely and developing automatic knowledge acquisition programs that realize a function of the ways of viewing and thinking. Based on this, we also need to realize the new STG for Science education and verify its effects through its practical application in our teacher promotion program.

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REFERENCES


Building Mechanical Flapping Birds and Arduino Robotic Cars for educating youths in 7th, 8th and 9th graders at Arizona State University

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Building, 3D-designing, testing and analyzing both mechanical flapping birds and Arduino-based robotic cars was conducted in a six week engineering outreach program for middle and high school students. Thirteen participants from Superior Jr./Sr. High School students at the Superior Unified School District in Arizona took place in this study. Students from 7th, 8th and 9th grades benefited by learning from experienced engineers working in their field of study. The students were exposed to Arizona State University (ASU) student organizations such as Micro Air Vehicle (MAV) club, Society of Hispanic Professional Engineers (SHPE) and engineering alumni. The program, which was sponsored through the NASA Space Grant, sparked imaginations through hands-on learning by using principles of flight, physics and engineering concepts. The project helped minority females who are traditionally not exposed to these types of programs. The students benefited from this engineering project to help influence their education, career interests and opinions on what engineers do in addition to course concepts such as lift, drag, thrust, weight, velocity, average velocity, angles (“SOHCAHTOA”), programming, mean, median, range, mode, graphs, introduction to MATLAB and Arduino engineering.

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softwares. After the program, results showed 85% increase in knowing what type of engineer the middle and high school students would want to become in the future. Also, a 20% increase thought engineering is fun and a 30% increase in the students’ perception and motivation in becoming engineers in the future. The goal of the program was met to change the perception on how the students perceive engineering through a hands-on approach to learning mathematical concepts. Overall, through the use of flapping mechanical birds and robotic cars showed that students benefited in this six week engineering outreach program.

I. Introduction

In an effort to confront formidable STEM education pipeline challenges facing the nation, we proposed a Mechanical Flapping Bird STEM Outreach Program targeting 7th - 9th grade female minority students. The program aimed to empower students with motivation and confidence, via fun and exciting hands-on learning activities, to pursue professions within the areas of Science, Technology, Engineering, and/or Mathematics (STEM). In [4] a 2009 survey of over 1250 students conducted by the American Society of Quality (ASQ) showed that most teenagers would not consider an engineering career. According to [9] in 2008 Science and Engineering Indicators, underrepresented minorities, including Blacks, Hispanics, and American Indians/Alaska Natives, constituted only 9% of both academic doctoral employment and full-time faculty positions, up from 2% in 1973. Based on [7], [8] the number of females involved in STEM-related fields remains low – especially for Hispanic females (Landivar, 2013). The proposed program is expected to result in effective 7th, 8th and 9th grade methods that can be readily implemented in schools across the nation.

The main goal of this project was to design a mechanical flapping bird. This helped the students to become familiar with issues associated with modeling, designing, and building a flapping wing mechanical bird micro air vehicle (MAV) drones [1], [2], [3]. The topic addressed drawing shapes and sizes of birds and getting familiar with their dimensional configurations. Studying the aerodynamics of flight can be an arduous task for kids, but it is essential for determining the distance and velocity the bird micro air vehicle performs during a typical flight mission. This motivated the topic for designing a mechanical bird. The first step was to design a mechanical bird micro air vehicle. Students examined shapes and sizes of different wings and fuselage to determine maximum distance and velocity by altering the dimensions of different shaped mechanical birds. The students gained mechanical and aerospace engineering skills from working together to design more efficient types of flapping bird wing configurations that produced the greatest amount of lift and the least amount of drag from learning aerodynamic concepts with practicing engineers they interacted with. The students designed their own mechanical birds. This enabled the students to have their drawings/design come to life and put their designs to the test to see how much lift their mechanical bird can achieve.

The first step was for each group to build and test two mechanical flapping birds and compare them. The platform that the mechanical bird used was a premade balsa wood structure with red and blue wings. The body of the mechanical bird was easy to put together. The structure was premade with precut holes for mounting parts and pieces that could easily be integrated together. Students examined various flight regime paths. The students conducted experimental tests to determine the mechanical bird vehicle’s performance. The students gained mechanical engineering skills from building and designing their own mechanical birds and learning from practicing engineers. The students worked together as a team to achieve their goals and build two mechanical flapping birds that flew. The student could use these vehicles to understand search
and rescue missions. A wind tunnel will be incorporated in the future for the students to use at ASU.

We had cohorts that consisted of 3-4 students. The first student recorded the distance in feet that the bird traveled, another student timed in seconds with a stopwatch the duration the vehicle traveled, another student recorded all the data down on a data table on a sheet of paper to later be placed into a spreadsheet, and finally another student flew/tested the mechanical flapping bird [18], [19]. The students computed velocity using fundamental equations in physics such as distance = velocity * Time or X=VT. After the students computed the velocity they plotted height as a function of distance with projectile motion equations to visually represent their data they had collected. The students plotted in MATLAB the data they collected from their built mechanical birds. Projectile motion concepts were incorporated. Angles from using “SOHCAHTOA” were used so they could calculate the angle the mechanical birds flew at. Then they plotted the trajectory of their mechanical birds. The equations that the students used increased their understanding of physics and how the equations of motion determined the mechanical birds performance. The students realized how much of an engineering background they got out of this by using a hands-on approach to solving real world problems. The students made conclusions from the data they collected based on the maximum time the bird traveled, the minimum time the bird traveled, the maximum distance the bird traveled, the minimum distance the bird traveled, the average distance the bird traveled and the average time the bird traveled.

Additionally, the students built mobile robots that were controlled by the programmable Arduino boards. The Arduino Robocars were built from pre-made acrylic platforms which are easily assembled with a screwdriver set. Students learned how to program the Arduino board to read distance with the use of an ultrasonic sensor and control the speed of motor-wheels [5], [6]. The use of the ultrasonic sensor allowed them to compare the distance measured with a ruler from a structure. Velocity was calculated based on the distance and time that the robot reached at each programmed step. At the end, students participated in a competition where their robots performed an obstacle avoidance task. The team that reached the final line in the shortest time was the winner. The collected data from the distance, time and velocity was analyzed using mathematical concepts that the students learned in their traditional classes.

In this engineering outreach program, the students gained engineering experience that encompassed a designed, built, and analyzed flapping mechanical birds and Arduino robotic vehicle. This is important because the students gained understanding on what factors impacted the performance of designing and testing micro air vehicles and ground vehicles. Students from 7th, 8th and 9th grades should now be able to grasp and visually interpret from their Matlab programming codes and data analysis how changing different parameters in the mechanical flapping bird affects its flight performance through their poster. On the poster, the students showed accomplishments by having designed, built and tested a mechanical flapping bird [16], [17]. The students have gained mechanical and aerospace engineering skills by using a hands-on approach to solving real world problems.

The approach taken leverages 6 semesters of very successful student-centered mentor-driven pedagogical testing involving 4th-6th graders at 12 Title 1 elementary schools. This has involved 276 students (216 during Fall 2012-Spring 2014, 60 during Fall 2014-Spring 2015. Most students have been underrepresented minorities: Hispanics/Latinos (46%), Black/African American (37%), Asian/Pacific Islander (7%), American Indian (7%), white (3%), females (49%). See videos at https://www.youtube.com/watch?v=dOX-ouw8Oio (Spring 2015); https://www.youtube.com/watch?v=Wtu0NyQwFc8 (Fall 2014). At the end of our program, a
talk was given by Dr. Rodriguez and the students were exposed to hearing about missions to Mars, spacecraft, planetary exploration, space telescopes like Kepler, rovers, use of robot swarms, the new Boeing 787 aircraft, hypersonic vehicles, reusable rockets, future space travel, iron man suits, the future of computers and the internet, and using 3D printers to build stuff – including human organs.

II. Target Audience Demographics

Students from Superior Junior High School (JHS) in Superior, Arizona were targeted. This school – situated approximately 54 miles (one hour drive) from the main Arizona State University (ASU) campus – is a Title 1 school. Title 1 students are “at risk low-income 100% free lunch” students. Thirteen students participated in this program. At Superior, 85% of the students are underrepresented minorities; 50% are female. Furthermore, this fall 2015 semester, 100% of all the program students were female underrepresented minority students. The targeted 7th-9th graders represent a critical demographic – one that is critical in order to strengthen the nations’ STEM pipeline. The Mechanical Flapping Bird STEM Outreach Program serves Hispanic/Latino, African American/Black, Caucasian, Native American/American Indian, Asian/Pacific Islander, that comprise of 69.23%, 7.69%, 15.38%, 7.69% and 0%. In addition the district that the program serves comprises of mainly Hispanics/Latinos. According to Science and Engineering Indicators, in 2008, underrepresented minorities (blacks, Hispanics, and American Indians/Alaska Natives) constituted about 9% of both total academic S&E doctoral employment and full-time faculty positions, up from 2% in 1973.

III. Team

While most of the planned activities were led by Michael Thompson (ASU Mechanical Engineering PhD student, Hispanic) and a 2014-2015 NASA Grant Fellow, activities involved the following collaborators: Superior School educators (Arlynn Godinez, Director of Curriculum and Instruction at Superior; Valerie Garcia, Superior Junior High Student Advisor, and William Duarte, Principal of Superior), 1 ASU Electrical Engineering PhD student (female: Victoria Serrano, Hispanic, Vice-President of the MAV Club), ASU Micro Air Vehicle (MAV) and SHPE club students, 6 practicing engineers (ASU Alumni), (1 female: Deyzi Ixtabalan, Manufacturing Engineer, Hispanic, NorthStar Aerospace, 2: female, Maia Garcia, systems engineer, Hispanic, Honeywell); (3: female, Yamille Perez, Industrial Sales Representative, Hispanic, Caterpillar Inc., (4: Male, Rafael Haro, Design Engineer, Hispanic, General Motors), (5: female, Hannah Kolar, Mechanical Engineer, Caucasian, Honeywell), (6:female, Ruby Gomez, Hispanic, Design Engineer, Raytheon). In addition, a Hispanic ASU engineering professor and IEEE member, Dr. Armando Antonio Rodriguez, MAV club advisor and mentor to Michael Thompson, and others contributed to the outreach program. The ASU team, under the guidance of Dr. Rodriguez, has many years of technical outreach experience with underrepresented minorities. Dr. Rodriguez received a 1996 White House Presidential Excellence Award from President Clinton for leading a research-mentoring program on Flexible Autonomous Machines operating in an uncertain Environment (FAME) serving students across engineering.
IV. Technical Approach Taken.

The program consisted of six weeks of planned activities in the Fall 2015 semester. Fifteen 7th-9th grade students were bused from Superior JHS to meet with Michael Thompson and other invited speakers (see team) for 6 consecutive Saturday sessions (9am to 1PM) on the ASU main campus within Dr. Rodriguez’ Intelligent Systems Laboratory. Each student built, flight tested, collect data, analyzed, altered, retested and reanalyzed a (rubber-band powered) mechanical flapping bird vehicle (41 cm wing span, weighing 7 grams). In addition, students were exposed to speakers (see team, particularly Dr. Rodriguez) that addressed the importance of school, grades, coursework, studying, the ongoing scientific revolution (aerospace, communications, computing, electronics, entertainment, personalized medicine, regenerative medicine, etc.), the importance of high school and college and ever exciting career opportunities. Dr. Rodriguez has been recognized nationally for leading impassioned student-centered mentor-driven discussions on these national matters. When taken collectively, the goal of these activities, were simply to capture the imaginations of the students and let them see how relevant and vitally important their schooling is. The semester culminated by having the student’s present posters at ASU.

Week 1 Project - Designing/Modeling Mechanical Flapping Wing Bird Micro Air Vehicles

The main goal of this project was to design a mechanical flapping bird. This helped the students to become familiar with issues associated with modeling, designing, and building a flapping wing mechanical bird micro air vehicle (MAV) drone. The topic addressed drawing shapes and sizes of birds and getting familiar with their dimensional configurations. Studying the aerodynamics of flight can be an arduous task for kids, but it is essential for determining the distance and velocity the bird micro air vehicle performs during a typical flight mission [17],[18],[19]. This motivates the topic for designing a mechanical bird. The first step was to design a mechanical bird micro air vehicle. Students examined shapes and sizes of different wings and fuselage to determine maximum distance and velocity by altering the dimensions of different shaped mechanical birds.

The students gained mechanical and aerospace engineering skills from working together to design more efficient types of flapping bird wing configurations that produced the greatest amount of lift and least amount of drag from learning aerodynamic concepts with practicing engineers they interacted with [10], [11], [12]. The students designed their own mechanical birds. From Figure 1 above we can see that this enabled the students to have their drawings/design come to life and put their designs to the test to see how much lift their mechanical bird achieved.

Figure 1. From left to right. 3D-pen designed bird, 3D-designed glasses and students 3D-drawing.
**Week 2 Project - Building Flapping Wing Mechanical Bird Micro Air Vehicles (MAV)**

The main goal of this project was to build mechanical flapping birds. This helped students to become familiar with issues associated with modeling, controlling, designing, and building a flapping wing mechanical bird micro air vehicle (MAV) drone [13], [14], [15]. From Figure 2 we can see that the first step for each group was to build and test 2 mechanical flapping birds and compare them.

![Figure 2. From left to right. Testing and fully designed 3D-pen mechanical flapping birds.](image)

The platform that the mechanical bird uses is a premade balsa wood structure with red and blue wings. The body of the mechanical bird was easy to put together. The structure came premade with precut holes for mounting parts and pieces that can be easily integrated together. Students examined various flight regime paths. The students conducted experimental tests to determine the mechanical bird vehicle’s performance. The students gained mechanical engineering skills from building and designing their own mechanical birds learning from practicing engineers. The students worked together as a team to achieve their goal and build the two mechanical flapping birds that flew.

**Week 3 Project - Testing / Experimental Velocity Data Collection of the vehicles**

The main goal of this project was to test and collect data of the mechanical birds that the students built. Each group flew mechanical flapping birds. We had four cohorts that consisted of 3-4 students. The first student recorded the distance in meters the bird traveled, another student timed in seconds with a stopwatch the duration the vehicle traveled, another student recorded all the data down on a data table on a sheet of paper to later be placed into a spreadsheet, and finally another student flew/tested the mechanical flapping bird. From the Figure 3 we can see the data being the bird flying, the data plotted into Matlab engineering software and the data from the flying mechanical bird being measured and collected.

![DREAM TEAM- Trajectory of Vehicle](image)
Figure 3. From left to right. Testing and plotting data collected in Matlab engineering software.

Next the students computed velocity using the one of the fundamental equations of physics that distance = velocity * Time or X=VT. Then, after the students computed the velocity they graphed the velocity as a function of time to visually represent their data they have collected. The students graphed the data they collected from their built mechanical birds. Projectile motion concepts were incorporated using angles from “SOHCAHTOA”. The students used “SOHCAHTOA” to calculate the angle that the mechanical birds flew at. Then, they graphed / plotted the trajectory of their mechanical birds in Matlab engineering software. The equations that the students used increased their understanding of physics and how the equations of motion determined the mechanical bird’s flight performance. The students realized how much of an engineering background they obtained by using a hands-on approach to solving real world mathematical problems. The students made conclusions from the data they collected based on the maximum time the bird traveled, the minimum time the bird traveled, the maximum distance the bird traveled, the minimum distance the bird traveled, the average distance the bird traveled and the average time the bird traveled.

**Week 4 Project – Building & Programming Robotic Car Systems with Arduino Boards**

The students built a 2-wheeled robot in mechatronics. This allowed them to integrate mechanical parts such as the base and wheels together with electromechanical systems such as the motors. This project provided an extension of the flapping mechanical birds experiments by integrating programming skills through the use of an Arduino Mega microcontroller. The students programmed their Arduino robotic car with Arduino software [2],[3]. Students learned basic concepts about programming such as: including libraries, defining variables, setting the baud rate of the connection between the computer and the Arduino board, and the logic of the program. Students discovered how the velocity of the car can be increased by setting up a higher speed value in the Arduino program. This data was used to plot the velocity of the car (in cm/s) versus the "speed" command in the program. Students created a table for the "speed" value starting from 100 to 250 with an increment of 25 units. Then, they measured the distance that the car traveled (in centimeters) and the time that the car used to reach its final position (in seconds). This information was used to calculate velocity in cm/s at each value of the "speed" command. After the table was created, a plot was generated for the velocity of the car which was predominantly linear as it was expected. Once the students completed this experiment, another program was provided to measure distance with an ultrasonic sensor. Students learned how to connect each wire of the ultrasonic sensor into the different pins of the Arduino board. Additionally, they specified in the program the pins that they were using on the Arduino board, so that the connections and the program were consistent. As can be seen from Figure 4, this would help the students to develop engineering skills using robotics.
The students needed to measure the distance with the ultrasonic sensor, so that the robot could perform an obstacle avoidance mission. This would help the students to develop engineering skills using robotics and eventually integrating it with other vehicles such as the flapping birds. Near the end of the week 4 project the students began working on finalizing their poster to practice their presentation with the engineers.

**Week 5 Project – Building & Programming Robotic Car Systems with Arduino Boards**

The students built robotic cars which were controlled by the programmable Arduino boards. After building the Arduino robotic cars the students competed against each other. The Arduino robotic cars were built from pre-made acrylic platforms which are easily assembled with a screwdriver set. Students learned the basic concepts of programming an Arduino Mega board such as declaring the libraries to be used, specifying the variables of the program, setup the communication between the computer and the programmable board, and using commands in a loop. Additionally, they familiarized with concepts such as: how to program the Arduino board to read distance with the use of an ultrasonic sensor, and how to control the speed of the motor-wheels. From Figure 5 we can see below the students in the competition.

The use of the ultrasonic sensor allowed them to measure distance from a fix object. Velocity was also calculated based on the distance and time that the robot reaches at each programmed speed value command. At the end, students participated in a competition where their robots performed an obstacle avoidance task. The team that reached the final line in the shortest time was the winner. The collected data from distance, time and velocity was analyzed using mathematical concepts that the students learned in their traditional classes.
**Week 6 Project - Students Present Final Poster Presentation for Science Fairs Entitled:**

*“Designing, Building, Testing and Analyzing Micro Air Vehicles”*

In this project, the students presented through a poster their finalized work that encompassed designing, building and analyzing mechanical flapping bird micro air vehicles. This is important because the students gained understanding on what factors impacted the performance of designing and testing micro air vehicles. From [6], it has been demonstrated that having tangible interfaces benefits the learning process of young students. From Figure 6 below we can see the students from 7th, 8th and 9th grade were able to grasp and visually interpret from their Matlab programming codes and data analysis how changing different parameters in the mechanical flapping bird affected its flight performance.

![Students with posters](image)

Figure 6. From left to right. Superior Jr./Sr. high school students with their posters.

On the poster, the students showed their accomplishments by having designed, built and tested two mechanical flapping birds. The students benefited and gained mechanical and aerospace engineering skills by using a hands-on approach to solving real world mathematical problems.

The outreach videos for the program can be found here at these links:

- **Weeks 1 - 6 Overall video of outreach program:**
  
  https://www.youtube.com/watch?v=9SiXZi_D03o

- **Week 1 - 6 Videos of outreach program:**
  
  - Week 1) https://www.youtube.com/watch?v=0W2woRmhlMM
  
  - Week 2) https://www.youtube.com/watch?v=L2htjbhONio
  
  - Week 3) https://www.youtube.com/watch?v=M7fHAZ1JAc0
  
  - Week 6) https://www.youtube.com/watch?v=fqSj-TJu8RI

**V. COMMUNITY PARTNERSHIPS - ORGANIZATIONS / CLUBS INVOLVED**

The students built, designed, tested, collected data and plotted their data in matlab working with real professional / PhD graduate / undergraduate student engineers. Work was performed in an enjoyable atmosphere where the students enjoyed Mexican food, Tamales, and was able to network with the professional / PhD graduate / undergraduate student engineers. The students were able to ask career based questions such as "Do you like your job?"; "What do you do at Honeywell / Raytheon / General Motors Co. / APS / Caterpillar / Ford Motor Co. ?" Are you the only girl who work in your group?" The students learned that women in engineering is rare based on the last question. From Figure 7 and 8 below the groups can be seen below. The entire group of engineers showed the students their great motivation to help the students learn.
In detail, the total number of representative engineering clubs / organizations / companies involved was eleven. The total number of engineering clubs/organizations involved were three. The total number of engineering companies involved were seven. The organizations / companies were the following: 1) MAV Club; 2) SHPE de ASU; 3) SHPE Phoenix; 4) Superior Jr./Sr. High School; 5) Ford Motor Co.; 6) Honeywell; 7) NorthStar Aerospace; 8) Raytheon; 9) Caterpillar; 10) Arizona Public Services Co.; 11) General Motors Co. The students interacted with the following types of engineers in the program: Aerospace, Mechanical, Computer Science, Electrical, Bio-medical, Civil, Nuclear and Chemical Engineering. Majority of the engineers in the program were from aerospace engineering. The benefit of having the program was that the students were able to have an intellectual discussion about what do these engineers do? Each high school student was able to choose an engineering major they had in mind that they picked based on all the engineers discussions they had over the six week program. Every professional / PhD / working engineer spoke for about 5 minutes on what they do at their respective company. Each engineer from their company was able to explain to the students how they lover their job and the work that they have the opportunity to do is exciting.
VI. FLOW CHART OF ENGINEERING OUTREACH PROGRAM

The flow chart below shows the progression of steps taken of how the program was handled. The engineering outreach program was broken up into nine phases that can be seen below from Figure 9.

Phase 1 was to start building and designing mechanical flapping birds and Arduino robotic car systems. The second phase was to utilize 3D-pens to enhance the student innovation and creativity to design parts. The 3D-pen lets the students have an artistic component to their engineering design by creating specific parts for the mechanical flapping bird. The third phase consisted of testing the mechanical flapping bird. The fourth phase was collecting the data from the newly build and designed mechanical bird air vehicle systems. The fifth phase was to assemble all the vehicles in order to gather the appropriate information. The sixth phase was to program the data into Matlab engineering software. The seventh phase was to plot the data into Matlab to obtain the trajectory of the flight path. The eighth phase was to have a competition with the Arduino robotic cars. The final phase was brought together in a culmination of creation of a poster that demonstrates what the students have learned throughout the six weeks engineering outreach program.
VII. MIDDLE AND HIGH SCHOOL GROUPS WITH MENTORS

The students worked closely with their engineers. Group 1 was named “Los Diablos” group and contained four undergraduate engineer, and 1 PhD Graduate engineer with a total of five mentors for that group. From Figure 10 and 11 shows the groups 1-4 with some of the high school students and engineers.

![Figure 10: From left to right. Groups 1 and 2 of the engineering outreach group photo.](image1)

![Figure 11: From left to right. Groups 3 and 4 of the engineering outreach group photo.](image2)

Group 2 was named “Dream Team” with two undergraduate engineers, one masters graduate engineer with a total of three mentors for that group. Group 3 was named “Panthers” and contained three professional engineers who work in their field of study, two undergraduate engineers with a total of five mentors for that group. Group 4 was named “Pink Birds” with two professional engineers who work in their field of study, three undergraduate engineers, one masters graduate engineer with a total of six mentors for that group.

VIII. RESULTS AND DISCUSSION

During the Fall 2015 semesters, we captured the imaginations of 13 Title 1 Hispanic girls – girls lacking role models at home; many of which will be the first to graduate from high school/college. We plan to stay in touch with these girls – to serve them as mentors (in principle) forever. Impact-wise, this goal is superceded only by our plan to scale up our activities in the future across many more Arizona K-12 schools. Technically, the program addressed performance-based vehicle design for MAVs. This work impacted many communities, especially Hispanics involved in the MAV Club, SHPE de ASU. It encourages students to pursue engineering undergraduate degrees and graduate school.

The 3D-pen red mechanical bird had a much higher payload than the blue mechanical bird. The students put more of the 3D-pen plastic on top of the bird and weighed the vehicle down. The micro air vehicle club had built hoops where the students were able to fly the bird through the hoops. This helped the students to aim the bird at a higher angle of attack and fly mechanical birds through a series of tests. The students tested both the red and blue mechanical birds five times and collected distance and time measurements. With this data the high school students were able to compute the velocity of the mechanical birds. Then the students calculated the angle
with "SOHCAHTOA." After the students had the angle and velocity the students were able to use projectile motion equations to plot the trajectory of the micro air vehicles in matlab engineering software. The hands-on project-based program lets the students engage in an intellectual stimulating conversation about career paths that helps the students learn what engineers actually do. The students were able to observe that by using projectile motion equations both of their red and blue mechanical birds were able to fly at very different speeds. From the High school students plots the group, "Los Diablos" flew the blue bird with a much higher trajectory however by starting off with a greater angle of attack then the 3D-pen red mechanical bird.

The 3D-pen red mechanical bird was able to fly further due to the light weight of the bird. The students were easily able to grasp "SOHCAHTOA" concepts and calculate the flight path angle that they calculated to be around 53 degrees. For the dream team group, the students were able to observe that the blue mechanical bird was able to fly much higher and further then their red mechanical bird.

In the beginning the high school students were not sure what majors they would like to pursue, but by the end of the engineers talks we asked the students and each high school student was able to choose an engineering major. This was because they were exposed to hearing and seeing real engineers that look like them. The students were surrounded by engineers and they were able to help the students. Since we had actually more engineers to high school students the event was able to run smoother, that is the goal every time. The plan is to let the students see and talk to “real” engineers to impact them in a meaningful way. We initially had some issues and problems with with (4) defective 3D-Printing pens of the 2.0 version. We overcame that obstacle with support from the career center, Robin Hammound, who was able to fund some more 3D-printing pens to keep the 3D-pen session week going. The results of the six sessions can be seen here below.

![Figure 12](image.png)

Figure 12. Survey results showing before and after the program if the students now thought math is more fun.

Despite the level of difficulty of engineering, a mathematical approach was taken to battle this and can be demonstrated through the results obtained before and after our engineering outreach program. The results revealed that students using a hands-on approach approach when learning mathematical concepts increased students confidence in mathematics. From Figure 12, a 20% increase thought engineering is fun and a 30% increase in the students’ perception and motivation in becoming engineers in the future for the Superior Jr./Sr. High School students. As shown in the plot, the answer in "what is the highest college degree they plan to earn", students would like to pursue as high as a PhD degree. This is something that none of the students even had in mind prior to our engineering outreach program. Students received a end of the session
presentation to motivate the students to pursue higher education by Dr. Rodriguez, an electrical engineering professor. In addition, after the program, the results showed that the students choose an engineering major based on the discussions we have had during the six week engineering outreach program.

![Survey results showing before and after of what kind of engineer the high school students wanted to become.](image1)

**Figure 13.** Survey results showing before and after of what kind of engineer the high school students wanted to become.

From Figure 13, After the program, results showed 85% increase in knowing what type of engineer the middle and high school students would want to become in the future. Prior to the program, students were not sure and didn't know what types of engineering were available. Based on the results collected, the majority of the students after the program wanted to become mechanical engineers. This was due to the majority of engineers from the ten different organizations / companies involved talked about what they do at their company and how they love their engineering jobs. Not only could the students choose a major, but the Superior Jr. Sr. High School students changed their opinion on "how fun engineering is", based on working a real hands-on approach to learning mathematical concepts.

![Survey results showing before and after of the highest college degree the students plan to earn.](image2)

**Figure 14.** Survey results showing before and after of the highest college degree the students plan to earn.
Figure 15. Athletes of the week news showing one of the high school participants wanting to pursue mechanical engineering based on this engineering outreach program.

As can be seen from above from Figure 15, after the program one of the students, Marlee Esatico made newspaper headlines where she would like to major in mechanical engineering based on our engineering outreach program. This shows the effort and motivation we put into the program motivates and sparkles interest for the students to pursue engineering. Our goal was met positively, it change the perception on how middle and high school students perceive engineering through a hands-on approach to learning mathematical concepts. In particular, they benefited by learning from professional engineers working in their field and engineering students who are currently pursuing their bachelors, masters and PhD degrees in various fields such as mechanical and electrical engineering. This unique group were multidisciplinary background so that the students could learn what different types of engineers do and they could understand how they could one day become like them. The use of flapping mechanical birds and robotic cars in an engineering outreach program for six weeks overall showed that the students benefited.

**IX. CONCLUSION AND FUTURE WORK**

At the end of our engineering outreach program we concluded the following: 1) 100% of the students were female; 2) 66.7% of the students were Hispanic / Latino; 3) 50% of the students said they DO NOT want to be engineers; (This shows that engineering could be seen as a field mostly for men); 4) However, 54.5% said yes, engineering is fun!; 5) 41.7% said science is kind of fun; 6) 58.3% of the students said they CAN NOT name different
types of engineers; 7) 41.7% of our students said they would like to pursue a masters degree; 8) 63% of the students said they do NOT know if there is a difference between math and engineering.

In the middle of the program we concluded the following: 1) 33.3% wanted to become Electrical Engineers; 2) 33.3% wanted to become Aerospace Engineers; 3) 16.7% wanted to become Biomedical Engineers; 4) 16.7% said they do not know if they want to become an engineer; 33.3% of the students said they DO NOT want to be engineers. Some of the responses that students gave on why they do or do not want to become engineers were: 1) “I dont know if i want to be an engineer because i dont know a lot about what they do”; “I wanna be an engineer because it makes good money and my step dad works at SRP and knows a lot about engineering.”; “I learn a lot from him too.”; “I want to be in the medical fields of engineering.”; “I want to because i would really like to make good money and have a good life.”; “I don't know if i do or don't.”; “No because i want to be a softball player.”

In the near future, we plan to have the middle/ high school students work with real 3D-printers and Solid Works engineering software so that they can design mechanical pieces from scratch. We plan to host the next engineering outreach events in the Spring semester. We plan to host from January 9th to Feb 13th. Those 6 six consecutive Saturdays. Future work for this project would be to do a 3D-drawn structure for the entire mechanical flapping bird with the high school students. After testing only one of the birds with some parts being 3D-drawn we led to the conclusion that the plastic is actually strong enough for the entire bird to be 3D-drawn. The high school students were able to only 3D-draw the frame of the wings and tail of the mechanical flapping bird. In Figure 5 below, Victoria Serrano, PhD student in Electrical Engineering was able to 3D-draw almost the entire vehicle out of ABS plastic. However, future work on this would require some templates for the high school students to 3D-draw the different parts of the mechanical flapping bird.

Figure 16. Victoria Serrano, PhD student in Electrical Engineering 3D-drawing parts of the mechanical flapping bird out of ABS plastic.
Acknowledgments
This work was supported by the NASA Space Grant program, under Grant No. NNH15ZHA003N. The IRB number approval for this study was STUDY00003055. We greatly thank Valerie Garcia, Arlynn Godinez, Dr. Rodriguez and Dr. Tskalis for supporting this program. Bussing the students to Arizona State University was instrumental to run the program. We appreciate their interest in our work and their support.

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Abstract

The University of Hawaii at West Oahu (UHWO) is a diverse and indigenous-serving institution that embraces Native Hawaiian values while simultaneously providing an accessible and affordable college experience and fostering excellence in teaching and learning. Blended learning is put forth as an empirically tested strategy to improve student learning, facilitate student access to a quality education, support indigenous culture and traditions, develop new opportunities, meet instructional and institutional goals, and find solutions for diminishing resources. Resilience is widely accepted as a desirable property of human and environmental systems which must cope with the impacts of rising sea levels. Building disaster resilient Pacific island communities requires managing the unexpected and cascading impacts of inundation and other coastal hazards that cross policy domains, geographic, political, and sectoral boundaries. In the relatively near term, the impacts of global sea level rise are expected to contribute to the increased frequency of extreme water levels at the shoreline of Pacific Island nations. We discuss how faculty members use the blended mode to enrich teaching and learning and how students draw on hybrid course offerings to graduate faster and improve learning. In this paper we highlight best instructional practices, key strategic issues, and new pedagogical approaches for the blended approach. We also highlight challenges with declining resources, faculty development and assessment/evaluation revealed through our detailed experiences in teaching and learning practice and research.
1. Introduction

Resilience is widely accepted as a desirable property of human and environmental systems which must cope with the impacts of rising sea levels. Building disaster resilient Pacific island communities requires managing the unexpected and cascading impacts of inundation and other coastal hazards that cross policy domains, geographic, political, and sectoral boundaries. In the relatively near term, the impacts of global sea level rise are expected to contribute to the increased frequency of extreme water levels at the shoreline of Pacific Island nations. A resilient coastal community is able withstand external shocks associated with rising sea levels, persist, and rebuild itself when necessary, preferably in a stronger (UN/ISDR, 2002). The resilience concept is embraced by decision makers searching for increased flexibility, robustness, and adaptability in the face of rising sea levels: applications range from hydrologic and hydraulic engineering ("safe-fail systems") to resilient financial instruments (i.e. portfolio hedging). Hazards associated with sea-level rise combine with social vulnerabilities to create potential disasters, such as catastrophic inundation and erosion.

Resilient communities possess the ability to anticipate, self-organize, adapt, and continuously learn from rising sea levels in order to provide better protection against future coastal hazards. Improved resilience to climate variability and change, in turn, is acknowledged to promote sustainable societies and to reduce socio-economic vulnerabilities. In the context of sea level rise, the paradigm shift from crisis management to community based disaster resilience is shown in Table 1.
Table 1. The evolution of risk assessment and emergency management (modified from ISDR, 2002).

<table>
<thead>
<tr>
<th>Crisis Management for Sea Level Rise</th>
<th>Community-based Disaster Resilience for Sea Level Rise</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Hazards, Emergency and Disaster focused</td>
<td>Vulnerability, Risk and Resilience Focused</td>
</tr>
<tr>
<td>2. Single, Event based Scenarios</td>
<td>Dynamic, multiple risk issues and development scenarios</td>
</tr>
<tr>
<td>3. Reactive</td>
<td>Proactive</td>
</tr>
<tr>
<td>4. Respond to and recover from event</td>
<td>Assess, prepare, monitor and update/adapt</td>
</tr>
<tr>
<td>5. Fixed, location specific conditions</td>
<td>Extended or changing conditions, with local variations</td>
</tr>
<tr>
<td>6. Single authority or agency has responsibility</td>
<td>Involves multiple authorities and decision makers: Multi-disciplinary Approach</td>
</tr>
<tr>
<td>7. Established hierarchical relationships: command and control</td>
<td>Shifting and fluid relationships: situation specific functions and free association</td>
</tr>
<tr>
<td>8. Response and Recovery</td>
<td>Mitigation and Preparedness</td>
</tr>
<tr>
<td>9 Urgent, immediate and short time frames in outlook and planning</td>
<td>9. Comparative, moderate and long time frames in outlook and Planning</td>
</tr>
<tr>
<td>10. Rapidly changing, dynamic information</td>
<td>Accumulated, historical, layered, updated, or comparative</td>
</tr>
</tbody>
</table>
The emerging and holistic concept of community disaster resilience requires us to recognize that lives and property can be secured through sustainable local pre- and post-disaster planning in advance of an extreme sea-level event. For example, homes raised above the expected flood elevation (“homes on stilts”) are better designed than many non-elevated structures to cope with an inundation event. The remainder of the paper is organized as follows. Section 2 describes the risks associated with climate change and sea level rise to Pacific Islands. Next, research advances carried out by the Pacific Region Integrated Climatology Information Products (PRICIP) group is discussed (Section 3). The Coastal Services Center (CSC) is part of the National Oceanic and Atmospheric Administration's (NOAA) National Ocean Service. It supports the well being of coastal communities by working with private and public sector partners in order to link people, information, and technology in a holistic fashion that considers environmental, social, and economic issues (Section 4). Finally, conclusions are provided in Section 5.

2. The Gravity of Threats to Pacific Islands
Using mid-range scenarios, in which a rise in the sea level of 40 cm is envisaged by the 2080s, the number of people threatened worldwide from coastal flooding is projected to more than double to 200 million (Patz and Kovats, 2002). Table 2 illustrates the current global rate of mean sea level rise. The number of global “environmental refugees” is expected to reach 50 million by 2010, with small, low-lying island populations at the greatest risk (Potter, 2008): rising sea levels currently pose a threat to more than half a billion people that live within 5 meters above sea level around the world. (and the more than 100 million people worldwide live within one meter of mean sea level). Results shows that sea-level rise is an ongoing and accelerating process with a high likelihood of becoming a grave danger to coastal communities on Pacific islands. There have been several major coastal storms to affect Pacific islands in recent decades: Hurricane Iniki (central North Pacific) hit the island of Kauai in Hawaii in 1992, leading to $2.5 billion in physical damages. SuperTyphoon Pongsona (western North Pacific) struck on December 8, 2002 and caused $700 million in damages on the island of Guam. Other notable historical storm “event anatomies” in the Pacific Ocean region include Typhoon Chata’an (western North Pacific) and Cyclone Heta (central South Pacific). The strong winds, heavy rains, and high seas (storm surge, etc) that accompany these disasters pose a direct threat to the well-being of Pacific communities.

The citizens of some Pacific island states and deltaic coasts do not have the luxury of retreating inland from the coast, and may face involuntary relocation. For example, in the Pacific nation of Tuvalu, a ring of nine Polynesian islands, several thousand people have already left for other nations because of rising seas and displaced people from low-lying areas could provide the human reservoir for the spread of disease, including malaria (Potter, 2008). Accordingly businesses, non-governmental organizations and the public sector have an obligation to evaluate
the impacts of sea level rise on Pacific islanders and to propose innovative solutions to mitigate these effects. In the Pacific ocean, meltwater is expected to constitute a long term threat of sea-level rise (in the second half of the twenty-first century), with thermal expansion of the upper ocean posing the greatest immediate challenge. Table 3 shows the current trend of relative sea level rise at select Pacific Island locations. Observed rates of relative sea level rise for select US Flag and Affiliated Pacific Islands are shown (Figure 1).

Table 2. Current rate of global mean sea level rise

<table>
<thead>
<tr>
<th>IPCC (2007) Observed Total Sea Level Rise</th>
<th>Rate of sea level rise (m per century)</th>
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</thead>
<tbody>
<tr>
<td>1961-2003</td>
<td>0.18 ± 0.05 (sea level stations)</td>
</tr>
<tr>
<td></td>
<td>(0.59 feet/century)</td>
</tr>
<tr>
<td>1993-2003</td>
<td>0.31 ± 0.07a (satellite altimetry)</td>
</tr>
<tr>
<td></td>
<td>(1.02 feet/century)</td>
</tr>
</tbody>
</table>

Table 3. Current trend of relative sea level rise at select Pacific Island locations

| Rate of sea level rise (m per century) based on monthly mean sea level data |
| Kwajalein, RMI                                                            |
| 0.105 ± 0.051 (0.34 feet/century)                                         |
| from 1946 to 1999.                                                        |
| Guam                                                                     |
| 0.010 ± 0.090 (0.03 feet/century)                                         |
| from 1948 to 1999.                                                        |
| Pago Pago, American Samoa                                                |
| 0.148 ± 0.056 (0.49 feet/century)                                         |
| from 1948 to 1999.                                                        |

Source: NOAA CO-OPS [http://tidesandcurrents.noaa.gov/sltrends/sltrends.html]
Pohnpei, FSM 0.16 ± 0.32 (0.52 feet/century)
Yap, FSM -0.09 ± 0.32 (-0.30 feet/century)
Kapingmarangi, FSM 0.22 ± 0.36 (0.72 feet/century)
Guam 0.06 ± 0.12 (0.20 feet/century)
Saipan, CNMI 0.11 ± 0.35 (0.36 feet/century)
Pago Pago, American Samoa 0.17 ± 0.06 (0.49 feet/century)

Source: UHSLC (2008 for PRICIP http://www.pricip.org/)
Climate-related factors can exacerbate existing fragile situations beyond the tipping point for many Pacific Island governments, even those that appear stable. Accordingly, developed nations have begun to consider the best ways to assist low lying island states as the impacts of sea-level rise and climate change begins to take its toll on families, communities and nations of Pacific islands. For example, in 2008, Australia focused on the humanitarian impacts of climate change in the Asia Pacific region, by hosting a conference entitled “The People’s Assembly: Sustainable Solutions for Victims of Sea Level Rise”, held at the Queensland State Library in late August. In this assembly event, a panel of scientific, business, academic, humanitarian and
environmental leaders debated outlined practical adaptive strategies that Australia could implement to assist nations throughout the Asia Pacific region that were impacted by rising sea levels. Recommended solutions include improved training in meteorology (and related sciences) and the development of advanced early warning systems to predict extreme events in order to increase the adaptive potential of affected communities. The international aid agency Oxfam released a blueprint (Oxfam 2008) for Australia’s new engagement with Pacific nations, which recommended reducing greenhouse gas emissions by at least 95 per cent by 2050; developing renewable energy alternatives; providing financial support funding to help Pacific nations adapt to rising sea levels; and assisting communities displaced by the results of climate change (including governance arrangements and preparations for forced immigration).

3. Pacific Region Integrated Climatology Information Products (PRICIP) project

The Pacific Region Integrated Climatology Information Products (PRICIP) project seeks to enhance the resilience of communities in the Pacific region to coastal storms. The PRICIP seeks to provide decision-makers in coastal areas with timely, relevant, and accurate information about the causes and consequences of “storminess” in the Pacific and to improve our understanding of storm phenomena including strong winds, heavy rains and high seas that pose a grave danger to people and infrastructure (see bottom of Figure 2). At the top of the PRICIP conceptual framework (Figure 2) it is shown that users have access to a variety of tailored storm information products (forecasts, etc) that will help to build community resilience. The use of their climatological decision support systems and integrated information products can help coastal communities in the Pacific region to undertake disaster planning and respond appropriately to inundation hazards.

PRICIP’s suite of integrated information products can be used by flood mitigation planners, government officials, non-profit organizations, and community leaders in order to improve the management of coastal inundation hazards and to better understand patterns and trends of storm frequency and intensity within the Pacific region. This includes spatio-temporal information about coastal inundation and erosion risks (at time scales ranging from hours to years) as well as the longer-term climatological perspective.
Figure 2. PRICIP Conceptual Framework (PRICIP, 2008)
A suite of strong winds, heavy rains, and high seas derived data and information is served via the PRICIP Portal, the gateway by which coastal storm products developed through the PRICIP project, as well as those that originate from other sources, can be viewed and retrieved. For example, the University of Hawaii Sea Level Consortium, UHSLC, (http://uhslc.soest.hawaii.edu/) has developed products for PRICIP which examine extreme event climatology at Honolulu by deconstructing the tide gauge record into seasonal, tidal, and high frequency water level components. Sources of information include NOAA’s Integrated Surface Hourly (ISH) mean sea level pressure and wind speed data; the Global Historical Climate Network (GHCN) precipitation dataset; the National Water Level Observing Network (NWLon) tide gauge records; the National Data Buoy Center (NDBC) wave buoy records; the U.S. Army Corps of Engineers’ Coastal Data Information (CDIP) buoy data, and other data. This information will be targeted to decision-makers in key sectors including emergency management, health care, water and natural resource management, energy and commerce, transportation and communication, and recreation and tourism. A summary of sector-specific impacts associated with specific extreme events is provided, as well as its historic context climatologically.

The intent is to convey the impacts associated with extreme events and to familiarize users with in-situ and remotely sensed products that are commonly used to track and forecast weather and climate. To carry out this work, theme-specific data integration and product development teams have been established. These teams are comprised of climate and storm experts from NOAA’s National Climatic Data Center (NCDC), Center for Operational Products and Services (CO-OPS), Coastal Services Center (CSC), National Weather Service (NWS), and the National Marine Fisheries Service (NMFS), as well as the University of Hawai‘i, University
of Alaska, University of Guam, Oregon State University, and the Scripps Institution of
Oceanography. Work includes delineating event return recurrence intervals via Generalized
Extreme Value (GEV) analyses and correlating event characteristics with regional climatological
indices (e.g., ENSO and PDO).

4. NOAA Coastal Services Center

The Coastal Services Center (CSC) is part of the National Oceanic and Atmospheric
Administration's (NOAA) National Ocean Service. The CSC is a partner in over 100 ongoing
projects geared to resolve site specific coastal issues. The RVAT (Risk and Vulnerability
Assessment Tool) was produced by the CSC. It uses 3-D storm surge visualization to help
decision makers identify people, property, and resources that are at risk of injury, damage, or
loss from the potential impacts of storm surge and other hazards. Based on the RVAT Hazards
Locator Tool, the Tutuila Hazard Assessment Tool (T-HAT, 2008) was developed by the NOAA
Coastal Services Center (CSC) with the assistance of the NOAA Pacific Services Center (PSC)
and the American Samoa Coastal Management Program, which is part of the American Samoa
Department of Commerce, and the National Oceanic. Using Internet Explorer, this ArcIMS-
based tool can be viewed at www.csc.noaa.gov/t_hat/.

In 2004, a near miss by Hurricane Heta caused strong winds and heavy rains on the island of
Tutuila, the largest and most populated of the seven South Pacific islands that make up the U.S.
territory of American Samoa (Figure 3). More than 3,000 families were displaced from their
homes and the island had no electricity or water. In addition to hurricanes, Tutuila, is vulnerable
to tsunamis, flooding, landslides, and earthquakes. T-HAT capitalizes on GIS hazard data used in American Samoa's recently completed Hazard Mitigation Plan, which the Disaster Mitigation Act of 2000 requires states and territories to complete to receive Federal Emergency Management Agency (FEMA) funding for hazards mitigation.

The Coastal Zone Management Agency in American Samoa uses T-HAT to assist with permitting requirements and to increase the technical capabilities of their staff and the general public. The tool is now used daily by administrative assistants to inform the public about natural hazard risks when they apply to the American Samoa Coastal Management Program for building and development permits. T-HAT provides an easy to use Web-based GIS tool that allows the
coastal program staff and permit applicants to rapidly and accurately identify potential hazard risks for any location on Tutuila.

T-HAT is extremely valuable for visualizing the range of hazards that a project might face. For example, Figure 4 identifies high, medium, and low flood risk zones in the Nu’uuli/Ituau village in Tutuila while Figure 5 displays tsunami risk.
Figure 4. Flood risk in Tutuila, American Samoa.
Figure 5. Tsunami Risk along the coast of Tutuila, American Samoa
5. Conclusions

Global average temperatures increased by 1.3°F (plus or minus 0.3°F) over the twentieth century and atmospheric carbon dioxide levels are now higher than at any time in the past half a million years. The impacts of sea-level rise are on the rise worldwide, including statistically-probable but unanticipated catastrophes as well as moderate-scale repetitive events. In 2007, a total of 960 disasters caused about 82 billion dollars in damage, affecting at least a quarter billion people, disproportionately affecting vulnerable communities in developing nations (Munich Re, 2008). Natural disasters alone killed over 150,000 people in the first half of 2008, more than in all of 2004 when the Boxing Day Tsunami struck coastlines of Indian Ocean nations.

The resilient worldview can help Pacific Island communities to overcome pathological behavior including institutional rigidity, social dependencies, political hegemony, and ecological degradation. The need to strengthen interdisciplinary linkages among the fields of disaster resilience, inundation modeling, sustainable community planning, and all-hazards coastal mitigation is emphasized. The lessons learned in the Pacific region will be valuable for low-lying island states around the world. For example, in November 2008, the president of the Maldives, an archipelago of almost 1,200 coral islands located south-southwest of India, indicated his desire to relocate the entire country. Future work should emphasize the development of dynamically driven storm surge model, using a community-modeling approach for the next generation of storm surge modeling and forecasting.

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Transforming Online Teaching and Learning for Natural Hazards Management: Ethical Considerations, Strategic Issues, and Best Practices

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Abstract

An online course management system (asynchronous learning network) has been developed in WordPress to transform teaching and learning in Public Administration and Social Divisions at UHWO. The online learning resources used to support our novel asynchronous learning network include social media (twitter, facebook, etc), email, electronic mailing lists, threaded conferencing systems, online discussion boards, wikis, and blogs. This asynchronous communication is supplemented traditional synchronous components such as videoconferences involving disaster management role playing, exercises and training (including Community Emergency Response Team training) as well as text and voice chat. This research uses the aforementioned tools determine ethical considerations in online teaching and learning. Asia’s worst flooding of 1998 occurred in China and is used as a case study. Ethical decisions are key to shaping the disaster studies field and they must be included in the online classroom: It is important that values and ethical considerations are made explicit during the disaster planning process so that under conditions of pressure of urgency and criticality they can be made consistent with the ethical judgments that underlies the emergency management decision process. It is concluded that in the community disaster planning phase, there will be innumerable issues, each with its own ethical components.
Introduction

Ethical decisions are key to shaping the disaster studies field and they must be included in the online classroom: It is important that values and ethical considerations are made explicit during the disaster planning process so that under conditions of pressure of urgency and criticality they can be made consistent with the ethical judgments that underlies the emergency management decision process. In the community disaster planning phase, there will be innumerable issues, each with its own ethical components. What humans and assets do we protect, and to what level of safety? How do we set disaster budgets and priorities? Answers explored during disaster preparedness activities should be based on key values and ethical analysis that can provide guidance during implementation Other issues include:

- How do we ensure that priority-setting judgments are not purely technical matters.
- How do we ensure the goals of transparency and accountability
- Who should receive the most resources
- Who do we rescue first?
- How do deal with families that refuse to follow mandatory evacuation orders?
- When do we stop expending resources to critically ill victims that are unlikely to survive?
- When do we phase out rescue efforts and shift to recovery mode?

The way these questions are answered reflects the ethical perspectives and moral analysis strategies of the planning group(s).

In this paper we consider the role of ethical decisions in flood management. Flood events often constitute a catastrophic disaster threat: they have an enormous impact on human well-being, jeopardizing important social development goals such as addressing poverty, ensuring adequate
food, water, and sanitation, and protecting the environment. Direct losses from floods include
drownings and injuries as well as damage to infrastructure and property, agricultural production,
and sites of historical and cultural value. Indirect health problems often arise, such as water-
borne infections, exposure to chemical pollutants released into flood waters, and vector-borne
diseases.

2. Case Study A: 1998 Yangtze River Flood

At 6,300 km (3,900 miles) the Yangtze is Asia’s longest river, the world’s third longest and the
most important waterway linking China’s leading commercial hub, Shanghai, to the less
industrialized regions of the Yangtze river basin: The fertile Yangtze River basin supports 40%
of China’s GDP (including 40% of the nation’s agricultural and industrial output) and is home to
one third of its people. The Yangtze river basin is also a vital source of natural resources,
accounting for 40% of China's freshwater resources, more than 70% of the country’s rice and
fishery production and half of its grain. The 1997–1998 El Nino and 1998 Asian summer
monsoon was one of the strongest on record, and monsoon rains continued unabated for much of
the summer. The central and southern parts of the country along the Yangtze river and its
tributaries were severely impacted by more than 60 days of heavy flooding in the Yangtze River
Valley. The Yangtze flooding constituted the world’s single most devastating natural disaster in
1998 and China’s worst flooding in over 40 years: approximately 200 million people were
affected over 50 million acres as 670 mm of precipitation occurred in the Yangtze river valley
from June to August, 1998 (Wu et al. 2003). In July and August 1998, extensive flooding also
occurred in northeast China, in the Songhuanjiang, Nenjiang and other rivers. The 1998 Yangtze
floods affected more than 180 million people, killing approximately 4,000, damaging more than
10 million homes and forcing 14 million people to relocate. Direct economic losses were put at 31 billion US dollars.

Four factors which significantly worsened the impact of heavy rain during the 1998 flood were:

• Deforestation and overgrazing, sharply reducing the capacity of forests and grasslands to retain water; Forest cover in Sichuan province fell from 20% of the land area in the 1950s to 9% by the late 1970s (Kirby, 2001)

• Loss of lakes and wetlands, cutting the capacity of the river's middle and lower reaches to store water. The surface area of the lakes along the Yangtze shrunk from 17,198 sq km in 1949 to only 6,605 sq km in 1980. In the early 1950s, the Yangtze basin had contained 4,033 large and small lakes, of which about 1,100 were lost over the past half century.

• Rising erosion rates, causing rivers and wetlands to fill with silt. For example, one of the largest reservoirs in Guangxi province, Changgang, has lost half a million cubic metres of capacity annually as it silts up.

• Snowmelt and melting glaciers in the Qinghai-Tibetan plateau

Both the amount of precipitation over the Yangtze river catchment and the floodwater discharge from the upper basin of the Yangtze river did not exceed the historical extremes during the 1998 flooding, but water levels in the middle basin far exceeded the historical maximum. Historically, dikes have been built to control flooding along the Yangtze River, but the 1998 flood levels in the middle reaches of the Yangtze River forced Chinese officials to consider dramatic strategies to save large cities on the Yangtze River from inundation. During the summer of 1998, it was
feared that Yangtze River flooding would cause the dikes along the Yangtze to fail to some degree, particularly those already weakened due to erosion, aging, or neglected repairs.

To minimize the probability of a catastrophic dike failure in the densely populated city of Wuhan (central China's largest industrial center, with more than 7 million residents in China’s central Hubei province) and neighboring farmland, Chinese authorities deliberately destroyed dikes in Jianli County (Hubei province), about 90 miles upriver from Wuhan. This preventative action was successful in diverting floodwaters away from Wuhan, lowering the height of the Yangtze River at Wuhan. While this purposeful destruction of dikes at Jianli temporarily prevented Wuhan from being flooded, the social and economic impact on Jianli Country was immense: more than 500,000 people living adjacent to the Yangtze River were forced to evacuate (many on extremely short notice).

However, Chinese officials believed that saving Wuhan from inundation might also require opening floodgates and the deliberate destruction of dikes in the Jingjiang section of the Yangtze River which runs from Zhijiang (Hubei Province) to Chenglingji (Hunan Province). It is one of the most hazardous parts of the Yangtze River: the many bends in the river slow down the water and the riverbed is high due to the resulting sand and mud deposits. The higher water level in the Jingjiang leads to the ancient Chinese saying: “The danger of the Yangtze River lies in Jingjiang”.

The 180 km Jingjiang river embankment provides defense for the central Chinese city of Wuhan and the major Beijing-Guangzhou Railway transportation artery. It also protects the productive 30,000 km² Jianghan plain (an alluvial plain located in the middle and south of Hubei province
which borders the Dongtinghu Plain and has an area of more than 30 thousand square kilometers).

The Jingjiang flood plain lies in central Hubei province which is home to over 300,000 people. The Jingjiang flood diversion area had not been used since 1954, when floods killed more than 30,000 people. However, purposefully destroying dikes at Jingjiang would reduce the risk of dikes suddenly bursting at Shashi City. Accordingly, extensive preparations were put in place to dynamite the Jingjiang dikes and divert waters into the Jingjiang floodplain. This was expected to submerge more than 1,000 square kilometers (386 square miles) of land and 27,000–33,000 ha (68,000–82,000 acres) of farmland in the Jingjiang floodplain. Deliberately flooding towns and villages in the Jingjiang area required the approval of the State Council of the People's Republic of China (國務院), the chief administrative authority of the People's Republic of China. Since 1954 China’s State Council has been constitutionally identical to the Central People's Government (中央人民政府), particularly in relation to local governments. China’s state council is chaired by the Premier and includes the heads of each governmental department and agency. Currently, the council has 35 members: the premier, one executive vice premier, three vice premiers, five state councilors (of whom two are also ministers), and 25 additional ministers and chairs of major agencies.

In 1952 the Jingjiang Flood Diversion Project was undertaken in the northeastern part of the Gong’an County. Officials at the Jingjiang Flood Diversion Management Bureau were instructed to begin destroying dikes and opening floodgates when water levels on the Yangtze reached a record high of 45 m (149 feet) at the monitoring station in Shashi city, just north of the area that would be flooded. Fortunately, the water level at the Shashi monitoring station remained
approximately 6 cm (2 in.) below the 45-m level. However, as a precautionary measure 330,000 people were evacuated from the Jingjiang region.

August 6, 1998: Hubai Provincial Flood Control Headquarters advised that there were critical flood levels. More than 300,000 people in the flood diversion area were evacuated to make room for diverted floodwaters.

August 16, 1998: The water level in Shashi rose to 45.22 meters, which exceeded the 45.00 meter state stipulated flood diversion mark. However, in a bid to reduce losses, officials decided not to divert water.

August 20, 1998: The sixth Yangtze River crest threatened Wuhan and 2.3 million citizens and soldiers provided support for the Jingjiang River embankment.

However, in the summer of 1998 floods weakened the Jingjiang River embankment so 40,000 Chinese People’s Liberation Army soldiers and half a million local citizens helped to withstand the floodwaters.

**Case Study B: Deliberate Yellow River Flood Warfare**

The Imperial Japanese Army quickly obtained large swaths of Chinese territory at the onset of the Second Sino-Japanese War in 1937 and by June 1938, the Japanese had control of all of North China. On June 6, 1938 the Japanese imperial army captured Kaifeng, the capital of Henan, and threatened to take over Zhengzhou which would have directly endangered the major Chinese cities of Wuhan and Xi'an (as Zhengzhou stood at the junction of the critical Pinghan and Longhai Railways). To deter further Japanese advances into western and southern China, the
Chinese Nationalist leader General Chiang Kai-shek opened the dikes on the Yellow River near Zhengzhou on the advice of Chen Guofu, a prominent political ally in party affairs. Specifically, the dike was destroyed on June 5, 1938 and June 7, 1938 at Huayuankou, on the south bank of the Yellow River causing flooding in the Eastern states of Henan, Anhui, and Jiangsu.

The deliberate floods constitute what many consider to be the largest war induced environmental disaster in history (Dutch, 2009; Lary, 2004). This act of environmental warfare destroyed thousands of square kilometers of farmland and shifted the mouth of the Yellow River hundreds of miles south. It is estimated that the disaster affected approximately five million people. In particular, the flood inundated thousands of villages, thereby driving villagers from their homes and creating three million refugees. It is estimated that at least 400,000-500,000 died from the flooding with another half a million becoming homeless. Besides this large death toll, the ecological toll on agricultural and other ecological resources was severe: crops in the abandoned, flooded countryside were destroyed and irrigation channels were ruined. Moreover, even once the water eventually receded the soil was often uncultivable as much of the land was covered in silt. Both private property and public infrastructure were destroyed, leaving survivors destitute.

3. Logistic Regression

Discriminant function analysis (DFA) is typically employed in the presence of a categorical dependent variable if all of the predictors are continuous and nicely distributed about the mean. It is used primarily to predict group membership from a set of continuous predictors. Specifically, DFA assumes multivariate normality, i.e. the means of the various Dependent Variables (DVs) in
each cell and all linear combinations of the DVs are normally distributed. On the other hand, Logit analysis is usually employed if all of the predictors are categorical

Logistic regression is used to predict a categorical (usually dichotomous) variable from a set of predictor variables where the predictor variables are a mix of continuous and categorical variables and/or if they are not nicely distributed. The medical community often uses logistic regression for problems in which the dependent variable is whether or not a patient has a disease. For a logistic regression, the predicted dependent variable is a function of the probability that a particular individual will be in one of the categories (i.e. that an individual has a disease, given her set of scores on the predictor variables).

As an example of the use of logistic regression in disaster research consider the Yangtze River flood case study. Disaster management college students ($N = 630$) were asked to pretend that they were serving as a member of the State Council of the People's Republic of China hearing arguments for and against the destruction of dikes at Jianli and Jingjiang. The discussion included a description of the emergency management options in logical but emotional language. Various points of view were put forth and computer simulations were carried out to show the impact of the proposed evacuations and dam breaches on communities. Each participant read one of five different scenarios which described the goals and benefits of the proposed dam breaches. They were:

- **ECONOMIC** – protecting down-stream economic assets including the central Chinese city of Wuhan and the major Beijing-Guangzhou Railway transportation artery
- **ENVIRONMENTAL** – the need to protect the productive Jianghan plain
• SOCIAL – the challenges associated with evacuation and the threats to life safety associated with flooding.

• POLITICAL – understanding the decision making process in China’s state council and the Jingjiang Flood Diversion Management Bureau.

• MILITARY – camouflaged soldiers reinforced the earthen dikes along the banks of the Yangtze river in order to help back the swollen river. With waters on the Yangtze at their highest levels in 44 years, nearly 5 million people in five provinces were mobilized to help fortify the embankments.

After reading the background of the Yangtze River flooding and the other case materials, each student was asked whether or not to proceed with the study. Participating students were asked to fill out an Ethics Position Questionnaire (EPQ) (Forsyth, 1980) which assesses personal moral philosophy. The instrument contains two dimension: relativism and idealism. Scoring high on the relativism subscale of the EPQ is consistent with a personal and situational moral philosophy and a rejection of universal moral principles. Overall, high scorers on the idealism subscale of the EPQ espouse a concern for the welfare of others and believe that ethical behavior leads only to positive outcomes, never to bad or mixed consequences. (Forsyth, Nye, & Kelley, 1985).

The EPQ asks questions about acceptance of issues that vary in terms of relativism and idealism. The instrument contains 20 Likert-type items (each with a 9-point response scale from “completely disagree” to “completely agree”). The relativism scale includes items such as “Different types of moralities cannot be compared as to ‘rightness’” and “What is ethical varies from one situation to another.” The idealism scale, in contrast, measures one’s perspective on positive and negative consequences with such items as “A person should make certain that their
actions never intentionally harm another even to a small degree” and “If an action could harm an innocent other then it should not be done” (Forsyth, 1980). It is important to note that idealists (persons who score high on the idealism dimension) do not make ethical decisions by balancing good consequences against negative outcomes; rather, for an idealist, the existence of any negative outcomes may make a behavior unethical, even though there may be many positive consequences.

Figure 1. Four-fold classification of Personal Moralities based on Idealism and Relativism (Forsyth, 1980)

A four-fold classification based on Idealism and Relativism is shown in Figure 1. There are four quadrants that categorize various individuals on the basis of their personal moral philosophy and ethical choices: Situationalists, Absolutists, Exceptionalists and Subjectivists. Situationalists are highly relativistic and idealistic contextualists: they believe that individuals should seek to achieve the best outcomes possible, but that moral rules cannot be universally applied across all situations: adherents prescribe close examination of individual situation in reaching a contextually appropriate moral evaluation. Absolutists, like Situationists, are also idealistic; they
support decisions that yield positive, desirable consequences. However, Absolutists are not
relativistic; they believe that ethical absolutes must be included in any code of ethics.

Subjectivists and Exceptionalists are both low in terms of idealism. Subjectivists are pragmatic
relativists that reject universal moral rules (high relativism) and believe that following rules will
not necessarily lead to the best outcomes for all concerned (less idealistic about the possibility of
achieving humanitarian goals). Its adherents make subjective, individualistic moral judgments
rather than basing their ethical choices on more “objective” information, such as universal moral
absolutes or the extent to which a given action harms others. Finally, Exceptionists are principled
pragmatists who endorse moral rules as guides for behavior, but believe that following actions
that lead to some negative consequences shouldn’t necessarily be dismissed. Low in both
relativism and idealism they are willing to make exceptions to their moral principles. Human and
animal rights activists tend to be high in idealism and low in relativism. This study examines
whether gender, idealism and relativism are related towards attitudes in complex emergency
management decisions.

We begin with a simple bivariate logistic regression, using student’s decisions as the
dichotomous criterion variable and gender as a dichotomous predictor variable where we have
coded gender with 0=Female, 1=Male and decision with 0=stop the decision to breach the dam
and 1=continue with the decision to breach the dam. Our regression model involves predicting
the logit, i.e. the natural log of the odds of have made one or the other decision. That is:

\[
\ln(\text{odds}) = \ln\left( \frac{\hat{y}}{1 - \hat{y}} \right) = a + bX
\]
where \( \hat{y} \) is the predicted probability of the event which is coded with 1 (continue with the plans to destroy the dykes and open the floodgates) rather than 0 (not to proceed with dynamiting the dykes and opening the floodgates). \( 1 - \hat{y} \) is the predicted probability of the other decision and \( X \) is the predictor variable, gender. The intercept (constant term) is given by \( a \) and \( b \) is the slope from the logistic regression equation.

An iterative maximum likelihood procedure is used to construct a logistic regression model.

Starting with an arbitrary value of the regression coefficients an initial model for predicting the observed data is constructed. Errors in the aforementioned prediction are then evaluated and the regression coefficients are changed in order to make the likelihood of the observed data greater under the new model. The procedure is iterative since the procedure repeats until the differences between the latest model and the previous model are trivial (i.e. the model converges).

Observing the statistical output we observe that 630 cases are used in the analysis (Figure 1)

<table>
<thead>
<tr>
<th>Case Processing Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unweighted Cases</td>
</tr>
<tr>
<td>Selected Cases Included in Analysis</td>
</tr>
<tr>
<td>Missing Cases</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>Unselected Cases</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Table 1. Case Processing Summary

Block 0 output is for a model that includes only the intercept (constant term). Given the base rates of the two decision options 58.4% (i.e. 368/630) of students decided to stop the dam destruction implementation while 41.6% decided to allow it to continue (Table 2). Without any other information the best statistical inference is to predict, for every case, that the student will decide to stop the dam destruction. Using that strategy one would be correct 58.4% of the time.
Table 3 (variables in the equation) shows that the intercept only model is

\[
\text{ln(\text{odds})} = -0.340 \quad \text{which yields the predicted odds is } [\text{Exp}(B)]=0.711. \quad \text{That is, the predicted odds of deciding to continue with the dyke destruction is } 0.711. \quad \text{Since 262 of the students decided to continue the dyke destruction and 368 decided to stop the destruction, our observed odds are } 262/368 = 0.712
\]

### Variables in the Equation

<table>
<thead>
<tr>
<th>Step 0</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-.340</td>
<td>.081</td>
<td>17.664</td>
<td>1</td>
<td>.000</td>
<td>.712</td>
</tr>
</tbody>
</table>

Table 3. Variables in the Equation

Now look at Block 1 output where the gender variable is added as a predictor. The Omnibus Test of Model Coefficients (Table 4) illustrates a Chi-square of 48.198 on 1 df, significant beyond .001. This is a test of the null hypothesis that adding the gender variable to the model has significantly increased our ability to predict decisions made by the students. The -2 Log likelihood statistic (807.247) models how well the model predicts the decisions (the smaller the better) as shown in the model summary (Table 5). The Cox and Snell $R^2$ (0.074) is similar to the interpretation of $R^2$ in multiple regression, but does not reach a maximum value of 1, whereas the Nagelkerke $R^2$ can reach a maximum of 1.
### Omnibus Tests of Model Coefficients

<table>
<thead>
<tr>
<th>Step</th>
<th>Chi-square</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step</td>
<td>48.198</td>
<td>1</td>
<td>.000</td>
</tr>
<tr>
<td>Block</td>
<td>48.198</td>
<td>1</td>
<td>.000</td>
</tr>
<tr>
<td>Model</td>
<td>48.198</td>
<td>1</td>
<td>.000</td>
</tr>
</tbody>
</table>

Table 4. Omnibus Tests of Model Coefficients

### Model Summary

<table>
<thead>
<tr>
<th>Step</th>
<th>-2 Log likelihood</th>
<th>Cox &amp; Snell R Square</th>
<th>Nagelkerke R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>807.247</td>
<td>.074</td>
<td>.099</td>
</tr>
</tbody>
</table>

*a. Estimation terminated at iteration number 3 because parameter estimates changed by less than .001.*

Table 5. Model Summary

### 4. Conclusions

The Variables in the Equation output (Table 6) shows us that the regression equation is $\ln(\text{odds}) = -0.788 + 1.176 \text{Gender}$. We can now use this model to predict the odds that a subject of a given gender will decide to continue with the dyke destruction. When the student is a woman (gender = 0), then $\text{odds} = e^{-0.788+1.176(0)} = e^{-0.788} = 0.455$. That is, a female student is only 0.455 as likely to approve the dyke destruction as she is to stop the destruction. For male students (gender = 1) then $\text{odds} = e^{-0.788+1.176(1)} = e^{0.388} = 1.474$. That is, a male student is 1.474 times more likely to decide to continue the dyke destruction as she is to stop the destruction.

The odds are now converted to probabilities. For women students in the study

$$
\hat{y} = \frac{\text{odds}}{1 + \text{odds}} = \frac{0.455}{1 + 0.455} = 0.31
$$
That is the model predicts that 31% of women will decide to continue to destroy the dykes. For men

\[ \hat{y} = \frac{odds}{1 + odds} = \frac{1.474}{1 + 1.474} = 0.60 \]

That is our model predicts that 60% of men will decide to continue to destroy the dykes.

The variables in Equation output (Table 6) provides the odds ratio predicted by the model: Exp(B) provided in the right most column. The odds ratio is obtained by raising the base of the natural log to the \( b \)th power, where \( b \) is the slope from the logistic regression equation. In our model the result is \( e^{1.176} = 3.241 \) which means that the model predicts the odds of deciding to continue the dam destruction are 3.241 times higher for men than they are for women. For men, the odds are 1.474, and for women they are 0.455. The odds ratio is: \( 1.474/0.455 = 3.24 \)

<table>
<thead>
<tr>
<th>Variables in the Equation</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1 gender</td>
<td>1.176</td>
<td>.172</td>
<td>46.570</td>
<td>1</td>
<td>.000</td>
<td>3.241</td>
</tr>
<tr>
<td>Constant</td>
<td>-.788</td>
<td>.108</td>
<td>53.424</td>
<td>1</td>
<td>.000</td>
<td>.455</td>
</tr>
</tbody>
</table>

a. Variable(s) entered on step 1: gender.

Table 6. Variables in the Equation

In order to classify subjects according to their decision we establish the following decision rule: If the probability of the event is greater than or equal to 0.5 (the SPSS threshold set by default), then it is predicted that the event will take place (in some cases we may wish to set the threshold higher or lower than 0.5). Using the 0.5 threshold we classify a student into the “Continue with Dam Destruction” category if the estimated probability is more than 0.5, which it is for every male student. A subject is classified into the “Stop the Dam Destruction” category if the estimated probability is less than 0.5 which it is for every female student.

The sensitivity of the prediction, i.e. the percentage of occurrences correctly predicted is now examined: \( P(\text{correct} | \text{event occurred}) \). For the “Continue with Dam Destruction” event the Classification Table (Table 7) shows us that this rule allows us to correctly classify 137/(125+137)=52.3% of the subjects where the predicted event was observed. For the
specificity of the prediction, i.e. the percentage of nonoccurrences correctly predicted we have: $P(\text{correct} | \text{event did not occur}) = 275/(275+93) = 74.7\%$. Hence this rule correctly classifies 74.7% of the subjects where the predicted event did not occur (i.e. “Stop Dam Destruction”). Overall the predictions were correct 412 (i.e. 275+137) out of 630 times for an overall success rate of 65.4%. Recall that the overall success rate was 58.4% for the model with the intercept only.

<table>
<thead>
<tr>
<th>Observed</th>
<th>Predicted Decision</th>
<th>Percentage Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>stop</td>
<td>continue</td>
</tr>
<tr>
<td>Step 1 decision</td>
<td>275</td>
<td>93</td>
</tr>
<tr>
<td>continue</td>
<td>125</td>
<td>137</td>
</tr>
<tr>
<td>Overall Percentage</td>
<td>65.4</td>
<td></td>
</tr>
</tbody>
</table>

a. The cut value is .500

Table 7. Classification Table

References


Title: Curriculum Detailing for Online Courses in Applied Education

Topic Area: Curriculum, Research and Development

Presentation format: Paper session

Description
The paper discusses issues in curriculum design and detailing for Applied Education courses which are taught mainly using online format. Applied education, targeted for adults, needs to prepare the graduates to apply the knowledge and skills directly into professional practice. The learning theories and their relevance for developing curriculums for applied education in the online delivery mode is discussed and a strategy for optimizing the content is presented.

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Introduction
This paper discusses issues in design and detailing of curriculum for online teaching and learning of applied education courses. One of the key factors that make applied education programs different than other programs is that “graduates from applied education programs experience a more rapid integration into the labour market as compared to graduates from liberal arts education programs (Adamuti-Trache, Hawkey, & Schuetze, 2006).” The market focus or society readiness of the graduates of applied education has been a driving factor for students to join an applied education program.

In addition to job readiness, other main characteristics of applied education can be summarized as follows.

- The learners are adults
- The learners have a well-defined and preconceived idea about their landing career or career goal.
- The learners come with their own perception of the programs they are joining. The perception may sometimes be completely wrong or it may change with time as they spend more time in the programs and have more insights on the nature of the job.
- The job market is dynamic, interdependent and globalized and the learners need to be prepared for this.
- The learners need not only to equip themselves with the skills that they can apply immediately in solving practical problems in the society but they also need to learn the fundamental knowledge to adapt to the ever changing nature of the job market and the advancement of technology.

Although applied education’s focus is on imparting skills and knowledge that can be applied directly in the society, the depth and breadth of what needs to be taught to achieve the set of skills and knowledge is not a solved problem. The skill, knowledge and expertise relevant today can be obsolete tomorrow. Moreover, the real life problems are unique in nature and the set of skills and expertise required is not only to solve the existing and known problems but also to solve anticipated and unanticipated problems in the field of their expertise and beyond. Therefore, the learners need to acquire broader sets of skills, fundamental knowledge and knowledge in broad range of areas pertinent to the field so that they are competent in applying that knowledge to known, anticipated and unanticipated issues. Defining the depth and breadth of required skills and knowledge is one of the challenges for curriculum design and detailing. Although this is a generic issue for all types of education, this is a challenge for applied education where learners already have a perception of what their goal is and their motivation may decline to learn a content which has no direct connection with their perceived goal of the program.

Online learning of applied education
With the advancement of information and communication technology, there is proliferation of application of online resources in education and learning. Furthermore, many applied education courses
and programs are being offered completely online or with major learning components in online platform. As online education is gaining rapid popularity and more and more learners will be using online platform for learning, applied education also needs to adapt its content to fit in teaching and learning for the online mode. Defining and detailing the curriculum of applied education for online learning has further philosophical and practical issues.

The students in applied education are adults who come with a more or less defined career goal. If they find courses that they cannot establish a direct link with their career goal, they get less motivated to learn. This is a real challenge for online courses, as in online learning the onus is more on students and they require greater degree of self-regulation, as pointed by Kauffman (2015), for better performance. The students may be disengaged from learning if they don’t find relevancy of the content to their career goal.

In addition to the relevancy of the content, the learners also need to be able to process or realize the raw content presented in the form of data or information to a higher order of content in the form of knowledge or wisdom. Ackoff (1989) classified the content of human mind into five categories of Data, Information, Knowledge, Understanding and Wisdom which was presented as a pyramid by Bernsetin (2009). Data is raw symbol, information is meaningful data and knowledge is application of the information. In today’s world of rapidly advancing information and communication technology, there is no scarcity of data. Learners are overwhelmed with data and lack of a structured way to look into the data and extract meaningful information from that data can disengage the learners. A proper facilitation from the instructor in extracting relevant data, analyzing the data to skim meaningful information and laddering the information to arrive at relevant knowledge is required to engage the learners. As students have more onus of learning in online learning, a breakdown of role of learners, facilitators and strategies for interaction with the content are key for encouraging online learners for continuous engagement.

**Learning theories, applied education and online platform**

A theoretical framework for defining and detailing applied education curriculum for teaching and learning in online platform is discussed in this paper. There are many learning theories which have been grouped into three main categories: Behaviorist learning theory, Cognitivist learning theory and Constructivist learning theory (Harasim, 2015, p.9). Mackeracher (2004) points out that behaviorist theory permeates our lives as learners through instructional technology “encompassing the development of sound educational resources such as instructional manuals, self-instructed learning modules (as cited in Merriam and Bierema, 2013)” and so on. Merriam and Bierema (2013) also underscore the fact that “behaviorism is particularly evident in adult career and technical education, business and industry, and the military.”

Against this background, the paper discusses key implications of instructional design in particular, and behaviorist theory in general, in applied education. The paper further extends the context and concept to apply the theories for online learning and teaching of applied education.

**References**


Development of a Gaming Material and a Design Framework for Integrating Career Education into PBL in Mathematics

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ABSTRACT

Several national and international surveys have showed that a very low percentage of Japanese high school students believe mathematics to be useful in daily life. One solution for this problem is to integrate mathematics education into career education but there are few attempts. Therefore, Numazaki and Matsuda (2015) developed a gaming material and a design framework for integrating entrepreneurship education as a part of career education into problem-based learning (PBL) in mathematics. However, results of a trial lesson using the developed material showed that few students acknowledged the importance of utilizing mathematical ways of viewing and thinking. Additionally, few recognized that topic of the gaming material was relevant to their own career planning. Therefore, in this study, we revised and expanded the previous framework, and developed a new gaming material based on the revised framework. Regarding the framework, we added and emphasized utilization of abstraction and symbolization, which offer more mathematical benefits than quantification and visualization. Moreover, we emphasized the association of mathematics education with career education focused on cultivating basic and general abilities required for career development. Regarding the gaming instructional material, we changed the topic from preparation of a business plan for opening a bakery to proposing a new ice cream product in a company in order to emphasize the importance of mathematics in broader business contexts. In addition, clear indications for prompting utilization of mathematical ways of viewing and thinking are in all the processes.

INTRODUCTION

A very low percentage of Japanese high school students think that mathematics is useful in daily life, and they do not want to work in areas that require learning outcomes of mathematics education (National Institute for Educational Policy Research 2007). PISA’s 2012 survey (OECD 2012) revealed that Japanese students’ motivation for mathematics learning was the lowest in the world. This issue was recognized and addressed as early as 2009, when the Japanese Nation Course of Studies (NCoS) was revised, and problem-based learning (PBL) was introduced into the Japanese curriculum, namely Mathematics 1 (a compulsory subject) and Mathematics A. However, it is doubtful that PBL in mathematics will play the expected role in the new curriculum. Matsuda and Matsuda (2011) pointed out that the problems in the NCoS guidebook and in the textbooks authorized by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) were inadequate for cultivating students’ ability to apply learning outcomes to problem-solving in everyday life.

Therefore, Ito and Matsuda (2013, 2014) developed instructional materials for PBL in mathematics by introducing gaming methods into some topics related to daily life, and have verified the materials’ educational effects. However, Ito and Matsuda do not solve a problem of students do not want to work in areas that require learning outcomes of mathematics education. One solution for this problem is to associate mathematics education with career education.

In Japanese schools, career education has been conducted mainly during Time for Special Activities and Time for Integrated Study. The Central Council of Education (2011) stated that the purpose of career education is to prompt students to become socially and vocationally independent through cultivation of their basic, general abilities, including 1) Ability to establish relationship and community, 2) Ability to understand and manage oneself, 3) Problem-solving ability, and 4) Career-planning ability. These basic and general abilities should be cultivated in each subject area, paying attention to the connection between subject and career education.
However, as Shimomura (2008) stated, career education in Japan is not associated with subject areas; it is instead focused on providing knowledge about workplace experiences, and the four basic abilities listed above are not always consciously included.

Based on the above discussion, Numazaki and Matsuda (2015) proposed a topic cultivating entrepreneurship through mathematical PBL. They examined and proposed a design framework for gaming instructional materials, and developed a gaming material that provides learners with the mission to create a business plan. Their framework is based on Ito and Matsuda’s (2013) framework, and is designed to provide education on three elements: problem-solving scripts, ways of viewing and thinking, and domain-specific knowledge. Matsuda (2013) stated that these three elements correspond with Bruer’s (1993) statement that general strategies, meta-cognitive skills, and domain-specific knowledge are all elements of human intelligence and expert performance.

![Figure 1: Numazaki and Matsuda's (2015) framework for integrating entrepreneurship education into mathematics education.](image)

However, results of a trial lesson using the developed material showed that although students understood the usefulness of mathematics in society, few acknowledged the importance of utilizing mathematical ways of viewing and thinking. One reason for this is insufficient instruction in mathematical ways of viewing and thinking; another is insufficient incorporation of abstraction and symbolization, which offer more mathematical benefits, in contrast to quantification and visualization, which are easy but low-level mathematical methods.

Additionally, Numazaki and Matsuda (2015) selected entrepreneurship education as a part of career education; the topic of the instructional gaming material was creation of a business plan to rebuild a family business. However, few students recognized that this topic was relevant to their own career planning. For successful integration of mathematics and career education, the versatility and effectiveness of mathematics learning outcomes in other contexts must be emphasized. This necessitates a redesign of the gaming material based on the above points.
PURPOSE

In Japanese schools, career education has been conducted mainly during Time for Special Activities and Time for Integrated Study. In this study, we expanded Numazaki and Matsuda’s (2015) framework, emphasizing the association of mathematics education with career education, and improving issues found in the trial lesson. In addition, we developed a new gaming material based on the expanded framework.

ASSOCIATION OF BASIC AND GENERAL ABILITIES WITH MATHEMATICS EDUCATION

As mentioned previously, basic and general abilities comprise four elements: “ability to establish relationship and community,” “ability to understand and manage oneself,” “problem-solving ability,” and “career-planning ability.” The primary purpose of mathematics education, alternately, is acquisition and utilization of mathematical knowledge. Mathematical ways of viewing and thinking are also included, playing a role in connecting acquisition and utilization of knowledge. Therefore, we integrate career education into mathematics education to emphasize the association of basic and general abilities with mathematical knowledge, and with Matsuda’s (1993) mathematical ways of viewing and thinking.

Ability to establish relationship and community

The Central Council of Education (2011) states that “ability to establish relationship and community” is the ability to understand one’s own situation; to participate in society by playing a vital role in cooperation and collaboration with others; to proactively build the future society with understanding for the ideas and situations of various others; and to listen to others’ opinions and express one’s own ideas accurately. The council has additionally specified these related elements: “ability to understand another’s character, ability to encourage others, communication skills, teamwork, and leadership.”

We consider as the basis of these elements devices of communication that build consensus by gaining reliance and enhancing persuasiveness. Taibo (1998) defined communication as “success when speaker’s encoding and receiver’s decoding are matched.” Conversely, Hall’s (1980) communication model focuses more on the importance of decoding than of encoding. One additional study suggests that encoding experiences are useful in decoding messages from others (Manstead, Wagner, & MacDonald 1986); thus, experiences of the “encoding” variety are significant.

“Encoding” corresponds in part with “symbolization,” one of the mathematical ways of viewing and thinking. However, encoding in communication has a broader meaning than does symbolization. Matsuda (1993) explained that symbolization is conversion of expressions to language in the real world and to formulae in the mathematics world. However, encoding in communication includes many varieties of conversion among each expansion. Therefore, encoding in communication includes Matsuda’s (1993) described “symbolization, quantification, visualization, and realization,” as well as devices to heighten persuasiveness, such as promotion of understanding by decreasing ambiguity and enhancing redundancy.

Moreover, from the speaker’s viewpoint, structure of messages and concretion of abstract concepts are devices that promote the receiver’s understanding (Sawer 2006). Therefore, abstraction and concretion, along with deduction, induction, and analogy, are used to make structured messages more effective.

Based on the above points, we associate mathematical ways of viewing and thinking with the ability to establish relationship and community.

Ability to understand and manage oneself

The Central Council of Education (2011) states that “ability to understand and manage oneself” comprises the ability to understand one’s own future potential, based on consideration of the questions “What can I do?”, “What do I value?”, and “What do I wish to do?”; the ability to behave positively while maintaining a mutual relationship with society; and the ability to control one’s thoughts and emotions in order to learn willingly for future growth. The council has additionally listed the following related elements: understanding one’s own role, positive attitude when considering the future, maintaining self-motivation, maintaining patience, managing stress, and proactive attitude. Moreover, it states that this ability concerns acting with self-efficacy.

According to Bandura (1986), methods for enhancing self-efficacy include 1) performance accomplishments, 2) vicarious experiences, 3) verbal persuasion, and 4) emotional arousal. He states that “performance accomplishments” are particularly important. Therefore, cultivation of these abilities is an appropriate strategy for enhancing self-efficacy. MEXT (2011) selected PBL as an example to cultivate understanding and management of oneself in mathematics education; it allows students to realize “I can do it if I try.” However, much like the question of the chicken and the egg, it is difficult to tell whether students’
perception of self-efficacy influences their willingness to meet challenges with tenacity, or vice versa. We also consider the perspective gained by performing problem-solving activities useful in enhancing students’ self-efficacy. To this end, we believe that problem-solving scripts and mathematical ways of viewing and thinking should be taught; students should be prompted to utilize these skills and self-evaluate their own levels of mastery, and to recognize improvement in problem-solving results and processes. They will then be able to recognize enhancement in their own problem-solving ability.

However, “problem-solving ability” is considered in the next topic. Therefore, we consider the relationship between understanding oneself and mathematics in this section. Saito et al. (2007) divided the career planning process into three objectives: “to understand my real self,” “to explore my own future,” and “to choose my own career.” Here, the ability “to understand my real self” corresponds with the “ability to understand oneself,” and involves methods such as 1) self-reflection, 2) taking a psychological test, and 3) seeking others’ evaluations. Self-reflection requires cataloging experiences, thinking about them, and considering them in light of test results and others’ evaluations. To this end, individuals must be able to make an analogy of their own aptitude based on the results of others’ self-reflection, to deduce explanation of their own character from test results, and to induce their own character and aptitude from a combination of experiences, test results, and others’ evaluations. Therefore, the necessary mathematical perspectives of analogy, deduction, and induction are associated with the ability to understand and manage oneself.

Problem-solving ability

The Central Council of Education (2011) states that “problem-solving ability” means the ability to discover and analyze various problems at work, to make appropriate plans through this analysis, and to solve the problems. In addition, they have listed the following related elements: “understanding, choosing, and processing information; understanding the essence of things; pursuing the causes of phenomena; discovering problems; planning; attitude to deliver; and ability to evaluate and improve.”

MEXT (2009) stated that “mathematical activities” are important in mathematics education and explained typical mathematical activities: “To find a problem by oneself, to make a work plan for solving it, to analyze and process it, to reflect on the meanings of results, and to expand the results.” Ability to perform these tasks thus corresponds with problem-solving ability. In the latest NCoS, PBL was introduced into the mathematics curriculum in order to promote mathematical activities. Ito and Matsuda (2013, 2014) developed a framework for PBL in mathematics and confirmed its educational effects. This framework emphasized utilization of mathematical ways of viewing and thinking; our new framework also adopts this policy.

Career-planning ability

The Central Council of Education (2011) defines “career-planning ability” as the ability to collect, choose, and utilize information about various ways of living, and to make proactive decisions about one’s career by understanding the value of work, by defining the meaning of work in relation to one’s own positions and roles in life and society, and by properly making use of information about diversified lifestyles.

A traditional career theory, Super’s (1969) vocational development theory assumes that each occupation requires a characteristic pattern of abilities and personality traits. Similarly, Schein’s (1978) study of “career anchors” emphasized career matching. He stated that reflection on the questions “What is one good at?”, “What are one’s needs and motives?”, and “What are one’s values to govern one’s choices about work?” formulates the foundation for a career. However, our new gaming material concerns not self-understanding itself, but instead proficiency in methods of self-understanding, through analysis of the features of one’s company and products.

Various types of career-planning methods exist, one of which is scenario planning (Nishimura 2012). This method has been used by companies making business strategies, and focuses on maintenance of flexibility as the most important consideration. Because our focus is on cultivating basic and general abilities to prepare for a career in the long term, we take a position more like that of scenario planning (preparing for the future with flexibility) than that of Saito et al. (2007) (considering a career plan for the present).

Numazaki & Matsuda (2015) highlighted functional, probabilistic, and statistical ways of viewing and thinking as the mathematical tools necessary for maintaining flexibility in solutions. Moreover, in scenario planning, functions are used in forecasting, statistics is used in understanding scenarios, and probability is used in quantifying and evaluating scenarios. However, to truly understand scenarios, we must utilize not only statistical perspectives but also statistical knowledge, particularly “mean, validation, correlation and effect-cause,” as they correspond to the big ideas (Wiggins & McTighe 2006).
DEVELOPMENT OF A NEW FRAMEWORK FOR INTEGRATING CAREER EDUCATION INTO MATHEMATICS EDUCATION

Numazaki & Matsuda’s (2015) framework consists of three elements: problem-solving scripts, ways of viewing and thinking, and domain-specific knowledge. In this study, we revised that framework with a focus on ways of viewing and thinking (an attempt to solve the issues found in the trial lesson) and on domain-specific knowledge (an attempt to associate mathematics education with career education), as shown in the Figure 2. In the following sections, we explain in detail our revisions to the framework.

Figure 2: The developed framework for integrating mathematics, entrepreneurship, and career education

Ways of viewing and thinking

Based on the issues found in the previous study, we reconsidered the correspondence not only between abstraction and symbolization but also between the whole framework of mathematical ways of viewing and thinking. Based on the Matsuda’s (2012) framework, we defined the correspondence between problem-solving processes and mathematical ways of viewing and thinking as shown in Figure 3.
One purpose of the “goal-setting process” is to understand a problem. In the mathematical problem-solving process shown in Figure 3, it is essential to formalize a problem from the real world into the math world. However, to understand a problem in the real world, one must first consider how mathematical concepts can be used to formalize it. To this end, transformations such as quantification and realization are needed, along with ways of thinking such as specialization and generalization. In the “generate alternatives process,” formalization of the problem is performed via abstraction, and specialization allows the individual to handle the problem mathematically. At this point, a variety of formalization alternatives can exist. In addition, in order to solve these formulas by utilizing domain specific knowledge, variety of alternatives also exist. During the “rational judgment process,” formulas and solutions derived by the generate alternatives process are verified using analogy, induction, and deduction, along with visualization and quantification of solutions. No mathematical ways of viewing and thinking are applied during the “derivation of optimized solution process”; rather, to consider what is suitable, informatic and systematic ways of viewing and thinking are applied. During the “consensus building process,” through which solutions are explained comprehensibly, it is necessary to use transformation of expressions in the real world as devices for communication, as shown in Figure 3.

Domain-specific knowledge

Domain-specific knowledge can be classified as internal knowledge or external knowledge. Internal knowledge corresponds to “big ideas,” as defined in the theory of “Understanding by Design” (Wiggins and McTighe 2006). In our previous study, we considered a revised version of the rational judgment framework originally proposed by Tamada and Matsuda (2004) to be internal knowledge, and knowledge of marketing and pricing to be external knowledge. In the present study, we added the concepts of “mean, variance, correlation, and cause-effect,” major concepts in scenario planning, to the internal knowledge category.

DEVELOPMENT OF A NEW INSTRUCTIONAL GAMING MATERIAL

We developed a new instructional gaming material based on the new framework as described in the following paragraphs. Moreover, clear indications for mathematical ways of viewing and thinking in all processes were added to solve previous issues.

The topic of the new material was changed from preparation of a business plan for opening a bakery to proposing a new ice cream product in a company; this general context should emphasize the importance of mathematics in broader business contexts. We chose ice cream as a product because it will likely be familiar to upper secondary school students.

Goal-setting process

The players’ first task is to understand and analyze the conditions and goals of the problem. Their second task is to determine business plan policies as sub-goals and develop a work plan. Their objective is “to propose a new ice cream product in a confectionery company to solve the problem of stagnant sales.” Their goal is to develop a business plan to produce the new product; the condition given is that the loan must be repaid in three years. They are required to use quantification and realization to understand the problem.
When the players determine sub-goals, they must consider factors such as “decreasing cost,” “assessing risk,” and “maximizing benefit.” They are prompted to use generalization and specialization to consider various benefits by referring to Figure 4, which indicates transformations. When developing their work plans, they must consider the various ways they can utilize mathematics to solve the problem, and the merits of each method. Additionally, they are required to consider what information is needed to generate a business plan, as well as effective collection methods.

**Figure 4:** An example chart to help students formulate problems by transforming

**Generate alternatives process**

During this process, players first collect information according to the plan they generated during the goal-setting process. This information includes the domain-specific knowledge of 3Cs, STP, and 4Ps present in the previous gaming material, and the knowledge of mean, validation, correlation, and cause-effect added to the new gaming material. Players acquire this knowledge while collecting information about “the company, market research, product ideas for ice cream, suppliers, machinery, advertisement strategies, income, and expenditure plan.” The market research topic includes information about both macro environment and microenvironment. “Macro environment” refers to factors such as politics, economics, society, and technology; “microenvironment” refers to factors such as the condition of competitors, market trends concerning ice cream, and customer needs. When collecting information, players can utilize functional perspectives to forecast population and market trends, and statistical perspectives to consider correlation and cause-effect of differences among phenomena as a part of scenario planning. These methods are considered again during the review process even if unused during problem-solving, to emphasize the usefulness of mathematics. To pursue understanding of the players’ own hypothetical company, they are required to use three methods: self-analysis, financial analysis by ICT, and third-party evaluation. During this activity, they are prompted to utilize mathematical ways of viewing and thinking, including analogy, deduction, and induction. To develop an expenditure plan, players must formulate expenditure formats; they are also prompted to utilize abstraction, which was insufficiently covered in the previous study. For market research, players are prompted to estimate customer numbers using abstraction.

Second, players must create a business plan based on the data they collect by way of analogy, induction, and deduction. They are asked to consider main customers, product ideas, suppliers, machinery, points of sale, advertisement methods, regular prices, unit sales, and sales goals. If they did not collect enough information or did not understand the information accurately, product idea choices are limited and mathematical methods unavailable. Regular prices, unit sales, and sales goals are developed using a break-even point provided as an Excel sheet, based on functional ways of viewing and thinking.

**Figure 5:** An example to formulate sales estimation
Rational judgment process

During this process, players are required to revise their business plan to account for any problems that arise related to the three viewpoints in Figure 7 and risk assessment. Figure 7 shows a revised version of the rational judgment framework (Tamada & Matsuda 2004). First, players must ask themselves, “Does this product contain any artificial additives that are banned in foreign countries?” This requires them to consider whether there are any customer-related problems. Second, they must ask themselves, “Have I chosen any defective machines?” Third, they must ask, “Does this plan provoke other divisions’ antipathy?”

When analyzing risks, players consider some potential business scenarios and assess risks based on informatic perspectives and viewpoints. They are required to quantify probability and size of damages for each scenario. They are also required to visualize these probabilities and the size of damages. If size of damages is large, they must consider counterplans. Scenario planning is implemented in this material through all these activities. If players discover any issues during this process, they must return to the generate alternatives process to revise their business plan.

Derivation of optimized solution process

Players choose one alternative as their optimized plan after rounds of progress through the generate alternatives process and the rational judgment process. First, they must consider rights and responsibilities for decision by utilizing informatic and systematic ways of viewing and thinking. They subsequently choose their optimal business plan and specify the reasons for their choice based on benefits and conditions of the problem. At the same time, they must consider which benefits were important, including the benefits of using mathematical or other methods.

Consensus-building process

During this process, players explain their business plan to the decision maker, a manager of the ice cream division. Their explanation must use induction/deduction based on their collected data. Additionally, when explaining risks and counterplans, they must describe their collected data using symbolization. If their explanation meets with approval, they receive feedback from the game and move on to the review process. If not,
they return to the rational judgment process to revise their business plan again, with a time limit. If they are unable to gain approval within the time limit allowed, the system considers the mission failed, and the players move on to the review process.

**Review process**

All of the players’ choices are saved in a log. This provides them with the opportunity to reflect on their activities. The game can also return feedback information based on this log. After receiving feedback, players are prompted to acquire or confirm the necessary knowledge: problem-solving scripts, mathematical ways of viewing and thinking, and domain-specific knowledge such as “mean, validation, correlation, and cause-effect.” The relationship between these ways of viewing and thinking, domain-specific knowledge, and career education are indicated clearly.

**CONCLUSION AND FUTURE PERSPECTIVES**

We expanded a framework for designing instructional gaming materials integrating mathematics education and entrepreneurship/career education. Moreover, we developed new materials based on the expanded framework. We intend to conduct trial lessons using the new materials in the near future.

**ACKNOWLEDGMENTS**

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Assessing Need for New Graduate Programs

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Introduction

Over the past three years, faculty in graduate education at Texas A&M University–Texarkana have completed the proposal process to apply for and receive the university’s first doctoral degree program. The degree, a Doctor of Education in Education Leadership, offers individuals in the region a practitioner-based, web-enhanced degree program designed for working professionals. Establishing a need for the degree program was a step in the process that required major planning, development and implementation. This paper provides an outline of the needs assessment process and suggests a multi-step approach to developing a successful needs assessment.

Background and Need

A&M-Texarkana has a presence in northeast Texas, southwest Arkansas, northwest Louisiana, and southeast Oklahoma. As a comprehensive university, A&M-Texarkana offers 17 undergraduate programs and 12 graduate programs. The region is largely rural, and the university attracts a large population of first generation college students. The enrollment at the university hovers around 1800 with a goal of becoming a regional institution that serves approximately 2500. Over the past five years, the university, previously an upper division and master’s degree granting institution, expanded downward to offer freshmen and sophomores and, simultaneously, entered into a cooperative doctoral program with sister institution, Texas A&M University-Commerce, with intentions of establishing a standalone doctorate as soon as feasibly possible.

The need for a doctoral degree in Education Leadership with a concentration in school administration has been well documented in this region of Texas for some time. Individuals wishing to pursue an advanced degree in this region have had to commute great distances and/or seek out online programs. A&M University-Texarkana faculty and administration, committed to providing this degree, realized that demonstrating that need through a strong needs assessment was a critical first step in insuring that an adequate student base existed.

Steps in Establishing a Needs Assessment

Before a proposal can be developed, approved, and implemented, a demonstrated need must exist. Since 2002, only one new degree program has been approved and established at the university. A careful review of the population that yielded a positive result would be critical to build on for the
standalone program. The suggestions below are meant to assist in the creation of future needs assessments and provide a roadmap for completing such a process.

**Understand what you want to know**

Every successful needs assessment is well defined. The first step is to identify exactly what answers are needed to address the proposal. Questions should be formulated in a manner that provides relevant data on the topic and can be extrapolated for later reporting. In this needs analysis, four major ideas drove the needs analysis:

- Is a doctoral program in Education Leadership (Education Administration) a desirable degree in this region?
- Is there enough interest in this degree in this region to create sustainability of the program?
- What are the career tracks for the persons who indicate interest in pursuing this degree?
- What program delivery format would be most desirable?

**Know your audience**

Successful needs assessments must have a defined target audience. This was possibly the easiest step in creating the needs assessment. Since the proposed degree was in education administration, we determined that the target audience should be mid-level administrators and aspiring administrators in our region’s public schools. With this information, we identified approximately 900 individuals that would receive the survey.

**Understand what others have done**

Understanding what is in the literature on the topic is very important, but always be sure to seek out advice from those in the region who have input (Hunt, 2005). In order to prepare the needs assessment survey and survey delivery format, a review of the literature was Step 1. An abundance of literature on needs assessments exists, and the literature includes plenty of texts to choose from on the subject. Additionally, faculty chose a couple of regional universities that have been successful in similar projects. By interviewing faculty at these institutions, survey questions were modified and refined. This step was
critical in not only understanding what others have done successfully but also helped to clarify what could prove to be unsuccessful.

**Allow ample time to develop the survey**

Fowler (1993) states that, "In surveys, answers are of interest not intrinsically but because of their relationship to something they are supposed to measure. Good questions are reliable (providing consistent measures in comparable situations) and valid (answers correspond to what they are intended to measure)." (p.69) Quantifying the time it will take for a strong survey to be developed is impossible, but it should be understood that much time and consideration is involved in this step. Allow for input from various stakeholders while questions are being formulated and tested. It is critical to make sure the survey questions harvest the data that will provide the support needed before the survey ever begins.

**Identify the survey tool**

Many online survey tools are on the market, so obtaining one that will accomplish the task of delivering questions and collecting data. The best approach is to select a tool that is familiar or is easy to learn. For this effort, Survey Monkey was the most expedient because of its ease of use and its affordability.

**Inform the audience what you need**

When recruiting participants for the survey, make sure the target audience understands why their responses are important to the proposal. Provide enough details to educate, but be careful not to be too verbose. Figure 1 shows the short but concise explanation that was provided to the participants.
**Personalize the requests**

Personalizing the survey request is one of the most important steps in creating a successful needs assessment. Data was assembled into a spreadsheet and included name, current title, school district and access code (along with several other columns) as column headers. Each person was issued a 6-digit access code that must be entered in order to complete the survey. The access code purpose was two-fold: it ensured that only individuals that had an access code could complete the survey and that each access code could only complete one survey. Figure 2 represents the required survey field for access code.

Figure 2: Access code display.
**Remind but be patient**

The needs assessment survey for the doctoral degree was available for completion for approximately 60 days. To urge participants to complete the survey, reminders should be sent out, biweekly, to persons that have not completed the survey. Throughout this time frame, it may be tempting to send email reminders more often but beware of exhausting the participants’ patience.

**Have an opt out**

If an email is perceived as spam, individuals want a way to remove themselves from an email list. If the email list serve is not sophisticated enough to include an opt-out link, take the extra time to remove each person on an individual basis as requested. Doing so will insure that individuals who do participate are doing so because they are interested in supporting the effort.

**Be available**

Participants in the needs assessment may or may not have questions or concerns about the survey, project, or their participation. Timely responses to emails and phone calls regarding the needs assessment are critical.

**Ask the participants if they would like to know more**

Creating a situation where survey participants can elect to provide their email addresses for future contact can prove beneficial in many ways. Having the individuals’ email addresses provide support in two areas: to enable future focus groups and to provide more information to interested individuals after the survey is completed and the data are analyzed. Figure 3 provides an example of how to request an email address for future contact purposes.

Figure 3: Email request situation.
Conclusions

Creating a needs assessment can be a daunting task. However, by completing a very systematic process and attending to details along the way, the process can be simplified and can provide effective results. The survey at A&M-Texarkana yielded amazing results because faculty employed a systematic approach. The survey was sent to 900 participants and approximately 650, or 72% responded. A needs assessment contains several considerations, and each step should be carefully considered. Understanding and implementing the above mentioned steps will help to create a strong and successful needs assessment.
References


1. **Title:** Science Activity using Ancient Data of Natural Phenomena in the Korean Peninsula
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5. **Abstract**

   Every cultural tradition of scientific knowledge and methods are different. In the Korean Peninsula, we have massive material we could infer the past scientific knowledge. The Korean recording history of natural phenomena began about a thousand years ago. We used a sourcebook published by Korea Meteorological Administration titled “Meteorological Records from Ancient Korea including Astronomical and Seismological Records from ≪SAMGUK SAGI (History of the Three Kingdoms)≫ & ≪SAMGUK YUSA (Memorabilia of the Three Kingdoms)≫”. The Samguk Sagi and the Samguk Yusa are the history books (reports) were written in 1145 and 1285, respectively. They contain history of politics, diplomacy, human life, and natural phenomena in ancient country of Korea. The sourcebook contains the natural phenomena recording only from two history books with additional descriptions. This contains 112 meteorological data (including drought, frost, hail, rain, snow, flood, thunder, wind, lightning, etc.), 66 astronomical data (including solar eclipse, comet, meteor, Venus, etc.), and 88 seismological data (including earthquake) from BC54 to AD927. It is sufficient for learning materials as science and history of science.

   We would like to propose a new approach that utilizes the traditional science materials in science education. We introduce a science activity using meteorological, astronomical, and geological data in ancient reports. Students do scientific research like a scientist as selecting, analyzing, interpreting data using the ancient data. This is accompanied by a variety of scientific research methods and inquiry process. Students' research subjects are ‘Is there any periodically features of solar eclipse’s cycle?’, ‘What’s the difference between ancient and today’s earthquake in seismic cycles, distribution and strength?’, ‘Is this true that a school of fish are recorded fell from the sky? Or false?’. Students developed scientific insight could select meaningful information for their scientific research, analyzed scientific data, and interpreted the result based on scientific thinking. Furthermore student understood the scientific result more narrative and contextual. In addition, students found that the ancient recording of natural phenomena are very scientific even if it is rather descriptive and qualitative than analytic and quantitative. It was proved that it is very useful heritage for generations as historical, cultural and scientific.
a. **Title:** Against the odds: Academic excellence of selected schools in the Limpopo Province of South Africa

b. **Topic area:** Educational Administration

c. **Presentation format:** Paper Session

d. There are a number of schools that are regarded as dysfunctional in rural areas of Limpopo Province of South Africa. This is a study of the success stories of schools in these rural areas whose learners and teachers perform beyond expectations against the challenges they face regarding resources and administration. Teachers, learners and community members work in partnership to produce excellent results.

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Abstract

Despite the challenges experienced in schools in South Africa regarding producing excellent academic performance, some schools have managed to produce excellent matriculation results. The aim of this article was to establish the lessons learnt from schools that excel despite odds. We interviewed current school principals, stakeholder leadership including three former school principals of the four schools. The results show the odds against which the four best performing schools in Vhembe excel academically. We established unique contributions that the teachers, school leadership, traditional leadership, parents and community leadership made to the academic excellence associated with the schools. We argue in agreement with considerable literature that the school culture of academic excellence is inherently significant and further indicate how the culture of academic excellence in those four schools was developed over the years.

Keywords: Excel despite odds, best performing schools, academic excellence.
Title of the submission: **What are we really testing?**

Topic Area: **Curriculum, Research and Development**

Format: **Workshop**

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Description: The purpose of this presentation is to present the impact of assessment development on teaching and learning in a K-12 setting. Today more school districts are beginning to develop their own assessments to measure student learning outcomes. This presentation describes the process of how a school district uses assessment development to create district-wide assessments and improve student learning.

**Abstract**

The purpose of this presentation is to present to an audience of K-12 educators the impact of assessment development on teaching and learning. Assessment development is a rigorous process that is often times left to the experts found in large testing companies. Today, however, more school districts are beginning to develop their own assessments to measure student learning outcomes. This presentation describes the process of how a school district uses assessment development to create district-wide assessments and improve student learning.

In response to the demands of creating valid and reliable assessments across multiple subject areas and grade levels, a 50 hour Assessment Development course was created. Informational flyers and Interest Forms were sent out throughout the district to solicit teacher participation in the assessment development process. As a result, there were 38 teachers from a variety of subject areas and grade levels who submitted Interest Forms.
School district personnel from the Department of Research, Evaluation, Assessment and Accountability created four assessment development modules in order to facilitate teachers through process. An overview of these four modules---Creating a Test Blueprint, Item Writing, Test Formatting, and Revisions/Edits will be discussed during the presentation. The presenters will also discuss how the team of teachers will reconvene in the fall to review item statistics after the administration of pre-assessments to students. Once the item statistics are reviewed, the assessments will undergo further revisions and edits prior to the administration of post-assessments during the spring.

The 50 hour assessment development course received rave reviews from teachers who participated. The majority of the feedback was for the course to be a requirement for all teachers within the district. As a result of this course, teachers not only created a valid and reliable assessment, but made the connection between teaching, learning, and assessment. The assessment development process can be a powerful tool used to improve teaching and learning throughout a school district.

The format of the presentation will include an overview of the process and a question and answer period. Individuals who attend this presentation will be able learn the steps in creating an assessment development course that can be reasonably implemented within their school district. Attendees will be able to ask specific questions to presenters on how to implement the assessment development process in their district, school, or classroom.
Is Task-Based Instruction Effective in Promoting English Language Learners’ Literacy Skills?

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Introduction

There are many language teaching methods and approaches developed since the 1970. The revolution began from the traditional methods, such as Grammar Translation method and the Audiolingual method, to a communicative approach that focuses on learners’ communicative competence. With the linguistic demands placed on English Language Learners (ELLs) and that teachers are held accountable for students’ test scores, both general and English as a Second Language (ESL) teachers are now facing a great deal of instructional challenges. Many models, including the theme based model, the adjunct model (Snow, 2001), and the sheltered instruction model (Echevarria, Vogt, & Short, 2008) have been cultivated in light of facilitating ELLs to acquire both content and language, which is also known as content-based instruction (Briton, Snow, & Wesche, 1989). Research has shown that language learners benefit from content-based instruction because they not only need to acquire Basic Interpersonal Communication Skills (BICS) but also Cognitive Academic Language Proficiency (CALP), two terms coined by
Cummins (1981). There are numbers of ways for teaches to integrate content and language instruction (e.g., Celic, 2009; Huang, 2000; Mohan, 1986). Results of these studies show that CBI is effective in helping ELLs acquire both content and language.

Another method derived from the communicative approach is Task-based instruction (TBI) which has received a great deal of attention in the literature of second language acquisition (e.g., BavaHarji, Gheitanchian, & Letchumanan, 2014; Cao, 2012; Li, 2000; Mao, 2012; Miao, 2014; Thompson & Millington, 2012). The results suggest that TBI has a positive impact on learners’ acquisition of a target language. However, a great deal of studies seems to focus on how the method helps learners acquire English as a foreign language (EFL) and/or at a university setting. Limited studies have been conducted to look at how the method promotes younger ELLs’ second language acquisition; more importantly, how do ELLs acquire both content and language skills through task instruction. Thus, the purpose of the present study is to investigate what impact TBI has on developing secondary school ELLs’ language skills and content knowledge. In particular, taking a qualitative study approach, we examined how TBI facilitates these ELLs develop their literacy skills and knowledge. The following questions guided the present study:

1) Is task-based instruction effective in promoting ELLs literacy skills? If so,
2) In what ways does task-based instruction facilitate ELLs writing skills?

**Literature Review**

A body of research has indicated that integration of language and content facilitates learners’ academic and language development (Brinton, Snow, & Wesche, 1989; Marsh, Cenoz, & Hornberger, 2007; Mohan, 2001; Nordmeyer & Barduhn, 2010). In addition, with the
influence of communicative language teaching, applied linguists suggest teachers to use tasks to help students acquire a target language (Brandl, 2008). There are different ways to call this teaching method, namely, task-based instruction (TBI), task-based language teaching (TBLL), task-based language teaching and learning (TBTL), and task-based teaching (TBT). For the purpose of this paper, we will use the term TBI throughout. Advocates of TBI believe that the best way to learn a language is by means of exposure and negotiation of meaning during communicative tasks (Willis, 1996). Nunan (2004) states that TBI is language instruction which “involves learners in comprehending, manipulating, producing on interacting in the target language while their attention is focused on mobilizing their grammatical knowledge in order to express meaning, and in which the intention is to convey meaning rather than to manipulate form” (p. 4). In other words, TBI focuses on students using the target language to achieve an outcome through negotiation of meaning. A task can be categorized as the following types: information gap, problem solving, decision making, jig-saw, role play, stimulations, discussions, and projects all of which stress the importance of interaction and negotiation of meaning (Rubdy, 1998). Skehan (1998) also suggests that a task not only needs to be meaningful and has a purpose, but it also needs to relate to real world tasks.

Several TBI designs have been introduced. Ellis (2009) summarizes the designs and concludes that TBI consists of three stages: pre-task, during task, and post task. Another TBI framework that has received a great deal of attention in the literature is that of Willis (1996), which includes pre-task, task cycle, and language focus. The framework not only focuses on fluency but it also requires accuracy during a task. According to Willis, students receive an introduction of the topic and instruction of the task during the pre-task phase, which prepares them to perform the task. Then, they plan, conduct, and report the task during the task cycle; and
finally with the guidance of the teachers, students review and analyze particular language features and practice them during the language focus phase. As such, TBI offers a pedagogic paradigm in which students are given opportunities to work with the target language from the beginning of a task (Willis & Willis, 2001; 2007).

A body of research has been conducted to examine the effectiveness of using TBI to facilitate English instruction. Studies have looked at whether TBI benefits learners in acquisition of different language skills. For examples, scholars (e.g., Cao, 2012; Li, 2000; Marashi & Dadari, 2012; Miao, 2014; Zhang & Hung, 2013) investigate if TBI facilitates learners’ writing skills by looking at their scores on writing pretest and posttest. Other studies also explore if TBI promotes learners’ reading comprehension (e.g., Mao, 2012; Sidek, 2012), speaking skills (e.g., BavaHarji, Gheitanchian, & Letchumanan, 2014; Torky, 2006), and grammar use (e.g., Furuta, 2002; Thompson & Millington, 212). While all of the results of the studies suggest that learners benefit significantly from TBI, some scholars claim that TBI may not be useful. Ur (2013) argues that language instruction should not focus on one particular method. Rather, it is more effective if teachers design language lessons that are based on the needs of the students as well as the teachers’ experience. In the same token, Swan (2005) also points out that very little research has proven that TBI alone causes successful second language acquisition for students with various contextual factors, especially those in the beginning and intermediate levels who have inadequate exposure of English outside the classroom. Thus, “[t]he naturalistic communication-driven pedagogy characteristic of TBI has serious limitations, especially as regards the systematic teaching of new linguistic material” (p. 397).

Despite the debate of TBI addressed above, scholars continue to examine the effectiveness of the method in various contexts. However, a great deal of studies looks at the
results quantitatively; very few studies specifically examined how and in what ways TBI promotes students’ language learning. Also, the majority of the studies seem to focus on teaching and learning English as a foreign language (EFL) or studying the language in university settings; very few research studies have emphasized how TBI promotes literacy learning in the elementary or secondary level. Thus, the purpose of the study is to investigate how TBI facilitates literacy development of ELLs at the high school level. Specifically, this study takes a slant at how using a task can promote ELLs’ development of writing skills and literacy knowledge, character narration in particular.

Methods

This qualitative case study took place in an ESL course at a public high school in the Northeast region of the USA. The emphasis of the course was on grammar, reading, writing, listening, and speaking with variety content topics. In other words, the class focuses on integration of language and content instruction. For this study, we selected Willis’ (1996) TBI framework that consists of pre-task cycle, task cycle, and language focus. Before implementing the task, the students were asked to write a narrative of a character of their choice from the book *Run Away Home* (McKissack, 1997) that they had previously read. This piece of writing served as a pre-test for this study. Upon completion of the task, the students were asked to revise their writing based on what they had learned during the task and their revision served as a post-test. The pre and post-test writing samples produced by the participants were graded using a rubric which focused on character description, language use, and mechanics developed by the teacher. The participants’ essays were then analyzed to examine how TBI benefited the participants’ development of writing skills and literacy knowledge. The details of the task are described in the section below.
Participants

The ELLs at the school were divided into three levels based upon a proficiency test upon admission to the school or previous transcript grades if they had ever taken ESL. The three levels were either beginner, intermediate and advanced. The participants of this study were from the intermediate class. A total of four students were selected from the class because they were able to participate in the whole process. Of the four participants, there were one Spanish speaking student, two Arabic speaking students, and one Chinese speaking student. Two students were in 9th grade and two were in 11th grade. The length of time that the participants had stayed in the United States at the time of the study ranged from two to nine years.

Task Design

Data were the two essays that the students produced before and after the task. They served as pre and post-tests for the purpose of this study. During the pre-task cycle, the teacher explained to the students what a narrative was and showed them writing samples of narratives. The students were also introduced the task they were to perform during the task cycle. The task consisted of three steps. First, the students discussed the character they selected during the pre-task cycle with a peer and the teacher. Then, they were asked to conduct a self-critique on the character narrative that they produced during the pre-task cycle following the guidelines (Appendix 1) given by the teacher. The guidelines mainly focused on what the students thought of their own writing in general. After that, the students were to share their writing with a partner and provided feedback on each other’s writing based on the guidelines given (Appendix 2). This set of guidelines emphasized the students’ language on character description. The task was communicative in that it reflected on what the students would possibly encounter in real life. In
other words, the skills involved in the task were important parts “of readiness for college, careers, and life in the 21st century” (Achieve, 2015). During the language focus phase, the teacher selected a grammar feature that she deemed the students needed to pay additional attention to according to their performance in the pre-task and during task cycles. In this case, the present participle was selected. The teacher provided feedback on the grammar feature as a class. She also conducted one-on-one meetings in which the students were given examples of correct usage of the present participle as well as character development using the grammar feature. The students were then instructed to examine their writing, implement present participle phrases, and strengthen their character description in the second essay. Their writing samples were analyzed to examine how TBI facilitated their development of writing narratives. Findings are reported in the following section.

**Results**

Based on the analysis of the participants’ writing samples, four themes were generated. They are: character description, language use, use of present participle, and sentence structure. Findings were presented in a narrative format supported by the participants’ output from the writing samples.

**Finding 1: Character Description**

In regards to writing narratives, almost all of the participants wrote a summary of the chosen character or the story rather than writing a descriptive piece about their character in the pre-test. However, there was an increase in character description in all of the participants’ post-test. The major difference between the two essays in terms of character description was that characters in the pre-test were very one-dimensional and reactive, instead of having their own
thoughts or background story and being proactive which could be seen in the pro-test. The below experts from one of the participants illustrated such improvement:

Pre-test: “His grandfather, the chief of the tribe, could not help it. They took all the fresh guys, among them was Sky.”

Post-test: “His grandfather, the chief of the tribe, could not help. He was old and he felt scared inside, even when in that moment he looked so brave. They took all the young men, among them was Sky.”

In addition, the use of adjectives was improved overall. The number of adjectives used in the pre-test was limited. However, the participants made good use of adjectives in the post-test to describe their characters to make them more descriptive. For example,

Pre-test: “The students of hit say, “Mr. Ben we would remember it…”

Post-test: “The abused students replied, “Mr. Ben, we would remember it…”

Finding 2: Language Use

Verb choice appeared to be one of the major difficulties in the participants’ writing samples. There were problems in the use of consistent verb tenses and correct subject-verb agreement in all of the participants’ writing samples. Such a difficulty appeared frequently especially in the pre-test. Although the difficulty of using appropriate verb phrases diminished in the post-test, the problem still existed. For example, the sample below shows an inappropriate use of verb tense and subject-verb agreement. A participant wrote in her post-test,

“Before Sara were born, she has a child who was exposed to this sickness, so she knew this better than anything else.”
On the other hand, there was a slight improvement of using verb phrases in the post-test. For example,

*Pre-test:* “Every day Sky live in School dormitory, his mom and father both are farmer, was so poor.”

*Post-test:* “Every day, Sky lived in the School dormitory, his mom and dad were both farmers, and were so poor.”

Besides verb phrases, some participants’ vocabulary seemed to expand comparing to the pre-test. They attempted to use more advanced-level vocabulary to describe the character’s feelings as well as actions. The examples below from two of the participants show the improvement of vocabulary use to describe the sad feelings of the characters in the post-test.

*Pre-test:* “Papa explained to them the situation and they all were so sad.”

*Post-test:* “Papa explained to them the situation and they all were dejected.”

*Pre-test:* “Sky said “By” to the family and looked very sad to Sarah.

*Post-test:* “Sky said “Bye” to the family and looked very mournful toward Sarah.

**Finding 3: Use of Present Participle**

In the pre-test, the participants’ writing samples lacked sentence variety. Most of their sentences were simple in structure. After the task cycle, the participants not only attempted to use more adjectives in the sentences as previously mentioned in the finding section, but there was also a clear increase in the use of sentence variety in the majority of the participants’ post-test. In terms of using present participle phrases, only two participants attempted to use this
feature in their narrative writing during the pre-test. After the task cycle and language focus on the correct usage of present participle, despite the fact that not all of their attempts were correct, all of the participants increased their use of present participle in describing their characters in the post-test. One participant had one correct use of the feature out of four of his attempts, while another participant had only two attempts with one used correctly. The experts below illustrated the participants’ use of present participle phrases in their writing.

“Thinking so much about it, Sky became dizzy and lost his consciousness.”

“Sky remembered his little brother’s death, wishing he returns again.”

“Sky and his family quickly got ready with their pipes, sacs and everything, escaping from their land.”

**Finding 4: Sentence Structure**

All of the participants had difficulties producing correct sentence structure in their pre-test and pro-test. Such problems include the incorrect use of punctuations, pronounce, and double use of verb in a sentence. These occurred frequently in the pre-test. Although, the inappropriate use of sentence structure still existed in the post-test, there was an immense improvement in syntax. The experts below demonstrate this fact.

*Pre-test:* “When In 1887 Sky was forty year old, he with his family live in a country.”

*Pro-test:* “In 1887, Sky was fourteen years old, he lived with his family in the country.”

*Pre-test:* “Every day Sky’s family need to go to the fields to work very hard they make was not much money, but can allows them to eat three meals for a day.”
Post-test: “Daily, Sky’s family needed to go to the fields to work very hard as they did not make much money; but it allowed them to eat three meals a day.”

Overall, the majority of the students’ pre-tests were not advanced in their academic language and mechanics. There was also a lack of character description in all of the participants’ writing. In the post-tests, all of the participants’ writing was longer and there was more of an attempt of writing with an expanded vocabulary and with more complex sentences, especially present participle phrases. The majority of the participants’ post-test showed that they thought deeply about how to link character actions/motivations with their present participles.

Significance of the Study

Based on the findings of the study, it appeared that TBI is effective in promoting ELLs’ writing skills. Such a method facilitated the participants’ learning process in that it encouraged interaction among the students as well as between the students and the teacher. More importantly, the participants’ character descriptions and language use improved. Implementing TBI in writing instruction allowed the participants to think deeply about the characters by using more adjectives and present participle phrases rather than merely summarizing what they did in the story.

Previous research (e.g., Wong, Armento, & Staggard, 2015) reveals that ELLs need adequate guidance to distinguish the difference between summary and narrative writing. The findings of the study also showed that the participants lacked knowledge of such differences despite the fact that the teacher had discussed with the class the features of narratives and showed them examples during the pre-task cycle. This suggests that in order to make good use of the time spent in the pre-task cycle, more attention needs to be given when introducing narrative
writing to students by setting specific lesson objectives during the pre-task cycle so that teachers can assess students’ understanding of what a narrative is before proceeding to the task cycle. This way, students will have a clear expectation of the type of writing they will be producing before being introduced to the task they will be performing. As such, teachers can pay more attention to a selected language feature during language focus phase. Such findings also suggest that instructional assessment should not be ignored in each cycle within task-based instruction.

The lack of proficiency in the language withholds ELLs’ ability to use vocabulary or sentence variety to express their ideas in the writing process (Peregoy and Boyle, 2013). In the study, the researchers used TBI to help the participants acquire present participle phrases in hopes of increasing their sentence variety that assist them to express a main idea and its complementary idea, while painting a more vivid, in-depth character with regards to their thoughts and actions. The analysis of the post-test indicates that the participants constructed increasingly complex sentences that reflected their developing thoughts. Although all of the participants attempted to apply present participle in their post-test, only one student was able to apply all of the phrases correctly. What could have been done differently in this procedure was to have students create several instances of present participle phrases, and then have their peers check the phrases, and re-interpret them back to the creator. In this way, struggling students can consult with their peers to check the intended meaning and feel encouraged to provide more specificity in their narratives.

While composing narrative essays, asking students to flesh out characters or depict settings, ELLs may struggle to construct such full-bodied descriptions, or strain to convey the thoughts of their characters with intricacy. To achieve descriptions, the participants in this study often created sentences that contained many verbs, but often, of inconsistent tense; the result is
that their intended meaning is not communicated smoothly due to multiple verb disagreement. Therein existed a common problem – elongated sentences with the aim of expressing extended idea, but inhibited by too many verbs that did not connect their main and supporting ideas. In other words, they produced run-on sentences with incongruent verb issues. On the other hand, a few participants presented the opposite issue. They did not include enough details in their essays, but still used excess verb tenses.

Research suggests that form-focused instruction benefits ELLs’ academic writing skills (Carlo, August, McLaughlin, Snow, Dressler, Lipman, Lively, & White, 2004; Ferris, 1995; 2002; Genesee, Lindholm-Leary, Saunders, & Christian, 2006; Stuart, 1999, Wong et.al, 2015). In this study, the teacher provided one-on-one meetings with each participant in which she discussed character development as well as the use of present participle during the language focus phase. The participants’ improvement in the post-test could be highly related to the form-focus instruction and the discussion about the characters with the teacher. However, all the participants had difficulties using verb phrases correctly. Even though the language feature focused in this study was present participle, students need to be able to use basic grammar structures before moving onto complex sentences. Thus, going back to basic grammar instruction is necessary (Wong et. al., 2015).

Conclusion

In this study, we examined the effectiveness of TBI in facilitating ELLs’ literacy skills, particularly in narrative writing at the secondary level. Our findings indicated that TBI promote ELLs’ writing skills in that through performing the task, the participants’ character description and language use improved. The learning outcomes of SLA and literacy knowledge through TBI
are two folds: the participants not only gained knowledge in the use of present participles, vocabulary, the use of adjectives, albeit errors continuously existed, but their writing skills of character description also improved. As suggested in this study, TBI is beneficial in promoting ELLs’ literacy skills. However, it is important for teachers to have specific instructional goals during the pre-task cycle so as to make sure students have a solid understanding of the task and background knowledge needed for them to perform the task. In addition, it is necessary for teachers to assess students’ ability to use previously learned grammar before introducing new and advanced grammar features. All in all, acquiring literacy skills means that students need to have knowledge on various ingredients. The results of the study imply that task-based instruction is effective in facilitating ELLs’ literacy skills, but it requires teachers’ careful planning and more than one task maybe necessary in order to see significant progress.
Reference


ENTREPRENEURIAL LEARNING: EXPLORATION INTO EDUCATIONAL STRATEGIES FOR OWNER MANAGED SMALL FIRMS

Proposal submission for the 14th Annual Hawaii International Conference on Education

Abstract:
Research studies are now available which focus on organizational learning strategies for large corporate entities in the private sector. The concept of learning and organizational structures has been an evolving process since its inception by Chris Argyris. Drawn from Kurt Lewin’s System Theory and organizational development research in the 1940s, organizational learning provides a framework for learning to become a continuous, iterative process (Morgan, 1997). Organizational learning in small business enterprises (SBE) is discussed in the literature as an underserved area of training and development. Additional research is needed to further understand and explore how to policy makers, private businesses, educators, and other institutions can effectively support current SBE, and provide theoretical and practical data for entrepreneurial education programs (Gibb, 2009; Rae and Carwell, 2005, Cope, 2005).

The panel presentation will align itself with literature that examines entrepreneurial and small business internal and external processes and strategies that promote or inhibit personal and organizational learning (Kempster and Cope, 2010; McKay, 2001). Specifically, this session examine some of the work of prominent researcher who has contributed significantly to the awareness, practice and education of small business owners globally. Additionally, we will explore entrepreneurial learning strategies in the context of social constructivism and action learning in small businesses.
Both entrepreneurship and learning is inherently constructivist, behavioral and social processes. The term entrepreneurial learning therefore means learning to recognize and act on opportunities, and interacting socially to initiate, organize and manage ventures. Based upon the review of the literature, our panel will discuss four (4) areas of learning in the full lifecycle of successful entrepreneurs in an effort to generate ideas and feedback to broaden the perspective on learning in owner managed small business.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Description</th>
<th>Theory and Models Referenced</th>
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| Entrepreneurs / Small Business Owners | Entrepreneurs who own and manage the day to day operation and core service offerings of their venture | System Theory  
Organizational Learning  
Entrepreneurial Processes |
| Entrepreneurial Learning      | The process of how entrepreneurs recognize, identify, and act on opportunities that create and release value in the exploration (Rae & Carswell, 2001). | Experiential Learning  
Situational Learning  
Action Learning  
Critical Reflection  
Self-directed Learning |
| Social Learning               | Self-directed, self-learning networks which requires trust, autonomy, confidentiality and the building of relationships which allow for honest and progressive discussion and feedback of business problems. (Brett et al, 2012) | Community of Practice  
Social Learning Networks  
Team-Based Learning |
| Entrepreneurial Leadership    | Leadership development in entrepreneurial ventures reflects a complex social process of becoming. Learning process is inherently contextual and shaped by various leadership enactments and observations present in the entrepreneur’s environment. (Kempster and Cope, 2010) | Action Learning  
Self-Direction  
Leadership Identification  
New Venture Creation  
Succession Planning |

The US Census recorded over seven million businesses with less than 250 staff paid over 3.3 million in payroll expenditures in 2012. These U.S. small businesses employed about half or
56.1 million of the nation’s private workforce in 2012 (SBA, 2014). Understanding the significant impact small business has on the US economy, there is limited in-depth analysis of how entrepreneurs learn to become leaders of their enterprise. And what external learning strategies owner managed small firms (OMSF) use to develop personally, and the impact leadership development has on the organization (Kempster and Cope, 2010). The session will summarize entrepreneurial learning and learning strategies used by small business owners for sustainability and growth to better understand learning opportunities that address not only the objective or “what” of training, but the “how” and “why” in the processes of learning.

References:

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Title of submission
Comparison of shirts collar shape and images between real and 3D simulation

Topic area of the submission: Cross-disciplinary areas of Education

Presentation format : Poster session

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Proposal of my paper
This research is to look into various women’s shirts collar drafting methods and to recognize the difference by comparing shape of collars of clothes made in real and 3D simulated images. It intends to offer basic materials for pattern draft of shirts collars by making it possible to predict real collar shapes with 3D simulated images based on those data.
Comparison of shirts collar shape and images between real and 3D simulation

SuJoung, Cha
Major of Fashion, Department of Beauty Design, Woosong University

1. Introduction

Recently, the application of 3D clothing CAD program is increased to save time and cost of various design development for being set up to customer’s eye level. So, it is very meaningful to find out differences between real and 3D simulation clothes.

Thus, this study is to look into various women’s shirts collar drafting methods and to recognize the difference by comparing shape of collars of clothes made in real and 3D simulated images. With that, it intends to offer basic materials for pattern draft of shirts collars by making it possible to predict real collar shapes with 3D simulated images.

2. Method of study

1) Design for study: The design for this study is the shirts collar of dual structure that is composed of band collar and shirts collar.

2) Shirts collar terms

(1) Shirts Collar: In this study, it is defined to only collars which stand collar and shirts collar form one collar.

(2) Upper Collar: It is defined to collar that makes up of upper shape connected to stand collar.

(3) Raising Size of Stand Collar: It is a raising size from center front vertically for drawing shirts collar.

(4) Collar Drawing Space: It is a drawing space between stand collar and upper collar.

(5) Outside Length of Collar: It is a decision line of collar shape from upper collar center back line to collar point.

(6) Outside Angle of Collar: It is a decision part of shirts collar end shape which is an angle of the upper collar edge.

(7) Inside Angle of Collar: It is an angle for line that determines the end shape of the collar, which is an angle between upper collar and stand collar (Figure 1).
3) Making experimental clothes
(1) Using program: DC Suite Version 5.0 program from Seoul National University Digital clothing center was used to make 3D clothes for this study.
(2) Making experimental clothes
A. Making real experimental clothes: The material used in this study is 100% cotton muslin for excluding influence factors for visual evaluation.
B. 3D simulation: After making pattern in 3D, data which is applied properties of muslin is compared to real one.

Table 1. Name of Experiment Clothes

<table>
<thead>
<tr>
<th>No</th>
<th>Methods</th>
<th>Real</th>
<th>3D simulation</th>
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<tbody>
<tr>
<td>1</td>
<td>Kang, Sook Nyeo</td>
<td>A1</td>
<td>B1</td>
</tr>
<tr>
<td>2</td>
<td>Oh, Soon &amp; Lee, Eui Gil</td>
<td>A2</td>
<td>B2</td>
</tr>
<tr>
<td>3</td>
<td>Im, Ji Young</td>
<td>A3</td>
<td>B3</td>
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</table>
4) Evaluation scale: The 25 items for the evaluation to measure shirts collar image are selected by extracting 25 adjectives from previous studies (Jang, 2004; Kim et al., 2010; Lee, 2009). Using seven point scale, high grade is for positive image. For example, if suggested image of photo is close to ‘clear’, it has 7 point but if it is close to image of ‘untidy’, it is 1 point.

5) Data Analysis: In this study, data was statistically analyzed through the SPSS WIN 18.0 program. One-way ANVOA was performed for comparisons of image evaluation by shirts collar and Duncan's multiple range tests were performed for comparisons of shirts collar image. T-test was performed to compare shirts collar image between 2D and 3D.

### 3. Results

The results of this study to find to various women’s shirts collar drafting methods and to recognize the difference by comparing shape of collars of clothes made in real and 3D simulated images. It intends to offer basic materials for pattern draft of shirts collars by making it possible to predict real collar shapes with 3D simulated images based on those data, is as follows.

1) The results of comparing shirts collar shape, it had some differences between real and 3D simulation pattern in spite of using same drafting method. The angle of collar to collar is proportioned the length of collar to collar. If the angle of collar to collar was small, the length of collar to collar was in proportion to short at real clothes but it had not to apply at 3D simulation pattern. Also, it had differences between inside angle and outside angle of collar.

2) The results of comparing fitting condition between real and 3D simulation clothes, three-dimensional effect of 3D simulation cloth had difference with real cloth. The collar shape had some differences in fitting condition


4) The results of evaluating real collar image, suit and office look’s collar of having professional, neat

4. Conclusion

This study found out complement parts for commercialization of 3D simulation clothes as looking into differences of image and pattern between the real and 3D simulation. Also, it offers useful information since it is possible to understand differences of image and pattern shape depending on the drafting methods.

However, because this study was accomplished one item of shirts collar, there will be limits to apply for all clothing. Therefore, studies for various clothing items will be in need.

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Laboratory of covering construction in Bunka Women’s University, translated Park, H. S. (1987), Covering Construction-Theory, Seoul: Kyungchunsa, p.228.
1. Title: Exploration on the Implementation of Mathematics Content Standards for High Schools

2. Topic Area: Mathematics Education

3. Presentation Format: Oral Paper Session

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7. Description:

This study mostly explores the current status about the implementation of mathematics content standards for high school in Taiwan. Collected data come from the math teachers’ surveys in high schools. In addition, researchers examine and compare the Common Core for USA and the Syllabus for Singapore.
Abstract

This study mostly explores the current status about the implementation of mathematics content standards for high school in Taiwan. These standards were modified and published for Grade 10 to Grade 12 students in 2010. Basically, these standards are absolutely important because the domains of math textbooks and later assessments are determined accordingly, so they have great influence on students’ learning. In fact, reforms in math education have been made over past two decades. Many changes are visible indeed, including curriculum, pedagogy and assessment. Particularly, many countries including Taiwan pay much effort in the reforms of curriculum.

Both of quantitative and qualitative data are collected and analyzed in this study. Most data come from the math teachers’ surveys in high schools. Some selected face-to-face interviews are also included. In addition, researchers examine and compare the following two documents which contain what students are expected to learn: (1) USA: Common Core State Standards for Mathematics (Published in 2010) and (2) Singapore: Primary Mathematics Syllabus and Lower Secondary Mathematics Syllabus (Implemented from 2007). Some findings and implications will be shared and discussed in the presentation.

Key words: learning expectation, opportunity to learn, guidelines(or standards).
The challenges of Integrated Curriculum (Beane, 1997) in a new school: A Principal’s view

Curriculum, Research and Development

Paper session

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Setting up a brand new elementary school with limited resources is a challenge. Trialling a new model of curriculum, James Beane’s model of Integrated Curriculum (1997) using a democratic approach, which had not been used schoolwide in New Zealand before, proved to be another challenge. In this reflective narrative, the Foundation Principal of this new school, shares the evolution of the model and the unexpected results it brings.
The challenges of Integrated Curriculum (Beane, 1997) in a new school: A Principal’s view

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Background:
The journey towards Curriculum integration first began when I was appointed as a Lecturer in a Bachelor of Teaching programme, in a well known New Zealand University. The programme I was employed to work in, used James Beane’s model of Curriculum Integration (p. 8, 1997) as a way of training teachers. Whilst I took the first year students through the traditional compartmentalised New Zealand curriculum documents (1993), as a member of the teaching team, I had a fast track learning experience about this model of curriculum which was the basis of the second and third year students learning. I then attended the Innovative Teaching and Learning Conference in Invercargill in 2003, and listened to Beane himself, and observed his wife Barbara Broadhagen in action, with a random group of local students. What I saw fascinated me, and began to whet my appetite to read and study more about this innovative model. The opportunity to put this knowledge (that I had begun to accumulate into practice), came three years later, when I was offered the chance to set up a brand new school, in a small rural setting, in a picturesque location, in the South Island of New Zealand.

Process:
The new school began with two classes and I was fortunate enough to be able to take one of our University graduates, who had won a position there, with me as a teacher in the school. As it was a brand new situation, the model of Curriculum Integration needed to be explained carefully to the Establishment Board (who were very excited about it), the parents and the students when they began at the school. Fortunately, the other classroom teacher, who had been working for many years experimenting with inquiry learning, found that this model provided, what she felt, was a logical next step.

Subject matter from the local context (personal integration) formed the initial basis for the children’s studies as there was much to do and set up, and the surrounding environment was very beautiful, and loaned itself to exploration in an integrated way. As it was a Special Character school, students then began to ask questions about the world around them more, the impact of our actions, about the environment, global warming and what they could do to solve issues in these areas began to emerge.
A group of five year olds decided to fundraise each month, to sponsor a World vision child, middle school children set about cleaning up the shores of the nearby lake, while senior students wrote to the City Council about the introduction of traffic lights in a busy intersection in the town, as part of their developing problem solving skills, which emerged from asking these questions.

Other skills such as social integration, began to emerge in students through opportunities to demonstrate citizenship, working collaboratively in groups and developing increasing self discipline for the students. The results of this integration was that as a school staff, we seemed to spend minimal time on behavioural issues and most of our time on learning. This was an unexpected positive spin off from the Curriculum Integration model.

Like Beane’s model of Curriculum Integration (1997), the model we used was student designed, (in that the children had the power to make decisions about what they studied), i.e. they suggested questions they wanted the answers to, and then they voted as a group over a few days to narrow this study question down, until there was agreement within the group about the specific questions to be answered in their study. The areas studied were generated from students’ personal and social concerns, by asking the students what questions they had about the world, or about themselves? What did they wonder about? What kept them awake at night?

These questions were grounded in the concept of democratic education (Beane, p. 50, 1997) with all students having one vote on what they should study, and with all voices being heard. In this way they began to develop the values of social justice and equal views for all. Respecting others was part of the school ethos which was based on the notion of treating others as you want to be treated, and the fact that while at school, students understood we worked together and supported one another as a family. There was a strong focus on inclusion in the school and involving everyone, no matter who they were, and as the school grew, so too did the number of students with special needs.

In this way, (as in Beane’s model) personal and social integration skills as well as a focus on democracy, dignity and diversity (pp. 8-9, 2005) were key components of the model developed.

The benefits of adopting the Curriculum Integration model were that student development needs were met, by providing intellectual challenge, and there was a greater sense of power and control provided for students over what they studied. Student initiated projects, particularly fundraising and ideas to reach out beyond themselves, also seemed to be increasingly prevalent.

This sense of involvement and control, led to a decrease in the occurrence of behavioural incidents in the classroom, due to higher interest levels by students. The other benefit of adopting this approach, was the fact that students had greater freedom and a greater range of ways in which they worked, making learning more interactive and providing greater flexibility in what they studied, how they studied it and how they presented their work and how it was assessed. Effectively students were involved at every step of the process and had a voice at each level.
Community experts were invited in to talk with students, providing community involvement in the school and this meant networks and connections were established locally, leading to an increase in the profile of the school which resulted in a growing presence in the community and roll growth.

Evidence of the development of democratic citizenship and entrepreneurialism increased in the students at the school over time. One savvy student offered to pay other children to vote for her question, which she really wanted answered! This made staff realise that some children very quickly grasped the notion of democracy and the power of the vote. Five year olds reaching out beyond themselves to sponsor a child (who was not as fortunate as they were) clearly demonstrated increasingly levels of citizenship and awareness about the world. The living of the values in the school and children’s willingness to move beyond the school and help in the community, for example cleaning up the lake and planting trees, demonstrated their citizenship not just to staff but to parents and others outside the school. Social action became an integral component at the end of each unit studied by the students, demonstrating to them the power they can have to be agents of change.

Over time, community stakeholders bought in more to the process, as they understood the Curriculum Integration model and began to see the benefits in the lives of their children. Weekly newsletters from the school (which were also given out at the library/church and available online), explained what the children were studying. Each term an invitation was extended to parents, Grandparents and friends of the school to attend an open afternoon/evening, where the children took their families/others around the school, and explained to them what they were learning. This developed social skills in the children.

Displays of childrens’ work were on the walls all around the school, with explanations of what they were learning, so that any person entering the school could see the Curriculum Integration process in action. The media was invited into school events and again this promoted the school, to the wider community, along with fortnightly assemblies, run by various classes providing an opportunity to showcase their work.

Teacher reports and feedback to parents helped them to understand the process of Curriculum integration and realise the benefits it brought to their children and the authentic learning opportunities provided. Self and peer assessment models involving students feedback became a regular feature of assessment in the school.

As a safeguard to ensure the national curriculum was being covered, staff worked hard to develop a model of curriculum coverage where they tracked back (over the course of a year) the questions studied by students and the curriculum areas these fitted into. In term 4, if there were gaps in curriculum coverage, these were met by deliberate teaching in particular areas, to ensure the requirement of a broad and balanced curriculum was met. The Principal then took this information one step further and developed it into a matrix of coverage at beginning, middle and senior school, to ensure students were not repeating areas over time. This became a most useful piece of information, for the staff team.
Reflecting back:

I believe the use of Curriculum Integration in our new rural primary school was very successful. Learning was described by students as “the best education ever”, others’ said they “learnt so much” and that there was “fun in their learning”. Student behaviour was generally excellent as students were highly motivated and very involved in their learning. As a staff, we were “purists” and this is often the best way to be. It is my belief on reflection, that we were naively successful, we made mistakes at times but learnt from these.

Challenges:

Some parents never seemed to endorse the model. Whether this was passive resistance or apathy on their part is unclear. The Ministry of Education audit review body, (ERO) which visited in the first year of the school’s opening was critical that the model was not fully developed but evolving, however as we explained this was the nature of the process. On their second visit three years later, they were far more complementary. The fact that Curriculum Integration with a democratic approach was a different model and not pre planned by teachers, was a challenge to the way things had always been done in our system and change often creates critics.

When I left the school after four years as Principal, it was in great heart, the roll had quadrupled, staff had a clear understanding of the model and were working together very effectively, and I believed that Curriculum Integration was firmly embedded in the school.
References:


Abstract

We would like to discuss the Adaptive Collaborative Learning (ACL) on the Cloud Services, which integrates different systems and applications into one comprehensive system. The experimental pilot studies conduct on the ACL and provide further observation for applying the ACL. And we discuss the ACL would affect the Learning Fields.

1. Introduction

For many years we have in Japan neglected a focus on encouraging logical thinking and individual creativity in our schools. As a result, education in Japan is often perceived as cramming, with students often tending to avoid tackling harder conceptual problems. Instructors assess students not on originality but whether they adhere to a certain format. Hence, the challenges we face for the future of education are to find better ways to encourage students to think, create their own ideas, and achieve knowledge rather than responding with cookie-cutter predictability.

Project Based Learning (PBL) is an innovative instructional strategy that has been widely applied at educational institutions of variety of levels. PBL encourages students to engage in “real world” problem-solving investigations. It also allows students to autonomously conduct their study in a more constructive manner as well as develop the critical thinking skills of causal reasoning. Likewise, current Knowledge Management (KM) theories and practices have in many ways played equally important roles in corporations and educational institutions. KM and education share the same philosophies that play critical roles at many organizational levels that require an efficient understanding of their collective information and knowledge.

In this article, we would like to emphasize the importance of combination of PBL, KM, and Collaborative Learning on the Cloud and the incorporation of technology into education. We also would like to demonstrate how our approach enhances student skills and abilities by introducing case studies conducted at Chuo University in Japan. We describe the mechanism of human intellectual development and knowledge structuralizing process by studying topics in cognitive science as possible aids for new knowledge creation – categorization, metaphor, and metonymy.

In 21st century society, knowledge has attained independent value of its own. “Knowledge” in the networked society reflects the new value resulting from the dynamic interactions and sharing among knowledge of individuals’ and organizations’. Today, the rapid aging of the population amid
extremely low birthrate is pressing concerns to the Japanese society as it may threaten Japan’s most valuable assets for its established economy, its intellectual resources. Alike, this concern has spread among government, industries, and citizens.

In this paper, we introduce the Adaptive Collaboration Learning (ACL) and discuss its potentials in the new paradigm of the 21st century networked society. It is an innovative information technology system for knowledge creation based on the Cloud Computing and XML Web Services. It is a new system that produces dynamic and valuable interactions among human resources through sharing, interlocking, and collaborating with different types of knowledge.

2. Basic Concept of ACL and XML Web Services

We can envision a future business world where an organization no longer functions on its own but collaborates with a variety of other organizations. In other words, organizations will no longer need to stick to specific data or applications. Rather, they will need to be flexible enough to adopt appropriate objects according to each business model and project. Likewise, in the Ubiquitous Society, continuous innovations are always required, and collaboration and sharing knowledge within and outside of the organization are essential for survival. We can realize this knowledge sharing and management system-Adaptive Collaboration (AC)-by incorporation XML Web Services and iDC (Fig.1).

In terms of applying AC into e-Government and e-Local Governments, it is imperative to build a system as a Social System with the perspectives of users in mind instead of those of the system or service providers. The XML Web Services based e-Government and e-Local Government system will enable AC with utilizing SOAP/XML data sharing, dynamic data linking among governmental bodies, automatic linking and execution between application modules on the Web (Ohashi M. edi., 2004).

The XML Web Services enables us to automatically link the distributed applications online to realize AC. Automatically coordinating applications (objects) distributed on the Web may also present the optimum options for business and public services. Accordingly in the Ubiquitous Society, incorporating iDC and XML Web Services will provide a bridge between the traditional top-down, hierarchical organization and the horizontal business models. (Hori M. & Ohashi M., 2005b)

![Layer Model](image)

3. Experimental Pilot Study on Adaptive Collaboration

3-1. Implications of the study

In the Ubiquitous Society, open networked information systems are vital as they enable people to collaborate with others regardless of location and type of business. In that environment, we will experience shifts in our communications both in terms of quantity and quality. Not only “Human-to-PC,” but a new pattern of “PC-to-PC” will expand the dimension of communications. The information we share with others will include not only textual information but a disparate range of data and information, and including knowledge that is essential for decision making.

Therefore, the primal benefit of collaboration is the sharing of knowledge, information, and data with others. In order to realize this, there needs to be a space or “ba” where a variety of applications help users to produce new knowledge, information, and data that are appropriately shared and re-used among users. We conducted a demonstration experiment to examine technologies that are essential to build this knowledge sharing environment.

The information and knowledge sharing space has two distinctive attributions – static and dynamic. One is that it statically unifies the management of information and related behaviors, and the other is that it adds actions to make it adaptive to the dynamic operation processes. The stored data are structured for the purpose of re-use, hence it is also the “ba” that encourages knowledge recycling.

Since there are many possible operations imaginable that are suited for the Adaptive Collaboration, its goal is to provide users with a workspace to accomplish their own tasks instead of simply offering functions such as word processing or spreadsheet applications. The workspace may offer email and bulletin board services or document management services. The possibilities are infinite as it is also able to integrate specialized applications for each operation into the user interface.

3-2. Requirement and Purpose of the Study

For successful collaboration, it is essential that data, information, and knowledge are continuously stored and can be shared among many individuals. In order to do so, it is critical not only to build a reliable infrastructure and developed network, but also to consider how the data should flow on the network along with how the data should be applied and utilized. For certain fields, it is strongly preferred that contents still be usable without depending on specific applications or software, or when values are changed 100-200 years from today. That is, data and content need to be constantly viewed, utilized, and processed by many users. Furthermore, the system needs to be flexible enough for the distribution and re-use of data and content as they might be stored at dispersed locations at different times.

Therefore, the essential requirements for AC are the following: 1) users are geographically-dispersed and belong to different organizations, 2) knowledge information is easy to store and retrieve, and long-term information storage needs to be safe and secure, 3) knowledge information needs to be available for high-level statistical processing and analysis, and 4) it operates uninterruptedly, and it is low in cost and highly-reliable.

The purpose of the study is to realize the real-time AC environment through data sharing. For this purpose, we conducted the following experiments: 1) a demonstration experiment on the Storage Management which enables users to share information located in the iDC storage, 2) a demonstration experiment on data management by applying XML Web Services into the real-time collaborative work system through data sharing(Ohashi M.,edi,2004,2003a)(Web Services Initiative,2005).
3-3. Experimental Methods

For ensuring the durability and universality of data, it is important to standardize a character encoding scheme and data structure as well as a system that reconstructs and personalizes data according to the need of a user. In terms of data structure, it is necessary to standardize data format that is both open and global for the purpose of information transmission and distribution across the world. In terms of personalization, it is indispensable to consider how to systemize knowledge so that a system could tailor and reconfigure data for each user depending on a situation to utilize stored data. Collaboration can be divided into three categories from the perspectives of a long term use, “ba” on the Internet, and application of the XML Web services technology into digital data: 1) intensive utilization of network infrastructure, 2) network utilization for information and knowledge, and 3) integrated utilization of distributed data in a large area.

In order to realize this open and flexible data structure and information distribution, it is necessary to conduct demonstration experiments in the following ways:

- Providing and integrating an Active utilization environment and a Static, long term environment on the network, an Adaptive space.
  - MAN (Metropolitan Area Network + iDC (Internet Data Center)
- Building an environment with the XML Web Services technology that is independent of a system and application.

In order to examine the feasibility of these mentioned above, we conducted a demonstration experiment. First, we examined the possibility of collaboration among corporations, universities, and research institutions by building an information sharing environment prior to applying XML Web Services into the data management system which utilizes the information stored within the iDC. Second, we examined the effectiveness of the data storage system and evaluated whether the external applications are capable of high-level utilization such as its proficiency of producing knowledge out of information, presenting data effectively, and storing know-how (Fig. 2).

3-4. Results of the Experiment

The demonstration experiment proved that real-time discussion with sharing data and resources among the geographically-dispersed teams was possible. Furthermore, we confirmed that it is
possible to collaboratively edit and process image data between remote locations using a high-speed network.

For the future agenda, if we plan the long-term use of the system, it is necessary to consider how to manage the Web services and how to develop and spread its computer architecture in corporations. In other words, in order to administer the relationship between different Web services on the multivendor delivery platform, it is necessary to consider how to manage many different components involved in this system such as network operation management, service management, and Web Services management including ERP, CRM, SCM, EAI, and, EC.

Physically storing files and data and keeping them readable for a long time do not necessarily mean keeping them understandable for a long time. It is critical for a variety of systems to be able to cooperate in order to process diverse data while extensively accessing meaningful data. To facilitate this, it is essential to utilize a unified meta-standard technology such as XML, and to add autological, self-explanative description onto data themselves.

4. Conclusion

The Adaptive Collaborative Learning, which has drawn attention as a new network system that supports the future Ubiquitous Society. The ACL is capable of functioning with the legacy system that has been widely utilized in organizations while integrating a number of different applications seamlessly. With these beneficial features, more innovative business activities can be conducted such as sharing the order information across the organization, improving efficiency in CRM, risk management, delivery management, profit-cost management, cash flow accounting, balance sheet adjustment, account receivable factoring, updating and comparing the transition of sales, and making strategic decision and setting practical business goals.

The ACL is the most versatile system that facilitates to realize the AC in the Ubiquitous Society. For instance of incorporating the XML Web Services, since it is solely application/system independent, this also assists the flexible coordination with other systems and creates a seamless environment for the user hence it is highly functional as a core system.

The Ubiquitous Society is a society grounded upon the collaboration around human knowledge within organizations and individuals. The biggest bottleneck of the ACL might not be the difficulties in developing the technologies and infrastructures. Rather, it might be the introverted and closed nature of human beings.

Acknowledgement

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Reference


Co-constructing strategies for success with students with Dyslexia in a Tertiary education setting in New Zealand: A Practitioner’s view

Special Education

Paper session

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This presentation outlines the partnership and strategies developed with students to support others with dyslexia, in a range of post-secondary programmes, in a New Zealand Polytechnic.

By working on the provision of a range of approaches, from talking with the students themselves to find out what they needed to succeed, and then getting these students together regularly, they became less isolated and empowered to share ideas with one another. Strategies that worked for different students were demonstrated and shared along with a range of ICT applications to support learning. Working with staff across the institution to build capability in how to support students with dyslexia, occurred at the same time, as well as providing a range of other supports. This paper explores the ways in which students with dyslexia can be supported in post-secondary settings to succeed and the challenges this can present.
Co-constructing strategies for success with students with Dyslexia in a Tertiary education setting in New Zealand: A Practitioner’s view

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Background:

With over 40% of students who are active users of the Disability Support Service at Otago Polytechnic in 2015, identifying as dyslexic, this area became the focus of research and development for the Disability Advisory Service. From professional readings and research, attendance at workshops, discussion with colleagues and partnering with students themselves, a list of strategies along with a range of approaches enabling students to succeed, have emerged.

This presentation outlines the way the partnership developed, along with the range of strategies which enabled students with dyslexia to succeed in passing their assessments at a Higher Education level.

Definitions:

Dyslexia, (which has multiple definitions), is defined by the Ministry of Education in New Zealand as “a spectrum of specific learning difficulties and is evident when accurate and/or fluent reading and writing skills, particularly phonological awareness, develop incompletely or with great difficulty. This may include difficulties with one or more of reading, writing, spelling, numeracy, or musical notation. These difficulties are persistent despite access to learning opportunities that are effective and appropriate for most other children” (MOE, 2015).

Mike Styles from Ako Aotearoa describes dyslexia as “a specific literary condition where people have significant difficulties in reading and writing and spelling” He goes on to discuss the difference between fluid intelligence (ability to think logically and solve problems in novel situations) compared to crystalline intelligence (intelligence based on experience and skills such as reading and writing), commenting that dyslexic people have at least average fluid intelligence, but are limited in their crystalline intelligence caused by phonological decoding issues (Styles, p.1, 2015).

The British Dyslexia Association (2015) defines dyslexia as “a specific learning difficulty that mainly affects the development of literacy and language related skills. It is likely to be present at birth and to be life-long in its effects. It is characterised by difficulties with phonological processing, rapid
naming, working memory, processing speed, and the automatic development of skills that may not match up to an individual's other cognitive abilities”.

Dyslexia affects a broad range of students in different ways via:

- Auditory processing – how the brain recognises and interprets sounds
- Language processing – affecting comprehension/oral language skills
- Visual processing – visual discrimination and visual memory skills
- Auditory/visual integration – ability to follow instructions
- Memory – recall and comprehension skills
- Attention – focus/easily distracted

Reading Rockets, (n.d.)

Process:

The process began when an increasing number of students with dyslexia identified their condition and requested support from the Disability Support Service at Otago Polytechnic at the beginning of 2015. Assessment documentation was provided to the service from each student, and after discussion with colleagues and attendance at Ako Aotearoa workshops around “Supporting Adult Dyslexics in tertiary education and training”, and talking with students themselves, common strategies began to emerge, for what worked for these students.

A support group was established for students with dyslexia at Otago Polytechnic and lunch was provided. An ICT expert was invited to attend to support the use of applications and online support. Initially students were shy and reluctant to share what worked for them, but over time, they became more comfortable with one another and began to share their own successes and strategies. These strategies were recorded and formulated into an evolving list. The ICT expert brought other ideas to the group from online research and demonstrated various functions of computer applications, for example in MS Word, which helped students access these and ideally they were free, so no cost was involved. Other students shared ideas such as using cellphones to video lectures, accessing podcasts, and trialling mindmapping tools to assist with note taking and writing. This group encouraged students to feel less isolated and encouraged them to share what worked well with others, co-constructing a collective body of knowledge together.

Workshops for lecturing staff were then held to build capability in the organisation, in both face to face and online forums and these were run collaboratively by the Disability Advisory and Learning Advisers. Collaborative sharing amongst Lecturers developed an environment where all could learn together (Maori concept of Ako). The Disability Adviser then attended a regional workshop and requested that this area be placed on the agenda for discussion with other Disability Advisers, across the South Island of New Zealand. A sub-group was formed informally as a result of this network, and through email and face to face conversations, once again strategies for success and ICT applications (many of which the students themselves spoke about) were shared, which had the effect of affirming what was already happening at Otago Polytechnic in the area of Disability Support, for students with dyslexia.

Strategies:

Strategies that worked for students with dyslexia as shared by the students included the following:

- Drama helps commit information to memory
- Clearly (part of Evernote) changes fonts, background, overlays, colour
- Dyslexia Friendly (specific font designed for dyslexics in 2014)
Examples of these strategies in action included two Nursing students who requested peer support and additional exam time. Both of these students passed with As and Bs in their exams and feedback, given from the students at the end of exam time, indicated how helpful these supports were for them. An engineering student with Dyslexia and Irlin’s syndrome, passed all of his exams with additional time and overlays, as well as pre-arranged positioning for natural lighting in the exam room, and during class time.

Additional time and the use of Note takers (other students), peer tutors and Reader Writers were provided to other students studying for Sports Management Degrees and Horticultural Diplomas during the semester and this ensured they were given additional support to process information and extra time was provided during exams for the students to process information. They all passed their courses.

A dyslexia friendly environment has a range of characteristics present according to the British Dyslexia Association (2014), such as attention to paperwork, for example, font size, background colour and the availability of overlays if required by students. The use of Powerpoint presentations with pastel backgrounds, Arial fonts of size 12-14, as well as assistive technology, staff training and supportive Managers all combine to create a supportive environment for dyslexics to help them succeed.
Challenges:

Challenges throughout this process involved finding the right ICT expert who would investigate and follow through on student ideas and suggestions. Costs and licensing issues can preclude students from accessing programmes such as Dragon Naturally Speaking, for example, this programme was ordered for two students but in the end they could not afford it. Assessments for students to initially identify as dyslexic are also expensive and this can create a barrier for students to access support in the early stages and to identify as dyslexic.

Summary:

While the list and the group continues to grow, research in the field of Dyslexia is a relatively young discipline. It is vital to continue to share ideas with one another and learn together in order to continue to build on this increasing body of knowledge at all levels for the benefit of those who are dyslexic.

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2016 Conference Proceedings

We would like to thank all those who attended the 2016 Hawaii International Conference on Education. We look forward to seeing you at the 15th Annual Conference to be held in January 2017. Please check the website this February for dates and further details.

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