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ABSTRACT

Technology is changing the face of the differentiated instruction concept. Whether teaching completely online or through a blended approach, differentiation is essential in addressing the diverse learning needs of students. This presentation will help you to develop an understanding of what it means to differentiate online so that you can create exciting, innovative differentiated learning experiences/activities that will actively engage learners in our high-tech world. This session will explore: 1) What tools do I need to support teaching and learning online? 2) What is the Virtual Resource ToolBox? and 3) How can I create my own Personalized Virtual Resource ToolBox for Teaching & Learning online?

Problem

Teaching online can be a challenge. Technology is changing the face of the differentiated instruction concept. 1) What tools do I need in my toolbox to support teaching and learning online? 2) What is the Virtual Resource ToolBox? and 3) How can I create my own Personalized Virtual Resource ToolBox for Teaching & Learning online?

Learning Objectives

As a result of this session, participants will be able to:

- Develop an understanding of what it means to differentiate instruction in the online setting.
- Explore and discuss resources that support differentiation in the online learning environment.
- Begin to Create a Personalized Virtual Resource ToolBox for differentiating instruction in the online learning environment.
- Share resources and strategies (individual toolboxes) that support differentiation in the online learning environment.
- Apply current knowledge of what it means to differentiate instruction in your planning and teaching of an online course.
- Extend and enrich your knowledge and skills in the area of online differentiation.

What Was Done

Creation of a virtual toolbox of tools and how to go about creating your own personal toolbox.

What is going to be shown or demonstrated or offered

Participants will explore the following:

1) What tools do I need in my toolbox to support teaching and learning online?
   What can you differentiate?
   How can you differentiate?
2) What is the Virtual Resource ToolBox?
   Explore tools
   Explore strategies
3) How can I create my own Personalized Virtual Resource ToolBox for Teaching & Learning online?

Engage participants in the start of making their own Personalized Virtual Resource ToolBox for Teaching & Learning.

BIOGRAPHY

Silvia Braidic, Ed.D. serves as a Professor & Coordinator of the Global Online Administrative Leadership Programs at California University of Pennsylvania. Previously she served as the Coordinator of Graduate and Undergraduate Secondary Education at Duquesne University. In addition to her work at the university level, she has experience as a principal and assistant principal. Research interests include teaching and learning in the online environment, differentiating instruction online, teacher supervision in the online environment, and quality matters/course design. She serves as a mentor for the Online Learning Consortium Teaching Certificate Program and is a certified QM Master Quality Matters (QM) Master Reviewer for Higher Ed, Peer Reviewer for K-12, Peer Reviewer for K-12 Publisher, and Continuing & Professional Education Peer Reviewer. Silvia has conducted workshops (for K-12 and higher ed), presented at numerous conventions in the face-to-face as well as online setting, and published various articles.
ABSTRACT

Students’ bullying and harassment have been shown to be a problem of today’s society and more schools around the world are starting to address them. Although much of the attention and research has focused on middle-school students, addressing bullying and harassment in universities is important and makes the object of the present research. We provide an overview of how student versus student bullying and harassment are recognized as a problem, reported, monitored, and dealt with at Canadian universities. Specifically, we identify schools where there is information and policies regarding students’ bullying and harassment; we show what advice and help is offered; we identify what frameworks are used to tackle it; as well, we present other initiatives aiming to prevent it. We also attempt to evaluate preventing measures by linking them with incidence figures. This review may guide future initiatives to prevent bullying and harassment with the ultimate goal of improving the quality of university environment.

Keywords: bullying, harassment, university students, Canada
Common Mistakes Of University Faculty
Shawn M. Bielicki, Liberty University, USA

ABSTRACT
This qualitative phenomenological inquiry examined faculty development and teaching consultation contacts from 78 unique university faculty by an experienced teaching consultant over a nine month period in the 2016-17 academic year. In all, 590 contacts were completed via phone, email, and face-to-face meetings or observations. Data were collected and analyzed by examining all of the post-contact notes and teaching consultant recommendations from the faculty-led informal phone calls or emails, direct classroom observations, teaching consultations, and attendance at faculty development sessions. Data were coded using a grounded approach. Emerging themes were discovered using common word searches and constant comparison. This analytic approach resulted in the descriptive categories of the most “common mistakes of university faculty”. Findings indicated that participants most struggled with (a) planning; (b) mastering their learning management system or technology; (c) setting limits; (d) making personal connections; (e) making learning engaging; (f) classroom management; (g) organization; and (h) managing discussion. Implications highlighted the need for additional faculty training and support in these areas. Suggestions for future research are provided.

Keywords: Qualitative, Phenomenology, Faculty, Mistakes, Personal Connections, Passive Learning, Classroom Management
Adjustment To College & Business Students: Who Needs Help & Why?
Sherrie Lewis, Saint Leo University, USA

ABSTRACT

Students face a variety of life changes while entering college. Many leave their homes and begin their studies in new cities or towns. Others leave their home countries and seek an education or new life in a different land. These groups of students learn to juggle financial, social, educational and academic responsibilities while attending college. None the less, exposure and interaction with students of various cultural backgrounds is one of the hallmarks of higher education. This study compares the self-reported adjustment experiences of 294 U.S.-born students, immigrant students and international students.
Evaluating The Quality And Effectiveness Of Teacher Preparation Programs

Abstract Of Presentation

Denise Staudt, University of the Incarnate Word, USA

ABSTRACT

In order to prepare teachers to have a significant impact on students and student learning, we must be able to prepare the best teachers possible for our schools. Recent public concern for the effectiveness of teacher preparation programs has sparked renewed interest at the national level on the quality of teacher preparation programs. Evaluating the quality and effectiveness of teacher preparation programs is a necessary ingredient to improved teaching and learning in our schools. The presentation, Improving Teacher Preparation Programs, describes an innovative AACTE project where a cadre of trained consultants will be made available to support teacher preparation programs in their assessment, accreditation and program evaluation efforts.

Recruiting, preparing, and supporting good teachers has a direct impact on the learning and success of America’s students. Research has demonstrated that the most important school factor in a student’s success is a strong teacher. Available research also indicates that high quality teacher preparation is important to student learning. Well prepared teachers outperform those who are not prepared. There is no credible research that shows any advantage to students of having teachers without preparation. Teaching is both one of the rewarding and one of the most challenging jobs. To do it well, teachers need excellent preparation.

Unfortunately, too many teachers entering the field are reporting that they are unprepared for the realities of the classroom even after they complete a teacher preparation program. Too often, teacher preparation programs do not receive the specific feedback they need to improve from schools or the teachers. Therefore, the growing public concern about the effectiveness of teacher preparation programs has sparked a renewed interest in evaluations to gauge the quality of programs. Teaching is both one of the most rewarding and the most challenging jobs. To do it well, teachers need and deserve excellent preparation.

Evaluating the quality and effectiveness of teacher preparation programs is a necessary ingredient to improved teaching and learning. Recognizing the need to improve teacher preparation programs, teacher educators are working to drive needed improvements, which in turn, will improve the quality of teaching in the schools. In response, the American Association of Colleges of Teacher Education has begun cultivating a cadre of consultants to support teacher preparation programs in their assessment, accreditation and program evaluation efforts.

Training for this cadre of consultants included specific courses for consulting (Introduction to the Consultant Credential, Leadership for Consultants, and Communication for Consultants). In addition, consultants must also complete the following courses: Building Quality Assessments, Using Data For Improvement, Creating a Quality Assurance System, Making a Case for Accreditation: Standards and Evidence, Preparing for Accreditation and Leveraging Accreditation for Quality Improvement. After the training, consultants were interviewed by AACTE staff at the AACTE national conference.

Participant Outcomes:

The participants will be able to

- Understand the need for quality teacher preparation programs,
- Describe the AACTE project,
- Understand the benefits and challenges of the project and
- Provide feedback for the project.
A Contrapuntal Teaching Of Sarah Waters’
Fingersmith And Its Movie Adaptation
And Its Pedagogical Effects
Suk Koo Rhee, Yonsei University, South Korea

ABSTRACT

This presentation examines how teaching an English novel along with its Korean movie adaptation will affect Korean students’ critical thinking and intellectual horizon. The source texts chosen for this project are: Fingersmith (2002) by Sarah Waters and its movie adaptation, The Handmaiden (2016) directed by Park Chan-Wook. This presentation focuses specifically on in what ways each of the two texts pedagogically complements the other in classroom context. In order to achieve this aim, this study discusses what kind of agenda the two texts articulate for their respective readership and audience, and how they are similar and/or different from each other. For instance, both texts place emphasis on a same sex relationship. At the same time, the movie adaptation diverges from the source text by adding the context of coloniality, that is, Japanese imperial rule over Chosun, to the class context of the original text. Situated in this context, the two female protagonists’ love for each other takes on the extra significance of transnationality on top of its cross-caste relationship. This presentation examines the significance of this twist for Korean students in classroom and analyzes the way what the students find missing in each of the two texts through comparison affects their understanding of each text.
Instructor Characteristics And Impact On Male Student Motivation In UAE Territory Education
Sultan Ali R. Alkaabi, University Of southern Queensland, Australia

ABSTRACT
This paper presents data obtained from focus groups conducted to investigate male students’ experience of higher education in the United Arab Emirates (UAE). Among the issues discussed by students was the impact of instructors on student motivation and this paper focuses on that issue. Thirteen focus groups were conducted with 83 EFL male students at four government campuses including United Arab Emirates University (UAEU) at Al Ain Campus, Higher College of Technology (HCT) at Ras Al-Khaima Campus), and two campuses (Abu Dhabi and Dubai) of Zayed University (ZU). Students spoke about their instructors’ characteristics, teaching style and the positive and negative impact those sets of characteristics had on their learning experience. The resulting themes from the focus groups show instructors had an impact on student class performance and in some cases led to class failure. Recommendation for better instructor care were suggested to policy makers and instructors to foster a better student learning experience.

Keywords: Teaching Style, Instructor Care, Focus Groups, Motivation.
Do Different HRM Policy Bundles Lead To Different Performance Outcomes Across Multiple Occupational Identities?

Tony Dundon, University of Manchester, UK
Kenneth Cafferkey, University of Razak, Malaysia

ABSTRACT

Existing research on the relationship between human resources management (HRM) and performance outcomes rarely examine or test for reactions from different occupational employee groups (Lepak et al., 2012). Research does show that employee attitudes about the diffusion of certain HR practices may affect attendant outcomes such as employee commitment, satisfaction and discretionary effect which, in turn, can influence organisational level performance results (Kehoe and Wright, 2013). However, a neglected area in this regard is how far - and to what extent - different occupational or employee hierarchies interpret HR policies in similar or different ways. For example, variance can exist between professional, manual, supervisory, technical or executive occupational categories about the impact of HR on employee behaviours. Explaining such potential variation has been limited in extant HRM and Organisational Behaviour research (Jiang et al., 2015).

Using data from a single case organisation from the Republic of Ireland, which employed different occupational categories, the research in the proposed paper will test whether HRM policies and practices that are applied uniformly across multiple employee groups influence commitment, motivation and satisfaction in the different sample groups. The research involved a two-stage process, starting with management interviews to identify the actual HRM practices, followed an employee attitude survey to (n=604) to different non-managerial staff. Cronbach’s Alpha was used to test the robustness of the measures, which included clusters of HR-Performance practices: Training and Development (T&D, $\alpha=0.77$), Performance Reward (PR, $\alpha=0.72$), Employee Involvement and Involvement (EIP, $\alpha=0.80$). Employee outcome measures include ‘commitment’ ($\alpha = 0.62$), ‘satisfaction’ ($\alpha = 0.72$) and ‘motivation’ ($\alpha = 0.60$), similarly used in other related HR-performance studies (Purcell and Hutchinson, 2007).

The findings contribute to social identity theory. The evidence reports that different groups of employees have varied perceptions of, and reactions to, the same HRM practices. Implications for organisations considering HR as a source of competitive advantage are discussed.

REFERENCES


Impact Of Student Mobility On The Labor Market
Laetitia Pozniak, University of Mons, Belgium

ABSTRACT

Many researches focus on salary's determiners (Murnane et al., 2001; Nyhus et Pons, 2003; Heckman et al., 2006; Calvo-Armengol & Jackson, 2007; Almlund et al. 2011; Heckman & Kautz, 2012; Kramarz & Skans, 2012; Branche-Seigeot & Giret, 2013; Drydakis, 2016) and going abroad during your study is one of the variables that can lead to a higher remuneration (Messer et Wolter, 2005).

Other authors highlight that a student mobility can be helpful to make an international career or to get a job abroad.

In our study, we focus on the first job obtained by brand new graduate student. We want to highlight the variables that could influence getting a first job (McMahon, 1992; Murphy-Lejeune, 2000; Messer & Wolter, 2005; Harfi & Mathieu, 2006; Ballatore & Bloss, 2008; Parey & Waldinger, 2011; Rodriguez Gonzalez et al. 2011; Knight, 2012; Gerhards & Hans, 2013; Harfi & Mathieu, 2013; Voin & Gerard, 2013). One of our hypothesis is that international student mobility have a positive impact on getting a first job.

Our paper will present the study of 300 students graduate from our Business School (Warocqué School of Business and Economics – University of Mons in Belgium) from 2010 to 2017.

AUTHOR BIOGRAPHY

Laetitia Pozniak, Ph.D. in Business and Economics, is Assistant Professor at Warocqué School of Business and Economics (University of Mons). She works in the Finance Department. Her researches fields are financial communication, unregulated markets, internet communication, Small-Medium size enterprise and Grounded Theory. Since 2014 she is the international exchange coordinator in Business Faculty.
The Motivations And Experiences Of UK Students Studying In North America
Alexander Seal, University of Surrey, United Kingdom

ABSTRACT

In recent years, the UK government has actively promoted UK students spending a period of time studying abroad as part of their degree. Through undertaking either a semester or academic year abroad, students, the government has argued, can gain valuable intercultural skills for their transition into a global employment market. However, to date, there has been limited research with students who have undertaken mobility programmes. More specifically, there has been little attempt to explore UK students’ motivations, experiences and aspirations for travelling to another country to study. This paper draws on a recent qualitative study with forty UK students who studied abroad for either a semester or academic year. Focussing on students who travelled to North America, I outline and argue that studying abroad articulates with wider discourses of ‘travelling’. Through the narratives of these students, I demonstrate how decisions to study abroad are often made with more emotive motivations, such as excitement and a sense of adventure, rather than academic aspirations. Secondly, I discuss and outline the attraction of North America as a destination for UK students. Through a combination of perceived cultural familiarity and media images, UK students develop vistas or North America as a desirable destination to explore and study. Lastly, whilst previous research in this area highlights that there is often little interaction between local and visiting students, I demonstrate, through my data, that UK students in North America achieve considerable levels of integration with each other. The paper concludes with some theoretical insights into why this might occur.
Observations On The Outstanding Scholars Program At The University Of Windsor Within The Crashworthiness, Impact And Materials Deformation Research Group

William Altenhof, University of Windsor, Canada

ABSTRACT

In 2001, the University of Windsor implemented an Outstanding Scholar Program, serving as a mechanism to involve Undergraduate Students into research activities while providing a suitable stipend to these individuals. The Department of Mechanical, Automotive and Materials Engineering, at Windsor, was eventually added into the listing of eligible participants in 2006. Within the author’s research group, the Crashworthiness, Impact and Material Deformation (CIMD) research group, numerous Outstanding Scholars have been involved in two main areas of study, namely, investigations associated with the design and engineering of testing machines for energy dissipation systems and also the enhancement of safety restraint systems to better protect children in vehicles during transit. The focus of this presentation is on the involvement of students in these two research areas, their specific roles, focus of investigation and responsibilities. Additionally, the benefits to the Outstanding Scholars, supervising professor, other research students, and the academic institution will be articulated in the presentation. Data over the past eleven years provides clear indication that involving Outstanding Scholars into the CIMD research group resulted in (1) students obtaining experience in solving practical problems to complement their undergraduate studies, (2) exposing undergraduate students to research responsibilities, typically not prescribed in their studies, thus enhancing the educational maturity of these students, and (3) enhancing student performance through the research environment as evident in many of these students obtaining co-authorship in peer reviewed publications, obtaining provincial and national level scholarships, and being sought after by professors as graduate students.
Organizational Citizenship Behavior In Professional Sports: Measuring The Dimension Of Organizational Loyalty

Thomas Kernodle, Empire State College, USA

ABSTRACT

The purpose of this paper is to explore Organizational Citizenship Behavior among professional athletes. OCB has been defined as individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate, promotes the effective functioning of the organization (Organ, 1988).

OCB consists of several different dimensions. These dimensions have been analyzed, combined, and divided many times resulting in overlap and redundancy among them. There is often disagreement among OCB researchers about what should comprise the constructs of OCB. While other dimensions of OCB have been studied in the sports industry, there has been little research on the dimension of organizational loyalty. Van Dyne, Graham, and Diener (1994) define the construct of Organizational Loyalty as “identification with and allegiance to an organization's leaders and the organization as a whole, transcending the parochial interests of individuals, work groups, and departments” (p. 767).

This paper will discuss methods to measure organizational loyalty among professional athletes, including various measurement issues, as well as the relevance of organizational loyalty and its impact on team performance.
The Impact Of Manufacturer Power And Distributor Power On Influence Attempts Within Channels Of Distribution

Kevin L Hammond, The University of Tennessee at Martin, USA
Robert L. Webster, Ouachita Baptist University, USA

ABSTRACT

This manuscript reports the results of a national survey of sales managers regarding the relationship of their firm with its distributors. We examine the relationship between the existence of power and the exercise of that power between manufacturers and their distributors. This study is an extension of previous studies and is part of a much larger effort investigating the antecedents and consequences of power, mutual respect, mutual trust, and relationship commitment within manufacturer-distributor relationships.

Specifically, the purpose of this study is to empirically examine the impact of various types of manufacturer and distributor power on coercive and non-coercive influence attempts used by manufacturers and distributors. Accordingly, we form eight hypotheses for testing worded as follows.

H1: Increases in manufacturer power due to (a) corporate role performance, (b) boundary role performance, and (c) sales and profit leads to a statistically significant increase in manufacturer’s use of coercive influence strategies.

H2: Increases in manufacturer power due to (a) corporate role performance, (b) boundary role performance, and (c) sales and profit leads to a statistically significant increase in manufacturer’s use of non-coercive influence strategies.

H3: Increases in manufacturer power due to (a) corporate role performance, (b) boundary role performance, and (c) sales and profit leads to a statistically significant decrease in distributor’s use of coercive influence strategies.

H4: Increases in manufacturer power due to (a) corporate role performance, (b) boundary role performance, and (c) sales and profit leads to a statistically significant decrease in distributor’s use of non-coercive influence strategies.

H5: Increases in distributor power due to (a) strength of the trade area, (b) product customization, (c) switching cost, (d) few distributors in trade area, and (e) sales leads to a statistically significant increase in distributor’s use of coercive influence strategies.

H6: Increases in distributor power due to (a) strength of the trade area, (b) product customization, (c) switching cost, (d) few distributors in trade area, and (e) sales leads to a statistically significant increase in distributor’s use of non-coercive influence strategies.

H7: Increases in distributor power due to (a) strength of the trade area, (b) product customization, (c) switching cost, (d) few distributors in trade area, and (e) sales leads to a statistically significant decrease in manufacturer’s use of coercive influence strategies.

H8: Increases in distributor power due to (a) strength of the trade area, (b) product customization, (c) switching cost, (d) few distributors in trade area, and (e) sales leads to a statistically significant decrease in manufacturer’s use of non-coercive influence strategies.

Means and Pearson correlations are calculated and presented. Regressions are employed to test each of the eight hypotheses.

Results and implications, limitations, and suggestions for future research are provided along with tables for the descriptive statistics, Pearson correlations, and regression analyses.
Web Applications For Learning CUDA Programming

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ABSTRACT

Along with the progress of semiconductor technology, the integration of transistor on a chip has been accelerated, and then most processors currently contain many processing core. Especially, GPUs (Graphic Processing Unit) include more than 3000 cores on a chip. Such applications must be developed by using special programming frameworks, that is, OpenACC and CUDA. For beginners, it is difficult to understand the concept of multithreading programming and many APIs of CUDA. Multithreading programming is completely different from a normal single-thread programming.

On the other hand, a new teaching technique, called flip teaching, recently has attracted a large attention. In order to apply the flip teaching to the programming language education, many exercises for programming are required even as preparation. However, since learners are just beginners, they cannot evaluate programming exercises by themselves. So, In order to overcome such a problem, our tool automatically generates the two kinds of programming exercises: the first is syntax practices for understanding the grammar, and the second is semantics practices for understanding the flow of a program. Then we construct a web-based system that automatically generates a variety of programming exercises by using program templates and script language, such as PHP language. Furthermore, our system can also grade the exercises automatically.

In order to evaluate the effectiveness of our web-based application, the following experiment is carried out as follows, but in order to confirm the effectiveness of our approach, the third step is divided into two types: 1) Learning as preparation (about 23 minutes), 2) Pre-test (8 minutes), 3) A type: Practices (syntax practice (8 minutes) + semantics practice (16 minutes)), B type: second learning (about 23 minutes) and 4) Post-test (8 minutes). Namely, by comparing results of the pre-test and the post-test of A type (using practices of the web application) and B type (without practices of the web application), the effectiveness of our approach is empirically evaluated.

With regards to the syntax issues, the results of the post-test are superior to the results of the pre-test for both A type and B type, so the third phase (both the web application and the second learning) of our experiment can enhance the ability of CUDA programming. On the other hand, with regard to the semantics issues, the results of the post-test are not necessarily superior to the results of the pre-test. Actually, the post-test is somewhat more difficult than the pre-test, so the results of the post-test may be possibly degraded, but the ratio of the degradation of B type is larger than A type. Thus, the second learning (B type) may not contribute to the enhancement of the program understanding ability, so our approach (A type) that utilizes the web application is necessary for learning CUDA programming in terms of semantics issues. Furthermore, we will consider another practice, such as fill-in-the-blank type, to improve both programming abilities and we will evaluate the new practice in the near future.

Keywords: GPU programming, Flip teaching, Script language, Auto-generation, PowerPoint
Teaching Digital Natives, Immigrants, Residents And Visitors In The 21st Century

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ABSTRACT

Technology has fundamentally transformed education and learning in the 21st century. Since January 1, 2001, the beginning of the 21st century, people have been using technology earlier and today it is not uncommon to see toddlers online using hand-held technology. Admittedly, this early access may have changed how they learn (neuroplasticity) as they are constantly stimulated visually and cognitively in a specific and repetitive manner. Content is displayed on fixed and mobile screens at home, school and the community. The past boomer generation and the children of boomers lacked much of this stimulation and immersion in digital realities, and when they assume teaching roles their own educational praxes might be wanting. They need Professional Development (PD) to lead and teach digital learners; to employ digital tools in schools and improve their digital fluency and digital literacy in order to locate new digital confidence.

Keywords: digital native, neuroplasticity, digital literacy, popular culture, differentiated instruction, professional development

At a recent Education World Forum (2015) underwritten by a United Nations organization, participants predicted the next global challenge would be to construct our society in such a manner that “…everyone can create, access, utilize and share information and knowledge, enabling individuals, communities and peoples to achieve their full potential in promoting their sustainable development and improving their quality of life” (p. 22). This challenge is not something that evolved quickly, indeed over the past 25 years, global needs, education, and learning has changed via accountability movements, higher standards based outcomes, advanced curricular expectations and demands for innovative processes, to a point where education is more personal, individualized and arguably more authentic (Ryan & Bagley, 2015).

However, this transformation includes education and also about teaching the Digital Native (DN) who can now learn independently online without educator direction or input in many cases (Savin-Baden, 2015). The DN fits into a group within the millennial generation, born after 1990 that utilize online web resources such as UReddit.com, EdX.org, Google, and You Tube, to locate information, communicate, learn, grow, and advance their own abilities (Neuman, 2016). This generational movement is a response to the incessant infusion and consumption of digital tools in society (Prensky, 2005) which has fundamentally changed 21st century learning environments.

Today many “children use computers or cellular smartphones even before they can read” (Šergo, Bartol, Dolničar & Podgornik, 2017, p. 751) and help adults (Digital Immigrants/Visitors) use the same technology. We see people in their teens that can impact global networks just by hacking into digital frameworks. In fact, Zach Latta, an 18 year old High School student and executive director of Hack Club, “has grown Hack Club to 69 schools so far, and he is intent on continuing to grow that number. The success of Hack Club comes in part from its quick-start mentality that engages students from the first meeting” (Thompson, 2016, p. 18). DNs immerse themselves online and are effortlessly interrelating with technology via mobile devices linked to cyber-space (Neuman, 2016; Wang, Hsu, Campbell, Coster, & Longhurst, 2014).

Digital fluency is vital in order to use digital tools to create, design, and converse (Hsi, Pinkard & Woolsey, 2005; Šergo et al., 2017). Fluency in a digital environment requires authentic skills, meaningful applications and digital capacities (Wang, Wiesemes & Gibbons, 2012). Digital fluency is an ability to apply digital technology and includes “constructing new representational practices, design sensibilities, ownership, and strategic expertise gained, taking a practice-oriented perspective rather than a data, information, or knowledge-centred perspective” (Hsi, 2007,
p. 1513). To achieve digital fluency there need be reliable infrastructure, skilful users, and digital understanding to manoeuvre within ICT frameworks (Ministry of Education, 2013) since current digital fluency may depend upon possession and usage of up-to-date digital tools (Howell, 2014). It is not uncommon to see new curricula that lay out K-12 programs in introductory programming (coding), data collection and analysis (research), and robotics (STEM, STEAM), so students can enhance their digital literacy and computer science skills via reasoning (Massachusetts Department of Elementary and Secondary Education, 2016).

In the background, which quickly become the foreground, White and Le Cornu (2011) claim there has been a change in the characterization of the digital landscape, suggesting it is not about generations, instead the landscape is populated with Digital Visitors (DV) and Digital Residents (DR) along a continuum, as a person can “place themselves at a particular point along this continuum” (p. 1), based on their own digital praxes. This self-categorization via self-identity labelling is common and leads to certain perceptions of self-efficacy. For instance labelling oneself a DV may cause avoidance given certain digital situations in favour of less complicated dated technology. A DV may choose to stay with an earlier version of an operating system since they are comfortable, skilled and agile with the earlier version, for instance continuing to use an older version of Microsoft Word (2010) software. They may believe that they will be less fluent, literate and efficient with the new version hence there is a pause in the digital evolution of that person. DV let technology eclipse their knowledge and skills and this can only cause the person (teacher) to feel less digitally competent, which sadly occurs in education regularly due to the cost of staying current, and professional development limitations.

Fortunately, technology and learning theory currently incorporates and addresses Neuroplasticity, which is the brain’s ability to transform itself via focused stimulation on specific areas which seems to strengthen and change a person’s capacity to learn (Ehiobuche & Justus, 2016; Thompson, 2013). Using some, or even dated technology is still desirable since it is a step away from avoiding technology altogether (DI/DV) which may be the action of a person with inadequate digital fluency and/or literacy (Larson & Marsh, 2015), and can be viewed not as a generational nuance, but more of a distinction within perceived self-efficacy (Ryan & Bagley, 2015; Spencer, 2016).

Purpose

This review was undertaken to examine the current landscape involving frequently used terms and understandings which suggest there are DI, DR, DV and DN, in order to make sense of the unfolding 21st century learner in educational institutions.

Questions

What does it mean to be digitally literate and digitally fluent and how can this help educator’s move toward student centred learning and away from past praxis as teacher centered educators?

Many students have never been without a digital device (Wang et al., 2014) as they were immersed in digital activities and large amounts of screen time since birth (Bittman, Rutherford, Brown, & Unsworth, 2011). Information and edutainment was a click away at any time of the day, in fact sometimes technology acted as a babysitter and kept children transfixed and in front of the screen for hours. Has this immersion impacted their learning style? Recently neuroplasticity theory has revealed how brains have the ability to change in response to repeated experiences (i.e., exposure to digital media) and this has implications for education (MacDonald, 2017).

DN and frequent digital users often expect instant answers, preferring speed, multitasking, nonlinear processing, social learning, and applied (project-based) authentic activities rather than traditional approaches (Thompson, 2013; Wang et al., 2014). The result, many students today appear less motivated and engaged when the environment lacks technology (Wang et al., 2014).

Further, there is a need to explore arguments against DN’s, as many believe there is limited empirical evidence supporting the notion of different learning capabilities (Thompson, 2013; Wang et al., 2014). Can DN’s learn in a deep manner and are teachers failing students by not adapting certain instructional praxes? (Ryan & Bagley, 2015). Do DN’s learn differently (neuroplasticity theory) due to constant exposure to digital technologies? Neuroplasticity,
digital technology, popular culture, learning and instruction are explored as a means to understand, motivate and engage people.

**BACKGROUND**

Learning continues to evolve as digital technology exerts pressure on society (Larson & Marsh, 2015; Thompson, 2017). Learners today opt for self-education via online instruction both formally and informally and as a result they become digitally literate, fluent and proficient, which impacts intelligence since “intelligence is not seen as an immutable characteristic, but as changeable depending on experience” (Hayes & Stewart, 2016, p. 398). Indeed, Spencer (2016) from CORE Education, New Zealand explains the nuances of digital fluency and digital literacy:

Being ‘digitally literate’ means acquiring the skills to make and create meaning, and select technologies to do so. Being fluent requires competencies and capabilities that go beyond the skill level. Someone who is digitally fluent not only selects tools and knows what to do with them, but can explain why they work in the way they do and how they might adapt what they do if the context were to change. (p.1)

In North America the Labour Market Outlook (2015), a pan-Canadian analysis of the computer Technology landscape claims,

811,200 ICT professionals are currently employed in Canada. Under three economic scenarios over a 5-year horizon, a combination of employment growth and replacement requirements produces estimates of total hiring requirements. Under a baseline scenario, cumulative hiring requirements in Canada for ICT talent are expected to be 182,000 by 2019. It is projected that the availability of homegrown ICT talent will not be sufficient to meet these hiring requirements. (p. x)

Given this opportunity it is wise for educational stakeholders to move in this direction to attempt to meet the needs of society by training the DNs in every increasing technology based occupations. Consider the recent actions of Past president, Barack Obama who launched a Computer Science for All initiative in 2016,

... providing $4 billion (U.S.) in funding for states to teach students from kindergarten to Grade 12 to learn coding and other computer skills”(Freeman, 2016, p. 1). Related is the code club with a worldwide (12 countries) network of after-school volunteer run clubs (500 +) that invites children aged 9 to 11 to code via programs such as Scratch, HTML & CSS and Python by making games, animations, and websites (Raspberry Pi foundation, 2016).

Elsewhere, Australia’s Labor party recently invested nine million dollars “to establish a National Coding in Schools centre (NCIS) so that all teachers in Australia have the opportunity to develop their skills, and every student can have access to exciting ways to learn coding” (Australian Labour Party, 2016, p. 1). This decision is very much a case of following others since,

12 European countries already have computer programing and coding as part of their curriculum and a further 7 are in the process of introducing it. Countries, including New Zealand and Singapore are in the process including coding in the curriculum. Computer programming and coding is already part of the primary curriculum in England, Belgium and Finland, Estonia, the Netherlands, Italy and Greece. (Australian Labour Party, 2016, p. 1)

With this global push into cyber-space how does this impact the learner? Profoundly of course, and researchers have for some time considered this question for instance; ten years ago Doidge (2007) suggested the human brain has the ability to change itself via neuroplasticity, which involves stimulating and training areas of the brain to increase learning, aptitude, and intelligence. “Neuroplasticity is the brain’s capacity to reorganize itself by forming new neural connections over the lifespan. The more opportunity students are given to receive, pattern, and unconsciously manipulate new information, the greater the stimulation and regeneration of brain pathways” (MacDonald, 2017, p. 10).
Technology usage provides a constant source of new information, repetition and produces “superior visual skills, hand-eye coordination, ability to monitor multiple processes and react quickly to unexpected events” (Thompson, 2013, p. 13). Which begs the question: How is education responding to these apparent changes? Are teachers changing their pedagogy? And, are educators changing the learning environment so that it is more stimulating, interactive, and engaging for DN’s?

It seems logical that digital literacy practices come easier to DN’s since they have grown up using digital technology and previous generations have also, although to a lesser extent (Larson & Marsh, 2015). This is changing the dynamics of learning (Ng, 2012) as students engage with popular culture online on a daily basis, and educators have the opportunity to capitalize on an innovative teaching mode/tool (Creadick, 2013; Schols & de Haan, 2016). Hall (2011) explains that popular culture engages students in learning, develops students’ critical literacy skills, and challenges students’ societal assumptions about popular culture. If the curriculum is connected to the students’ interests and experiences, it will impact the motivation to learn (De Jesus, 2012), as it helps them find relevance in their academic world (Hall, 2011). Popular culture provides opportunities to make real world connections through the media (Schols & de Haan, 2016) which instigates opportunities to think critically and develop their own positions, opinions, and express their thoughts on social, political, and economic issues (Creadick, 2013).

Differentiated instruction is attractive as a pedagogical tool as it enables the teacher to modify the content, process, and/or product based on the student’s learning profile, interests, and readiness to learn (De Jesus, 2012). Differentiated Instruction is an approach used to adjust the curriculum to meet the needs of diverse students in classrooms (Morgan, 2014; Roy, Guay, & Valois, 2013). This instructional strategy provides content that uniquely challenges students and leads to academic achievement (De Jesus, 2012; Watts-Taffe et al., 2012). However, Teachers need to be provided with adequate resources, (technological devices) in the classroom in addition to PD opportunities to engage students using digital technologies, popular culture, and differentiated instruction as tools (Larson & Marsh, 2015).

**METHOD**

This synthesis unfolded via searches within Google Scholar, Microsoft Academic, RefSeek, ResearchGate, and Educational Resources Information Center (ERIC). Key words were identified and used to explore sites, such as: “DN”, “digital literacy”, “digital fluency”, “differentiated instruction”, “learning in the 21st century” and “professional development of teachers”. Resources within this synthesis were chosen through distillation of abstracts, impact factors and rankings, along with date of publication, since the most current literature was sought.

Some material was housed within ERIC (EBSCOhost); yet this database also housed objects in Scholars Portal, Elsevier Science Direct, DOAJ (Directory of Open Access Journals). Similar key words were used in Google Scholar and the ERIC database including: “neuroplasticity and education”, “digital immigrants”, “professional development for teachers”, “DN”, “popular culture and education”, “differentiated instruction”, and finally, “learning in the 21st century”. Articles were downloaded, saved and organized into themed desktop folders, then reviewed and sorted according to their relevance and date of publication.

**Twenty-First Century Learning**

Research suggests the average person consumes three hundred per cent more information as he or she did in the 1960s (Helding, 2011). The information is greater because technology touches all corners of the world and keeps us informed instantaneously; a standard that has DN’s wanting instant access through their mobile devices (watches, phones, pads, laptops). DN’s want drive-through type service (answers) and expect the same in classrooms (Neuman, 2016). Today technology provides faster downloads and uploads and creates high standards (societal norms) for communication speed, socializing, retrieving information, and learning (Ehiobuche & Justus, 2016), than was possible just five years ago. Prensky (2001) devised the phrase DN to characterize a cohort of children born within the digital age; who have seemingly unlimited access to technology and innovative devices (Kolikant, 2010) which leads to the theory of altered development effecting the very way in which DN’s learn (Ng, 2012; Wang et al., 2014).
It could be a matter of visual literacy as a preferred learning mode rather than the rejection of traditional literacy involving the reading of print (Neuman, 2016). Visual literacy implicates learning by images which seem to align with digital realities where visual stimulation is constant, deep and diverse. Researchers Smith and Chipley (2015) examined DN and found a “. . . positive association between the number and variety of digital tools utilized and students’ growth in confidence and enjoyment as digital learners and producers” (p. 237). This supports the recommendation that “. . . a series of digital projects are required to build confidence as digital learners, because literacies are best developed through repeated exposure over time, in a variety of contexts, and within learning communities” (p. 237). Hence the current trend in education of project-based learning (PBL) that is authentic (real-world problems) and group based. Herein PBL, it refers to a structured learning process that is guided by an underlying question, issue or problem in which students individually or in small groups to research, design, and produce something in response that demonstrates their learning. Entire curriculums, lessons, or even schools may be designed to incorporate PBL into their curriculum and pedagogy. (Beane, 2016, p. 23)

Luterbach & Brown’s (2011) Delphi Study illuminates the importance of technology in classrooms that use new technologies to engage students in higher order thinking skills (HOTS) (Luterbach & Brown, 2011). However many educators are Digital Immigrants (DI), inexperienced and unable to incorporate new technology into their classrooms (Fieldhouse & Nicholas, 2008; Larson & Marsh, 2015). DI and DV may not identify the value of technology in classrooms, instead they get by on the skills they have (Fieldhouse & Nicholas, 2008). DI/DV need to increase their digital literacy and usage in classrooms, to become efficient, effective, and digitally literate (Larson & Marsh, 2015). The change begins with educational authorities such as the Massachusetts Department of Elementary and Secondary Education (2016) who recently concluded:

As digital tools, computing devices, and services become an integral part of the learning environment, and as students gain the knowledge and skills to use, modify and create with them appropriately, new opportunities for learning open up. Dynamic geometric applets, for example, can help students visualize and understand complex mathematics concepts. Simulation software enables students to investigate models of real-world problems, such as climate change and population growth. (p. 4)

DN learning preferences include speed, nonlinear processing, multitasking social learning, and working on activities rather than reading texts as these skills are fostered during their interaction with digital media and technology (Neuman, 2016; Wang et al., 2014). Still, researchers are concerned since DN’s could be inept deep learners who struggle with productive work (Thompson, 2013). Researchers have begun to notice obsessive tendencies, short attention spans and an inability to maintain focus that is disorienting for DNs (Helding, 2011). DN were born into a stimulating digital world that is engaging youth more so than previous generations (Larson & Marsh, 2015). A recent study found several issues teaching DN, such as constant distractions from cell phones, and mobile devices, plagiarism, a need for instant feedback, mistakenly citing non-scholarly sources, and not reading the required course materials (Neuman, 2016). Admittedly, (DN) most students today work at a fast pace which presents opportunities to make errors, while pursuing the most up to date visual stimulation (visual literacy) that connects with their current interests and skills (Larson & Marsh, 2015). Educators must find both time and opportunity to fine-tune teaching praxes and reflect upon cognitive implications of technology on a new generation of DN (Helding, 2011; Neuman, 2016).

DNs and Neuroplasticity

Today, neuroplasticity is an accepted theory (Macdonald, 2017) of neurogenesis; a brain cell process (neurons regenerate), that is continually changing in response to experience and repetition enabling people to improve their motor development, memory, and ability to learn (Eaton, 2010). It is the brains ability to reorganize by forming new connections over the lifespan that has implications for education since manipulated information presented in certain intensities, patterns and configurations “can stimulate and regenerate brain pathways for the user/consumer” (Macdonald, 2017, p. 10). The negative effects of neuroplasticity include fixation after changes have occurred in the brain and have become well established, as “it can prevent other changes from occurring” (Doidge, 2007, p.24). This means that some stubborn habits and disorders are created through neuroplasticity (Doidge, 2007) where we fixate at
some point.

Thompson (2013) suggests DN’s repetitive experiences with digital technologies have impacted cognitive function and Doidge (2007) and Eaton (2010) claim neuroplasticity is exceedingly high in children today as brains are more susceptible to change than adults. It is the intensity of interaction with digital media that is impacting brain development of the very young and altering the learning processes (Thompson, 2013; Schols & de Haan, 2016). It is the constant use of digital technologies that trains brains to excel at “visual skills, hand-eye coordination, and ability to monitor multiple processes and react quickly to unexpected events” (Thompson, 2013, p. 13). Researchers are concerned that DN’s suppress activity in the frontal lobe, a region responsible for planning, abstract thinking, and perspective taking (Thompson, 2013). Educators need be prepared to teach students how to critically evaluate multiple perspectives when interacting with digital media (Larson & Marsh, 2015) to support DN’s as they learn.

21st Century Digital Literacy

Since 2001, technology has advanced at increasing rates and is proving to be an unsettling societal change force in society, and a new form of individualized communicative learning (Buckingham, 2008). Children are quick to master this new form of individualized communicative learning, which is now a cultural norm (Buckingham, 2008). A new literacy rises up, something beyond, or is it within digital literacy? Known as visual literacy, it has a history and is a fast moving body of theory and practice wherein cognitive ability and the affective domain mesh; it is described as an,

ability, skill, and competency; . . . . includes the ability to write (encode) and read (decode) visual communication; . . . . is comprised of skills that are learnable and teachable; [and it] is not isolated from other sensory skills; and . . . . incorporates theories from a variety of fields of inquiry. (Serafini, 2014, p. 23)

Indeed, in our “21st century society – accelerated, media-saturated, and automated – a new literacy is required, one more broadly defined than the ability to read and write” (Jones-Kavalier & Flannigan, 2006, p. 8). Students need digital literacy to become supportive and participatory members of the digital world (Larson & Marsh, 2015).

In the past 10 years students have opted to use “blogging, social networking, game-making, small scale video production, podcasting, social software, and so on” (Buckingham, 2008, p. 85) to communicate with others and,

the development of social networking has led to a new form of communication that is not possible to achieve using solely print-based textual practices such as sending and receiving text messages, short messages, or photographs through instant messaging systems such as Twitter, Snapchat, or Instagram. (Larson & Marsh, 2015, p. 62)

Still, teachers need to address digital media to promote critical thinking (Buckingham, 2008; Francom, Ryan, & Kariuki, 2011) and students will need to “continue to refine their skills in differentiating problems or sub-problems that are best solved by computing systems or digital tools and those best solved by humans” (Massachusetts Department of Elementary and Secondary Education, 2016, p. 30). To be inclusive, students of all “backgrounds should be prepared for personal and civic efficacy in the twenty-first century and should have the opportunity to consider innovative and creative technology-based careers of the future” (Massachusetts Department of Elementary and Secondary Education, 2016, p. i).

Using digital literacies in the classroom enables students to be creative when expressing thoughts and reflections (Larson & Marsh, 2015). Students “have the ability to travel across diverse communities, discerning and respecting multiple perspectives” (Larson & Marsh, 2015, p. 62) in the classroom. Digital literacy challenges encourage teachers to integrate digital tools that can expand literacy skills (Sternberg, Kaplan, & Borck, 2007). For instance, students can access mobile technology such as cell phones, watches, computers, laptops, and iPads to complete reading and writing tasks (Sternberg et al., 2007) which can positively motivate and engage students (Larson & Marsh, 2015).
The role of the educator is altered via digital literacy efforts since “using the same skills used for centuries – analysis, synthesis, and evaluation – we must look at digital literacy as another realm within which to apply elements of critical thinking” (Jones-Kavalier & Flannigan, 2006, p. 9). Even though some (educators) DI/DV may be hesitant to incorporate digital modes into the classroom, fearing they may not have the expertise (Ryan & Bagley, 2015) educators as learners can adopt a student-centred approach and act as a facilitator of project-based learning (PBL) (Larson & Marsh, 2015). Educators still can provide students with motivational feedback to ensure students are thinking critically about their digital information, resources, and forming authentic yet personal connections (Larson & Marsh, 2015). Educators establish a shared, equal learning experience with their students since educators may not be the expert on the topic and will learn from their students (Larson & Marsh, 2015).

21st Century Popular Culture

Popular culture refers to texts, media, computer games, films, popular music, toys and magazines that students use to understand issues in the world (Simmons, 2014). Popular culture practices are embedded in everyday lives, and educators should understand the practices in and out of school (Creadick, 2013). Popular culture creates opportunities for debate and critical thinking about many human traits such as ethnicity, social class, gender, and sexuality (Happel-Parkins & Esposito, 2015). These texts provide awareness and direction for students (Creadick, 2013; Hall, 2011). Popular culture includes and illuminates cultural stereotypes and/or norms (Happel-Parkins & Esposito, 2015) which educators must bring into classrooms to help students develop their own ideologies and understand representations in media (Creadick, 2013; Hall, 2011; Happel-Parkins & Esposito, 2015).

Popular culture and meanings have multiple unfixed interpretations (Happel-Parkins & Esposito, 2015) therefore there is a tension between popular culture and “how people make meaning of themselves, their worlds, and how they view and judge others” (Happel-Parkins & Esposito, 2015, p. 8). When educators utilize popular culture as pedagogy, students engage using examples from current media to express a perspective (Creadick, 2013; Happel-Parkins & Esposito, 2015). This is the first step in getting the students to begin to analyze popular culture (Hall, 2011; Happel-Parkins & Esposito, 2015). The implications suggest students will associate popular culture with schoolwork (Simmons, 2014) and students may define and drive popular culture consumption within the classroom; therefore, the educator is discouraged from interfering and instead listens to what students deem as popular (Creadick, 2013). Educators can facilitate discussions about popular culture and encourage students to think critically (Creadick, 2013). How this is done is often via certain strategic pedagogical modes such as PBL, performances in the form of skits, plays, presentations and group work.

21st Century Differentiated Instruction

Since 2001 Differentiated Instruction (DI) has enjoyed a prominent position in schools and classrooms as it allows educator to modify content, processes, and/or product based tasks to connect with a student’s learning profile, interests, and readiness to learn (De Jesus, 2012; De Neve, Devos, & Tuytens, 2015). Content refers to what the student is learning; process refers to the activities the student engages; and the product refers to outcomes a student realizes to demonstrate knowledge (Watts-Taffe et al., 2012). Readiness is the preparedness to complete the work while a learning profile refers to the students’ preferred modes of learning (Cox, 2008). Student interests can be used to engage and motive students to move forward.

DI is a pedagogical approach matching learning tasks and activities to the needs of learners (De Neve, Devos, & Tuytens, 2015). DI encourages educators to avoid using one instructional approach as they tailor curricula to meet individual needs (De Jesus, 2012; Watts-Taffe, 2012). This strategy is personal, individualized, inclusive, and serves diverse students (De Jesus, 2012). Educators tap into what interests’ students by involving students in the daily events (Subban, 2006). For instance, in physical education where differentiated approaches can be used via flexible grouping, student choice, increased self-selected activities and open access to resources (Rock, Gregg, Ellis, & Gable, 2008; Morgan, 2014) improve students’ performance, learning and skill building. Modifying pedagogy to include diverse learners can increase student engagement (Morgan, 2014) while meeting their learning needs. Classroom activities are built upon student interests and inclusion of life experiences makes it meaningful (Morgan, 2014).
Some educators may believe it is too time consuming to determine individual learning needs of each student and develop personalized curricula for diverse learners while teaching the full curriculum (Rock et al., 2008). Many believe differentiated instruction is too complex (Mills et al., 2014). DIs allow students to learn at their own pace and rate (De Jesus, 2012; Subban, 2006). It is a learner-centered instructional process that does require planning, but is beneficial (Mills et al., 2014).

Educators’ PD

Educators in the 21st century can teach in new ways by using digital technologies, and innovative instructional modes (Koh, Chai & Lim, 2017). Unfortunately, many educators in our 21st century still use the teaching tools and practices they were exposed to as students (Ertmer & Ottenbreit-Leftwich, 2010; Koch, Heo, & Kush, 2012). Professional development needs to be “strongly anchored upon the pedagogical goals of 21st century learning and focused on developing teachers’ TPACK for 21st century learning” (Koh, et al., 2017, p. 13). TPACK (Shulman, 1986) unites Pedagogy, Content, and Knowledge (PCK) as a core of effective pedagogy, causing overlap. Koehler and Mishra (2009) later added dimensionality and technology traits so that individual teachers, grade-level, school-specific factors, demographics, and culture ensure that every situation is unique, and no single combination of content, technology, and pedagogy will apply for every teacher, every course, or every view of teaching. As important, are technology frameworks housing TPACK that support digital fluency in education institutions. Digital fluency frameworks should centre upon: (1) teaching and learning, (2) administrative use of technology and (3) infrastructure requirements and needs (Ministry of Education, 2013).

Educators need to be current, motivated and aware that “effective teaching requires effective technology use” (Ertmer & Ottenbreit-Leftwich, 2010, p. 256). If technology is used, it may be used ineffectively lacking student-centeredness which is currently believed to be most powerful for facilitating student learning (Koh, Chai & Lim, 2017). Teachers need to professionally learn to deal with advancing technology effectively in teaching and learning situations (Ertmer & Ottenbreit-Leftwich, 2010). It may merely be a confidence issue and a fear of falling behind while covering mandated curricula (Ertmer & Ottenbreit-Leftwich, 2010). One strategy to increase teachers' confidence is by helping them gain personal experience; hence PD is necessary yet not any PD, it must be collaborative, meaningful, and applicable to current work (Hunzicker, 2011; Lieberman & Pointer-Mace, 2009). Researchers have determined that collegiality among teachers is very important as teacher community provides support, understanding, and empathy for one another (Lieberman & Pointer-Mace, 2009). Teachers benefit most from learning “that is designed to build on their strengths, their disciplinary knowledge, and their interests - in other words, professional development that is teacher-centred and connected to the teacher’s daily responsibilities” (Upitis & Brook, 2017, p. 95).

Ideally PD opportunities would be provided online and face-to-face with “attention to both content and pedagogical knowledge, a collaborative approach in workshops . . . meetings, emphasis on transforming . . . teaching and learning, hands-on opportunities . . . and an environment marked by collegiality and professional respect” (Upitis & Brook, 2017, p. 104). Without ideal PD Educators can develop their practices by interacting and learning with one another via blogs and video podcasts of instruction aimed at implementing technology based teaching strategies within the classroom (Lieberman, & Pointer-Mace, 2009). This would create an interactive teaching and learning resource that can be used throughout the school jurisdiction and beyond and educators can access this professional development training from anywhere with Internet access (Lieberman & Pointer-Mace, 2009). To some extent this is happening yet there is much more possible.

Educators must be provided with ideal PD opportunities to help build their confidence and provide teachers with information on how to appropriately implement technology using differentiated instruction while addressing popular culture in classrooms (Ertmer & Ottenbreit-Leftwich, 2010). Authentic examples are instructive and will motivate change via support from colleagues and administration.

CONCLUSION

Educators need more PD to support DN’s, as it is crucial for educators to include technology in their teaching practices (Ehiobuche & Justus, 2016). There are three major findings: first, DN’s learn differently than previous
generations of students and this is due to the immersion of digital technologies on their highly plastic brains (MacDonald, 2017; Thompson, 2013). Students of the twenty-first century are more comfortable and intuitive in handling technologies than DI or DV (Prensky, 2001; Šorgo et al., 2017; Thompson, 2013). This is not to say that DI are not capable of using technology comfortably but they need to invest time and effort to explore new technologies in order to learn how to use them effectively in the learning environment (Ng, 2012).

The second finding was that educators must adjust their teaching practices (pedagogy) to meet the current learning (Content/Knowledge) demands of DN’s in the twenty-first century via TPACK (Koh, et al., 2017; Helding, 2011). Educators need to cultivate innovative teaching strategies while being mindful of digital literacy, visual literacy, popular culture, and DI. Digital and visual literacy is very prevalent in students’ lives both inside and outside of school, whether they realize it or not, which can mediate interaction with digital tools, literacy and derivative communication (Brännback, Nikou, & Bouwman, 2017; Larson & Marsh, 2015). Digital literacy may underpin the learning needs of all students in the classroom, yet technology can be used in a variety of ways to support student growth, learning and literacy development.

Popular culture offers promising possibilities for engaging DN and helping them find relevance in their academic world (Hall, 2011). Popular culture also allows students the opportunity to make real world connections through the media, movies, television, and music (Hall, 2011; Schols & de Haan, 2016). This allows students the opportunity to think critically, develop their own opinions, and express their thoughts on social, political, economic issues that exist in the world. DI ensures that every student is successful and comfortable in his or her learning environment (De Jesus, 2012; Watts-Taffe et al., 2012) by connecting the curriculum content to the students’ life experiences values, and personal interests (Brännback et al., 2017; De Jesus, 2012). This would ensure the content students are learning is meaningful.

The last and third finding is that educators need more 21st century (ideal) PD opportunities to enhance their teaching praxes (Upitis & Brook, 2017). Most importantly, it is crucial that teachers believe in their own abilities to implement these changes into their own classrooms; they need to adopt new pedagogical beliefs that incorporate the students’ needs for learning (Ertmer & Ottenbreit-Leftwich, 2010). The educational stakeholders must work on creating an environment that supports this initiative by creating a culture that enables educators to make mistakes, try new practices, and take risks in their teaching practices (Upitis & Brook, 2017). Educators must have support, guidance, and resources readily available in order to help make this change of teaching and learning to support their 21st century learners.

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Gender, School Location, Age, And Subject Combination As Predictors Of Secondary School Students’ Achievement In Mathematics

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ABSTRACT

The study examined gender, school location, age, and subject combination as predictors of secondary school students’ achievement in mathematics in Taraba State, Nigeria using the descriptive ex post facto design. The sample of the study is made of 420 (224 male and 196 female) out of 3,966 students in 12 senior secondary schools in Jalingo Education Zone of Taraba state (2016/2017 academic session). Mathematics Achievement Test (MAT) with reliability index of .86, obtained using KR-20, was used for data collection. Standard Multiple Regression (SMR) was used for data analyses. Finding of the study revealed no significant effect of gender, age, school location and subject combination on students’ achievement in mathematics. The study also found weak correlation for all the predictor variables. Even though school location and sex are negatively correlated, subject combination and age group are positively correlated with achievement in mathematics. All the correlations are not statistically significant at .05 confidence level. The implication is that achievement in mathematics is not predictive on any of these variables. Therefore, it is recommended that teachers, government, parents and all stakeholders in education should discard negative beliefs and practices that tend inhibit good performance, but ensure that students are encouraged (irrespective of gender, age, school location and subject combination) to study mathematics. This will go a long way to reduce the prevalent poor performance in mathematics.

Keywords: Gender, Age, School Location, Subject Combination, Achievement
Contextually Assessing Multinational Global Cyber Business Risk Of Cyberattacks – Corporate Director Liability

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ABSTRACT

Directors of corporations must be well advised on how to make good decisions to protect themselves from liability from cyberattacks. CEO’s, IT managers, members of the Board of Directors are not well informed and need guidance on the subject. It is better to be ready than to get a wake-up call on the topic. On the one hand, with the onslaught of litigation regarding cyberattacks upon corporations, the officers and directors of corporations are not the guarantors of liability. Keep in mind that corporations provide real wages and jobs for people for living. Blaming the corporation for all of the shortcomings of the internet including hacking is not reasonable. On the other hand, there is the duty of due diligence for directors; meaning the duty of reasonable care as opposed to any guarantees. Reasonable care has many definitions in the context of many circumstances and has to be applied on a case by case basis. For example, the duty of care for a director may be different for an act that may be preventable and quite different for an act involving cyberterrorism. This paper has specific legal guidance in the areas of cyber security based on recent federal FTC administrative agency rulings and decisions in the courts of the U.S... Cybersecurity negligence is a question facing many boards and corporations today. This paper involves the legal/business research necessary to delineate the standards of liability for corporations because cyber security breaches are not going away any time soon. Directors operating in their own world who fail to understand the global cyber technological context, risk being accused of defrauding investors for failing to disclose the risk of cyber intrusions that lead to financial losses for breach of fiduciary duty. The most recent events of this nature include Equifax and many more.

Reading this paper is worth your time because: (1) people in shareholder derivative actions sue for non-compliance and receive a percentage of the damages award. A strong line of defense by the corporation is required; (2) the pervasiveness of cyberattacks and the media blitz regarding cyberattacks is a nightmare and will affect customer brand image and stock prices. It can be financially devastating; (3) directors and officers are not well informed of the standard for negligence and can be held liable; most directors do not know that the Federal Trade Commission, a federal agency, has subject matter jurisdiction over cyber security.

Keywords: Director Liability; Fiduciary; Cyberattacks; Hacking; International; Federal Trade Commission; Shareholder Derivative Suits

Domestic and International Corporate Economic Context and Magnitude of the Problem

If the common stock of a corporation dropped by 40%, most board of directors would understand that and take up measures to prevent the loss. Statistical research shows the following: “While there are numerous contributors to the rise in cybercrime -- which is expected to cost the world more than $6 trillion by 2021, up from $3 trillion in 2015 -- the most obvious predictor is a massive expansion of the global attack surface which hackers target. Data remains the primary hacker target. Microsoft predicts by 2020 data volumes online will be 50 times greater today. There are 111 billion lines of new software code being produced each year — which will include billions of vulnerabilities that can be exploited, according to research conducted by Secured Decisions.”

The prevalence is obvious. “Cyberattacks on businesses are now weekly news as breaches of personal information are announced regularly by brand name companies—Target, Neiman Marcus, Home Depot, Jimmy Johns, JP Morgan Chase, and others. Even before the most recent wave of privacy breaches, professionals in the insurance industry were aware of the serious threat posed by cybercrime. However, until recently, many corporate executives did not share the view of risk professionals on the importance of addressing cybersecurity at the board level.”

For the board of directors of a corporation, the risk assessment of assets at so many levels is a never ending battle. Tack on the need to address systematic approaches to address and solve cyber security issues. It is a daunting task; but, how serious is the problem? Only 4% of all data is encrypted. Trying to prevent hacking can be like dealing with an invisible enemy; like chasing a spirit. The negative energy is sinister and serendipitous requiring some sort of transcendent ability to monitor computer systems. The Directors and managers of IT within corporations need to watch out because they are being held responsible for something that they cannot see or control. One thing we know, as the war intensifies, “it” continues to multiply. Data breaches are common everyday occurrence illustrated by one report from the New York Times “Cyberattacks have become an ever-increasing threat. The F.B.I. now ranks cybercrime as one of its top law enforcement activities…”

“Anthem, February, 2015, one of the nation’s largest health insurers said that the personal information of tens of millions of its customers and employees, including its chief executive, was the subject of a very sophisticated external cyberattack. The company added that hackers were able to breach a database that contained as many as 80 million records of current and former customers, as well as employees. The information accessed included names, Social Security numbers, birthdays, addresses, and email and employment information, including income data.”

“Sony Pictures, November 2014, a huge attack that essentially wiped clean several internal data centers and led to cancellation of the theatrical release of "The Interview," a comedy about the fictional assassination of the North Korean leader Kim Jong-un. Contracts, salary lists, film budgets, entire films and Social Security numbers were stolen, including -- to the dismay of top executives -- leaked emails that included criticisms of Angelina Jolie and disparaging remarks about President Obama. President Obama and national security officials have said North Korea was behind the attack.” Staples, October 2014 the office supply retailer said hackers had broken into the company’s network and compromised the information of about 1.16 million credit cards.” JPMorgan Chase, July-August 2014. The computer networks of JPMorgan Chase were infiltrated in a series of coordinated, sophisticated attacks that siphoned off gigabytes of data, including checking and savings account information. JPMorgan Chase said account information of 83 million households and small businesses were compromised. Authorities said the same hackers tried to gain access to the systems of at least a dozen other financial institutions. In the JPMorgan attack, the bank said it found no evidence of any fraud or misuse of customer information. JPMorgan said the hackers got access only to customer email addresses, homes addresses and phone numbers but nothing of a more sensitive nature like Social Security numbers.”

Target, December 2013, in one of the largest data breaches ever reported, hackers stole credit and debit card records from more than 40 million Target customers, as well as personal information like email and mailing addresses from some 70 million people. The Target breach, caused by malware installed on the company's networks that siphoned away customer information, happened during the holiday shopping period. When it was announced, the chain’s traffic and sales took an immediate hit, and its profit for the quarter fell 46 percent. Update: Target agreed to pay $10 million to settle a lawsuit brought by shoppers affected by the breach.”

Before we embark on the legal analysis, putting the problem in the context of making business decisions is very important. “In this initial report we start by asking what we should count in estimating losses from cybercrime and cyber espionage. We can break malicious cyber activity into six parts:

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3 Grandville, K (2015). Nine Recent Cyberattacks Against Big Business. Retrieved from http://www.nytimesinteractive/2015/02/05/technology/nine-recent-cyberattacks.html?_r=0 (Last visited July 18, 2017) such as: “Primera Blue Cross, March 2015, The company, a health insurer based in Washington State, said up to 11 million customers could have been affected by a cyberattack last year. Hackers gained access to its computers on May 3, and the breach was not discovered until Jan. 29, Primera said. The breach could have exposed members' names, dates of birth, Social Security numbers, mailing and email addresses, phone numbers and bank account information. The company is working with the F.B.I. and a cybersecurity firm to investigate.”

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• The loss of intellectual property and business confidential information
• Cybercrime, which costs the world hundreds of millions of dollars every year
• The loss of sensitive business information, including possible stock market manipulation
• Opportunity costs, including service and employment disruptions, and reduced trust for online activities
• The additional cost of securing networks, insurance, and recovery from cyber attacks
• Reputational damage to the hacked company

Put these together and the cost of cybercrime and cyber espionage to the global economy is probably measured in the hundreds of billions of dollars. To put this in perspective, the World Bank says that global GDP was about $70 trillion in 2011. A $400 billion loss—the high end of the range of probable costs—would be a fraction of a percent of global income. But this begs several important questions about the full benefit to the acquirers and the damage to the victims from the cumulative effect of cybercrime and cyber espionage.”

The business costs in the criminal area by itself “on a global level, putting malicious cyber activity in context – Piracy- $1 to $16 billion, % of GDP-.008 % to .02%. Global cyber activity- $300 billion to $1 trillion-.4% to 1.4% of GDP. U.S. Cyberactivity- 24 billion to 124 billion-.2% to .8% of GDP.” As we can see, the need for oversight, order and stability will help corporations manage their businesses better. These statistics present staggering risk of liability.

At the global level, statistics show “not all company directors are well informed about the issue. In January 2015, the UK government's FTSE 350 Cyber Governance Health Check Tracker Report found that only 5% of main boards indicated that they regularly and thoroughly review their key information and data assets. Only 1% of boards were described as fully informed and skilled in respect of cyber security. Similarly, a UK government survey conducted by PwC in 2015 showed that just 42% of 9,700 executives in over 150 countries said that their boards are involved in security strategy, and only 25% said that their boards are involved in reviewing security and privacy threats.”

A strong line of defense by the corporation is required. Chasing the cybercriminal or hacker is costly and inefficient. Brand image distortion caused by a cyberattacks, in some cases multiple cyberattacks costs billions. “Cybercriminals do not steal just data. They also stole up to $1 billion from 100 different financial institutions across the U.S., Germany, Russia, Ukraine, and China over the past two years, security firm Kaspersky Lab reports. According to the FBI's Internet Crime Complaint Center, ransomware--malicious programs that infect a computer or network and hold data hostage until a ransom is paid--has cost companies $18 million in the past 15 months.”

GLOBAL COMPUTER OPERATIONS

The international context presents a different realm of complications for corporations. A study done by Ponemon Institute named factors such as risk, consequences, hacker motivation and what is being done about cybercrime as central to the problem. Hacking is such a complex problem globally let alone coming into the U.S. to do business and having to figure out the boundaries of liability. International corporations need good advice on what can be done to prevent cyber losses.

“The level of risk for cybercrime varies among countries. DoS attacks are considered to pose the greatest risk to organizations. Respondents in the U.S., UK and Hong Kong report they are most worried about denial of service attacks and in Brazil respondents are concerned about viruses, worms and Trojans. Social engineering is the greatest concern in Germany. An average of 43 percent of respondents report SQL injections as the most serious attacks their organizations experienced in the past two years. More than one-third of organizations represented in this research

5 Id at p.3
experienced APTs (35 percent), botnets (33 percent) and DoS attacks (32 percent). Organizations face an average of 66 cyberattacks weekly that cause business disruptions.8

“Respondents in all countries reported the most serious consequences are business disruption and loss of sensitive information, including intellectual property and trade secrets. Of least concern as a consequence of cybercrime, with the exception of respondents in the UK, are diminished reputation and brand name followed by equipment damages.”9

“The hacker’s motivation. While respondents may have different perceptions about which cyber risks are most detrimental to their businesses, they all agree that the primary goal for cybercriminals is financial fraud and/or access to the company’s financial records. In the U.S. and UK, financial gain is followed by theft of customer data. Approximately five percent of security attacks are motivated by political or ideological agendas.”10

“Too little is done in many countries to prevent cybercrime. While the majority of companies have the important security building blocks, such as firewalls and IPS, needed for their security infrastructure, less than half of organizations in this study have advanced protections to fight botnets and APTs. The majority of organizations in the U.S. and Germany are deploying solutions and training that are more specific to addressing cyber risk such as anti-bot, application controls and security intelligence systems. Whereas, other countries represented in this study are lagging behind in their cyber security readiness. Senior executives are more concerned about cyber-attacks and see a greater need to take steps to reduce the risk.”11

“In all organizations represented in this study, respondents who hold leadership positions are more likely than respondents in lower level IT and IT security positions to say their organizations are very concerned and have fully implements and applied security precautions, technology and training.”12

Leaders at the board of director level face the expense and the complex problem of having to turn a consistent profit in the menacing environment of cyberattacks. In other words, chief executive officers of international corporations need all the guidance that they can get given the depth of the problem.

Obviously “Technology must be developed and security measures increased to combat these growing cyberattacks. Tucker Bailey estimates “that over the next five to seven years, $9 trillion to $21 trillion of economic-value creation, worldwide, depends on the robustness of the cyber security environment”13 If cybersecurity measures are not timely, jobs will be lost, and corporations will suffer losses.

“IBM’s new mainframe system, called IBM Z, is capable of running more than 12 billion encrypted transactions per day;

8 Ponemon Institute (May 2012). The Impact of Cybercrime on Business: Studies of IT practitioners in the United States, United Kingdom, Germany, Hong Kong and Brazil Retrieved from https://www.ponemon.org/local/upload/file/Impact_of_Cybercrime_on_Business_FINAL.pdf (Last visited July 19, 2017) Organizations in Germany and the U.S. experience the highest average rate of weekly attacks, 82 and 79 respectively. Brazil and Hong Kong have the lowest frequency, on average 47 and 54 per week respectively. On average, respondents believe 17 percent of machines and mobile devices within their organizations have been infected by an act of cybercrime. The present survey questions were part of a larger omnibus survey instrument (a.k.a. Meta survey) fielded on a quarterly cycle in all five countries. Ponemon Institute© Research Report Page 2; Cybercrime continues to be costly for businesses worldwide. In the aftermath of one cybercrime attack, the cost to investigate, recover brand and reputation and invest in technologies ranges from an average high of $298,359 (U.S. $ dollars) for German organizations to an average low of $106,904 (U.S. $ dollars) for Brazilian organizations. The impact of mobile devices on cyber security risk. The one risk respondents in all countries can agree with is the use of mobile devices such as smart phones and tablet PCs in the workplace. Hong Kong and Brazil report on average the highest percentage of mobile devices infected an act of cybercrime. The U.S. and Germany appear to be the most successful in limiting infected mobile devices. These countries report the lowest average of infected mobile devices and machines connected to the network at 11 percent in the U.S. and nine percent in Germany.

9 Id.
10 Id.
11 Id.
12 Id.
It seeks to address cyberattacks which have compromised financial data, and help firms automate financial regulatory compliance, in line with data protection laws;

IBM’s transaction engine supports 87 percent of all credit card transactions, totaling nearly $8 trillion worth of payments each year.\(^\text{14}\)

“If your corporate business has international origins doing business in the U.S., or you are a U.S. corporation, legal analysis of responsibility takes a complex dimension. “Should states forfeit the remedies that the due diligence obligation provides by denying its application in cyberspace? Consider the DOD Cyber Strategy’s pronouncement that “[i]n a manner consistent with U.S. and international law, the Department of Defense seeks to deter attacks and defend the United States against any adversary that seeks to harm U.S. national interests during times of peace, crisis, or conflict.” No state would adopt a contrary position. Thus, if they hope to effectively defend against any adversary during times of peace in a manner consistent with international law, states would do well to consider not only the costs of the principle, but also its benefits.”\(^\text{15}\)

Here in the U.S. and abroad, shareholders are owed a fiduciary duty; higher than ordinary care. “When considering the board’s role in addressing cybersecurity issues, it is useful to keep in mind the broad owes a duty to the corporation and, more specifically, the board’s role in corporate governance and overseeing risk management. It has long been the accepted model, both here and around the world, that corporations are managed under the direction of their boards of directors. This model arises from a central tenet of the modern corporation — the separation of ownership and control of the corporation. Under this structure, those who manage a corporation must answer to the true owners of the company — the shareholders.” \(^\text{16}\) It is a heightened duty of care. Many of the hidden incisive issues of the cybersecurity lawsuits against directors of corporations have involved compliance with the Federal Trade Commission regulations and the interpretation of the regulations in the courts. “This is actually a legitimate problem in cybersecurity - on top of the existing project management problem - as it is another dimension that needs to be considered.” \(^\text{17}\) With appropriate recommendations that help to manage the risk, corporations may substantially reduce but not eliminate the exposure to liability and our government needs to get its act together.

**JURISDICTION AND TRANSACTIONAL RISK**

For interpretation purposes of the next section of our disposition, there are a couple of caveats of high importance. Practically, jurisdiction is an issue in almost every case and the following is highly indicative of litigation strategies for cybersecurity cases. Likewise, the doctrine of negligence per se applies to any precedent setting administrative or court decision.

“In order for a case to be properly heard, a court must have personal jurisdiction over the parties. If a court is found to not have jurisdiction on appeal, a verdict can be overturned which is a disaster. This can cost millions of dollars in time and effort litigating a case only to find that the court in which the case was heard did not have the authority to decide the case from the beginning. As one can imagine, it is a popular litigation strategy to contest jurisdiction on Appeal because of its summary way to dispose of a case altogether.”\(^\text{18}\)


In short, after the filing of a lawsuit, if the corporation raises the jurisdiction defense after the case has been heard, instead of before the case is heard, it can have devastating financial consequences to the corporation especially in the case of a finding for the plaintiffs.

The violation of a regulation or a statute is negligence per se. “Readers know that alleged violations of state or federal regulations can be used by plaintiffs in a number of ways, including the allegation that the violation constitutes negligence per se under state law.” I n other words, if I happened to be in a car accident and I exceeded the speed limit, the court would presume negligence almost automatically. Based on my experience in the practice of law, the violation of the following standards provided by the FTC interpreted by the courts or any standard adjudicated by a court is highly likely to constitute negligence. The negligence per se doctrinal construction does have a stinging effect on the outcome of a case.

LEGAL LIABILITY-INADEQUATE SECURITY MEASURES-NEGLIGENCE PER SE

Contextually, cybersecurity is the responsibility of many levels of a corporation including the board of directors. Finding solutions that reduce the risk of cyber-security liability to the corporation is a fiduciary duty. It is a well-established principle of law that when one undertakes and action, they will be responsible for the foreseeable consequences of their actions. Another well-conceived principle of law is the following: a principal is responsible for the acts of an agent, so long as the agent is acting within the scope of his or her authority. A finding against a corporation of the violation of its regulations is negligence per se. So if the FTC brings an action, it is commonly too late for the corporation. In both the CardSystems Solutions and Wyndham Worldwide Corp cases, where the FTC brought an action against these two corporations who allegedly did not take appropriate cybersecurity precautions, the FTC found that it had jurisdiction and that such inaction by both corporations regarding the lack of procedures protecting against cyberattacks did constitute unfair practices; thus the use of this administrative law decision as a basis for a negligence per se finding in lawsuits filed in federal district court. This is bad news.

Most cases start at the administrative agency level of adjudication. Here is where a plaintiff or the government itself can bring an action. “When the agency itself brings the action, it is usually for the public good or on behalf of society. The impact of the wrongful conduct is so great that the government agency must stop the activity. The legal significance of the a party getting a decision from the administrative agency, deemed by the courts as a specialist in the field, is that the decision may be binding on the court action filed by the Plaintiff. So, in a cyber-attack liability case, it is to the advantage of the plaintiff, whether it is the government or private parties, to secure an administrative agency decision. Also, the administrative agency conducts its own fact finding, and provides a quicker more inexpensive snap-shot of the factual legal merits of a case. One issue that is heavily contested is whether the administrative agency had jurisdiction, or authority to decide the case in the first place. If not, then the case gets dismissed usually with no repercussions. The case filed in court now has to proceed on its own merits without the benefit of a favorable decision by the administrative agency. Court cases take a long time and are extremely expensive. Receiving an unfavorable determination from the administrative agency is usually a fatal blow the case filed in court.”

In CardSystems Solutions, Inc., a credit card company, the FTC found “respondent's failure to employ reasonable and appropriate security measures to protect personal information it stored caused or is likely to cause substantial injury to consumers that is not offset by countervailing benefits to consumers or competition and is not reasonably avoidable by consumers. This practice was, and is, an unfair act or practice.”


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The regulation creates the duty. This finding is adequate to allege negligence per se against the directors of the corporation in a separate civil action for damages in a court of law because the practice was found to violate a regulation. Delving into the Cardsystems case is useful.

Specifically what happened in Cardsystems, Inc., is as follows: In September 2004, “a hacker exploited the failures set forth in Paragraph 6 by using an SQL injection attack on respondent's web application and website to install common hacking programs on computers on respondent's computer network. The programs were set up to collect and transmit magnetic stripe data stored on the network to computers located outside the network every four days, beginning in November 2004. As a result, the hacker obtained unauthorized access to magnetic stripe data for tens of millions of credit and debit cards.” It is highly recommended, as directors or chief executive offices or IT managers to read the Cardsystems, Inc. case because the FTC specifically prescribes the in fact practical steps that corporations must follow to comply with the FTC computer procedures to prevent cyberattacks.


Holding: The Court of Appeals, Ambro, Circuit Judge, held that:

1 company’s alleged failure to maintain reasonable and appropriate data security, if proven, could constitute an unfair method of competition in commerce;
2 subsequent Congressional acts did not cause Federal Trade Commission Act provision prohibiting unfair practices to exclude cybersecurity issues; and
3 company had fair notice of meaning of provision of Act prohibiting unfair practices.

Affirmed.”

The foregoing two cases are important because the unfair practices holdings of the FTC involving the lack of corporate policies and computer protection against cyberattacks can be used in a shareholders derivative law suits as negligence per se.

ADEQUATE SECURITY MEASURES AND DIRECTOR/AGENT LIABILITY

In a cyberattack, directors and agents can be held jointly and severally liable. In this next case, the court ruled that within the common enterprise theory of liability, directors and agents can be held jointly and severally liable. Here we now move from administrative agency law to the federal district court.

One of the leading cases on the issue of joint and several liability of directors is FTC v. Millennium Telecard, Inc., which states the following proposition:

“The FTC's request is based upon two theories: (1) that Defendants, together, constitute a “common enterprise” for purposes of making them jointly and severally liable for the violations of the FTC Act, and (2) that Defendant Salim should be held individually liable for the acts of the corporate defendants.

“When determining whether a common enterprise exists, courts look to a variety of factors, including: common
control, the sharing of office space and officers, whether business is transacted through “a maze of interrelated companies,” unified advertising, and evidence which ‘reveals that no real distinction existed between the Corporate Defendants’.

“[a]n individual will be liable for corporate violations of the FTC Act if (1) he participated directly in the deceptive acts or had the authority to control them and (2) he had knowledge of the misrepresentations, was recklessly indifferent to the truth or falsity of the misrepresentation, or was aware of a high probability of fraud along with an intentional avoidance of the truth.” FTC v. Stefanchik, 559 F.3d 924, 931 (9th Cir.2009). Thus, as a general matter, an individual may be liable for the acts of a corporation where the individual had “actual knowledge of material misrepresentations, [was] recklessly indifferent to the truth or falsity of a misrepresentation, or had an awareness of a high probability of fraud along with an intentional avoidance of the truth.” FTC v. Publishing Clearing House, Inc., 104 F.3d 1168, 1171 (9th Cir.1997). However, “the FTC is not required to show that a defendant intended to defraud consumers in order to hold that individual personally liable.” This gives credence to building walls in corporations to make insure that the common enterprise theory of liability cannot be reasonably found to limit liability to only those directly involved.

Based on my experience in private practice- litigation, a court would usually abide by the specific FTC order in Windham absent some overriding doctrinal constitution prohibition, because the FTC has agency subject matter jurisdiction and specializes in the cybersecurity area of the law.

If a court finds for the plaintiff, that the corporation did not comply with the ruling in Cardsystems Solutions, (inadequate computer systems protection against cyberattacks) then the shareholders would be allowed to proceed with lawsuits against all the people in the corporate structure who were responsible based on the common enterprise theory. Now, the shareholder can clearly recover against the directors.

McCall is a leading case on director liability and ties in director responsibility for cyberattacks. In McCall the court states the following: “Unconsidered inaction can be the basis for director liability because, even though most corporate decisions are not subject to director attention, ordinary business decisions of officers and employees deeper in the corporation can significantly injure the corporation and make it subject to criminal sanctions. Id. This theory grew out of an earlier decision, in which the Delaware Supreme Court explained that: the question of whether a corporate director has become liable for losses to the corporation through neglect of duty is determined by the circumstances. If he has recklessly reposed confidence in an obviously untrustworthy employee, has refused or neglected cavalierly to perform his duty as a director, or has ignored either willfully or through inattention obvious danger signs of employee wrongdoing, the law will cast the burden of liability upon him.”

**WAIVER OF LIABILITY**

There may be a reprieve for directors of corporations. There may be a waiver of liability argument if an agreement is signed by the director. In McCall, the court considers a waiver of liability which potentially exonerates the directors. The court interprets the following waiver: “TWELFTH: A director of the Corporation shall not be personally liable to the Corporation or its stockholders for monetary damages for breach of fiduciary duty as a director; provided, however, that the foregoing shall not eliminate or limit the liability of a director (i) for any breach of the director's duty of loyalty to the Corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under Section 174 of the General Corporation Law of Delaware, or (iv) for any transaction from which the director derived an improper personal benefit.”

The waiver may be valid, in the case of strike lawsuits in mundane cases except in extraordinary circumstances where the damages are extraordinary and the breach of duty is reckless, even malicious. Again, the waiver of liability agreement is a way to protect directors from liability. If damages are extraordinary or the actions of the directors involve gross negligence, the waiver is usually considered in the context of the situation along with the totality of the circumstances and is only part of the evidence that would be considered by a court.

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25 Id.
26 McCall v. Scott, 239 F.3d 808 (6th Cir.2001)
27 Id.
SHAREHOLDER DERIVATIVE SUITS

Corporations are in the business of using computers and are therefore responsible to their stakeholders/shareholders for the foreseeable consequences of cyberattacks. Board of director members are agents of the corporation, and are the corporate governing body of the corporation. Under the common enterprise theory, the board of directors as a group and individually are responsible to shareholders. It is within the purview of board authority to manage the computer systems of the corporation prudently to withstand a cyberattack.

Recalling the Sony cyber breach, a case argued in the federal courts of the south district of California, the court clarifies the negligence standard for cyberattacks by ruling the following: “… because Plaintiffs allege that they provided their Personal Information to Sony as part of a commercial transaction, and that Sony failed to employ reasonable security measures to protect their Personal Information, including the utilization of industry-standard encryption, the Court finds Plaintiffs have sufficiently alleged a legal duty and a corresponding breach.” In the Abbott Lab case, a shareholder derivative lawsuit, stands for the following proposition: “that the business judgment rule will not protect the board and the individual directors.” This clearly shows that board members must make cybersecurity the business of the corporation at board meetings and actively engage in cyber protections. Therefore, based on the aforementioned cases, directors may be per se responsible for the foreseeable consequences of the damages caused by a cyberattack based on the FTC rulings. Only 4% of all data is encrypted. Obviously, global businesses are in the beginning phases of a technology revolution much like our industrial revolution in the early 1900’s. Without a doubt, the more ways that our institutions delineate and develop consistent standards of liability, the better for all. The clearer the rules, the better the world economy works.

HOW TO LIMIT LIABILITY

1. Systems vigilance is a must in complying with the FTC ruling. Practically from an IT department perspective, the list of tasks of in system protection is inexhaustible. From password protection, firewall implementation, use antiviral malware software, block spyware, manage data bases for protection, keep windows systems current, use strong passwords, use backup systems are a few. Reading the Cardsystems Solutions FTC opinion is a must. Most importantly, use cybersecurity audit trails detecting problems immediately.
2. It is important to be proactive and not reactive. Hire an agent firm in the cyberattack business to do the work for you and scrutinize their contracts. Businesses have the duty to provide adequate security measures with the use of contractors who provide information technology compliance audits and who indemnify against losses caused by cyberattacks. Be sure that the indemnity clauses also covers fines and penalties from regulatory agencies imposed by the FTC.
3. In case of disagreement, arbitration clauses are a must in any contract to alleviate litigation. This saves the business a lot of time and money.
4. Watch out for exculpatory clauses and hold harmless clauses among the contract provisions as an avoidance of liability tool used by the computer auditors and contractors.
5. Have a good educational system in place advising the board of directors of the efforts that are ongoing within the corporation preventing cyberattacks serving to keep updating systems. Many world class universities offer a Bachelor’s degree and a Master’s Degree in Cybersecurity.
6. Get liability insurance and hire consultants who become agents of the corporation. Businesses should also protect themselves legally, in case a client or employee is hacked. They should have language in their contracts that indemnify themselves against stolen personal information.
7. Make sure that directors have waiver of liability contracts for employee computer system malfeasance and cyberattacks executed by each director at the inception of service on the board.
8. Petition the state legislature to limit or exclude lawsuits for lack of proof of economic damages arising out of cyberattacks as a matter of public policy when a corporation has substantially complied with Cardsystem Solutions, Inc. States have passed some legislation on the topic.

In re Sony Gaming Networks and Customer Data Security Breach Litigation, 996 F.Supp.2d 942 (So. D.Cal. 2014)
AUTHOR BIOGRAPHY

Paul J. Morrow, Sr, Esq., is an associate professor of Law and Economics at Husson University with 30 years of private practice and teaching experience. He was an investment trust advisor, then a litigation attorney for a total of 17 years of private practice. In that time, he was an Assistant Attorney General. During his private practice, he taught a good number of courses then transitioned to teaching full time in 2002. He is published many times in Cyberlaw/Cybersecurity, Environmental law and Business Law education. His B.A. is from the University of Maine, and he earned his Juris Doctorate degree from the University of New Hampshire School of Law in 1985 where he served on the Dean’s Council. 2012 -2013. He is a member of the Maine Bar Association serving as a member of the Corporate Law section and the Consumer and Financial Institution section. He is also a member of the Federal Bar Association.

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Best Practices In Cross-Generational Leadership: A Proposed Qualitative Study Focused Upon The Millennial Generation

John A. Rushing, Barry University, USA
Marilyn Marousek, Barry University, USA
Jalane Meloun, Barry University, USA

ABSTRACT

Although there has been a significant amount of research undertaken on what Millennials want, there is a dearth of information on what actually works in leading that generation (Pfau, 2016). The goal of the proposed study is to close that information gap. Participants will be leaders in the HR departments of organizations that include for-profit and non-for profit, manufacturing, service, and educational settings. Sample population will be divided into two groups. One group will participate in the traditional interview and content analytic process. The second group will participate in a Delphi group research process. Then combined results will be compared, analyzed, and evaluated. The authors believe that a combined qualitative approach will have the merits of both methods (triangulating) producing more robust outcomes.
Organizational Management Of Stress In Police Work
John M. Violanti, University at Buffalo, USA

ABSTRACT

Ideas of positive adaptation to stress has led to a paradigm shift in psychology. Present ideology suggests that persons and organizations can now deal positively with stress and that employees do not always experience pathology. The exposure to stress and trauma in the police profession presents management with a challenge. This presentation will provide strategies for building resiliency in police personnel and the organization. An integral part of managing such exposure is increasing the resiliency of officers. In this sense, resiliency refers to increasing the ability of workers to “bounce back“ from stress and sustain a work balance; perhaps even becoming better performers. Ideas for increasing resiliency in police organizations will be discussed.
The Psychological Impact On The Use Of E-Learning Among Students In A Rural University
Mercy Tshilidzi Mashamba, University of Venda, South Africa

ABSTRACT

Different universities have introduced teaching and learning that is facilitated through information and communications technology (ICT), both inside and outside the classroom. The aim of this paper is to investigate the psychological impacts on the use of E-Learning among students in a rural university. It catalogues the rationale for using ICT in teaching and learning, and also ways in which electronically teaching methods are being utilized. It outlines how contextual factors, both psychological and environmental impacts on learning. It also describes the successes and challenges in implementing such programmes in skills, sociodemographic, and infrastructural terms. One hundred students in the School of Health Sciences will be selected through convenience sampling to participate in the study. Informed consent will be sought from selected participants and all ethical issues relevant to this study will be observed. Data will be collected through 10 focus group discussions and analysed using thematic content. Finally, based on the study findings, recommendations will be made on how to effectively implement E-learning in resource-constrained location.
Marketing A Mental Health Care Specialization: The 4 P’s Of Play Therapy

Joe R. Putulowski, California Baptist University, USA
Robert G. Crosby III, California Baptist University, USA

ABSTRACT

Nearly half of all healthcare service companies fail within the first four years. In addition to the impact on the entrepreneurs, vendors and suppliers, and the surrounding economy, this presents problems for the consumer, as much-needed healthcare services become unavailable to the community. Lack of effective market strategies and consumer awareness is one of the main reasons that new businesses fail. To address this problem, marketing experts apply the 4 P’s of marketing: product, promotion, place, and price. Researchers have begun to apply this framework to the healthcare industry; however, there has been limited application of the 4 P’s to mental health care and the critical specializations that exist within that industry. In the present study, we apply the 4 P’s framework to play therapy, an evidence-based psychotherapy specialization. Drawing from literature, we define the product as a form of counseling in which therapeutic play is used to resolve psychosocial difficulties in young children. Using a sample of 120 adult students attending an online university, we will conduct a survey-based experiment to determine promotion (i.e., where potential clients are most likely to look for therapeutic services), placement (i.e., how much further clients are willing to drive to see a specialist versus a non-specialist), and price (i.e., how much more clients are willing to pay for a specialist versus a non-specialist). The study is currently in progress and will be completed before the Clute conference. We expect the results to provide actionable guidance to professional play therapists, as well as other mental health care specialists, seeking to more effectively market their businesses.
The Case For Three Classes Of Entrepreneurial Activity
Robert A. Fiore, Springfield College, USA

ABSTRACT

It is proposed that entrepreneurial ventures be ranked according to potential output based on "effective" use of capital. A three-tiered classification system is proposed based on the expected Rate of Return (ROR) or the actual Rate of Return to investors since ROR measures the discounted future profits, capital employed and the speed in which the company is formulated. ROR reflects the economic health and intensity of the project. The expected or actual ROR is measured to be the change in the total value of an organization divided by the investment capital employed, expressed as an annualized rate of the change.

INTRODUCTION

It is well documented that the precise definition of entrepreneurship continues to be debated in the literatures. As early as 1969, Cole stated: "...for ten years we tried to define the entrepreneur. We never succeeded." William Gartner updated this thought in 1989: "Recent reviews of the entrepreneurship literature have found few changes in the dilemma in the sixteen years since Cole's statement." Lumpkin and Dess summarized: "...efforts have served to point out the various dimensions of the entrepreneurial process, they have not led to any widely held consensus regarding how to characterize entrepreneurial. This lack of consensus has impeded progress for researchers toward building and testing a broader theory of entrepreneurship, and has made it especially difficult for them to investigate the relationship of entrepreneurship to performance." Hornday continued: "...there is no accepted definition--working or otherwise--of the terms "entrepreneur" and "entrepreneurship"... the lack of consensus... ensnares nearly every empirical or theoretical research effort." Morris, Lewis and Sexton pursued this thought: "A more fundamental concern is the general lack of agreement among scholars regarding the nature of entrepreneurship itself. A wide variety of definitions, the most recent literature, and conflicting schools of thought continue..." Brazeal and Herbert observed that: "...cynics might assert that we have idiosyncratically defined our studies to meet pet interests without first clearly elucidating the phenomenon of entrepreneurship... Observers from more mature fields of study might note additional inconsistencies in defining clearly entrepreneurial constructs or phenomena studied."

Carland et al stated: "The controversy over the definition of entrepreneurship and the identification of entrepreneurs has been played out in the literature... nevertheless, no consensus definition has emerged. Researchers have been like the proverbial blind men describing an elephant." Harvard's Howard Stevenson noted: "The term entrepreneurship calls to mind so many varied images that a precise definition can be elusive." Venkataraman and Shane update the theme in 2000: "To date, the phenomenon of entrepreneurship has lacked a conceptual framework... the largest obstacle in creating a conceptual framework for the entrepreneurship field has been its definition. To date, most researchers have defined the field solely in terms of who the entrepreneur is and what he or she does."

The significant amount of attention devoted to entrepreneurship in recent years has resulted in a keen awareness of the limitations of current knowledge on the subject. For instance, Low and MacMillan (1988) not only note the lack of a well-defined research agenda or a set of research programs in the entrepreneurial field, but find that most of the contemporary research lacks clarity and consensus regarding purpose, theoretical perspective, focus, level of analysis, time frame, and methodology." Venkataraman and Shane (2000) summarize: "...many people have had trouble identifying the distinctive contribution of the field... undermining the field's legitimacy. Researchers in other fields ask why entrepreneurship research is necessary if it does not explain or predict empirical phenomena beyond what is known from other work fields."
Clearly we can conclude, a consensus definition does not exist and researchers make it clear one should. It is also generally recognized research in the field is, and will continue to be harmed due to a lack of strict operational construct. Myriad definitions do exist. Some are highlighted below.

**CURRENT DEFINITIONS OF ENTREPRENEURSHIP**

The 1999 Executive report, of the Global Entrepreneurship Monitor, Kauffman Center for Entrepreneurial Leadership at the Ewing Marion Kauffman Foundation defined entrepreneurship as: “Any attempt at new business or new venture creation, such as self-employment, a new business organization, or the expansion of an existing business, by an individual, a team of individuals, or an established business.” Timmons positions: “…entrepreneurship is the process of creating or seizing an opportunity and pursuing it regardless of the resources currently controlled. Entrepreneurship involves the definition, creation, and distribution of value… Entrepreneurship is a human creative act.”

**SCHUMPETER REVISITED**

For Schumpeter, the entrepreneur, “is not a passive figure who adapts to the re-equilibrating process” (Guzman-Cuevas, 1994). Schumpeter (1934) viewed the entrepreneur as an individual (an agent) who creates disequilibrium. This economic function is distinct from one who completes the equilibrium process by clearing the market by effecting supply and demand. The entrepreneur is the creator of a dynamic that creates market “creative destruction” and resulting “entrepreneurial profits” exist because the entrepreneur can recognize and capitalize on market opportunities before others. These Schumpeterian “entrepreneurial profits” are the cause of observed “hyper-rates of return” and therefore are one reason for the classification of entrepreneurial activity into distinct “classes”. From Schumpeter, it seems clear small business management is distinct from entrepreneurial behavior. Small business formation and management roles are usually not what are intended when economic research employs the word entrepreneurial. Management functions do not produce “creative destruction” but are simply “creative imitation”. However, usage of the term “entrepreneurial” when “managerial” is intended, is so widely practiced in the public lexicon (and the economic literature) that it should be included in, but differentiated, as a lower “class” of entrepreneurial behavior. This operational inclusion centers on Vesper’s (1983) definition, “the act and process of creating a new business.” Again, even the purest would argue that this construct might not involve the Schumpeterian prerequisite, innovation or creative destruction. Note that in no case are we discussing the accumulation of wealth or the transfer of wealth by arbitrage, as an entrepreneurial act.

**THE LOGIC OF THREE CLASSES**

From Schumpeter we have a new definition of what is "entrepreneurial" based on the logic: Entrepreneurship is market disruption through innovation = market disequilibrium = a level of monopoly = creative destruction of competitors = future profits = present value = high ROR. It is acknowledged that there exists an analog range of possible rates of return from -100% to +∞% but some classification could be useful. The location of precise cutoff points is a source of debate, certainly any number of classes could be proposed, however, there exists some foundation for three different classes of organizational behavior based on the expected economic outcomes of such behavior because they have three different purposes and impacts on the economy. Within, we examine entrepreneurial endeavors with high, medium and low entrepreneurial “intensities”.

The purpose of the building of acquiring and operating a local gas station is different than the formulation of Federal Express both in scale and breadth and market size and societal impact, but more importantly, the return to investors. The purpose of proprietor of the local gas station is normally:

“income maintenance” and has an associated expected rate of return of about 50% (approximately a $50,000 /yr. income to the owner with a $100,000 investment) from the act of offering, for sale, a standard commodity product, financed by family debt. No innovation and no growth is expected.
Shane (2008) makes this point clear when he states, “The typical start-up isn’t innovative, has no plans to grow…” Conversely, from the point of view of FedEx’s creator, Fred Smith, the purpose of creating Federal Express was:

the creation of an innovative systematic organization offering a new service in order to create a near monopolistic market (overnight delivery) by employing innovative ideas and technology to produce excessive entrepreneurial profits creating incremental value yielding early ultra-high rates of return exceeding 1,000% per holding period on total capital employed, allowing global expansion and mass market penetration, financed by IPO.

Clearly these two business endeavors are different in behavior, skills, process, purpose and result. These facts lead to the case for a system of classification for entrepreneurial projects based on the expected economic output of the organizational based on expected ROR.

<table>
<thead>
<tr>
<th>Class</th>
<th>ROR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class I</td>
<td>&gt; 1,000%</td>
</tr>
<tr>
<td>Class II</td>
<td>100%-1,000%</td>
</tr>
<tr>
<td>Class III</td>
<td>-100%-100%</td>
</tr>
</tbody>
</table>

EXPECTED RATE OF RETURN
THE OUTPUT CRITERIA

It should be noted there are many ways to calculate rates of return but for this purpose, since the expected ROR is based on projections, simpler compounded rates are used.

Where we have,

\[
ROR = \left( \frac{FV}{PV} \right)^{\frac{1}{n}} - 1
\]

Where PV is the original investment or value, FV=the latest value, and n is the number of years. All dividends or withdrawals should be included in the firm's FV.

THE CLASSIFICATION PROPOSAL

It is proposed that all economically creative processes and behavior be categorized into three classes as measured by the ROR. Generally, Class-I projects are potential IPO-based financed, and exhibit expected early initial ROR in excess of 1,000%, Class-II from 100% to 1,000% and Class-III from -100% to 100% since loss of total capital is possible. To summarize, the class of entrepreneurial behavior proposal is not based on function or size of the firm or the entrepreneur’s personality, it is founded on value output as measured as a rate of return based on rate of return.

CLASS-I ENTREPRENEURSHIP

It is proposed Class-I entrepreneurship is the most economically potent of all human organizational behavior, whose sole aim is to create the highest levels of value co-measured with the least capital input and hence, the highest rates of return. This particular process uses all capitals at maximum efficiency, producing at maximum scale of efficiencies, creating large pools of unmeet or new demand usually applicable to fostering or meeting human needs globally. Class-I entrepreneurship purposefully creates a partial temporary monopoly in new market space, which allows pricing to create acceleration of value and extremely high rates of return. This Class-I organizational act and process literally creates organizations that simultaneously creates expectations of future cash flows and hence creates present value as all future expected earnings is discounted into present value. Class-I organizing activity creates value by creating a new type of organization with a new purpose with systems that are commercially valuable, in and of, them- selves. The expected growth in total value can be measured as an expected rate of return, or ROR. Since the
organization itself has value, very high rates of return are produced at a brief early period of organizational formation. The period of increase in capitalized value could be as short as days and it is these short holding periods that produce ultra-high ROR.

These fundamentally different outcomes are produced by fundamentally different levels of competitive provisions, economic aspects are usually as follows:

<table>
<thead>
<tr>
<th>Class</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class I</td>
<td>Temporary monopoly</td>
</tr>
<tr>
<td>Class II</td>
<td>Partial monopoly</td>
</tr>
<tr>
<td>Class III</td>
<td>Near perfect competition</td>
</tr>
</tbody>
</table>

Class-I ventures usually have first-mover advantage and have the potential and propensity for global impact for capital transference and the power of “creative” destruction. Class-I economic phenomena are rare, probably comprising less than one percent of all entrepreneurial activity. Some contemporary examples of Class-I organizations are: Wendy's International, Dell, Apple, IBM, Cisco Systems, Intel, Microsoft, McDonalds, and Starbucks. For argument purposes, it is stated any organizational act which intends or shows the ability to produce hyper-rates of return a total rate of return based on all capital employed over the generally accepted compensation rate for the employ of capital (certainly beyond 100%) has, by definition, surpassed normal competitive forces and moved into a new “market-space” as intended to exploit a limited competitive situation, unleashed creative-destruction and innovation, and hence, is a rare Class-I entrepreneurial event.

These fundamentally different outcomes are usually produced by fundamentally different financing mechanisms and the financing aspects are typically as follows:

<table>
<thead>
<tr>
<th>Class</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class I</td>
<td>Public Offering or the potential to be public in a short period of time</td>
</tr>
<tr>
<td>Class II</td>
<td>Bank or debt financed</td>
</tr>
<tr>
<td>Class III</td>
<td>Family, friends or fools</td>
</tr>
</tbody>
</table>

**CLASS-II ENTREPRENEURSHIP**

Class-II organizations are more common and are important to the aggregate creation of job and income growth. Class-II organizations adapt and copy innovation or technology and bring other’s innovations to full economic fruition. Examples were firms who produce IBM or Mac clones. These firms may expand the size of the market. Class-II organizations have market power to force Class-I firms to “be paranoid” and continue to invest in R&D in order to maintain their own competitive advantage. Class-II organizations usually expand the size of the market and fulfill market equilibrium by finely tuning supply to demand. By exploiting demand by creating equilibrium, they earn excellent (but not ultra-high) rates of return in the 30–100% range. Both entrepreneurial and managerial skills are required in most Class-II organizations.

**CLASS-III ENTREPRENEURSHIP**

Class-III projects are virtual copies of existing organizations and are most common in frequency of occurrence. Typically, they include franchises, small proprietorships, trades-people shops and LLC’s that replace a market. Individuals starting self-employment organizations for the purpose of “income production or maintenance” usually exhibit very low levels of new systemization, innovative, creative-activities and wealth-creation. The owners of most class-III organizations work in their firm and not on it. Very little innovation is incorporated into the new organization or products. No or little, creative destruction occurs over geographic distances. No disequilibrium occurs. A Class-III plumbing-contractor proprietorship organized in Iowa does not destroy a similar organization in New York. Although a certain level of entrepreneurial traits may be required by the proprietor at a very short formulation stage, the need for this function is transient, i.e. virtually no entrepreneurial functions are required to franchise a McDonalds. The ongoing primary skills for success are the management functions. Class-III enterprises comprise the overwhelming majority of new business formulations worldwide. Class-III organizations usually exhibit near zero growth because the ROR is small and only sufficient to compensate the owner with income replacement.
proportionate with the time and effort expended providing the product or service. No "excess" capital is generated to allow, or promote expansion and low expected RORs are insufficient to attract new capital infusion.

A RECENT CASE

Uber is clearly a disruptive entrepreneurial venture creating billions in value and simultaneously destroying the viability of hundreds of taxi and delivery firms. The firm consists of a computerized communication and reservation system and the use of "franchised" private assets (automobiles). The formulation and organization of Uber was unique and insightful. CEO Travis Kalanick and Garrett Camp started Uber in 2009. The firm has 12,000 employees and revenue of $16.5 billion. Although the company posted a recent loss, the current value is $17 billion. The company remains privately held but an IPO is rumored. Clearly Uber is a class-I venture and although there were 15 rounds of financial, and the holding periods of each dollar invested vary greatly, some capital for some short holding periods, produced ROR in excess of 1,000% wherein the "creation" of Uber took place.

Fortune reported that the first Angel round early investment was $1.5 million and although there have been at least 15 rounds of investments, the rate of return on the earliest investments are outstanding. CNBC estimates the total yield multiple was 2,000 times or 200,000%. CNBC (2014) states the initial investment was worth $40 million eight years later, hence $40,000,000 and PV=$20,000 and n=8 years, the annualized compound rate of return was:

\[
ROR = \left( \frac{40,000,000}{20,000} \right)^{\frac{1}{8}} - 1 = 158\% / \text{yr}
\]

The actual rate of return is thought to be higher which depends on the holding period of the $20,000 investment, if the initial capital was withdrawn earlier, the rate of return would be higher, for instance, a holding period of 4 years would yield:

\[
ROR = \left( \frac{40,000,000}{20,000} \right)^{\frac{1}{4}} - 1 = 568\% / \text{yr}
\]

Fortune (2014) stated, "the start-up's early investors, whose shares are now worth as much as 2,000x their investment, are looking pretty smart" where 2,000x is a total yield of 200,000%. Business Insider (2014) stated. "Uber is currently worth 850 times more than First Round Capital invested" yielding a total ROR of 85,000%. Certainly, for some early investors with a two year-holding period, the ROR met our Class-I definition ROR>1,000% with a ROR in excess of 1,000%.

\[
ROR = \left( \frac{40,000,000}{20,000} \right)^{\frac{1}{2}} - 1 = 4,372\% / \text{yr}.
\]

This math coincides with investor behavior and all investors (especially hedge fund early investors) want their capital returned as soon as possible for re-investment or consumption. Rates of return well beyond 1,000% exist and the Class I organizational venture is fundamentally a different economic wealth creation process than a local pizza shop. In prior research (Fiore/ Howard, 2011) the author found rates of return in excess of 1,000% depending on the holding periods examined. We found early investments in Yahoo yielded a 122,249% annualized ROR to investors during a particular 371 day holding period, Juniper Networks yielded 76,209% in 1,108 days, Steel Dynamics yielded 28,878% in 81 days, and Redback Networks yielded 22,042% in 965 days. Clearly, depending on the PV, FV and the holding period, RORs in excess of 100%/year are rare but authentic.
IN THE CLASSROOM

Many students of entrepreneurship observe Kroc, Kalanick, Walton and other hyper-entrepreneurs and appropriately ask how they can create similar wealth. They state, "I'm not interested in operating a local retail store." They ask, "How to I build wealth..." In essence, they are asking, "How do I turn my Class III project into a Class I venture?" As with all science, the first step to a goal is classification. To do so, first identify the potential class of the ROR, and attempt to transform the proposal to a Class-I venture based on acquiring the following valuable attributes:

1. Serve global mass markets
2. Be able to achieve high growth rate
3. Have low capital requirements
4. Be able to keep competitor entrants out
5. Have necessary resources available
6. Be able to develop or acquire required core competencies
7. Offer a unique value proposition through a distinct competitive advantage
8. Have a low cost of goods structure
9. Exhibit high profit margins or high volume or both
10. Have the ability to reach Public Offering yielding a low Cost of Capital in a short time frame

Class I ventures are rare.

IMPLICATIONS

Such a classification system may increase levels of construct validity within entrepreneurial research and also help students set the appropriate goals. For example, some researchers are, in fact, only talking about Class-I projects when they refer to entrepreneurship, and classification may help eliminate data contaminated from Class-II and Class-III endeavors. Beyond academic research, such classification schema may benefit entrepreneur's building business plans as a classification system may transmit more accurate information about the proposed project to investors. For example, investors specifically looking for high risk projects with high hyper-returns are in essence, only looking for Class-I projects. Conservative investors will only be interested in looking at Class-II or III enterprises. More importantly, an entrepreneurial classification system may assist students in turning a Class-III business plan into a Class-I project.

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Sexual Pleasure And Enhancement Implications For College Sexuality Education
Jessica Maureen Harris, University of New York at Oswego, USA

ABSTRACT

Objective. The purpose of this study was to determine what sexual activities and behaviors college students are participating in, outside of the risk-focused lens of STI's and unintended pregnancies. Pleasure and sexual satisfaction is completely missing from today’s sexuality education, resulting in most Americans not being aware of the psychological and psychosocial health benefits of sexual expression (Davey Smith et al., 1997; Reiss, 1990). This study looked at college students and the use of sexual enhancement products during partnered and solo sexual activities, in order to better educate individuals on positive sexual health benefits, pleasure, and sexual satisfaction.

Methods. A sample of 956 college students completed a cross-sectional survey on sexual pleasure and enhancement. The survey examined students’ current and past sexual behaviors, sexual satisfaction, sexual comfort, use of sexual enhancement products, motivation, and beliefs and attitudes associated with sexual enhancement products. Results. Findings showed that age was associated with solo product use (p<.001) and partnered product use (p <.001). Participants over the age of 25 are more likely to use products during their solo and partnered sexual activities than 18-24 years old participants. Results suggest that individuals who use products are more sexually satisfied in regard to masturbation, (p=.001), solo sexual activities (p=.004), partnered masturbation (p=.002), partnered sexual activities (p=.002), ability to have orgasms during solo sexual activities (p<.00), and partnered sexual activities (p=.003), than individuals who do not use products. Conclusion. Results show that college students are participating in product use during their solo and partnered sexual activities, and there is a lack of education in college sexuality curriculum to educate students on products and pleasure. This study aims to better educate health professionals on the need for new innovative venues that may be appropriate for the delivery of sexual health education on college campuses.
The Impact Of The Gaming Destination On Macao Human Development
Luis Cunha, Macao Polytechnic Institute, R.P. China

ABSTRACT
Macao, supported by a tourism public policies strategic plan, has reported unprecedented economic growth during the last 15 years. However, recently, central government capital mobility restrictions had caused a considerable impact on this growth.

The United Nations Development Program (UNDP) proposed in 1990 the Human Development Index (HDI) as a wider measure of development (opposing to analyze of economic development on the basis of the Gross Domestic Product (GDP)). However, as Macao does not appear in the HDI ranking published by UNDP, it is impossible to scrutinize the current impact of the latest politic measures on its human development. This article presents a comparative and evolution analysis of economic growth and human development indicators. Aims to conclude on economic growth and the relative position of Macao in the HDI rank and the impact of the latest capital mobility measures of the central government on growth and human development.

Keywords: Economic Growth, Economic Development, Human Development, Human Development Index
Developing The I-Gen
Student In A Business School
Raymond Wimer, Syracuse University, USA

ABSTRACT

Faculty teaching undergraduate classes have likely encountered the unique needs and challenges of working with “iGen” – the current 18 – 22 aged generation. Battling or embracing technology in the classroom and catering to a me-first mindset have been discussed in relation to higher education. This session takes the needs of this generation beyond what is typically discussed to speak directly to the needs of an undergraduate business school student and the complementary skill set that, when developed outside the classroom, positively impacts performance academically.

Pulling from the first-of-its-kind undergraduate “gaming” programming, the Goodman IMPRESS program launched at the Whitman School of Management at Syracuse University, this session offers insight and recommendations for faculty and schools to enhance the performance of their student body. The session will discussed results and outcomes from the first 7 semesters of program implementation.
Cultivating An Online Tribe: Best Practices For Promoting Connection In An Online Environment
Judith Lewandowski, Purdue University, USA

ABSTRACT
This paper explores the principles of “tribes” as defined by Seth Godin within the online learning environment as it relates to the online learning environment (Godin, 2008). Using Godin’s framework for leadership development, the paper focuses upon specific practices online instructors can utilize to create a learning community designed to support, engage, and motivate learners. Additionally, Godin’s framework is compared to current research on communities of practice (Wenger, 1998, Byington, 2011, Rayner et al, 2014). This paper emphasizes the intentional use of facilitation strategies within online discussion forums. Action research collected over three years is included as evidence of strategy success and limitations.

Keywords: Online learning, best practices in collaboration, community of practice, online discussion strategies
Why Is It So Hard To Do A Good Thing? The Dilemma And Paradox Of Parental Advocacy In The Independent Education Planning (IEP) Process

Michelle Janzen, Brock University, Canada
Maureen Connolly, Brock University, Canada

ABSTRACT

This presentation is a phenomenologically oriented investigation and analysis of the websites of six schoolboards in Southern and Central Ontario, ostensibly committed to the inclusion of children experiencing disabilities into regular classroom programming and to the engagement of the parents of these children in the development of the Individualized Education Plans (IEP) that make this inclusion possible. My strategies for analysing these unobtrusive data sets were manifest and latent content analysis. These findings of my manifest content analysis include a) average of 10.6 clicks to find rights based information, b) average of 61.6 tabs and links to navigate through. Latent analysis revealed a) absence of recognizable representative image, b) difficulties for persons whose first language was not English, c) a challenging array of mixed signals, ambiguous messages and obstacles that misdirect and prevent access to information that parents desperately need to participate in the IEP process.

Keywords: Special Education, Individual Education Plan, Children with Disabilities, Parent Involvement, Website Analysis
Determining Authorship When Writing With Peers In Academia
Amy Tremback-Ball, Misericordia University, USA

INTRODUCTION/PURPOSE

The concept of authorship has different meanings to different individuals based on their academic background, occupational status, and societal standing. For those working in academics, authorship specifically can affect one's rank or status and therefore has financial implications. Authorship is important to the reputation, academic promotion, and grant support of the individuals involved as well as to the strength and reputation of their institution. It is an important topic to address not only for acknowledgment at one's institution, but also has critical implications for responsibility and accountability in publishing.

Research and writing at the College or University level may involve writing with fellow professors and professional peers. For those who teach at the post secondary level, research and writing may be an obligatory and/or voluntary task. The amount of time one is released for research varies greatly depending on the type of secondary institution in which one works as well as one's specialty area. In an academic environment where teaching is the focus often educators work in groups to complete research due to little or no release time. This may mean that 4-5 individuals are working on a given project. One's involvement as a collaborator in research can vary. It may be in the design or intellectual construction phase of the project, providing assistance with data collection and/or analysis of data, drafting of paper or just in editorial work. The amount of work each research team member contributes to the project has implications when it comes to determining authorship versus contributorship. Further, the amount of work one contributes has implications for the order of authors when publishing. Therefore, it is important to define who should be considered an author of the work. The purpose of this workshop is to identify why authorship matters, define who qualifies as an author, and discuss order or authorship with a focus on those projects that involve multiple researchers.

METHODS

The workshop will use lecture, discussion and case studies as instructional strategies. The participants will learn how some editorial boards are currently defining authorship, define the role of authors compared to contributors, the responsibility of authors and how some individuals determine order of authors. Attendees will also have the opportunity to discuss how these definitions impact working with students as compared to working with fellow academicians and possible ethical dilemmas they have encountered in the past pertaining to writing and authorship.

CONCLUSION

It is the hope of the presenter provides the participants in this workshop provide a new insight into how current definitions of authorship can and should influence how student projects are supervised and eventually submitted for publication.
Writing A Literature Review In EFL/ESL Contexts: A Critical Analysis Perspective

Nahla Nola Bacha, Lebanese American University, Lebanon

ABSTRACT

Research studies have indicated that EFL/ESL students have problems in writing the literature review in their term and/or research papers, a significant requirement in the academy at both the high school and university levels. It has been noted that the main challenges these students face are the pressure of the time limit to complete the task, the often little or no knowledge of the task, and the critical analysis skills needed. Effective reviews based on the western model have shown to include evaluation, clarification, integration, and synthesis of the controversies in past and current research on the topic being studied and identification of the gaps in the field that the researcher attempts to fill. Furthermore, as part of the foregoing, an organizational structure towards the purpose and/or research questions of the study is often not clear or followed. EFL/ESL student literature reviews that have been evaluated indicate more of summary and descriptive writing of the relevant research with little or no input from the research, the author in this case, rather than a critical analysis involving the controversies and the author’s stance on the topic under study. There is a need for explicit efficient teaching methods so that these students learn how to write effective reviews. This presentation outlines one teaching/learning method based on research studies that involves a scaffold step approach using critical analysis beginning with understanding, summarizing, evaluating, analyzing and synthesizing various studies on the chosen topic. The steps will be shared with the audience and samples of students’ work will be discussed highlighting the authorial voice of the researcher. Recommendations will be made for classroom teaching/learning.

Keywords: literature reviews, EFL/ESL students, critical thinking, teaching/learning

Bio: Nahla Nola Bacha, Ph.D. Leicester University, UK is Professor of Applied Linguistics/TESOL, Lebanese American University. She has taught in and administered the Department of English and published internationally in EAP, writing, discourse analysis, and EFL/ESL. Being Lebanese/Australian, she also researches contrastive language analysis.
Transforming Teacher Preparation: Comparing Yearlong And One-Semester Clinical Practice Models

Gwen McAlpine, Sohyun An, Kennesaw State University, USA
Charlease Kelly Jackson, Kennesaw State University, USA
Cherry Steffen, Washburn University, USA
Alyssa St. Cyr-Williams, Cobb County Public Schools, USA

ABSTRACT

This paper presents the advantages and disadvantages of a yearlong field experience, compared to the traditional one-semester field experience. For this study, the authors surveyed former student teachers who had conducted their internships in five elementary schools in the last five years. These five elementary schools worked on a grant-funded* Professional Development Program, together with one middle school and one high school. The findings of this study (and other grant studies involving the middle school and high school) were overwhelmingly positive in favor of the yearlong field experience. To put them in a larger context, these findings are related to literature on the psychological and academic benefits of each of the internship models. The long-term result of this program is that most of the local school districts have adopted the model of the extended field experience, a new model for these schools that could remain in place for years.

Keywords: Teacher Preparation, Yearlong Field Experience, Professional Development Schools (PDS)
Disney And The Magical World Of Writing; How Combining Creativity With Learning Disabilities Can Promote Academic Success
Michelle Janzen, Brock University, Canada

ABSTRACT

Through a Disney perspective, this paper discusses how students can use creative strategies to cope with learning disabilities in secondary, post-secondary and even graduate levels of academic achievement. In particular, the paper will be discussing how the author, who has an infinity for “everything Disney”, chose to use both Disney Characters and Disney Song titles from movies and television shows, as a creative strategy in the organization of her masters research thesis. The research study entitled “Why is it so hard to go a good thing? The Paradox and Dilemma of Parental Advocacy within the Individual Education Planning Process” took a phenomenological qualitative approach to investigate the experiences of parental advocacy and to seek out macro/micro factors that may have contributed to positive or negative outcomes within the IEP process. The use of Disney song titles was utilized as an adaptive tool not only to help in the organization of the findings of the research, but were also to help illuminate the phenomenological existential themes that were revealed through the analysis. The paper hopes to demonstrate that through the use of creative strategies in otherwise conventional academic expectations, students experiencing disabilities may increase the potential of achieving academic success.

Keywords: Disney, Learning Disability, Creativity, Learning, Children with Special Needs
Paper is available from author
Determinants Of Students’ Mathematics Performance: Empirical Evidence From Shanghai

Emmanuel Kayode Ogunyinka, Central China Normal University, China
Ronke Charity Adedoyin, Central China Normal University, China
Lei Wanpeng, Central China Normal University, China
Bin Tang, Central China Normal University, China

ABSTRACT

The Program for International Student Assessment (PISA) 2012 of 15-year old students, scores revealed that Shanghai-China had the highest performance out of the 64 participating countries in mathematics literacy. Student sample from Shanghai was 5110 from 153 schools. The objectives of the research revolve around the following: to examine the extent to which preschool education attendance and mathematics teacher-student ratio determines students’ performance in Shanghai. The data was analyzed using descriptive analysis and a hierarchical linear modeling (HLM). The results show that preschool education attendance for more than one year (PreSchM1yr) and mathematics teacher-student ratio (SMRATIO) were statistically significant and they explained a large part of the unexplained variance in the outcome variable, except preschool education attendance for one year or less (PreSch1yr). Through carefully tackling the inquiry, this analysis has displayed proof that could guide educationists and policy makers to take a clue from Shanghai success strategies, and to further improve their educational system. Finally, we recommend that preschool education attendance should be extended to three years or more among the least/developing countries while teacher-student ratio should be reduced to 6 persons to 1 teacher in junior and senior high school among the least/developing countries and 9 persons to 1 teacher in the recently industrialized/developed countries, to foster mathematics high performance. This may thereby lead to lifelong influence on science and technology.

Keywords: Students’ Performance; Mathematics; Hierarchical Linear Model; Students’ Assessment; Shanghai

1. BACKGROUND TO THE STUDY

Assessment is “an integral component of the teaching process” (Reynolds, Livingston, and William, 2006). It is the third stage in an instructional circle, undertaken after planning instruction and delivering instruction (Airasian, 2005). For this reason, after a long time forgotten, assessment became one of the most focused on educational issues in the twentieth century, to date. This globalization of interest in assessment has created many international debates. However, despite the discrepancies in beliefs about the benefits and disadvantages of individual forms of assessment, most assessment experts share the view that using many instruments to measure students’ learning quality will provide more reliable results and more valid interpretations, because “no single assessment procedure can be expected to provide perfect, error-free information” (Airasian, 2005, Cooper, Lindsay, Nye and Greathouse, 1998; Griffin and Nix, 1991; Thorndike, 1997).

The purpose of this investigation is to evaluate the relations between test scores and their related factors at the student- and the school-level. Mathematics proficiency was the primary concentration of Program for International Student Assessment (PISA) 2012; though reading and science literacies were assessed alongside.
The objectives of the research revolve around the following:

(i) To examine the extent to which preschool education attendance determines student performance in Shanghai?

(ii) To determine whether mathematics teacher-student ratio is associated with students’ performance in Shanghai?

Although many factors influence this outcome variable directly or indirectly, in this study, student background (preschool education attendance) and school characteristics (mathematics teacher-student ratio) are equally important factors influencing students’ achievement. Following the introduction in section I is the literature review which occupies section II. Section III discusses the research design and the estimation methods. Section IV presents the empirical findings, discussion, conclusion and a policy recommendation occupies the last section.

2. REVIEW OF RELATED LITERATURE

2.1. Preschool Education Attendance

Preschool education refers to any form of education provided to children before attending primary schools. The importance of early childhood education attendance for children’s social and emotional development, learning success and well-being, has been recognized by many studies in the world research literature, the Organization for Economic Co-operation and Development (OECD, 2013e). The early years of life are so critical for the acquisition of concepts, skills and attitudes that lay the foundation for lifelong learning (Cunha et al., 2006; Carneiro and Heckman, 2003). It represents a window of opportunity for a lifetime development of a person (UNESCO, 2010). Evidence suggests that preschool education attendance can lead to better learning outcomes possibly because it prepares students for the upcoming primary education (Martin et al., 2012; OECD, 2013e). The Trends in International Mathematics and Science Study (TIMSS) results revealed a very strong and positive relationship between preschool education and student performance in mathematics and science (Martin et al., 2012). It has also been suggested that even one year or less of preschool education attendance was enough to improve mathematics attainment, but this relationship was stronger for students who attended preschool for more than one and more or three years respectively, supporting the findings of independent research (Martin et al., 2012; Nelson, Westhues & MacLeod, 2003). These results are in accordance with the PISA 2012 findings from 64 countries and economies, according to which the long-term effects of preschool education on mathematics achievement are noticeable even after more than 10 years, in 15-year-old students (OECD, 2014b). A longitudinal study conducted in the United States of America (USA) by the National Center for Education Statistics (2009) with almost 4,000 children drew similar conclusions regarding the positive influence of preschool education attendance on student mathematics and reading performance. Evidences suggest that pre-primary education can lead to better learning outcomes possibly because it prepares students for the upcoming primary education. Recent TIMSS results revealed a very strong positive relationship between preschool education and student performance in mathematics and science, according to Martin, Mullis, Foy & Stanoce and OECD (as cited by Karakolidis et al., 2016). Study conducted by Barnett’s (2008) reasoned that well-arranged preschool training programs lead to lifelong school effectiveness, including higher performance in test scores, reduces grade repetition and higher education fulfilment.

2.2. Mathematics Teacher-Student Ratio

There have been series of inquiries about class size, but teacher-student ratio has not been conducted as extensively as the former. Number of students per teacher is generally associated with class size and it is mainly believed that smaller classes provide a better teaching and learning. This belief has been shared by many countries like the USA, European countries, China, Japan, and many other countries and they made policies to reduce their class sizes. Amongst the OECD countries, the average class size at the lower secondary level is 23. There are countries like Finland, Iceland, the UK with class sizes of 19 and lower and countries like Turkey, Korea and China with class sizes of 28, 34 and even 54; Blatchford & Lai, OECD (as cited by Nizamettin Koca and Bekir Celika, 2015). According to
the available data online, Shanghai student-teacher ratio (junior high school) fell gradually from 13.91 persons in 2005 to 11.49 persons in 2014.1

Teacher-student ratio is assumed by many as class size; though they are related, they are not accurately the same in nature. Class size is the number of students in a class or, the total number of students in a classroom. Teacher-Student ratio is the number of students per teacher, in other words the amount of students a teacher teaches in a school (Graue & Rauscher, 2009). In schools with smaller teacher-student ratio, teachers can have extra time to spend with each student and review their improvement and also provide a greater individualized teaching that accommodates each student (Johnson, 2011). Schools with larger class size and high teacher-students ratio recorded poor performance while better academic performance is associated with schools with small size and lower teacher-students ratio. Other studies like Bozzomo (1978), Bourice (1986) and Bolton (1988) confirm that there was no relationship between the size of the class and the results.

The empirical evidence on teacher-student ratio (T-S ratio) is mixed. In fact, several studies conclude that there are no effects of T-S ratio on student achievements. However, there are also compelling findings demonstrating a positive effect of increased T-S ratio on student learning, especially for low achievers and students from lower socioeconomic backgrounds, according to, Falch, Sandso, & Strom; Hoxby; Leuven & Løkken, Blatchford, Bassett, Goldstein, & Martin; Finn & Achilles; Fredriksson, Öckert, & Oosterbeck, Buckingham, Wheldall, & Beaman; Fien et al.; Vaag Iversen & Bonesrønning (as cited by O.J. Solheim et al., 2017).

3. RESEARCH DESIGN

The dependent variable in this research is students’ mathematics performance. The independent variables in this study included student- and school level variables. Preschool education attendance (PrSch) with dummy variable (i) yes, one year or less (PrSch1yr) = 1, otherwise = 0 (ii) yes, more than one year (PrSchM1yr) = 1, otherwise = 0. At the school level, mathematics teacher-student ratio (SMRATIO) was selected as school context variable. In this study, we centered the student and school variables around ground mean.

3.1 Descriptive Statistics

Students’ expected value in mathematics was 610.96 with standard deviation of 98.50. The level 1 and 2 variables, out of 5110 fifteen-year old students that participated in PISA 2012; preschool education attendance for one year or less accounted for 459 (8.9%, M=0.09, SD=0.28), while preschool education attendance for more than one year had 4517 (87.3%, M=0.87, SD=0.33) others 134 (3.8%) and mathematics teacher-student ratio 153 (M=115.07, SD=169.40).

Table 1 descriptive statistics

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math</td>
<td>5110</td>
<td>610.96</td>
<td>98.50</td>
</tr>
<tr>
<td>PreSch1yr</td>
<td>459</td>
<td>0.09</td>
<td>0.28</td>
</tr>
<tr>
<td>PreSchM1yr</td>
<td>4517</td>
<td>0.87</td>
<td>0.33</td>
</tr>
<tr>
<td>SMRATIO</td>
<td>153</td>
<td>115.07</td>
<td>169.40</td>
</tr>
</tbody>
</table>

Preschool education attendance for one year or less (PreSch1yr), Preschool education attendance for more than one year (PreSchM1yr), Mathematics teacher-student ratio (SMRATIO), N (population size), Standard deviation (SD)

3.2 The Theoretical Model For Hierarchical Linear Modeling (HLM)

HLM is a complex form of ordinary least squares (OLS) regression that is used to analyze variance in the dependent variables when the predictor variables are at varying hierarchical levels. HLM accounts for the shared variance in hierarchically structured data: The technique accurately estimates lower level slopes (student level) and their

1 https://knoema.com/atlas/China/Shanghai/Student-Teacher-Rate-Junior-High-School
implementation in estimating higher-level outcomes (school level). Variables at the lowest level of the hierarchy (level-1) are nested within level-2 categories and share in common the influence of level-2 variables. In our study, student-level variables such as preschool education attendance for more than one year (PreSchM1yr) and preschool education attendance for one year or less (PreSch1yr) are located at level-1, while mathematics teacher-student ratio (SMRATIO) is situated at level-2. In HLM, the outcome variable of interest is always situated at the lowest level of the hierarchy (Castro, 2002).

3.3 Results

Table 2 demonstrates the outputs of the HLM analysis with the unconditional model. It shows that about 50 percent of the total amount of difference in mathematics is attributed to schools in Shanghai-China. The outcomes pointed out that variability of average mathematics achievement between schools in mathematics was considerable.

<table>
<thead>
<tr>
<th>Effect</th>
<th>Variable</th>
<th>Estimated parameters</th>
<th>SE/SD</th>
<th>ICC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed</td>
<td>Math $\gamma_{00}$</td>
<td>610.24</td>
<td>5.68</td>
<td>0.50</td>
</tr>
<tr>
<td>Random</td>
<td>$\tau_{00}$</td>
<td>4814.92</td>
<td>69.39</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$\sigma^2$</td>
<td>4860.75</td>
<td>69.72</td>
<td></td>
</tr>
</tbody>
</table>

Standard deviation (SD), standard error (SE), Intraclass Correlation Coefficient (ICC) $\rho = \tau_{00}/\tau_{00} + \sigma^2$

The results affirmed the exigency to examine the interrelations between student-and school-level factors on mathematics achievement. Building on the unconditional model, the student-level variables were added into the unconditional model.

Research Question 1

To what extent is preschool education attendance (i.e. preschool education attendance for one year or less, preschool education attendance for more than one year) associated with PISA 2012 Shanghai-China mathematics performance?

Table 3 shows that preschool education attendance for more than one year was found to be statistically significant, while preschool education attendance for one year or less was not significant ($\gamma=16.22$, SE=9.14, p=.076). Finally, students who attended preschool education for more than one year were more likely to have higher performances in mathematics, compared to those who did not attend at all.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coef.</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math $\gamma_{00}$</td>
<td>610.32***</td>
<td>5.38</td>
</tr>
<tr>
<td>Student-level variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PreSch1yr</td>
<td>16.22</td>
<td>9.14</td>
</tr>
<tr>
<td>PreSchM1yr</td>
<td>54.97***</td>
<td>8.57</td>
</tr>
<tr>
<td>$\tau_{00}$</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>$\sigma^2$</td>
<td>4%</td>
<td></td>
</tr>
</tbody>
</table>

Coefficient (Coef.), Standard error (SE), proportion of variance explained at the school level ($\tau_{00}$), proportion of variance explained at the student level ($\sigma^2$). ***p<.01

After including all these level-1 explanatory variables in the HLM model, the residual variance is 4690.87, compare to the residual variance of 4860.74 in the unconditional model. The computed proportion variance explained at level-1 was 0.04 or 4%. Thus 4% of the level-1 variance in outcome is accounted for by the predictors added at level-1. The output of final estimation of variance components gives the test for the variance component for the intercept (intrcept1) to be zero with chi-square of 4893.89 with 152 degrees of freedom, this is statistically significant. We conclude that,
significant variation among school-level explanatory variables for math still remains to be explained, therefore needed to be considered. Table 3 reveals that with one standard deviation increase in more than one year preschool education attendance was associated with an increase in mathematics performance of about 55 points, after controlling other variables.

Research Question 2

To what extent is mathematics teacher-student ratio associated with PISA 2012 Shanghai-China mathematics performance?

We analyzed the student-level variables and find out that there was still much unexplained variance at the school-level, the next step was to identify whether mathematics teacher-student ratio could explain the between-school remaining differences. The outcome of the HLM analysis in Table 4 shows that mathematics teacher-student ratio was statistically significant predictor of student mathematics performance.

It should be noted that when level-2 explanatory variable was included in the analysis, the variance component representing variation between schools decreases relatively from (4322.35 to 3884.39). This indicates that the level-2 variable explains a relative small portion of the school-to-school variation in math achievement. More precisely, the proportion of variance explained by the level-2 predictors was 0.47 that is about 47%. Thus 47% of the level-2 variance in outcome is accounted for by the predictor added at level-2.

Table 4 level-2 conditional model

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coef.</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathγ00</td>
<td>610.33</td>
<td>5.09</td>
</tr>
<tr>
<td>School-level variable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMRATIO</td>
<td>-0.13</td>
<td>0.03</td>
</tr>
<tr>
<td>Student-level variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PreSch1yr</td>
<td>16.33</td>
<td>9.15</td>
</tr>
<tr>
<td>PreSchM1yr</td>
<td>55.02</td>
<td>8.59</td>
</tr>
<tr>
<td>τ00</td>
<td>47%</td>
<td></td>
</tr>
<tr>
<td>σ²</td>
<td>50%</td>
<td></td>
</tr>
</tbody>
</table>

*Mathematics teacher-student ratio (SMRATIO), ***p<.01

Meanwhile, Table 4 shows that one standard deviation increase in mathematics teacher-student ratio is majorly associated with decrease in mathematics achievement of about 1 point. Relative to the unconditional model, the conditional (final) model explained about 47% of variance at the school level and 50% of variance at the student level. However, it is presumed that the remaining school-level variance was still statistically significant (p<.001, chi-square=4370.09, df=151). This suggests that there are differences between schools in terms of mathematics performance which was not explained by the independent variables of this model, but could be explained by other predictors not measured in this study.

DISCUSSION AND CONCLUSION

The results of the present study and the findings of other research studies agreed as far as the importance of the extended preschool education attendance is concerned, Martin, Mullis, Foy and Stano and OECD recommended that more years of pre-school education attendance were linked to higher achievement in mathematics (as cited by Karakolidis et al., 2016). According to the data available online, Shanghai student-teacher ratio (junior high school) fell gradually from 13.91 persons in 2005 to 11.49 persons in 2014. However, the result of this inquiry depicts that mathematics teacher-student ratio was statistically significant. This result does not mean that the positive benefits of larger class size according to Bolton’s (2008) experience, “larger is sometimes better” be ignored. The empirical
evidence on teacher-student ratio (T-S ratio) is mixed. In fact, several studies conclude that there are no effects of T-S ratio on student achievements. However, there are also compelling findings demonstrating a positive effect of increased T-S ratio on student learning, especially for low achievers and students from lower socioeconomic backgrounds, Blatchford, Bassett, Goldstein, & Martin; Finn & Achilles; Falch, Sandør, & Strøm; Hoxby; Leuven & Løkken, Fredriksen, Öckert, & Oosterbeck, Buckingham, Wheldall, & Beaman; Fien et al.; Vaag Iversen & Bonesrønning (as cited by O.J. Solheim et al., 2017).

The use of PISA data was another asset to this study which has grounded its findings on a large and representative sample of 15-year-old students in Shanghai-China. In terms of the statistical analysis, this study applied the most suitable statistical technique for the clustered nature of the data so as to provide the highest possible quality of evidence (Field, 2013). Students’ mathematics achievement depends on various factors that add to large proportion of unexplained variance. For example, students’ and school socio-economic status, instructional practices, affective characteristics and school environment, just to mention few. Future study can be administered via different existing large-scale international assessment data like Trends in Mathematics and Science Study (TIMSS), Progress in International Reading Literacy Study (PIRLS) and Southern and Eastern African Consortium for Monitoring Educational Quality (SACMEQ). There is the dire need for further empirical analysis, because different data bases foster different contextual and background variables.

In addition to this, the inquiry of PISA data are cross-sectional, therefore it does not acknowledge establishment of causal relationships (Cohen et al., 2011). It only measures fifteen year old students’ mathematics achievement. Therefore, future research should carry out longitudinal studies that follow students over a long period of time, so as to survey whether specific mediations can lead to better mathematics performance. In a nutshell, this study only analyzed Shanghai-China, therefore should certainly be taken into consideration while generalizing the findings. Finally, we recommend that preschool education attendance should be extended to three years or more among the least/developing countries while teacher-student ratio should be reduced to 6 persons to 1 teacher in junior and senior high school among the least/developing countries and 9 persons to 1 teacher in the recently industrialized/developed countries, to foster mathematics high performance. This may thereby lead to lifelong influence on science and technology.

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Teaching Environmental Health Through Research In An Undergraduate University

Jerzy Bilski, Valley City State University, USA

ABSTRACT

The project being conducted at Valley City State University (VCSU) focuses on the implementation of research as a tool to teach environmental health issues at the undergraduate level. The current research being used for this teaching project is a long-term study of environment-friendly utilizations of coal fly ash (FA); the major coal combustion residue of FA that contains significant amounts of heavy metals. Teaching through research provides opportunities for students to gain additional knowledge.

A specific goal of teaching through research project in academic year 2016/2017 was to investigate the phytoremediation of coal FA, which is one of environmentally friendly methods to utilize FA. There are two steps in performing teaching through research. The first step is the lecture and discussion with students to explain 1) the overall research goal, 2) how to formulate and test a scientific hypothesis, 3) the necessary information about the specific experiment (goals, background, etc), 4) an experimental plan and methodology, 5) how to present and disseminate the obtained results; and any other related issues. The second step is in a laboratory setting where each student performs a separate experiment. At the experiment performed in greenhouse and laboratory, a student evaluates the effects of FA on the germination and growth of several plant species. FA is added to the plant growth media (soil) with other industrial by-products, such as sewage sludge, corn stove, saw dust, and beet pulp. During this project, the instructor and student meet frequently in the laboratory and classroom to discuss any progress and problems in performing the experiment. Upon completion of the experiment, the students present their obtained results at a regional meeting of the North Dakota Academy of Science, and at the local undergraduate forum.

In the academic year, 2016-2017, 4-8 students per semester participated in this interdisciplinary project that serves as a teaching tool, contributing to the deepening of students’ knowledge of botany, plant science, soil science, environmental chemistry, statistical analysis and other related areas. In addition, teaching through research enhances a student’s communication, problem solving skills, and critical thinking.

The research project used for teaching has been funded by the IDeA Network for Biomedical Research Excellence (INBRE) renewed grant. This research has a great impact on the present status and future of our science program at VSCU. It leads to the widening and upgrading of the academic and research components of our curricula. INBRE has enabled us to build a department that attracts quality students who attend VCSU for the excellent preparation and opportunities we can provide in the Science Department. Our new Environmental Science and Health Science majors, which were initiated with INBRE program support, have become one the fastest growing majors at VCSU in terms of enrollment. This project has contributed to the strengthening of the Health Science and Environmental Science program, and is targeted towards students who have aspirations to enroll in graduate or professional schools. We anticipate the continued growth and improvement of our curricula aided, in large part, by the resources provided through INBRE.

Most of our students do not come in with the aspiration to continue onto graduate or professional school and most do not have the confidence that it is possible for them. The experience in the laboratory opens their eyes and gives them the confidence to continue onto graduate or professional school, or to look for a career as a research technician in larger companies. Teaching through research strongly contributes to a student’s learning. Thus, this program should be continued for the foreseeable future. Altogether, in the last 6 years, 23 undergraduate students have been involved in this program, and their experiments resulted in a total number of 11 scientific papers and 31 abstracts.

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English Teacher Perception Of The Current English Curriculum And Instruction At A University In Saudia Arabia
Abdullah Almahmoud, State University of New York at Fredonia, USA

ABSTRACT

Task design allows teachers to organize and implement tasks according to the specific needs of the learners. The purpose of this research was to evaluate the teacher perception of curriculum and instruction in regards to English language development at a King Saud University, KSA. The study mainly used the quantitative questionnaire technique as a main data collection instrument. The participants are a total of 35 male and 25 female professors who are originally from Saudi Arabia, Egypt, Syria, India, United Kingdom and the United States aged from 25-55 years old. The results showed lack of development of English as a Foreign Language in the country. Teachers from Saudi Arabia and foreign countries advocate for evolution to the curriculum and its integral parts. Yet, the changes have not occurred in the system. This clearly shows that there is less involvement of the teachers in the development of the curriculum. The teachers have not also been able to provide inputs, help write and contribute their own material. This study showed valuable insights into the English Language Curriculum problems and various rectifications, which might help improve the quality of the curriculum and therefore, enhancement in increasing interest of students and developing their skills.
Learner Autonomy And Vocabulary Development For Female College English As Foreign Language Learners In The Kingdom Of Saudi Arabia
Norah Mansour Almusharraf, University at Buffalo, USA

ABSTRACT
This dissertation study aims to examine how English language learners in the Kingdom of Saudi Arabia (KSA) realize learner autonomy, especially in the context of the English learner’s meaning potential development via purposeful vocabulary acquisition. This study is a qualitative case study that engages both teachers and English learners as subjects over a prolonged period of time and examines their teaching and learning practices, agentive roles in language development, and strategies in accessing and developing meaning. It will investigate EFL students' perception and application of autonomous learning strategies for the purpose of English vocabulary development as well as their most preferred methods for learning English. This research draws on the premises of social constructivist framework and transformative learning theory, both of which place the learner as an agentive self and in the sociocultural context of language learning. Data collection took place at the Female University Campus in the KSA. It included English classroom observations, audio recordings of instructional practices, face-to-face semi-structured interviews of eight students and six teachers from two different classrooms. It also included classroom observations of eight focal students and two teachers, reflective statements, and English learning autobiographies from eight students. This study aims to bring implications for language teachers and researchers who advocate for learner autonomy theory and innovative classroom practices. It aims to offer specific guidance, and learning strategies on learner autonomy in English education in the KSA.
Comparative Research On Educational Systems And The Reasons Behind The Failing American Educational System
Rachel Holmes, Estrella Mountain Community College, USA

ABSTRACT

Global education rankings are assessed based on the Program for International Student Assessment which is facilitated every 3 years. This data has provided countries with opportunities to reflect and reform for continued growth, and it also provides comparative rankings among participating countries around the world. With the continual decline of U.S. rankings over the past three assessment cycles, researchers attempt to determine the reasons for the decline and the validity of the data. Additionally, this researcher will analyze the educational systems in consistently high-ranking countries to determine what educational practices may account for these successes and what educational practices are lacking in the United States.

Keywords: PISA, comparative research, educational reform
The Demise Of True Patient-Centered Healthcare
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Tyler Zeigler, Clopton Clinic, USA
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ABSTRACT

Healthcare delivery has changed dramatically in the last two decades in all aspects, but none more dramatically than the physician-patient relationship, which is perhaps the most important aspect. Where once physicians spent a considerable amount of time with each patient to truly get to know each one and to be able to diagnose their medical problems in order to prescribe the best treatment, talking directly to the patient and making notes in the patient’s medical record, today’s typical physician-patient encounter is more of one of a nurse coming in the room taking vital signs, asking questions, entering information in a computer and telling the patient the doctor will be in shortly. When the doctor does enter, he/she sets at their computer, asking questions the nurse has already asked, typing into the computer, then tells the patient what he/she recommends the patient do, hardly facing the patient during the encounter until the visit is over and the patient leaves.

What was once a true patient-centered approach to healthcare has been replaced by something more like a factory assembly line whereby the physician has a brief encounter with the patient and then moves on to the next one. What are the contributing factors to this change? While there may be many, the most significant culprits appear to be a shortage of physicians, both primary care physicians and certain specialists, and the multitude of laws and regulations imposed upon the healthcare system, requiring physicians to spend more time documenting than in focusing on the patient, as well as the reduction in insurance payments to physicians from private insurance companies, Medicare and Medicaid alike which have required physicians to become mass production machines in order to make up for the loss in revenue through the regulations.
The Relationship Between TPACK And Teachers’ Pedagogical Beliefs
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ABSTRACT
Technology integration on a daily basis during classroom sessions is highly essential for modern day living. This increased integration has led researchers to concentrate on using technology during instruction in an effort to support teachers and students in the classroom. Niess et al. (2009) stated how The National Council of Teachers of Mathematics (NCTM) describes technology as an essential principle that provides effective tools in teaching and learning mathematics. The council states that “technology is essential in teaching and learning mathematics; it influences the mathematics that is taught and enhanced students’ learning (NCTM, 2000, p. 24)”. Many studies have investigated the benefits of using technology in the classroom for both teachers and students. Nevertheless, this literature review discussion focuses on the teachers as playing an essential role in the learning process, since their responsibility is to provide effective teaching techniques to facilitate learning. In previous studies, some researchers focused on teachers’ technological pedagogical and content knowledge (TPACK) as a framework to assess teachers’ understanding of applying technology in the classroom (Chai, Koh, Tsai, 2013a; Schmidt, Baran, Thompson, Mishra, Koehler, & Shin, 2009; Lux, Bangert & Whittier, 2011; Roig-vila, Menguul-Andres, & Quinto-Medrano, 2015; & Dong, Chai, Sang, Koh, & Tsai, 2015). Whereas, other studies discussed teachers’ pedagogical beliefs that may affect the application of technology in the classroom (Tondeur, Braak, Ertmer, & Ottenbreit-Leftwich, 2017 & Deng, Chai, Tsai, & Lee, 2014; Hsu, Tasi, Chang, & Liang, 2017; Liu, 2011; Ertmer, 2005). By researching these two areas, these studies will bridge the gap, and enable discussions regarding the relationship between both areas because “there is a lack of studies about the relationship between teachers' TPACK and teachers’ beliefs” (Chai, Chin, Koh, & Tan, 2013b, p. 657).

LITERATURE REVIEW
Technological Pedagogical and Content Knowledge (TPACK)

Many educational researchers examine and investigate TPACK as a framework that helps them to better understand teachers’ technology integration, whether for just in-service teachers (Roig-vila et al., 2015; Hsu, Tasi, Chang, & Liang, 2017), pre-service teachers (Karatas, Tunc, Yilmaz & Karaci, 2016; Lux et al., 2011; Schmidt et al., 2009), or for both pre-service and in-service teachers simultaneously (Dong, et al., 2015). Moreover, the TPACK framework exists to accommodate all of the subject areas, such as mathematics for instance (Karatas et al., 2016; Niess et al., 2009), and language arts (Chai et al., 2013b).

Theoretically, Mishra and Koehler (2006) designed a general TPACK framework also referred to as TPCK, that emerged from Shulman’s (1986) idea of pedagogical content knowledge (PCK). They identified seven components or factors that teachers should know in order to be able to integrate technology effectively in the classroom. In fact, they also presented the three major components, content knowledge (CK) which contains information about the subject matter, pedagogical knowledge (PK) which refers to the methods used to teach the subject matter, and technology knowledge (TK) which involves the criteria for using the technology. Moreover, they also stated that the intersection and overlapping between the three major components would yield three secondary forms of knowledge technological pedagogical knowledge (TPK), pedagogical content knowledge (PCK), and technological content knowledge (TCK). To elaborate, by definition, TPK involves using the technology to teach, PCK entails the use of content knowledge via adopting pedagogical strategies, and TCK refers to the information about new ways for creating new learning scenarios for content that is specific. Thus, the intersection and overlapping between the three secondary forms of knowledge would inevitably construct TPACK. On that note, TPACK can therefore be defined as the knowledge that teachers should possess, to ably use technology in designing their classes effectively (Lux et al., 2011; Schmidt et al., 2009, Karatas et al., 2016; Niess et al., 2009; Chai et al., 2013a; & Dong et al., 2015).
Further, Chai et al., (2013a) in a review of the TPACK framework, found that the TPACK framework “can be used to guide educators; effort in dealing with the challenges on teaching and learning that are brought forth by rapidly changing technologies” (p. 35). This information is based on eight papers that were reviewed by the researchers. In fact, it is noted that using TPACK “as a framework for measuring teaching knowledge could potentially have an impact on the type of training and professional development experiences that are designed for both pre-service and in-service teachers (Schmidt et al., 2005, p. 125) For example, in the field of mathematics, Niess et al. (2009) discussed mathematics teachers’ TPACK standards, and mentioned that “TPACK provides a dynamic framework for viewing teachers’ knowledge necessary for the design of curriculum and instruction focused on the preparation of their students for thinking and learning mathematics with digital technologies” (p. 7). Hence, this means that the TPACK framework is capable of providing opportunities for teachers to understand and grasp how students learn concepts, and how they can successfully integrate technology in the classroom.

Subsequently, the need for a valid and reliable instrument has led researchers to design and develop a TPACK self-assessment survey over the years. The key factor for developing TPACK is that it can also “be used to create more effective classroom learning environments because new teachers also need to acquire an understanding of the common challenges and misconceptions students have when learning that subject (Lux et al., 2011). In recent studies, Schmidt et al. (2009), and Lux et al. (2011), designed a self-assessment TPACK instrument for pre-service educational teachers to evaluate and assess their knowledge in applying technology in classrooms, inclusive of their understanding of TPACK components that are mentioned in Mishra and Koehler (2006). The questionnaires were written and ranged on the basis of a five-level Likert scale. They both discussed the demographical factors such as age, gender, program study, and field experience. The validity and reliability of these instruments were constructed, and TPACK instruments yielded six factors which are TK, PK, CK, PCK, TCK and TPK. The use of a TPACK instrument can also help researchers to identify the areas where they can utilize technology effectively during instruction, but in reality teachers may also require more support to improve the education system despite having mere access to the TPACK instrument. For instance, Roig-Vila et al. (2015) studied seven teachers’ TPACK components in Spain, regarding how technology is integrated in the classroom, and how the instrument is also utilized (initially developed by Schmidt et al. (2009)). Additionally, in the study by Roig-Vila et al. (2015), they used a self-assessment instrument which expressed that in-service teachers are more knowledgeable in the pedagogical and content knowledge than in technology. However, it was determined across the board that male in-service teachers were more experienced than female in-service teachers in technical knowledge and didactic application. On the other hand, in the quantitative study by Karatas et al. (2017) (also used TPACK instrument developed by Schmidt et al. 2009), the researchers focused on pre-service mathematics teachers’ TPACK and TPACK related to self-confidence, and TPACK perception of the use of the technology-based learning environment called “The Project of Improving Opportunities and Instructional Technologies”. Their findings indicated that male pre-service teachers had higher scores on the surveys of TPACK, and are more confident about utilizing technology in mathematics education than female pre-service teachers.

To assess mathematic teachers understanding of TPACK, Niess et al. (2009) generated a TPACK development model that mathematics teachers can use when they apply technology in the classroom as part of their teaching process. The first stage is knowledge recognition which refers to how teachers are able to use the technology to recognize the importance of applying technology in teaching mathematics, and find the connection to the content. Second, is the process of accepting, which focuses on how teachers form a favorable or unfavorable attitude toward teaching mathematics use technology. Third, is adapting where teachers decide whether to adopt or reject teaching mathematics with the use of technology. Fourth, involves the process of exploration and implementation which includes the active integration of technology during mathematics instruction. Finally, the last stage is the advancing and confirmation stage, whereby teachers can evaluate the results of using technology in mathematics lessons.

Furthermore, the need for a mathematics pre-service teachers’ TPACK instrument that is specific to assisting mathematics teachers in training is very important due to the complexities of teaching mathematics, and the need to evaluate and plan lessons using technology. Thus, via the TPACK development model instrument formed by Mishra and Koehler (2006), the researcher will be able to develop a pre-service mathematics teachers’ TPACK instrument (PSMT-TPACK) based on the Schmidt et al. (2009), and Lux et al. (2011) instrument and Niess et al. (2009) TPACK development model. Moreover, this model is relevant because it can also help teachers evaluate their TPACK level in mathematics instructional technology.
Teachers’ Pedagogical Beliefs

The integration of technology in the classroom can be impacted by teachers’ individual pedagogical beliefs, which in some cases play a major role in applying technology effectively (Ertmer, 2005; Deng, Chai, Tsai, & Lee, 2014; Liu, 2010; Hsu, Tsai, Chang, & Liang, 2017; Ertmer & Ottenbreit-Leftwich, 2010; Tondeur, Braak, Ertmer, & Ottenbreit-Leftwich, 2016; Chai et al., 2013b). For example, Ertmer & Ottenbreit-Leftwich (2010) discussed how some variables can affect teachers in such a way that causes them to shift to technology usage. Additionally, they also discussed the pedagogical beliefs as key for adopting or rejecting the application of technology in the classroom.

Based on Pajare’s (1992) study, teachers’ beliefs have been defined as a “messy concept” across several studies (Ertmer, 2005; Sang et al., 2009; Ertmer et al., 2010; & Tondeur et al., 2017). According to Ertmer (2005), in Pajare’s (1992) study, it was “proposed that all teachers hold beliefs, however, defined and labeled, about their work, their students, their subject matter, and their roles and responsibilities” (as cited in Ertmer, 2005, p. 28). Moreover, teachers’ pedagogical beliefs as investigated in several studies, refers to the teachers’ beliefs about teaching and learning which are classified as traditional or teacher-centered beliefs, and constructivist or student-centered beliefs (Sang et al., 2009; Tondeur et al., 2017; Dang et al., 2014; Ertmer, 2005; Liu, 2011; & Chai et al., 2013b). Other studies classified teachers’ pedagogical beliefs as constructivist; a mixed constructivist or traditional belief; traditional; and a mixed low constructivist or traditional belief (Sang et al., 2009). Whereas, Deng et al. (2014), classified teachers’ pedagogical beliefs based on Sang et al. (2009) and Tondure et al. (2008) studies, into constructivist and traditional beliefs. This is in addition to both constructivist and traditional beliefs, and neither constructivist nor traditional.

Teachers’ Use of Technology and Pedagogical Beliefs

As technology integration can be impacted by teachers’ pedagogical beliefs, there is an assumption that teachers who hold constructivist or student-centered beliefs tend to apply technology, and use appropriate tools more effectively than teachers who hold traditional or teacher-centered beliefs (Ertmer & Ottenbreit-Leftwich, 2010; Ertmer, 2005; & Deng et al., 2014). For example, Deng et al. (2014), found that the tendency of applying technology in the classroom are less with teachers who hold traditional beliefs, because teachers who hold the traditional pedagogical beliefs are trained without any reference to use of ICT. In addition, based on the findings in the study, their constructivist pedagogical beliefs are more in alignment with a constructivist use of Information Communication Technology (ICT) (Deng et al., 2014). Moreover, even though teachers are more likely to hold traditional beliefs, if they have rich-technology environments that enable them to apply technology in their lessons, they could instead shift their beliefs to mirror more constructivist beliefs (Tondur et al., 2017). Unfortunately, Roehrig et al., (2007) adds that “even if pre-service teachers leave their teacher education programs with student-centered beliefs, they tend to revert to traditional practices when faced with the realities of the classroom (as cited in Ertmer, et al. 2010). On the other hand, teachers’ practices sometimes don’t reflect what pedagogical beliefs they hold because “teachers using technology during instruction rely on their pedagogical beliefs to practice” (Liu, 2011).

Significantly, teachers’ pedagogical beliefs can also be affected by some demographic factors such as gender, subject matter, experience, age (Deng et al., 2014; Sang et al., 2009; & Hsu et al., 2017), experience and cultural-social factors (Ertmer, 2005), or geographical and socioeconomic factors (Sang et.al, 2009). These factors can change teachers’ pedagogical beliefs of using technology even though they are more constructivist and use a student-centered approach. For instance, Sang, Valcke, Van-Braak, & Tondeur (2009) investigated teachers’ educational beliefs, and found that gender and subject matter play a major role that affect traditional beliefs, that males are more constructivist than females, and that teachers who teach non-academic subjects tend to use a more traditional approach.

Teachers’ Pedagogical Beliefs and TPACK

The studying of relationships between teachers TPACK and their pedagogical beliefs is discussed in a minimal selection of studies. One recent study example is by Chai et al., (2013b), who formed a discussion covering in-service Chinese language teachers’ TPACK, and how TPACK is associated with their pedagogical beliefs using a TPACK survey and teachers’ pedagogical beliefs survey. By studying the correlation between TPACK and their pedagogical beliefs, they found that teachers’ TPACK are more related to their constructivist beliefs than traditional beliefs. Whereas, Dong et al. (2015) studied pre-service and in-service teachers’ seven TPACK factors, and how TPACK is
related to their beliefs about constructivist oriented teaching (CB) and to their design disposition (DD). They found that in-service teachers are more knowledgeable and more confident than pre-service teachers in the TPACK, CB, and DD areas.

The relevance of this study is to assess pre-service math teachers understanding of TPACK and how it relates to their pedagogical beliefs since technologies are employed to scaffold sense making (Chai et al., 2013a). Additionally, understanding the relationship between teachers’ beliefs and their practices are essential in truly understanding how teachers’ practice can affect the integration of technology (Ertmer, 2005, Deng et al., 2014). Training teachers to be more technology savvy and skilled at applying a student-centered approach, that is useful for helping teachers to practice applying technology effectively.

In sum, integrating technology in the classroom has the capability of influencing teachers’ understanding of TPACK factors, and teachers’ pedagogical beliefs with regard to some demographical factors (for example, gender, age, experience, and level of student classification). However, existing studies pertaining to the relationship between pre-service mathematics teachers’ TPACK and their pedagogical beliefs are minimal. This goal of this study is to fill the gaps in research for this subject area, and investigate how teachers TPACK and their pedagogical beliefs are related. Therefore, the purpose of this present study is to answer the following questions:

1- Based on PSMT-TPACK, to what extent can math teachers be able to integrate technology in classroom instruction?
2- How do pre-service teachers’ pedagogical beliefs influence their teaching practices, or choice to integrate technology in the classroom?
3- What is the relationship between teacher’s pedagogical beliefs and TPACK, and how do demographic factors impact teachers’ practices?

REFERENCES


Program Review: How Can This Facilitate Interdisciplinary Collaboration?

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ABSTRACT

Results from 15 program reviews across the University were used to determine areas for growth among the faculty and their perspective disciplines. The most prevalent themes were identified and linked to those leaders within the university who could be part of a planned faculty development experience. The importance of interdisciplinary collaboration was the focus for the faculty development activities in order to break down the invisible silos that exist across most higher education campuses. Results will be analyzed for success within several strands of data; the next round of 18 program reviews, completion surveys and a certificate program linked to the annual faculty portfolios.
The Effectiveness Of State And Local Economic Development Programs: The Case Of New York State

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ABSTRACT

For many years now, individual U.S. states and cities have been offering incentive packages like tax credits to businesses for the purpose of creating new jobs in their area. The recent 3 billion dollar package offered by the state of Wisconsin to Foxconn has certainly given this economic development strategy widespread attention. But the Foxconn deal pales in comparison to Amazon’s recent invitation to states and cities to bid for its proposed second” headquarters. Amazon’s RFP has drawn even more attention. This paper will explore the issues surrounding such economic development programs so as to obtain greater insight into the effectiveness of such programs. How many jobs are created and at what cost? My home state of New York will get special attention.

Keywords: State Economic Development, Job Creation, Business Incentives, Tax Credits

INTRODUCTION

State and local economic development initiatives have captured recent headlines in the wake of two very noteworthy actions. The state of Wisconsin negotiated a 3 billion dollar package incentive package to bring the Taiwanese firm, Foxconn, to its state (Horowitz, 2017). Foxconn’s proposal promised 3000 manufacturing jobs initially with the potential for 13000 new jobs in Wisconsin. Shortly thereafter, Amazon announced a request for proposals from states and cities for the creation of a “second” headquarters in North America (Wingfield and Cohen, 2017). Essentially, it opened an “all-out” interstate bidding war for what Amazon estimates will be 50,000 jobs. Amazon asserted that it will invest over $5 billion dollars and generate tens of thousands of additional “indirect” jobs and billions in additional investment as a result of its presence. After the deadline for submissions had passed. Amazon announced that 238 cities, states, and regions across North America had submitted proposals. Amazon hopes to make a selection decision sometime in 2018 (Amazon.com website). In the meantime, the media have had a field day handicapping the various locations from which Amazon will choose.

Economic development incentive packages are nothing new. It is the scale of the Foxconn and Amazon deals that bring this job creation strategy into the spotlight. It raises questions about whether such incentive packages are effective in accomplishing the goal of job creation that can justify the incentives in terms of cost to the taxpayers and cost per job. Recent research has been looking into these issues.

THE PEW CHARITABLE TRUST AND THE W.E. UPJOHN INSTITUTE

Research at The Pew Charitable Trust and by Timothy Bartik for both the Pew Charitable Trust and the W.E. Upjohn Institute for Employment Research has attempted to measure and evaluate state initiatives aimed at enhancing job creation and investment.

Bartik and his associates have created a massive database for cataloguing state business incentives and their effects on employment and related economic variables. Entitled “Panel Database of Business Incentives”, it aims to provide researchers and policy makers with empirical data on various business incentives used by state for the purpose of enhancing that state’s economic development, especially as to job creation. At present, the database covers the years 1990 to 2015. The main business incentives included are job creation tax credits and property tax abatements.
Coverage includes 33 states which account for 92% of U.S. GDP.

There seems to be a growing consensus among research organizations that there are too many state economic development programs whose accountability and effectiveness are in serious doubt.

The existing research on incentives is that in some cases they can affect business location decisions, but that in many cases they are excessively costly and may not have the promised effects. The new research suggests that much of this consensus is justified (Bartik 2017).

*Incentives are still far too broadly provided to many firms that do not pay high wages, do not provide many jobs, and are unlikely to have research spinoffs. Too many incentives excessively sacrifice the long-term tax base of state and local economies. Too many incentives are refundable and without real budget limits. States devote relatively few resources to incentives that are services, such as customized job training. Based on past research, such services may be more cost-effective than cash in encouraging local job growth (Italics for emphasis).*

Though Bartik (2017) points out that work with this new database of incentives and taxes is preliminary, he makes the shocking conclusion that state incentives are not correlated with a state’s economic fortunes. Neither do they have a large correlation with a state’s current or past employment nor with income levels or with future economic growth. If confirmed by further research, this puts the whole rationale for state economic development programs in serious doubt.

### THE CASE OF NEW YORK STATE

New York State provides a good example of the issues surrounding state economic development programs (Giacalone, 2017). A good reason for taking a closer look is that the state’s administration has made new job creation a major priority since it took over the statehouse in 2011. Indeed, the state’s economic development agency, the Empire State Development Corporation, has spent heavily on public service advertising that asserts that many new jobs have been created throughout the state as a result of its efforts. Not a day goes by without the assertions in the media that tens of thousands of new jobs have been created. But have they? There are many “watchdogs” that are not so sure.

#### Citizens Budget Commission

In early 2015, the Citizens Budget Commission (CBC) released a report delineating the expansion of New York State’s economic development efforts (Davidson et al, 2015). The report encompassed several programs, including the Excelsior Jobs Program. At that time, the CBC noted that there seemed to be a proliferation of programs that lacked coordination and transparency. It emphasized that “All investments should be coordinated and aligned to regional strategies, performance metrics should be standardized for all programs and across all regions, and more comprehensive disclosure requirements should be put in place so that the costs and benefits of each project can be weighed. In a CBC Policy Brief, Edwards and Friedfel (2015) concluded that all programs should be reevaluated for effectiveness before existing programs are increased or new ones are added. It expressed significant concern over the START-UP NY program which seemed to have the greatest potential for abuse.

#### The Excelsior Jobs Program

In October of 2015, the Citizens Budget Committee released another report that concentrated on the Excelsior Jobs Program which had replaced the Empire Zones program in 2010 (Jain and Copeland, 2015). According to the CBC, the Excelsior program appeared to be an improvement over the Empire Zones program in several important areas. “The reformed program identified specific traditional and growth industries for eligibility, limited the benefit period to five years, set minimum job creation requirements by industry, and provided benefits retroactively based on performance.” The CBC further lauded the new program which, “In contrast to Empire Zones, which granted benefits to applicants "as of right" if they met all program criteria, Excelsior benefits must be approved on a case by case basis by Empire State Development (ESD). In addition, Excelsior had an annual program cap peaking at $250 million in 2015.” (Jain and Copeland, 2015).

Between 2011 and 2015, various New York State budgets have expanded the Excelsior Program. The overall time
horizon for the Program was extended five years, taking it to 2024. The benefit period for participants was increased from five to ten years. Changes were made in three of the four tax credits, providing more generous benefits. Movie production and video game production were added to the list of targeted industries. Moreover, the employment and investment thresholds for program eligibility were reduced making it easier to qualify for tax benefits.

Nonetheless, at that time, the CBC still concluded that The Excelsior Program was an improvement over the Empire Zones program. In a comparison of the first two years of both programs, it commented that “Despite changes to the program, Excelsior’s targeting, annual cost caps, reporting, and use of performance-based credits are still stronger than its predecessor.” It is a slimmer and more efficient program than its predecessor, a result of adhering to criteria for quality economic development programs and more robust reporting requirements for participants.

But the CBC also cautioned that the “modifications are worrisome for taxpayers. ESD should remain cautious and vigilant in administering and monitoring the program, and legislators should avoid additional modification to expand it; without careful guidance, Excelsior could slip back into the costly patterns of Empire Zones” (Jain and Copeland, 2015). In the latter part of 2016 and most of 2017, various media in New York State were heavily criticizing the Empire State Development Corp. as to the effectiveness and transparency of the Excelsior Jobs Program and related job creation and retention programs. The criticism was based heavily on a report issued by the Office of the State Comptroller (OSC, July 2016).

The Office of the State Comptroller

The Comptroller’s Report did not measure the total number of actual jobs created or new investments made. Its focus was on accountability and transparency as the representative of the taxpayers. However, the implications of these findings were that the number of net new jobs created by the Program was likely to be over-stated by ESD since not all the new jobs created were full-time as required nor was there adequate corroboration. Similarly, some of the “new” jobs created may have been transferred from other entities. A further implication was that some firms in the program were receiving tax credits without having met the job creation and investment goals agreed upon. Such a situation was not in the best interests of the New York State taxpayers.

The USA Network

A USA Network investigation found that ESD, through the Excelsior Jobs Program, committed $708 million in tax credits to 450 companies that pledged to create 45,750 jobs (Spector and Lahman, 2017). Their investigation reported that only about 19,000 jobs were created between 2012 and 2016. Yet, the state Comptroller’s Office claimed that ESD could not substantiate many of these Excelsior job claims. Moreover, it argued that ESD retroactively changed the job-creation goals of several companies and failed to account for turnover by counting new employees hired and not new positions created. Another issue was the alleged shifting of employees from related entities to the Excelsior participating firm.

Furthermore, a major objective of the myriad NYS job-creation initiatives was to improve employment in many state regions outside New York City. The USA Today Network study found that, at least from 2009 through 2014, three-quarters of the new jobs were in New York City. So, the hoped for regional impact has not materialized despite the considerable sums being spent on job-creation (Spector and Lahman, 2017).

Other NYS Development Programs

In 2013, the state initiated, START-UP NEW YORK, a job creation program under the direction of its Empire State Development Corporation. This program also provided tax credits. After spending over $50 million in promoting the program, it had resulted in just 408 jobs in its first two years. Acknowledging the program’s lack of success, it was rebranded as the Excelsior Business Program. Suffice it to say the new program uses the same tax credit approach though it changes many of the rules of the “START-UP” program in the hope better outcomes.

Similarly, “Innovate NY”, a state-sponsored venture capital fund was super-ceded by the New York State Innovation Venture Capital Fund” after the original program was rocked by a major scandal whereby a political ally of the
Governor inappropriately diverted $1 million in public funds (Girardin, 2014).

Vogel (2017) reports on IDAs, another New York State jobs initiative; His findings, though preliminary, indicate a modest level of success.

The Empire State Development Corporate defends its job creation and investment efforts against its critics. It argues that in many cases it is too soon to fairly evaluate its programs and regulatory compliance. It urges the critics to take a longer term view and not look for immediate or short-term results.

CONCLUSION

Both New York City and several other locales in New York State have made bids for Amazon’s HQ2. This intra-state competition parallels the inter-state competition, evidenced from the proposals throughout the country. Although NYC has not offered any direct subsidies, NYS has offered tax incentives the nature and size of which it did not disclose because of the competitive nature of the Amazon proposal.

Political scandals, lack of transparency, inadequate controls, limited job creation, and the high cost of incentives have plagued the New York experience with economic development programs. Would winning the HQ2 competition cost more than it is worth?

Overall, it would seem that Bartik’s conclusion about the minimal or non-existent effectiveness of state economic development programs, cited above, would apply to New York State.

AUTHOR BIOGRAPHY

Professor of Economics and Finance and holder of the Henry George Chair in Economics. B.A. and Ph.D. from Columbia University, MBA, St. John’s University. Faculty member since 1962. Research and publications in the areas of economic history, health care economics, managerial forecasting, and collegiate business education. Author of The U.S. Nursing Home Industry (2000) and co-editor of The Path to Justice: Following in the Footsteps of Henry George (2002).

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Amazon.com website.
Preparing Arts Educators: Are All Of The Puzzle Pieces Fitting?

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Michele Paise, Morehead State University, USA

ABSTRACT

Throughout the United States, arts educators are prepared at universities and colleges based on national accreditation standards, state requirements, and philosophical and methodological ideologies. Their preparation is critical to not only the success of the pre-service candidate but to the state of arts education in p-12 systems as a whole. Students preparing to be Arts Educators need the tools to be successful in the classroom as well as the skills to be considered a professional in the arts. Often times these two directives can seem to be at odds with each other and can create gaps in a student’s preparation. The purpose of this presentation is to examine (1) current trends in arts educator preparation, (2) specific degree plans at private and public institutions in Tennessee and Kentucky, (3) analysis of current national research and data available regarding arts educator preparation and (4) implications for further research.
Perceptions About Ethical Behavior Among Undergraduate Students Attending Religiously-Affiliated Institutions

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ABSTRACT

By controlling for size and existence of a religious affiliation, and gender, this study adds to the literature regarding opinions of undergraduate business students about the ethical nature of both academic and business related actions. Analysis of student survey data from two institutions similar in size and religious affiliation continues in this longitudinal study. After the data were separated by gender, ethical perceptions of male students significantly differed for business-related dishonest acts for those male students who had taken two or more courses in religion, but church service attendance did not seem to have any effect. This may suggest that taking more courses (or having more dialogs) in which spiritual/moral/ethical issues beyond academics are discussed may affect male student perceptions of ethical issues outside the institution.

Keywords: Cheating (Education); Student Attitudes; Business Ethics; Religious Affiliation; Institution

INTRODUCTION

Evidence suggests that business students have differing opinions of actions that are ethical and those that are not, and that these views may be related to the types of institutions the students attend (Comegys, 2010; Davis, 1993; Molnar, et al. 2009). Results of previous research have been inconsistent regarding the relationship between business students’ perceptions about ethical behavior and the characteristics of the institutions attended (Lawson, 2004; Smyth and Davis, 2004). Further, Cole and Smith (1995), Knotts, et al. (2000) and Ruegger and King (1992) all found that gender has a significant impact on the ethical judgments of students when asked about business situations. Females were found to be more ethical. Previous studies by this research team (Cotter, et. al. 2016, 2017) explored this relationship by controlling for the existence of a religious affiliation of the institutions, institution size, and respondents’ gender. Institution 1 is a small, private, Catholic, liberal arts college in the Midwest, and Institution 2 is a small, private, Christian university in the Southeast United States. Both institutions have enrollments of approximately 2,000 students.

The current study continues this previous research by considering the effect of attendance of church services (defined in this paper as “religiosity”), and also the number of courses in religion taken by student respondents. In the following sections, previous research regarding student ethical perceptions is presented, followed by a discussion of the research methods, results, and implications of the current study.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

This study expands the previous research by this team by also controlling for a component of religiosity (church service attendance) and the number of courses in religion completed. This study follows the approach of previous studies by considering whether students attending similar type and size institutions exhibit comparable ethical perceptions. The influence of the type and size of institution attended on the ethical perceptions of students has been...
widely studied, with inconsistent results reported. Molnar, et al. (2009) found students at a small, private, religiously-affiliated institution consider cheating less acceptable than do students at public universities, regardless of size. Davis (1993) found that students at small, private, liberal arts colleges cheat less than do students at large universities, whether they are public or private schools. Comegys (2010) found evidence that students attending religiously-affiliated schools have more ethical attitudes towards business than do those students attending non-religiously-affiliated schools; sizes of the six schools included in the study were not disclosed.

Smyth, et al. (2009) found the perceptions of students attending a public college were more unethical, but only for the worst types of behavior. The three schools included in the study all had enrollments of less than 3,500. Brown and Choong (2005) found no relationship between the type of school attended and either the participation in academically dishonest acts or the ethical perceptions of those acts. The public university in the study was reported as medium-sized, while the religiously-affiliated school was reported as small.

The 2016 study (Cotter, et al.) conducted by this research team found no overall difference between the two institutions in the ethical perceptions of the students. However, in the 2017 study (Cotter, et al.), a significant overall difference (p = .003) was found. The students at Institution 1 were found to be more ethical.

The varying results from these studies call into question whether the strongest relationship between students’ ethical perceptions is to the type of institution attended, the size of institution attended, both, or neither. Instead, perhaps the most robust relationships of students’ ethical perceptions are specific to other institutional or student characteristics.

The previous studies conducted by this research team also took into consideration the type of dishonest acts, academic or business. This variable was taken into consideration again in this study. Most previous research has found that students view both academic and business dishonest acts similarly. For example, Smyth and Davis (2004) and Lawson (2004) found that most students had similar ethical views regarding academic and business situations. Similarly, Nonis and Swift (2001) and Sims (1993) found students who cheated in school tended to cheat more in the workplace. However, these previous studies included only one institution or did not control for the type and size of institution attended.

To address the possibility of the impact on results of survey instruments containing both academic and business activities, the survey instrument for this research grouped questions into academic and business categories. Thus, the following null hypotheses were tested:

\[ H_{1a}: \text{The acceptability of academic dishonest acts will not be significantly different between students attending religiously-affiliated schools of similar size.} \]

\[ H_{1b}: \text{The acceptability of business dishonest acts will not be significantly different between students attending religiously-affiliated schools of similar size.} \]

The 2016 study (Cotter, et al.) conducted by this research team found a significant difference for business-related questions but not for academic-related questions. Institution 2 students were found to be more ethical for business-related questions. It was anticipated that significant differences would once again only be detected for business questions so further analysis focused only on these type of questions.

Similar to the 2017 (Cotter, et al.) study, this research analyzed the effect of gender differences towards the acceptability of dishonest acts on the results. Numerous studies report that females cheat less often than males (Atmeh and Al-Khadash, 2008; Guo, 2011; McCabe and Trevino, 1997; Niiya, et al. 2008; Rakovski and Levy, 2007; Yang and Huang, 2013), and Kuntz and Butler (2014) found females deem cheating and plagiarism behaviors less acceptable than do their male counterparts. Albaum and Peterson (2006), Cole and Smith (1995), Knotts, et al. (2000) and Ruegger and King (1992) all found that gender has a significant impact on the ethical judgments of students when asked about business situations. Females were found to be more ethical. Further, Simon, et al. (2004) found females were more likely to report a case of academic dishonesty.

These previous studies suggest that a gender bias may be present, so the data were further separated by
gender. Therefore, the following null hypotheses were proposed:

**H2a:** The acceptability of business dishonest acts will not be significantly different between male students attending religiously affiliated schools of similar size.

**H2b:** The acceptability of business dishonest acts will not be significantly different between female students attending religiously affiliated schools of similar size.

In the 2017 study (Cotter, et al.), males at Institution 2 were again found to be more ethical for business-related questions. No difference was found between the responses of females at the two institutions. It was anticipated that significant differences would once again only be detected for males so additional analysis focused on male responses to business-related questions. To further this area of research, the differences between the males at the institutions in regards to church service attendance and number of courses in religion taken and their possible effect on ethical perceptions were studied. It was found that the males at Institution 2 significantly (p = 0.000) attend church services more often and also significantly (p = 0.000) complete more courses in religion.

The concept of religiosity and its effect on ethical perceptions and behavior has been widely studied. Religiosity, as defined by Bloodgood et al. (2008, p. 559) is “understanding, committing to, and following a set of religious doctrines or principles.” This study is interested in one component of religiosity, namely church service attendance.

Burks and Sellani (2008) found that higher religious commitment did not result in a person being more ethical. Similarly, Baumsteiger, et al. (2013) concluded that religiosity does not determine a person’s ethical positions. Additionally, Wilhelm (2004) found that religious participation did not have a significant effect on moral reasoning, and Willson (2016) reported that religious service attendance did not significantly affect the willingness of students to report receiving too high of a grade on an assignment. These results were supported by Kurpis, et al. (2008) who found that church attendance did not significantly affect ethical behavioral intentions.

However, Albaum and Peterson (2006) found participants who reported being very religious were significantly more ethically inclined for business situations. Bloodgood, et al. (2008) and Burton, et al. (2011) found that students who attended religious services more frequently were less likely to cheat. Also, Conroy and Emerson (2004) found that frequent church attendance significantly reduced the acceptability of a number of unethical business practices.

In order to study whether church service attendance is related to the ethical perceptions of male students, the following null hypothesis was tested:

**H3:** The acceptability of business dishonest acts for male students who more regularly attend church services will not be significantly different from that of male students who attend church services on a less regular basis.

The completion of courses in religion and their effect on ethical perceptions and behaviors also has been widely studied, with inconsistent results. Bath, et al. (2014) found that the completion of required courses in religion did not significantly affect the tendency to cheat, and Conroy and Emerson (2004) found that taking a course in religion did not significantly affect the ethical attitudes of students towards business situations. However, Comegys (2010) concluded that completion of religious studies may affect students’ attitudes towards business ethics, but the affect was found to be more pronounced for non-business majors. Burks and Sellani (2008) found that completion of a course in religion resulted in higher moral development, no matter the type of institution.

To study any possible affect that the completion of courses in religion may have on the ethical perceptions of male college students, the following hypothesis was proposed:
H4: The acceptability of business dishonest acts for male students who have completed more courses in religion will not be significantly different from that of male students who have completed fewer such courses.

RESEARCH METHOD

The methodology and survey questionnaires were based on previous research studies (Molnar, et al. 2008) for the academic dishonest acts, and added questions from research by Smyth, et al. (2004) and Lawson, (2004) for the business dishonest acts. Additional questions regarding frequency of church service attendance and number of courses in religion taken were added to the survey. Following similar procedures to those from 2008, students were asked to complete a paper-based questionnaire asking their perceptions of dishonest acts. Questionnaires were used since the intention to engage in a behavior is a good predictor of behavior (Beck and Ajzen, 1991). Asking respondents to report perceptions of cheating, rather than how often they engage in cheating, is less threatening and likely to yield more honest responses (Kisamore, et. al. 2007).

In fall 2016 and spring 2017, surveys were again administered to undergraduate students at Institutions 1 and 2. The majority of respondents were traditional students who had mainly business-related majors. Survey questions regarding dishonest acts were coded on an interval assumed Likert-scale of 1 to 5, with 1 representing “strongly disagree” with the acceptance of the dishonest act, and 5 indicating “strongly agree” with the acceptance of the dishonest act, as perceived by the subject. Therefore, the lower the overall score, the less likely the student felt it was acceptable to commit the dishonest act. The survey asked how the students felt about academic dishonest acts (such as cheating on assignments or exams) and business dishonest acts (such as dishonest acts in a business environment). Using SPSS, researchers performed independent sample t-test analyses using the dependent variables of user responses to all questions relevant to this research and by categories of academic dishonesty questions and business dishonesty questions. The mean value of the student responses for each category was used. The larger the mean value of the response, the more strongly the student agreed that it is acceptable to commit that type of dishonesty.

RESULTS

A total of 276 usable questionnaires were collected; 159 were from Institution 1 (the Midwestern Catholic college), and 117 were from Institution 2 (the Southeastern Christian university). The majority of respondents (over 82%) were business-related majors. Approximately 60% of the respondents were male, and 40% were female. Sixty-eight percent were underclassmen (freshman and sophomores), and 32% were upperclassmen (juniors and seniors). Over 78% of respondents indicated they had a GPA of 3.0 or higher.

The researchers performed a principal factor analysis on the Likert questionnaire using the eleven questions relevant to this study. Two primary factor groups remain (after a varimax rotation), which are labeled academic and business dishonest acts, respectively. The two-factor solution was obtained using eigenvalue greater than one criterion and factor loadings > 0.5, as suggested by Hair, et al. (1995). Academic dishonest acts had eight questions with factor loadings ranging from .565 to .870, and business dishonest act questions had three questions with factor loadings ranging from .569 to .805. This is consistent with other research using this questionnaire.

Table 1 shows the results by institution and by factor (academic versus business categories). The t-tests results by the two factor groups isolated (academic dishonest acts and business dishonest acts) show a significant difference existing between the two institutions for the business dishonest acts factor only. Since there is no significant difference with the academics dishonest acts factor between the institutions, hypothesis H1a should not be rejected. However, these results indicate rejection of hypothesis H1b since Institution 1’s mean was significantly higher than that of Institution 2 for the business-related questions. This indicates that students from Institution 2 responded more ethically to these types of questions.
TABLE 1: T-TESTS BY INSTITUTION

<table>
<thead>
<tr>
<th>Category</th>
<th>College</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>t</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic-Related Only</td>
<td>1</td>
<td>159</td>
<td>12.67</td>
<td>4.149</td>
<td>-1.195</td>
<td>0.233</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>117</td>
<td>13.29</td>
<td>4.666</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business-Related Only</td>
<td>1</td>
<td>159</td>
<td>4.82</td>
<td>1.449</td>
<td>2.713</td>
<td>0.007*</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>117</td>
<td>4.34</td>
<td>1.427</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at p<.05

To control for gender, this study then split the data into male and female subsets. Table 2 shows the results by institution, by gender, for business-related questions only. The t-tests results show a significant difference existing between the two institutions for the business dishonest acts factor for males only. Therefore, the results indicate rejection of hypothesis H2a, but not H2b. Institution 1’s mean was higher for the business-related questions—suggesting male students of the Institution 2 responded more ethically to the business-related questions than male students from Institution 1 did, whereas responses of female students were not significantly different.

TABLE 2: T-TESTS BY INSTITUTION BY GENDER

<table>
<thead>
<tr>
<th>Category</th>
<th>College</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>t</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business-Related Only-Males</td>
<td>1</td>
<td>92</td>
<td>4.99</td>
<td>1.544</td>
<td>2.534</td>
<td>0.012*</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>74</td>
<td>4.41</td>
<td>1.384</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business-Related Only-Females</td>
<td>1</td>
<td>67</td>
<td>4.58</td>
<td>1.281</td>
<td>1.302</td>
<td>0.213</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>43</td>
<td>4.23</td>
<td>1.509</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at p<.05

Table 3 shows the results for all male students regardless of institution for business-related questions only by amount of church service attendance. (One survey was discarded due to an invalid response for church service attendance). The research team divided church service attendance into two categories: those who attended church services once a month or more, and those who attended less than once a month. The t-tests results based on church service attendance, show no significant differences existing between the business-related responses of the male students. This means H3 should not be rejected.

TABLE 3: T-TESTS BY MALE BY MEAN CHURCH SERVICE ATTENDANCE

<table>
<thead>
<tr>
<th>Category</th>
<th>Church Service Attendance</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>t</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business-Related Only</td>
<td>Once a month or more</td>
<td>103</td>
<td>4.64</td>
<td>1.349</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Less than once a month</td>
<td>62</td>
<td>4.85</td>
<td>1.726</td>
<td>-.887</td>
<td>0.376</td>
</tr>
</tbody>
</table>

*Significant at p<.05

Table 4 shows the results for all male students regardless of institution for business-related questions only by number of courses in religion taken. (Three surveys were discarded due to an invalid response for number of courses in religion taken). The research team divided the number of courses in religion taken into two categories: two or more courses taken, and fewer than two courses taken (<2). The t-tests results based on the number of courses in religion taken, show a significant difference exists between the business-related responses of the male students. This means H4 should be rejected.
As the research team continues the longitudinal study of ethical perceptions of undergraduate students of the two institutions, the results from the two previous studies were compared. Conflicting results were found. Overall, the results completely reversed between the two previous studies. What could be the cause of this inconsistency? Since the study attempts to control for institution (with both institutions being small, private, and religiously-affiliated) and gender (with males having lower ethical responses than females), what are the major differences between the two institutions which may be causing these differences in responses? In this current study, the researchers noticed that the differences in responses were due to the business-related questions. Perhaps the academic-related ethical issues may be viewed essentially the same by the majority of responding students since they may have encountered similar honor code issues and practices. Also, the same type of individual may be drawn to these similar institutions. Therefore, this study focused on controlling both for gender and type of ethical question and thus looked at male student responses relative to the business-related ethical questions.

Two major differences between the institutions are the number of courses in religion required, and reported attendance at church services. Institution 2’s students report more church service attendance, and it requires more courses in religion in its curriculum than in Institution 1. In this study, the researchers found that male students who had taken more than one course in religion had significantly lower (more ethical) mean responses to the questions related to business ethics than did male students who had taken fewer than two courses in religion. In other words, male students who had taken more than one course in religion were less accepting of business dishonest acts than were males who had taken fewer than two courses in religion. However, church service attendance did not seem to have any effect on male student perceptions of business related dishonest acts. Could the number of courses in religion explain this difference between institutions in business-related ethical questions? That is, does the difference in curriculum between institutions make a difference in the ethical perceptions of male students regarding business ethics? Institution 2 requires more courses in religion than Institution 1. Our previous studies reported that students’ perceptions concerning business-related issues were more ethical in Institution 2, especially for male undergraduate students. By controlling for both gender and type of ethical question, this research may provide a better indicator of what may actually be affecting student perceptions.

Many studies’ results disagree about the role of religiosity in business ethics (Vitell, 2009). The results of this research suggest that church service attendance by itself does not have an affect on student perceptions, but that the amount of curricular time spent discussing religious and social issues may affect student perceptions. Most students have more firsthand experience making academic ethical decisions since they make them on an almost daily basis when in school, and these issues are discussed in many first year experience courses and honor code discussions. However, business decisions may be somewhat foreign to students, resulting in less certainty about how they would handle dishonest acts when engaged in business activities. These research results suggest that more dialogue concerning spiritual/moral/ethical issues beyond the academic environment may cause students to further evaluate their perceptions concerning business ethical decisions. Bratton and Strittmatter (2013, p. 439) suggest “…that the most significant influence on ethical decisions in business may be in the environment in which business practitioners are trained.”

**LIMITATIONS AND FUTURE RESEARCH**

This study examined the idea that students attending small, religiously-affiliated institutions may have similar perceptions about the ethical nature of various activities when controlling for these two primary characteristics of institutions participating in the research. The number of institutions involved and the overall number of study participants is limited. Future research could expand the study to include a larger number of institutions and a more diverse sample of students to better understand the role of religiosity and institutional characteristics in shaping ethical perceptions.
participants continues to limit this study. In addition, single measures such as church service attendance and/or number of courses in religion taken cannot capture the diverse nature of what is meant by religiosity.

Continuation of this longitudinal research will yield additional data. Additionally, future extensions of this research may include the introduction of other institutions varying in size and religious affiliation. Other characteristics of the participating institutions such as the existence or absence of a formal honor code, level of employment experience, or geographic regional locations may produce fruitful results in the future when studying relationships between students’ ethical perceptions and other specific institutional characteristics. Eventually, the larger data set may be used in expanded research studies that compare results to those from larger institutions, and perhaps those without a religious affiliation.

REFERENCES


The Effect Of Teaching Methodology On Accounting Students’ Perceptions Of Traits Important To Success

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ABSTRACT

This study evolved from a previous study that examined the perceptions of the importance of specific traits to success in the accounting profession by both accounting professionals in the United States and internationally. That study found that the international subjects valued some soft skills, such as creativity, as being more important to success than did the subjects in the United States. Because of the importance of soft skills to success in the accounting profession worldwide, I sought to determine if teaching methodology in the accounting classroom in the United States could affect the perceptions of students regarding the importance of traits to success in the accounting profession. Three particular new methodologies were added to the accounting courses in which the study was run; a team debate, a writing assignment justifying an impairment decision in an unclear situation, and a team presentation in which creativity was a very significant percentage of the final grade. The results revealed that the traits of persuasiveness, good oral communication skills, good marketing skills, and creativity were ranked significantly more important by the student subjects at the end of the semester than they were at the beginning of the semester. Based on these results, accounting educators need to experiment to find methodologies that relate to their specific accounting courses that will help students realize the importance of soft skills for professional success in accounting.

Keywords: Teaching Methodology; Soft Skills; Teaching Accounting
Water Crisis In Flint Michigan –
A Case Study

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Karen McKenzie D.M., Hodges University, USA
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ABSTRACT

It is generally accepted that in the United States of America, no one should have to worry about the quality of water that they drink. However, more and more, this is not the case and it is becoming alarming in many communities. In the case of Camden Ohio, residents enjoyed low cost and excellent quality in their drinking water until a company piled road salt too close to the wells that supplied the village. When residents awoke to dark smelly water, everything changed. People do not realize how much water is a part of their everyday life until access is denied or removed. This issue was a problem for a village of approximately 22,000 citizens that presented the citizens of Camden with few options and none of them cheap (Forrer, Zimmerman, Mannix, 2013). A problem for a village is a disaster for a city of approximately 102,000 like Flint Michigan. This case study is about the water issues faced by Flint and the problems involved while attempting to correct the situation.
Beyond Mentoring: A Model For Integration And Acclimation Of New Adjunct Faculty

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Stephanie Bechtel, Central Michigan State, USA
Kendra Brown, Central Michigan State, USA
Jose Mabesa Jr., Central Michigan State, USA
Linda Gunn, Western Governors University, USA
Richard L. Hayes, Central Michigan State, USA
Lisa Fall, Central Michigan State, USA
Todd Wilmore, Central Michigan State, USA

ABSTRACT

Every institution of higher education desires that new faculty become quickly oriented and acclimated to the culture as well as methods inherent to that institution. Once new faculty are comfortable with operations and confident in their ability to fully engage with the organization these individuals will be more willing to take initiative while using their talents to the fullest. In the case of adjunct faculty, it is even more imperative to support new faculty as they may have limited opportunities to interact with campus staff and faculty. The faculty partner program at CMU is successful for a variety of reasons outlined in this paper. However, the physical makeup of the team is one of the key factors. The CMU team is comprised of adjunct faculty, full-time faculty, and administrators. This factor coupled with the Partner Team involvement in training, marketing, and administration provided the team with the confidence and knowledge necessary to provide support to faculty partners. Freeman (2010) noted that mentoring was a process to guide new adjunct faculty through the transition into a new system. The CMU team works with faculty partners as they transitioned into the CMU family and then remains available for support. CMU creates friendships that will endure past the partnering timeframe.
Fair Value Measurements: 
Time For A Change 
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Ara G. Volkan, Florida Gulf Coast University, USA

ABSTRACT

The purpose of this study is to describe the current status of fair value measurement and reporting for financial instruments. The objective is to evaluate and revise accounting procedures to create a proposal that will have a positive impact on investor confidence in the information reported for financial instruments. The proposal would eliminate the available-for-sale category and recognize all gains and losses in current net income. The outcome will be to improve the usefulness of the financial statements by eliminating the option to recorded unrealized gains and losses in other comprehensive income.
Cash Flow Rights And Voting Rights: A Separation
Onur Arugaslan, Western Michigan University, USA

ABSTRACT
We argue that the returns of single class common stock can be better expressed as a mixture of two return generating processes: one for voting rights and one for cash flow rights. Using data on U.S. firms with two classes of traded stock during some time period and one class of traded stock during another time period over 1980-2004, we provide evidence that is consistent with our characterization. Thus, our study provides an economic, rather than simply a statistical, rationale for many extant mixture models of stock returns and provides a completely different rational for why idiosyncratic risk appears to be priced.

Keywords: Voting Rights, Stock Return Distributions
The Relationship Between Indian And Asian-5 Stock Markets
Amalendu Bhunia, University of Kalyani, India
Devrim Yaman, Western Michigan University, USA

ABSTRACT
This paper examines the causal relationship between ASEAN-5 (Vietnam, Indonesia, Philippines, Malaysia and Thailand) stock markets and Indian stock market based on daily time series data for the period of January 2, 1991 to March 31, 2017 (March 31) using correlation analysis and vector error correction model. We find that Indian stock market is significantly negatively correlated with the Vietnam and Indonesian stock markets. Vector error correction model test results confirm that there is a significant long-run causality running from the Indian stock market to the ASEAN-5 stock markets and vice-versa. At the same time, there is no short-run causality running from Vietnam and Philippines stock markets to Indian stock market but there is a significant short-run causality running from the Indonesian, Malaysian, and Thai stock markets to the Indian stock market. These results show that although world markets are becoming more integrated, investors can still take advantage of international diversification opportunities by investing in the stock markets of different countries.
The Impact Of Religious, Social, And Economic Forces Upon The Development Of Management Education In Latin America

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ABSTRACT

Management's importance in the economy of a nation is paramount because it is responsible for the success or failure of businesses, the foundation stones of the free enterprise system. In turn, the most essential prerequisite to effective management is management education because it increases the knowledge, skills, and productivity of managers.

In Latin America, management education recently has been playing an important role in fostering the region's economic and industrial development. However, this was not the case in the past. This article explains (1) the impact of religious, cultural, and economic factors that influenced management education and, (2) the development of management education in the region from the early 1900s to the first two decades of the present century.

In Latin America, economic prosperity was considered a condition that militated against the ethical-spiritual aspects of a person. Management, one of the factors of production, and one of the preponderant precipitants of economic and industrial growth, was especially hostile to that religious ideology. For this reason, management education was often neglected. This was not only true in Spanish America, but also in Luso-America, where the church theology was traditionally more liberal. Such an inclination had its roots in the ancient Greek and Latin philosophy regarding commerce and industry.
Efficiency Of Specialized Organizational Capacity For Export Activities With Regard To The Company's Market Orientation

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ABSTRACT

International competition is followed by many hidden risks. However, internationalization of business is the only high-quality approach to long-term viability. The fact is that today's economy is based on knowledge and that organizational capacities represent the unified resource the company owns. The concentration of small business entities on the market is dominant. In such companies one employee usually performs almost all duties, most often those that are initially related to the domestic market. Therefore, export and wider market orientation represent a secondary activity. Hence, the purpose of this paper is to investigate the importance of the existence of organizational capacities involved around export activities and their effect on the business outcome in foreign activities according to their market orientation. The research was carried out on Croatian export companies and has shown that market orientation has a positive effect on organizational capacities for export activities especially when the orientation is focused on competition.

Keywords: Market orientation, organizational capacity for export activities, export, business result

1. INTRODUCTION

In global economy that is based on knowledge, human work force is the foundation of the company (Stoian & Rialp-Criado, 2010). Their embedded system of values, acquired knowledge, unique skills and creativity define the enterprise and market orientation in order to achieve long-term viability and business growth. The main issue, when the organizational capacities are concerned, is the lack of time and employees who will develop market orientation towards foreign markets (Abdel-Kader & Luther, 2008). For this reason, it is necessary to ensure qualified organizational capacities to determine market orientation and exploit the opportunities and benefits that foreign markets provide. Dedication visibly contributes to business results especially in cases where a qualified employee is entitled to his own reporting, i.e., has clearly defined job description and partial autonomy (Shaw et al., 2003; Dimitriades & Papalexandris, 2011; Tourigny et al., 2013). Through market orientation, they pursue better market analysis, participate in controlled risk environment and achieve better final outcome (Previšić et al., 2007).

The philosophical basis of market orientation is the concept of marketing based on the basic assumptions and theories, which consists of a series of activities related to the application of marketing concept in business (Kohli et al., 1993; Narver et al., 1990).

It is studied as a business culture or behaviour that contributes to achieving excellent business results. Two different approaches to market orientation have been accepted in the scientific literature, but they are not completely opposite and mutually opposing. Market orientation is defined in terms of organizational behaviour or business-related activities based on the conceptions of marketing. Accordingly, three groups of activities that make up the market orientation that stand out are: (i) generating monitoring and understanding the market, involving the existing and future consumer needs; (ii) disseminating data from the market through departments; and (iii) organizing reactions. Market orientation, as a way of organizational behaviour, represents the complete operationalization of key activities in a company that operates on the principles of marketing concept (Kohli et al., 1990).

Market orientation, on the other hand, is considered in terms of organizational culture and under market orientation implies a one-dimensional construct consisted of three behavioural components: consumer orientation, competition...
orientation and inter-functional coordination and two decision-making criteria: long-term orientation and orientation towards profit (Narver et al., 1990). This approach better encompasses the essence of a marketing concept as the term market orientation encompasses all the marketing concept holders and highlights the long-term prospects of making profit. As such, market orientation represents a business culture whose adoption leads to positive effects in business. From that point, Narver’s and Slater's approach can be considered more complete (Bozic, 2006).

According to research conducted, market orientation is influenced by supreme management, which often plays a key role in the shaping of organizational values and market orientation. Their willingness to take over risk depends on the readiness of company to - through market orientation - introduce new products and services and to act on the market as a serious competitor, creating a sustainable competitive advantage. Intermediate dynamics, through the interconnectedness of employees within a company and the inclination of an organization towards conflicting situations, also affect market orientation. Conflicts are hindering the flow of information and hampering the development of market orientation, affect the reaction time of companies to requirements from the environment and make business more difficult, as well as distort the satisfaction and dedication of employees towards work. In addition, the organizational system, which includes a degree of centralization, formal organization, organizational departments, as well as a rewarding system, leaves its mark on market orientation and cannot rule out even turbulences in the environment, market competition and technological turbulences that also determine the level of market orientation.

2. THE IMPACT OF MARKET ORIENTATION OF THE COMPANY ON ORGANIZATIONAL CAPACITY

Education, activity, dedication and effects of the employees were investigated intensively (Liao et al., 2011; Pulendran et al., 2000; Van Raaij et al., 2008). Research on the impact of market orientation on organizational capacities is virtually unavailable in scientific literature and certainly needs to be deepened. Several studies have been carried out on the impact of market orientation on organizational commitment and organizational learning, but the obtained results indicated the existence of empirical inconsistencies. A certain number of researchers came to the conclusion that organizational commitment is a consequence of market orientation (Chang et al., 2010; Jaworski et al., 1993), while others argued that organizational orientation precedes market orientation (Zhang et al., 2008). It is sure, however, that organizational commitment affects employee efficiency, their presence at work, and the desire to change jobs. Ultimately, organizational commitment affects the performance of the business.

Organizational capacity is initially manifested through organizational commitment that represents the psychological state of the relationship between the employee and his/her superior, as well as the employee's relationship itself with the organization and the way the tasks are performed (Meyer et al., 1991). Market orientation positively affects organizational commitment by motivating employees and encouraging them to work, through which they continue to develop their business opportunities. In addition, through market orientation, employees are taught the importance of teamwork, and a sense of greater organizational affiliation is born (Kim et al., 2005; Jaworski et al., 1993; Kohli et al., 1990). Thanks to market orientation, they identify the goals of an organization that they are a part of to their own goals and strive towards their realization.

Adopting market orientation contributes to the improvement of employee morale, job satisfaction and commitment to the organization as all organizational units are geared toward a common goal – external customer satisfaction (Kohli et al., 1990). Given the greater customer satisfaction, the company's business is improving, the business results are better and the company has a higher need to expand its business and thus the need for recruiting new workforce is created; the need for organizational capacities which will be solely responsible for export activities.

3. RESEARCH METHODOLOGY

From two basic approaches came two scales for measuring market orientation: MKTOR (Narver et al., 1990) and MARKOR (Kohli et al., 1993), and they served as a starting point for many others developed to measure market orientation (Ruekert, 1992; Narver et al., 2004). The application of the aforementioned scales in many studies has highlighted the advantage of the MKTOR scale, since it is more suitable for application on different samples (Mavondo et al., 2000), as well as for establishing the relationship between market orientation and business performance (Oczkowski et al., 1998). The MARKOR scale, in fact, has less statistical reliability, so its validity is very sensitive
The Clute Institute

(Gauzente, 1999). Besides that, the MKTOR scale is directly related to business success because it fully encompasses the aspirations to create value for consumers and to improve business results and does not include all external factors that affect the business success (Cano et al., 2004).

In accordance with that, market orientation was observed as a one-dimensional construct that is consisted of three behavioural components: (i.) consumer orientation, (ii.) orientation to competition and (iii.) interfunctional coordination (Narver et al., 1990; Bozic et al., 2008). The scale was consisted of 15 approved claims that measured the agreement of respondents with statements using a Likert scale (1-7). Organizational capacities were seen through five dimensions: (i.) top management support, (ii.) work discretion/autonomy, (iii.) rewards/reinforcement, (iv.) time availability, and (v.) organizational boundaries and export result is presented through a share of exports in total revenue of the company (%).

The targeted population represented the Croatian export enterprises (companies that have exported goods and services based on records of the Croatian Customs Administration). Given the uneven distribution, due to the company size, systematically stratified random sample has been applied. The sample was based on the criteria of the Accounting Act: the number of employees and total income before taxation. The study was conducted on a sample of 200 small, 200 medium and 200 large export enterprises in Croatia. Although the response rate amounted 15% for small, 19% for medium-sized and 31% for large companies, the representativeness of the sample has been provided (Anseel et al., 2010).

The research was implemented in the period from February to May 2015 using the online questionnaire. The respondent was a company director, board member or person in charge of international business. Upon completion of the research, control of the collected responses has been made in the direction of the organizations that participated in the survey, as well as in the direction of the occupancy rate of survey research instrument. In addition, information that legitimizes the survey (Timestamp and identification number of each questionnaire) has been checked as well. The hypothesis is stated as follow: The market orientation of Croatian companies positively affects the organizational capacity of companies for export activities. The hypothesis was tested using regression analysis. Two regression models were set. The difference was in the independent variable of organizational capacity for export activities. In one model common variable was defined and in the second model individual variables were used. While, in order to examine the viable use of common variable, Cronbach's alpha indicator was calculated. Finally, variables that have a statistically significant effect on the dependent variable were selected with the usage of Stepwise regression analysis.

4. RESULTS

Croatia, as a post-transition country, has an exceptional need to integrate into the world economy; but has been faced with a number of strategic issues that had failed to resolve for years. The narrow base in terms of the number of exporters, strict focus on a small number of close markets, unsatisfactory level of technology development, the unfavourable ratio and low added value of products and services, backed by a lack of economic and political support, led to the fact that in Croatia only 13% of companies are engaged in export activities (Ministry of Foreign and European Affairs); respectively, that every eighth entrepreneur generates revenue from foreign markets (Croatian Chamber of Economy). The respondents estimated that the share of exports in total revenue of the company is less than 20%. Thus, this study confirmed that Croatian companies are at a lower, unsatisfactory level of internationalization and still do not achieve significant business results on the international market where better competitors dominate.

Observing the organizational capacity for export activities, there is a persistence of organizational and hierarchical superiors’ awareness. More precisely, managers are aware of the importance of courageous employees who are willing to embrace new challenges. Therefore, employees, according to the achieved results, enjoy greater autonomy and obtained more responsible tasks. However, their actions still largely remain under the control of their superiors. Also, they are deprived of discretion to decide. Free decision making process is not the practice of business in Croatian companies. The problem lies in a deficiency of self-initiative employees who haven’t expressed the interest in generating new ideas and functions in the company. Moreover, employees often act as passive observers who routinely and reluctantly perform tasks that are set. Such conduct triggers a distrust of superiors. From a total of six dimensions,
the highest average rating has Emphasis Initiative – rewards/reinforcement (ENTREP=5.142), while the lowest estimated was autonomy in decision-making (AUTON=4.538). Results can be seen in Figure 1.

**Figure 1.** The average value of variable indicators of organizational capacity

Looking at the dimensions of market orientation, the focus of the companies is on the continuous monitoring of commitment and orientation to meet the needs of consumers. On the other hand, the biggest disadvantage is reflected in the sales staff that does not regularly exchanges information about its competitors.

The Regression Model with Common Variables

Table 1 shows Spearman's coefficients of correlation between the company's organizational capacity for export activities and the company's market orientation (aggregate variables). There was a statistically significant positive correlation between: (i) variable ORG_CAPAC and CUST with 1% probability (r = 0.530); (ii) variable ORG_CAPAC i COMPET with 1% probability (r=0.595); (iii) variable CUST and COMPET with 1% probability (r=0,536); (iv) variable CUST and COORD with 1% probability (r=0,647); (v) variable COMPET and COORD with 1% probability (r=0,527) and (vi) variable COORD and ORG_CAPAC with 1% probability (r=0,475).
Table 1. Spearman's coefficients of correlation between the organization's organizational capacity for export activity and market orientation: aggregate variables

<table>
<thead>
<tr>
<th>Spearman's rho</th>
<th>ORG_CAPAC</th>
<th>CUST</th>
<th>COMPET</th>
<th>COORD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Correlation Coefficient</td>
<td>1.000</td>
<td>.530**</td>
<td>.595**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>130</td>
<td>130</td>
<td>130</td>
<td>130</td>
</tr>
</tbody>
</table>

| CUST | Correlation Coefficient | .530** | 1.000 | .536** | .647** |
| Sig. (2-tailed) | .000 | .000 | .000 | .000 |
| N    | 130       | 130  | 130    | 130  |

| COMPET | Correlation Coefficient | .595** | .536** | 1.000 | .527** |
| Sig. (2-tailed) | .000 | .000 | .000 | .000 |
| N     | 130       | 130  | 130    | 130  |

| COORD | Correlation Coefficient | .475** | .647** | .527** | 1.000 |
| Sig. (2-tailed) | .000 | .000 | .000 | .000 |
| N     | 130       | 130  | 130    | 130  |

**. Correlation is significant at the 0.01 level (2-tailed).

Source: author’s calculations

Table 2 shows the Regression Model of correlation between organizational capacity of enterprises to export activities and orientation towards the market (common variables). It has been shown that the organizational capacity of the company for export activities has a statistically significant positive influence on COMPET competition, with probability of 1% (p-value = 0.00009). The adjusted coefficient of determination shows that this regression model can account for 31.31% of the dependence of the dependent variables, and the VIF coefficients do not indicate multicollinearity because they are all less than five.

Table 2. Regression Model 1 (common variables)

<table>
<thead>
<tr>
<th>Model 3: OLS, using observations 1-120</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent variable: ORG_CAPAC</td>
</tr>
<tr>
<td>Heteroskedasticity-robust standard errors, variant HC1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-ratio</th>
<th>p-value</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Const</td>
<td>2.85773</td>
<td>0.319348</td>
<td>8.9486</td>
<td>&lt;0.00001***</td>
</tr>
<tr>
<td>CUST</td>
<td>0.109663</td>
<td>0.0870373</td>
<td>1.2600</td>
<td>0.21021 2.119</td>
</tr>
<tr>
<td>COMPET</td>
<td>0.201741</td>
<td>0.0498667</td>
<td>4.0456</td>
<td>0.00009*** 1.526</td>
</tr>
<tr>
<td>COORD</td>
<td>0.0959231</td>
<td>0.0817921</td>
<td>1.1728</td>
<td>0.24329 1.805</td>
</tr>
</tbody>
</table>

| R - squared | 0.330463 |
| Adjusted R-squared | 0.313148 |

Note: *** statistically significant at 1% probability, ** 5% probability, * 10% probability
Source: author’s calculations

Table 3 indicates that the assumption of heteroscedasticity of the Regression Model 1 can be rejected. Also, the hypothesis of normal distribution of residuals has been accepted.
Table 3. Diagnostics of the Regression Model 1

<table>
<thead>
<tr>
<th>Diagnostic test</th>
<th>Diagnostic testing</th>
<th>Conclusion</th>
</tr>
</thead>
</table>
| White test heteroscedasticity | Test statistic: $LM = 11.7915$  
$p-value = P(\text{Chi-square}(9) > 11.7915) = 0.225323$ | The null hypothesis: heteroscedasticity is not present. |
| Breusch-Pagan test heteroscedasticity | Test statistic: $LM = 3.69702$  
$p-value = P(\text{Chi-square}(3) > 3.69702) = 0.296094$ | The null hypothesis: heteroscedasticity is not present. |
| Normal distribution of residuals test | Test statistic: $\text{Chi-square}(2) = 13.5716$  
$p-value = 0.00112972$ | The null hypothesis: the residuals are normally distributed. |

Source: author’s calculations

Regression Model with Individual Variables: Stepwise Regression

The table 4 shows Spearman’s coefficients of correlation between the organization's organizational capacity for export activity and market orientation. There was a statistically significant positive correlation between: (i) variable ORG_CAPAC and CUST_5 with 1% probability ($r=0.400$); (ii) variable ORG_CAPAC and COMPET_2 with 1% probability ($r=0.541$); (iii) variable CAGE_ECON and COMPLETE_4 with 1% probability ($r=0.555$); (iv) variable CUST_5 and COMPET_2 with 1% probability ($r=0.381$); (v) variable CUST_5 and COMPET_4 with 1% probability ($r=0.310$) and (vi) variable COMPET_2 and COMPET_4 with 1% probability ($r=0.445$).

Table 4. Spearman's coefficients of correlation between the organization's organizational capacity for export activity and market orientation: Stepwise regression analysis

<table>
<thead>
<tr>
<th>Spearman's rho</th>
<th>ORG_CAPAC</th>
<th>CUST_5</th>
<th>COMPET_2</th>
<th>COMPET_4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Correlation Coefficient</td>
<td>ORG_CAPAC</td>
<td>CUST_5</td>
<td>COMPET_2</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>N</td>
<td>1.000</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>130</td>
<td>130</td>
<td>130</td>
</tr>
<tr>
<td></td>
<td>CUST_5</td>
<td>Correlation Coefficient</td>
<td>.400**</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>N</td>
<td>130</td>
<td>130</td>
</tr>
<tr>
<td></td>
<td>COMPET_2</td>
<td>Correlation Coefficient</td>
<td>.541**</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>N</td>
<td>130</td>
<td>130</td>
</tr>
<tr>
<td></td>
<td>COMPET_4</td>
<td>Correlation Coefficient</td>
<td>.555**</td>
<td>.310**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>N</td>
<td>130</td>
<td>130</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed).

Source: author’s calculations

Table 5. shows a regression model of association between organizational capacity of an enterprise for export activities and market orientation. It has been shown that the organizational capacity of the company for export activities has a statistically significant positive effect on the exchange of information on competitors between sales staff, the focus on those consumers in which companies can gain competitive advantage and the development and implementation of post-sales services, ie COMPET_2 variables, with a probability of 1% ($p-value = 0.00018$), COMPET_4, with a probability of 1% ($p-value = 0.00050$), and CUST_5, with probability of 1% ($p-value = 0.00149$). The adjusted coefficient of determination shows that this regression model can account for 34.73% of the dependence of the dependent variables. VIF coefficients do not indicate multicollinearity because they are all less than five.
Table 5. Regression Model 2 – Stepwise regression analysis

<table>
<thead>
<tr>
<th>Model 4: OLS, using observations 1-120</th>
<th>Dependent variable: ORG_CAPAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heteroskedasticity-robust standard errors, variant HC1</td>
<td>Coefficient</td>
</tr>
<tr>
<td>const</td>
<td>3.05963</td>
</tr>
<tr>
<td>COMPET_2</td>
<td>0.108609</td>
</tr>
<tr>
<td>COMPET_4</td>
<td>0.168494</td>
</tr>
<tr>
<td>CUST_5</td>
<td>0.0919891</td>
</tr>
<tr>
<td>R- squared</td>
<td>0.363784</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.347330</td>
</tr>
</tbody>
</table>

Note: *** statistically significant at 1% probability, ** 5% probability, * 10% probability
Source: author’s calculations

Table 6 indicates that the assumption of heteroscedasticity of the Regression Model 2 can be rejected. Also, the hypothesis of normal distribution of residuals has been accepted.

Table 6. Diagnostics of the regression model

<table>
<thead>
<tr>
<th>Diagnostic test</th>
<th>Diagnostic testing</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>White test</td>
<td>Test statistic: LM = 10,8189 p-value = P(Chi-square(9) &gt; 10,8189) = 0,28833</td>
<td>The null hypothesis: heteroscedasticity is not present.</td>
</tr>
<tr>
<td>Breusch-Pagan test</td>
<td>Test statistic: LM = 2,16912 p-value = P(Chi-square(3) &gt; 2,16912) = 0,538056</td>
<td>The null hypothesis: heteroscedasticity is not present.</td>
</tr>
<tr>
<td>Normal distribution of residuals test</td>
<td>Test statistic: Chi-square(2) = 5,31457 p-value = 0,0701385</td>
<td>The null hypothesis: the residuals are normally distributed.</td>
</tr>
</tbody>
</table>

Source: author’s calculations

5. CONCLUDING REMARKS

There are numerous factors that influence the design of market orientation, as well as the consequences it causes. But, the causes and effects of market orientation are difficult to overcome as given the wide applicability and complexity. However, the market orientation of the company certainly affects the performance of companies in foreign markets as well as the final success of export. Market orientation is defined by the human capital in the enterprise. Therefore, it is of great importance to ensure and establish qualified and specialized personnel. This is also supported by the fact that expenditures for human capital that will define the market orientation towards export activities are lower than revenues generated in foreign markets.

Because of the recognition of the importance of human capital in enterprise engaged around export activities and defining market orientation, this paper examines a connection between market orientation and organizational capacity for export activities. Correlation is studied under the assumption that market orientation of Croatian companies positively affects the organizational capacity of companies for export activities.

Path analysis has demonstrated the positive impact of the company's market orientation on the organizational capacities for export activities. It has been shown that the orientation towards competition has a statistically significant positive impact on the human capital arranged around export activities, and particularly the exchange of information about competitors between sales staff, focus on those consumers where companies can gain competitive advantage and development and implementation of post-sales services.
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A Framework Of Using Signature Assignments To Transform Cornerstone Courses In Higher Education
Hong Lin, University of Oklahoma, USA

ABSTRACT

This presentation will introduce a framework of using signature research-oriented assignments to transform a large, lower division cornerstone course in a public institution.

Research indicates that traditional instruction of freshman often focuses on content delivery without providing research-oriented and inquiry-based learning. The traditional instruction treats content as a stand-alone component and overlooks the critical skills freshmen should acquire even in their freshman year. With this caveat in mind, simply teaching content does not promote active learning and can be ill-afforded in the long term.

With carefully selected signature assignments, hundreds and hundreds of freshmen are engaged in significant undergraduate research and writing assignments every semester. The signature assignments in the redesign process completely changed the way the professors teach, the engagement graduate teaching assistants involve, and the role the freshmen peers perceive each other. To determine whether the freshmen have reaped or lost learning gains in this gateway course redesign, the presentation will discuss results from a large-scale student survey and four-year data on D/fail/withdraw rates, which is usually considered the gold standard for the effectiveness of a large, lower division course redesign.
Mobile Device Growth Trends
And Factors In Higher Education
And K-12 Schools
Hong Lin, University of Oklahoma

ABSTRACT

In the 21st Century, one of a few biggest educational revolutions we have witnessed is the explosive adoption of handheld mobile devices in educational settings. From higher education to K-12 schools, a meta-analysis and research synthesis of journal articles between 1993-2013 has revealed that the adoption has blanketed across various subjects, disciplines, and student ages in higher education and K-12 schools (Sung, Chang, & Liu, 2016).

In higher education, for example, Anderson University in South Carolina launched The Mobile Learning Initiative, providing iPads to all biology students with apps for in-class and collaborative research projects (Anderson University, 2014). Jackson State University (JSU) provided iPads to all full-time freshmen, enabling them to access eBooks and dozens of apps that allow them to take notes, collaborate on content, communicate with instructors and peers, tap into math references, learn a foreign language, listen to thousands of audiobooks, and much more (Jackson State University News Room, 2013). Similarly, the Jeannine Rainbolt College of Education at the University of Oklahoma provided iPads to all its full-time undergraduate students. The goal is not just to transform students’ learning experiences, but also to prepare pre-service teachers to incorporate technology in their future classrooms, and to cultivate their long-term use of tablets as professional educators (JRCoE, 2013).

K-12 schools are not left behind. After a brief pause and reflection, the Miami-Dade County Public School District (M-DCPS) resumed their plan to give digital devices to all 354,000 students. This initiative is one of the largest one-to-one digital computing initiatives in the country (Blazer, 2014).

What are the overarching and distinct trends for these exponential adoptions of mobile devices in educational settings?

Distinct Trends for Mobile Device Usage

There are three distinct trends that have been driving the exponential adoption of mobile devices in educational settings during the 2000s. First, unlike the late 1980s and 1990s when portable devices were primarily laptops and notebooks, the implementation of portable devices in the millennium is focusing more on smaller, handheld devices such as tablets and smartphones (Zaranis, Kalogiannakis, & Papadakis, 2013). By January 2017, 95% of Americans own a cellphone of some kind, and roughly half of the Americans own tablet computers and about one-in-five own e-reader devices (Pew Research Center, 2017).

For this reason, another trend in the 2000s is the increasing adoption of mobile learning to enhance students’ experience. Researchers have indicated that mobile learning, through the use of tablets and smartphones, presents new opportunities for learning and strengthens the learning experience in ways other devices simply cannot achieve (Lam & Duan, 2012; Zaranis, Kalogiannakis, & Papadakis, 2013). In other words, mobile learning takes into account the mobility of technology, students, and learning (Sharples, Taylor, & Vavoula, 2007).

The third trend, it follows, is that more and more schools and institutions are launching large-scale mobile device initiatives and taking a systematic approach to embrace the advantages of mobile learning (Sung, Chang, & Liu, 2016). The systematic approach is crucial to ensure that stakeholders such as leaders, educators, students, technicians, vendors communicate and collaborate effectively (Blazer, 2014; Herold, 2014).
As a result of these distinct trends, a natural question naturally come to our attention: what influential factors drive the explosive growth of mobile devices in schools and higher education?

**Influential Growth Factors in Educational Settings**

There are three organizing factors identified in the literature regarding the mobility of technology, students, and learning.

**The Mobility of Technology.** A review of literature identified three major mobile advancements that enable augmented teaching and learning experience. The first mobile advancement involves the concept of cloud computing. Cloud computing has five essential characteristics: 1) On-demand self-service, which means users can obtain computing capabilities automatically without requiring human interaction and assistance; 2) Broad network access, which enables the provision of processing, storage, remote networks, and other computing resources in mobile phones, tablets, laptops, and workstations; 3) Resource pooling, where computing resources are dynamically assigned and reassigned according to user demand; 4) Rapid elasticity, which allows hardware and software capabilities to be elastically provided and released in response to user demands; 5) Measured service, which means users and providers of the services can both monitor and control resource usage to ensure transparency of resource usage (Koutsopoulos & Kotsanis, 2014). Empowered by cloud computing capabilities, the hardware and software capabilities in mobile devices have unveiled a new era.

In conjunction, the second advancement is the hardware capabilities in a variety of mobile platforms, which include, but are not limited to, smart phones, tablets, pocket PCs, personal audio players, personal digital assistants, e-readers, and Global Positioning Systems (GPS). The hardware in these mobile platforms usually support WiFi networking which allows the mobile device to connect to the Internet. They also support Bluetooth networking to support and increase the use of headphones, microphones, keyboards, and other peripheral devices (Koutsopoulous & Kotsanis, 2014; Minaie, Sanati-Mehrizy, Sanati-Mehrizy, & Sanati-Mehrizy, 2011; Murray & Olcese, 2011). Additionally, these platforms have hardware systems that integrate the capabilities of GPS such as depicting a map of stars and planet that are either above the horizon or below, day or night (Murray & Olcese, 2011). Moreover, a majority of tablets have a touch screen interface that not only allows various gestures such as pinch, flick, stretch, and rotate, but also allows multi-touch display. As such, a piano student, for instance, can pinch the screen to the size of his or her wish, handle more than one touch simultaneously, play multiple keys, and hear multiple notes (Murray & Olcese, 2011).

Arguably, researchers indicated that the hardware capabilities in various mobile platforms have reshaped the ways in which information is created, accessed, and disseminated (Avraamidou, 2008; Cantrell & Knudson, 2006; STEM Education Coalition, 2014). For example, students can work on real-world scientific questions and solutions individually and collaboratively by using various digitally-mediated tools, such as podcasting, remote monitoring, digital recording, digital storytelling board, desktop sharing, and videoconferencing. Researchers pointed out that while students can assess these cloud-based computing tools via their desktop computers as well, mobile devices allow students to leverage the ease of access to information related to scientific questions and observations at their fingertips (Chew-Hung et al., 2012; Evagorou, 2008; Peffer, Bodzin, & Smith, 2013).

To couple with the hardware specifications in various mobile platforms, the third mobile advancement is the software applications used by mobile devices. After all, what makes a difference in how mobile devices are adopted is what applications are developed to take the advantages of the hardware. The mobile apps in Apple and Android, two of the most popular mobile operating systems, have skyrocketed during the past few years. As of September 2017, more than 3.3 million apps including nearly 90,000 educational apps were created for the Android hardware (Statista, 2017), and more than 2.2 million apps including more than 80,000 education apps were on the Apple hardware (Apple, 2017). Such data could be doubled every year. There is no surprise that researchers stated that “we are in the era of the mobile platform now, and apps is reigning as king” (Norris & Soloway, 2011, p. 5).

These educational apps cover a wide range of subjects, accommodate different learning styles, and are ambitious to change the landscape of education. For instance, the iTunes U app on the Apple platform can allow educators of all levels to create their courses featuring audio, video, books, and other content. Students can access their assignments, materials, study notes, and discussions all together in iTunes U. This app touts the ability to keep students prepared...
for class and engaged in learning for free and at their fingertips (iPad in Education, 2014b). Some apps such as Dropbox and Box connect to web-based services and enable efficient file sharing and archiving (Murray & Olcese, 2011). Some apps support students organizing their calendar, worksheets, homework, learning notes, tests, and projects (Novello, 2012). Moreover, some apps help teachers deliver digital content such as lectures, online multimedia materials, and reference materials to students (White, Tobin, & Martin, 2012). Some apps allow both teachers and students to create content such as voice recordings, video and images, photo slideshows, and concept map (White, Tobin, & Martin, 2012). Additionally, some other apps enable students to use interactive rubrics to receive immediate feedback on quizzes in preschool classrooms (Aronin & Floyd, 2013; Novello, 2012).

**The Mobility of Students.** Along with the mobility of technology discussed above is the second factor to drive the explosive growth of mobile devices -- the mobility of students. Students in the 21st Century were dubbed as ‘Digital natives’ (Prensky, 2001), ‘new millennium learners’ (Pedró, 2006), ‘the net generation’ (Tapscott, 1999), ‘the gamer generation’ (Carstens & Beck, 2005) and ‘generation M’ (Rideout, Roberts & Foehr, 2005). These unofficial names reflect a generation who permeates the usage of mobile devices into their everyday lives and education.

Clearly, students today desire to move freely and easily and still be productive anywhere and anytime (Aronin & Floyd, 2012; Avraamindou, 2008; El-Hussein & Cronje, 2010; O’Shea, Gabriel, & Prabhu, 2010). In other words, students do not want to “sit in a small space for five hours a day while a teacher talks about the past and present” (Wiles, 2008 p. 2). Instead, they increasingly desire to access, create, and share information wherever and whenever they want (Sharple, Taylor & Vavoula, 2007: The New Media Consortium, 2014). For this reason, mobile devices with powerful hardware and software capabilities in cloud computing, as discussed in the previous section, meet students’ desire of mobility.

Although the desktop computer still plays an important role in the classroom and student learning, its use drops every year compared with that of mobile devices (Norris & Soloway, 2011). The first reason is that desktop computing is place-bound for students while mobile devices are wireless and portable (Chew-Hung et al., 2012; El-Hussein & Cronje, 2010; Evagorou, 2008). The wireless and portable functionalities allow users to interact and collaborate more freely and easily while on the move (Chew-Hung et al., 2012; El-Hussein & Cronje, 2010; Evagorou, 2008). The second reason is that the use of mobile devices represents a shift from a teacher-driven approach to a student-centered learning environment where students are encouraged to interact and collaborate when they are on move (Koutsopoulos & Kotsanis, 2014; Serio, Ibáñez, & Kloos, 2013). Specifically, in a student-centered learning environment, the availability of mobile devices to students is inevitable because students nowadays “do more than reproduce knowledge; they question and challenge the ideas of others and forward their own opinions and ideas” (Koutsopoulos & Kotsanis, 2014, p. 50). Such an observation aligned with the results of a recent study of 2, 350 K-12 students who valued a student-centered learning environment with mobile devices. According to the survey, 92% of the surveyed students in elementary, middle, and high school in the U.S. believed that mobile devices will change the way they learn in the future and make learning more fun. Moreover, 69% of them would like to see more mobile device integration in their classrooms (Booker, 2013). “It is inevitable that all computing will be mobile” (Norris & Soloway, 2011, p. 5).

To scale up the use of mobile devices in the classroom, some K-12 schools which usually prefer to provide mobile devices to students now allow their students to bring their own devices to the classrooms including tablets, phones, and laptops (Cisco, 2012; George, 2014). Bring Your Own Device (BYOD) allows students access to the same mobile devices at school and at home without switching among devices, thus making students work with technology with which they are already comfortable and familiar (Cisco, 2012; Horizon Project, 2013). Researchers and educators stated that Bring Your Own Device (BYOD) is a great approach to engage students in that the devices are integral to the world in which students live, therefore, BYOD will make learning part of their lives and enable a personalized learning experience (El-Hussein & Cronje, 2010; George, 2014; Horizon Project, 2013; Walling, 2012). Instead of banning BYOD, researchers argued that schools should teach students how to use their own devices properly (Cisco, 2012; DeWitt, 2012).

In higher education, the mobility of students ensures that learning activities turn quickly from concept to reality. For example, freshmen in sciences at Jackson State University enjoyed carrying their iPads provided by the university to do graphing calculation and access math reference formulas in class and outside of the classroom (Jackson State
University, 2014). Students at Instituto Tecnologicoy de Estudios Superiores de Monterrey were engaged in a Mobile Intelligent Laboratory, in which students collaborated on the move in a physics experiment. In the same fashion, art students adopted a BYOD approach to create and leverage a mobile blogging site to bridge meaning making across school and various art museum settings (Pierroux, Krange, & Sem, 2011).

The Mobility of Learning. As students become mobile with their portable devices, learning becomes mobile too when students have the freedom to learn in different locations than the teachers and to study at their own pace (Cavus & Al-Momani, 2011). The third factor to drive the explosive growth of mobile devices, therefore, is that mobile learning in general has become mainstream and is optimized for mobile learning. Researchers reviewed 154 journal articles about mobile learning between 2001 and 2010 (Hwang & Tsai, 2011). They found that the use of mobile learning accelerated significantly during 2008. Other researchers analyzed 102 mobile-learning projects. They found that the most studied fields in these articles are language arts, engineering, and computer technology (Frohberg, Goth, & Schwabe, 2009).

Of mobile learning, online learning has become more prevalent. A survey supported by the Sloan Foundation found that senior executives in higher education – presidents, provosts, deans, campus leaders – increasingly considered online learning as a strategic element in policy making. The survey also reported that 66 percent of the senior academic officers from 2,500 colleges and universities agreed that online learning was a critical element in their institutional strategic goals (Allen & Seaman, 2013). As a result, schools and institutions are adding new online courses and programs, adopting apps into their curriculum, and modifying websites, educational materials, resources, and tools to optimize learning for mobile devices (The Technology Outlook for STEM + Education 2013-2018 Report, 2013). For instance, Brown University launched a free online engineering course to teach high school students about the merits and challenges of the field (The New York Times, 2013). Florence-Darlington Technical College created the online physics course “Power Up: High Tech Online” to train the next generation of nuclear engineers by virtually connecting students with nuclear professionals (The Huffington Post, 2013).

Clearly, mobile learning is at the intersection of online learning and mobile computing (El-Hussein & Cronje, 2010). Schools and universities are involved in pioneering experiments for transmitting all instructional online materials to students by means of mobile devices (El-Hussein & Cronje, 2010; Walker, 2007). One noticeable trend is that schools and universities are employing mobile apps in their learning management systems (LMS). Schoology, a LMS adopted by K-12 teachers, recently released a mobile app that helps teachers streamline student submissions and the grading workflow with a simple gesture: swiping left or right in a mobile device (STEMblog, 2014). Blackboard, the most widely adopted LMS in higher education in the U.S., offers a mobile platform to allow students access to all content and assignments virtually anywhere with any types of mobile devices including smartphones. Desire2Learn and Canvas, another two big players of LMS in higher education, tout to let students take charge of their learning experience when they can easily work with course materials, cloud drives, and mobiles apps all in one place - at the students’ fingertips. Together with the mobility of technology and students, mobile LMS save students’ and faculty’s valuable time spent in going through the regular LMS processes in the desktop computing, which can now be done while they are on the move (University of Central Oklahoma, 2014).

All things considered, the three key factors - the mobility of technology, students, and learning – drive the widespread growth of mobile devices in schools and higher education. The following section discusses what happens when mobile applications are integrated into the curriculum.

SUMMARY

All things considered, there are three distinct trends on the explosive adoption of mobile devices in general: 1) significant increase of handheld devices, not laptops, in recent decades, 2) mobile learning becomes the new norm, and 3) higher education and schools are taking systematic approach to integrate mobile devices into their curriculum.

In the educational settings in particular, there are the three key factors to drive the widespread growth of mobile devices in schools and higher education: 1) the mobility of technology, 2) students, and 3) learning.

There has been an organizing theme in research that the trend of integrating mobile devices into educational settings will remain stronger and even bigger. Researchers have concluded that mobile technology meets the needs of mobile
students and their learning, and it helps them learn better when it is done correctly (Frohberg, Goth, & Schwabe, 2009; Hwang & Tsai, 2011). However, more empirical studies could investigate the best pedagogical use of mobile devices. In other words, while educators are glad to reap the benefits of mobile learning, emerging literature indicated some concerns of using mobile devices in the classroom such as distractions, lacking adequate integration into the curriculum, lacking teacher education, and so on (Sung, Chang, & Liu, 2016).

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A Study Of Cost Management And Cyber-Security
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ABSTRACT
This paper will analyze the tangible and intangible costs to an organization as it relates to network and cyber-security breaches. Historical network and cyber-security research will be examined to begin to formulate an efficient method to employ cyber-security tools at appropriate levels. The advantages and disadvantages of employing cybersecurity practices will be discussed. The direct and indirect costs of cybersecurity breaches will be evaluated. As well as an analysis of revenue loss, company reputation, employee training and future resource implementation will be conducted. Overall practical tools, techniques and methods will be identified for Information Security Officers (ISOs) to begin to effectively plan, execute, and maintain proper cyber-security protection. The paper will conclude with a comparison of cybercrime to traditional criminal activity. Forthcoming investigations on how to quantitatively formulate cyber-security solutions in relation to the cloud infrastructure needs to be addressed. Finally, future research should be conducted to study the effects of other internal and external business processes influence on cyber-security effectiveness.

INTRODUCTION
Long gone are attacks that only hack or access data for “bragging rights,” outbreaks are now diligently planned, intentional, formulated operations that desire intangible financial intellectual property as well as Personal Identity Information (PII) for monetary gain. Not only are businesses and government entities being targeted, cyber criminals now attack individuals’ information worldwide. The amount of revenue lost due to a data breach can be detrimental to an organization’s past, current and future endeavors. Cyber-attacks have evolved and become more complicated and efficient over the past 29 years. These threats continue to become more prevalent daily. These hazards span across all industries internationally. The tangible and intangible costs to an organization can be detrimental. The world is in dire need of a quantitative cost management system to assist with formulating and justifying cyber-security budgets.

DEFINITION OF A CYBER-ATTACK
A cyber-attack can be initiated by an individual or a large group. These attacks seek to alter or steal computer data illegally. Techopedia defines a cyber-attack as “a deliberate exploitation of computer systems technology-dependent enterprises and networks. Cyber-attacks use malicious code to alter computer code, logic, or data, resulting in disruptive consequences that can lead to cybercrimes, such as information and identify theft.

“A cyber-attack is also known as a Computer Network Attack (CNA).” CNA includes actions designed to destroy or otherwise incapacitate enemy networks” (Schneier, 2014, p.1).

Some of the most common hazards are trojans, unpatched software, and phishing. A trojan is generally initiated from a supposedly trusted user website. The end-user receives a false message to install some sort of update, and when the user clicks on the link malware is released into the computer system. Unpatched software generally attacks popular programs such as Adobe. When software does not have the most updated security patches the program becomes vulnerable to security violations because the system does not have the most recent security software installed to detect the occurrence. Phishing is also a very popular network attack, this is initiated by sending an email with a corrupt link, when the client clicks the link the attack is released (Grimes, R., 2012, p.1-2). There is an array of different types of computer hazards that have not been defined and the total number of attacks is unknown and continues to grow rapidly.
DEFINITION OF CYBER-SECURITY

There are numerous methods and techniques that exist to maintain vigilance against cyber hazards. For instance, defense in depth and layered security are popular tools to utilize for defending a standard computer network. Both techniques involve installing malware software and employing firewalls at various locations throughout a network at innumerable levels. However, no standard formula or process exists for balancing security measures in relation to risk while maximizing cost benefits.

Merriam-Webster dictionary describes cyber-security as “measures taken to protect a computer or computer system (as on the Internet) against unauthorized access or attack.”

The Information Technology (IT) community plans, executes, and maintains multiple methods to defend against cyber security attacks.

Background of Cyber-Attacks and Security and Why This is an Increasing Threat

Moreover, cyber hazards threaten personal information, national security, and the rights associated with intellectual property worldwide. Security attacks endanger interpersonal information such as credit card numbers, bank account information and medical records which are seized daily. Cybercrime could potentially destroy new inventions, alter the trade market, and decrease available employment (Lewis, & Baker, 2013, p.5). These exploits are increasing at alarming levels. If hackers are not halted identity theft and worldwide safekeeping are at high levels of risk. Last year, Ginni Rometty, IBM’s chairman, president, and CEO, said “Cybercrime is the greatest threat to every company in the world.”

The rise of computer breaches has drastically increased over the years and shows no signs of decreasing. Cyber-attacks have drastically surged from 1988-2017. Hackers target all types of organizations: hospitals, commercial organizations, educational institutions, insurance companies and the government are all vulnerable to these types of threats.

Computers have been prevalent in society for a long time prior to the first recognizable cybercrime. One of the first discovered cyber-attacks on the Internet was conducted by a man named Robert Morris. Robert was curious about the depth and details of the Internet, so he released the “Morris worm” to gauge the Internet’s capabilities and vulnerabilities. “He subsequently became the first person to be convicted under the ‘US’ computer fraud and abuse act. He now works as a professor at MIT” (Panetta, 2017, p.1). This type of criminal activity would become more common and continue to grow over the next two decades.

Another attack that lasted for over two years named Moonlight Maze was discovered by United States representatives in March 1998. The attackers accessed sensitive military maps from all echelons: Pentagon, NASA, and the Department of Energy (Balkhi, S., 2014, p.5). Later, in 2009 hackers penetrated the systems of more than 103 countries government computer systems. This operation was one of the largest spying procedures to ever take place (Markhoff, 2009, p.1). This was one of the first major operations that proved that no one industry or country was safe from this type of criminal behavior.

However, in 2014 health care associations and universities became extremely popular institutions to exploit. Attackers began targeting education heavily in 2014. Over 10 percent of cyber-attacks involved schools. Penn state revealed that over 18,000 social security numbers of students were comprised due to a breach that lasted from 2012-2014 (Wagstaff, K. & Sottile, C., 2015, p. 2-3). This is among one of the array of educational associations that experienced a data breach. The largest most recent phishing attack of 2017 occurred at the University of Washington School of Medicine that involved over 80,000 student records being revealed to attackers (Davis, J., 2017, p.1). Universities are becoming extremely susceptible to security breaches due to the lack of control of network security on students, faculty and staff.

Still, some of the most horrendous attacks occurred in 2015. Anthem, a health insurance association exposed more than 80 million people’s health records and not only did hackers steal this information, but the CEO’s personal
information was also compromised. In addition, in the same year an unidentified group stole more than $1 billion dollars from banks spanning across the globe (Szoldra, 2015, p.1). Proving once again that these deviants care nothing about affiliation or nationality.

Moreover, cyber-attackers not only target organizations for monetary gain. The most recent numbers of attacks are alarming and span across a vast selection of all types of institutions. In 2016 more than 30,000 member’s sensitive information from the Department of Homeland Security and the FBI were publicly leaked, this proving once again that the government is just as vulnerable to an attack as commercial enterprise (Editor, 2016, p.1). This trend will continue to elevate as technology continues to grow.

These bouts endure to linger at an alarming rate and are acquiring more data information than ever before, in March of 2016 a Hewlett Packard contractor’s laptop landed in the wrong hands and disclosed sensitive information of over 134,000 Navy sailors (Larter, D. 2016, p.1). Still this does not compare to some other contentions. A website facilitating company named Weebly unveiled over 43.5 million user’s passwords and email addresses (Kuranda, S., 2016, p. 4). In future years, the struggle to circumvent the amount of data that these assailants have access to will become extremely difficult.

Advantages and Disadvantages of Cyber-Security

The list for advantages of cyber-security could span across many pages. Still some of the major benefits are securing intellectual property and protecting an individual’s identity. In 2014-2015 over 56 percent of academic assets was compromised (Smart, 2015, p. 1). Network security assists with protecting intellectual property from harmful international adversaries and opponents. However, due to many other competing factors some prefer to be vulnerable.

However, increasing security does incorporate some pitfalls. The major disadvantages include: monetary expenditures, less efficient internet speed, configuration complications and privacy. The physical and software equipment utilized to protect information can be pricey and does not immediately reveal Return on Investment (ROI) for organizations. Adding additional security measures to a network can affect the speed and bandwidth available which decreases network speed. This can ultimately make employees angry because it reduces computer haste and restricts what type of programs can be downloaded and accessed. The cyber-security community is in dire need of people with intricate knowledge in this area. The skills for maintaining these detailed types of architectures can be difficult to acquire and maintain. Privacy has been debated for a long time, users often forgo security for ease of use and decreased pricing on equipment with known liabilities (O’Brien, Budish, Gasser, & Lin, 2016). Security will continue to be an issue based on the benefits and costs of implementation.

An Analysis of Costs

Many organizations account for tangible direct costs, but negate the secondary fees of planning, implementing, and executing current security operations. As well as analyzing the financial losses after the network has been compromised.

“One estimate predicts that governments and companies spend perhaps 7% of their information technology budgets on security. Another estimate put annual spending globally on cybersecurity software at $60 billion, growing at about 8% a year. The US Office of Management and Budget reported that in 2012, federal agencies spent more than $15 billion on cybersecurity-related projects and activities, accounting for 20% of all federal spending on information technology” (Lewis, & Baker, 2013, p.12).

The importance of security must be enforced at the highest levels of an organization. If top level management implements security policies and procedures and enforces security rules this could assist with alleviating some major security issues. There must be a strong relationship between all the business section leaders and the security information technology department head.

In the initial steps of estimation for cybercrime the Chief Executive Officer (CEO) and the Chief of Information Security Officer must define what business mechanisms dictate cost in relation to hazardous cyber-
attacks. First the business data must be evaluated, the value for the company’s intellectual property and trademark secrets must be assigned a concrete figure. Next the association should calculate the residual rates in the case that a data breach occurred, such as legal fees, recovering the network and the reputation injuries that follow an incident of this nature (Lewis, & Baker, 2013, p.3). The organization should conduct a thorough analysis of all costs associated with defensive and offensive methods to protect critical business information.

The importance of formulating a list of tangible and intangible assets in relation to a breach is significant for validating the cyber protection budget. Direct costs for an organization are generally simple to calculate. For security operations, some of these expenses would entail routers, switches, security system software, the salaries of the computer personnel, etc. Indirect costs are more unpredictable and make it extremely difficult to assign a definitive numerical number.

Examples of secondary fees for a breach could be adverse influences on consumer satisfaction, future business endeavors, company status, legal payments, and charges to recover data and rebuild the network (Bojanc, & Jerman-Blazic, 2008, p. 3). See Figure 1.

Direct, indirect and opportunity costs associated with cyber crimes

![Cost framework for cybercrime](image)

**Figure 1**: Cost framework for cybercrime. This figure illustrates some of the internal and external direct and indirect costs that organizations need to consider when conducting cyber-security costs (Ponemon, 2016, p. 29).

The figures associated with data breaches are reprehensible. In 2015, the estimated net national loss for stolen information was over 1 billion dollars (Szoldra, 2015, p.1). The numbers more than tripled in a single year. This figure climbed to over $ 3 trillion in 2016 (Morgan, 2016, p.1). The amount of money that is loss due these types of breaches must not continue, businesses will not be able to sustain revenue and continue to support the economy with these types of expenditures.

The costs associated with one exposing one individual’s PII is expensive. In 2016 IBM and Ponemon conducted a study in the United States that involved over 2,013 companies. The base price for a single user’s record cost companies $221 of this total $145 of this monetary value was related to ancillary fees. Businesses normally spend an average of $7.01 million dollars for a cyber-security attack (Ponemon, 2016, p. 3).

These numbers have not fluctuated much over the years, these figures should be able to assist CEOs and CISOs with structuring fixed costs for security purposes. See Figure 2.
Direct and indirect per capita data breach costs over 11 years

Figure 2: Direct and indirect per capita data breach costs over 11 years. This figure illustrates the direct and indirect costs per compromised record in a cyber-security breach (Ponemon, 2016, p.14).

One of the major indirect costs that occur immediately following a cyber violation stems from the loss of consumer and company identity veneration. Sometimes this will negatively affect consumer sales or lower stock price from 1-5% (Lewis, & Baker, 2013, p.12). Eventually the costs associated with technology may begin to outweigh the benefits.

“Cybercrime costs the global economy up to US$575 billion annually according to BofA Merrill Lynch Global Research, whose report goes on to say that in a potential worst-case 2020 ‘Cybergeddon’ scenario, cybercrime could extract up to a fifth of the value created by the Internet” (Symantec, 2016, p. 4).

The professionals conducting assessments of these trends are not reporting positive future outcomes for this type of criminal behavior. The future financial predictions are not looking to improve these figures, the estimated spending for avenues to secure data is expected to be over $1 trillion dollars during 2017-2021 and residual costs from a breach are anticipated to climb to over $6 trillion dollars (Morgan, 2016, p.1). There are currently no concrete solutions on how to alleviate the disastrous outcomes from these conditions.

Practical Applications

Unfortunately, there are no concrete models with quantitative data that exist on how to economically plan computer network defense. Researches have tried to apply such techniques as using standardized economic tools, implementing gaming models, and approaching cyber-security issues utilizing standard business process practices.

There is an abundant amount of information on the importance for Information Security Officers (ISOs) to plan costs like other business sections in an organization. For instance, ISOs need to formulate a technique that can demonstrate the Net Present Value (NPV), Internal Rate of Return (IRR), and Return of Investment (ROI), etc. to secure the necessary monetary support for security operations.

In addition, multiple amounts of information exist on the importance of creating a secure a network and managing costs simultaneously. The research and observed available data is very vague and looks at this problem very holistically, without separating the intricate details that need to be considered for effective network security. There are companies who have tools to capture data breach cost estimates after data has been compromised but there is no quantitative data to assist CEOs and CISOs with the ability to know what percentage of a company’s budget should be applied to cybersecurity defense.
One example is a company called the Hub it supplies organizations with a cyber risk insurance tool to calculate costs after an attack has occurred (Hub, 2017, p.1). See Figure 4. Still, this is a tool utilized for the aftermath of a data breach, businesses need a concrete model to formulate costs to protect and mitigate against attacks.

![Data Breach cost calculator](image)

**Figure 3**: This figure illustrates a method to calculate the costs affiliated with a cyber-attack after an organization has experienced a breach (Hub, 2017, p.1).

There are a few companies that attempt to capture budget costs for a network, without considering multiple other complicated factors: physical security tools, updating software, and maintenance network costs. Juniper networks created an exploratory model that assists businesses with formulating a budget for cyber-security tools. The tool calculates this number by inquiring about the number of employees, yearly income, and the value of the associations information (Juniper Networks, 2015, p.1). While this tool is a starting point for organizations it does not address several other tangible and intangible security features.

There are multiple articles that attempt to apply gaming theory to attempt to solve the cost management issues associated with cyber-security fees. One model teaches readers to consider internal and external risks and supplies readers with a non-direct systematic approach. This method outlines cyber reserves and considers external sellers in relation to product mandates. The author formulates the equation and constructs an answer based off business objectives and functions (Nagurney & Shukla, 2017, p.5). Nevertheless, no standard quantitative model that depict and analyze actual indirect and direct costs exist.

**Employee Education and Training**

Another proven technique to mitigate attacks is to train internal and external employees. The sources of breaches are split into three separate segments: hostile activity, technical error, and human mistakes according to the 2016 Ponemon study. The 23% of natural human error could be moderated by providing employee and consumer cyber-security awareness training. This would inform and arm these individuals with the ability to notice perpetrators and arm this population with proper tools to take initial action. A survey and study of 300 Chief Information Officers (CIOs) and Chief of Information Security Officers (CISOs) revealed that over 54% attributed an increase in more vigilant security could be attained through employee accountability (Forbes Insights, 2017, p.21).

A security company named Wombat conducted a Monte Carlo analysis and found that employee education drastically improves network security. “An investment in user awareness and training effectively changes behavior and quantifiably reduces security-related risks by 45% to 70%” (Wombat Security Technologies, 2015, p.1).
CONCLUSION

In the dynamic world of Information Technology (IT) security breaches have become the norm for most institution’s large and small regardless of the services or products that the organization provides, and this trend is only going to increase as the number of personnel and devices connected to the Internet continue to grow. The span of vulnerable people and information to cyber criminals is going to drastically increase. This threat will become the most lethal and common danger internationally. See Figure 4.

<table>
<thead>
<tr>
<th>Putting Malicious Cyber Activity in Context</th>
<th>Estimated Cost</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GLOBAL</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Piracy</td>
<td>$1 billion to $16 billion</td>
<td>IMB</td>
</tr>
<tr>
<td>Drug Trafficking</td>
<td>$600 billion</td>
<td>UNODC</td>
</tr>
<tr>
<td>Global Cyber Activity</td>
<td>$300 billion to $1 trillion</td>
<td>Various</td>
</tr>
<tr>
<td><strong>US Only</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Car Crashes</td>
<td>$99 billion to $168 billion</td>
<td>CDC, AAA</td>
</tr>
<tr>
<td>Pilferage</td>
<td>$70 billion to 280 billion</td>
<td>NRF</td>
</tr>
<tr>
<td>US-cyber Activity</td>
<td>$24 billion to $120 billion</td>
<td>Various</td>
</tr>
</tbody>
</table>

Figure 4: Putting Malicious Cyber Activity in Context. This figure illustrates how cyber-crime compares to other criminal activity globally and in the United States. Abbreviations defined: International Mission Board (IMB), United Nations Officer on Drugs and Crime (UNODC), Centers for Disease Control (CDC), American Automobile Association (AAA), and National Retail Federation (NRF) (Lewis, J. & Baker, S., 2013, p.4).

There has been a lot of research conducted on the massive complications of security issues and how the dangerous impacts of these sort of activities will continue to increase at disturbing levels, but little information exists as to how to solve the problem. Leaders and employees at all levels must be educated on these matters to make this an inclusive subject that is not only the responsibility of the Information Technology (IT) department to tackle. Technology is an essential attribute of almost all mankind. There now lies an obligation for all individuals that relish in the benefits of the Internet and technology to enforce standard security practices.

Regrettably, there is no one cyber security methodology that can be applied across all businesses and industries. This issue is a very popular topic because of the span of increased online transactions and as the Internet of Things (IoT) and Cloud services become a part of almost every aspect of daily life information will continue to be vulnerable. This is a very complicated matter for companies to manage costs in relation to security measures a holistic risk assessment should be conducted with not only considering information technology. Other business processes must be included, organizations need to assess the value of the company’s intellectual property and data, and employ an array of techniques to educate and train all employees on the importance of cyber security matters.

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Institutionalism And Public Financial Management
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ABSTRACT
Public finance is the main engine of governance and the cornerstone of enhancing the economic development and growth of a country. Even though the private sector conducts most of the public projects and programs, governments use public money to finance these projects and programs, and it is responsible for adopting sound policies and regulations that organize financial and non-financial activities in the country. In this paper, new institutionalism (NIT) is introduced as an effective and efficient way to manage public finance (national wealth) and reform, which will contribute to enhancing the quality of public services and programs, controlling corruption, and supporting institutional quality.

Keywords: Public Finance Management, Public Financial Reform, New Institutionalism Theory

INTRODUCTION
Public finance is the main engine of the economy, especially in developing countries. Even though the private sector plays an important role in providing public services, projects, and programs, they are introduced by the government and financed by public funds and taxpayer money. Furthermore, public financial management (PFM) is not limited to revenues and expenditures; it also includes budgeting processes, financial systems, and government investments (local and international) such as managing a sovereign wealth fund (SWF) that is owned by the state. Accordingly, managing public finance and using appropriate tools and mechanisms are the basis of achieving sustainable and comprehensive development. Also, the way public money is managed contributes to reducing waste of public money and controlling corruption (Ahmad, et al., 2006; Boadway, 2006; Gollwitzer, 2010).

Types of government spending and revenues vary among countries based on the nature and structure of their economies; however, shares of spending and revenues of Gross Domestic Product (GDP) show the importance of public financial management to shaping the economy. In developed countries, for example, average revenues count for 42% of their GDP, while government spending reached more than 45% of GDP in 2015 (OECD, 2016). Worldwide, according to the Heritage Foundation’s Index of Economic Freedom 2017, which covers 186 countries, on average government expenditures count for almost 34% of countries’ GDP (Heritage Foundation, 2017). In addition, public procurement as part of public finance of governments plays a major role in shaping the effectiveness and efficiency of PFM. The share of public procurement of GDP of the European Union is 16% and 12% for the OECD countries in 2015; worldwide, public procurement ranges from 10-15% of GDP globally (Djankov, et al., 2015). These figures highlight the importance of PFM in terms of shaping and directing the nation's wealth and sources of income, providing high-quality service and goods to people and organizations, and achievement of government strategic planning objectives. In addition, many studies and reports on the roots of the 2008 economic crisis concluded that poorly managed public finance at the country and global levels, was one of the main causes of that crisis (Laffan & Schlosser, 2016; Peters, et al., 2010; Stiglitz, 2010).

Therefore, PFM has been one of the main issues for politicians, scholars, and practitioners in discussing the best way of ensuring efficiency and effectiveness in managing public finance. Accordingly, public financial reform (PFR) has been adopted by many countries, especially developing countries, and it has also been imposed by international donors (IMF, World Bank, USA, EU) to ensure efficiency and effectiveness in PFM. According to Hooghe and Marks (2001), governance of public finance and accountability has changed over the years from concentrating on controlling corruption and allocations to effectiveness and efficiency not only for allocations, but also for investment by government agencies.
On the other hand, financial, budgeting, and administrative institutions play an important role in the outcome of PFM, where quality of institutions’ processes and outcomes are introduced as main factors in the success of PFM. Allen (2006) deems “the development of a country’s budgetary systems and procedures depends upon the evolution of its economic and political institutions” (p. 12). The same argument is raised by Aidt et al. (2008), in which they believe that the quality of institutions drives PFM and budget processes. According to Aidt et al. (2008):

Sound budget institutions are vital for a country’s ability to design and implement effective fiscal policies. Such institutions help ensure government accountability and prevent the leakage of public funds; increase efficiency of scarce public resources; and improve the prospects of maintaining fiscal stability and meeting social development needs. (p. 3)

The current paper’s argument is that institutions matter when analyzing PFM processes and outcomes and introducing PFR. Here, we argue that applying New Institutionalism Theory (NIS) to PFM will lead to well-managed public finances and successful public financial reform. The paper will begin by exploring the importance of PFM in supporting economic development and growth, fighting corruption, and adopting good governance. Then, NIT will be analyzed, and the relationship between NIT theory and the quality of public finance processes and outcomes will be explored. Finally, recommendations will be made as to how to ensure PFR success and the quality of PFM processes and outcomes.

**Public Financial Management (PFM)**

Managing public finance, collecting revenues, and allocating expenditures are the government’s duty, regardless of the political system implemented in the country. According to Allen (2009), “[F]or the public sector to deliver public services and achieve its policy objectives, it is critical that public finances are managed well” (p. 1). Accordingly, budgeting processes including preparation, accreditation and approval, execution, and control all directly influence the government’s work. Aaron Wildavsky (1961) in his masterpiece *Political Implications of Budgetary Reform* stated “[T]he budget is the life-blood of the government, the financial reflection of what the government does or intends to do” (p. 184). Therefore, PFM and the budgetary system impact both the way government operates and the quality of public services and programs.

Even though there is no broad agreement on the definition of PFM, scholars and practitioners think it includes regulations, rules, and systems that organize, direct, allocate, and control public revenues and expenditures (Ahmad et al., 2006; Gollwitzer et al., 2010). PFM refers to “the procedures, established by law or regulation, for the management of public monies through the budget process, which includes formulation, execution, reporting and analysis” (Ogujuuba & Okafor, 2013, p. 5). After deeming it to be "a system of multiple role-players", Pretorius and Pretorius (2009) argue that PMF is "the overall taxing, spending and debt management of government, which in turn influences resource allocation and income distribution" (p. vii). Ogujuuba and Okafor’s (2013) thinks that PFM as “a critical instrument in the implementation of economic policy, and it works by influencing the allocation and use of public resources through the budget and overall fiscal policy” (p. 1). According to Gollwitzer et al. (2010):

The term “public financial management” (PFM) is often used synonymously with budget institutions. However, while the two terms are similar, PFM is typically used in a narrower, and more technical sense—it is associated with systems, procedures and processes related to the budget, including expenditures, revenues and government borrowing, whereas the term “institutions” incorporates wider political economy and social influences on the budget. (p. 3)

PFM is essential for good governance, since the way of managing public finance supports adopting good governance practices in countries; also, the quality of PFM provides regulators and decision-makers with tools to evaluate public policies and programs (Ahmad et al., 2006; Gollwitzer, 2010). While the challenge is how to make the best use of limited resources available to governments, to serve the public in a good way, well-managed public finance enhances the effectiveness and efficiency of government work, as well as public goods and services (Borge et al., 2008; Simson et al., 2011; Pretorius & Pretorius, 2009). Furthermore, a well-managed public financial system supports controlling corruption through advocating transparency and accountability in the public financial management and budgeting system (Ahmad & Brosio, 2006; Santiso, 2006; Shah, 2006; von Hagen & Harden, 1995).
Additionally, prompting economic growth and sustainable development is another result of the quality of PFM. Economic structure and investment are influenced positively by the way countries manage their public finances. Additionally, although economic crises cannot be avoided altogether, the adoption of a good financial system limits the negative effects of crises and helps to overcome them quickly (Barrios & Schaechter, 2008; Keefer & Knack, 2007). According to Barrios and Schaechter (2008), “QPF [quality of public finance] comprises policies that not only ensure sound budgetary positions and long-term sustainability but also those that raise the production potential and facilitate the economy to adjust to shocks” (p. 7). Thus, the cornerstone of economic and administrative development in countries is the development of PFM.

On the other hand, budget institutions are a crucial element in any financial system. The way government manages its budgeting process helps in supporting the economic and administrative development process, distributing resources efficiently and effectively, and translating resource allocations into programs and projects of high quality (Boex & Muga, 2009; Allen, 2009). So, increasing spending on health and education services does not guarantee better outcomes unless combined with a well-managed public finance system and a well-papereed budget. In a study of 57 countries from 1990-2003, Rajkumar and Swaroop (2008) found that "[P]oor budget management has frequently been cited as one of the main reasons why governments in developing countries find it difficult to translate public spending into effective services.” (p. 97)

Many studies have investigated the relationship between quality of public financial management and budgeting institutions on the one hand, and good governance (Hooghe & Marks, 2001; Mattei et al., 2013), economic development (Albassam, 2015; Bahl & Wallace, 2005; Laffan & Schlosser, 2016), and quality of public goods and services (Ahmad et al., 2006; Borge et al., 2008; Mattei, et al., 2013) on the other. Most of the studies supported the importance and positive impact of PFM on enhancing the way governments govern, as well as supporting positive outcomes for public services and programs.

A study by Gollwitzer (2010) explores the impact of quality of public financial institutions on fiscal outcome in the members of the African Union and Morocco, finding that budget institutions affect economic development and fiscal outcome. The same results are found by von Hagen & Harden (1995) when they study the importance of PFM on sustainable fiscal development. In their study, von Hagen and Harden (1994) found that countries that have a high-quality PFM system enjoy better sustainable development compared to countries with a lower quality of PFM. Borge et al., (2008) explore the relationship between budgetary institution as part of PFM and public-sector efficiency, and the influence of the degree of public participation on public sector efficiency in local governments in Norway. Their study concludes that both the quality of the public financial system and democratic participation have a positive influence on public sector efficiency. The same result was reached by Ogugiuba & Okafor (2013) when studying the relationship between PFM and fiscal outcomes in Nigeria. After noting the importance of PFM for sustainable development, Ogugiuba and Okafor (2013) deem that “institutional improvement that includes: governance structure, accountability, transparency and predictability, is a fundamental to have quality of PFM and fiscal outcomes” (p. 15). Finally, it is appropriate to conclude this section by citing Ogugiuba and Okafor’s (2013):

A well-functioning PFM system would provide the assurance that the funds released through revenue generation and appropriation processes as well as from debt forgiveness (cancelation) mechanism would be productively used in a transparent and effective manner. A well-functioning PFM system would also improve the use of aid as well as overall budget performance, and thus contribute to macroeconomic stability and growth. In addition, it would contribute towards improving overall governance through protection of public resources against the risk of expropriation and corruption. (p. 1)

Public Financial Reform (PFR)

PFM is a cornerstone of comprehensive and sustainable development. A well-managed public financial system is considered to be an important tool in supporting quality of service delivery, fighting corruption, and supporting economic development and growth. That being said, the big challenge for many countries is how to reform the public financial system in order to have a high-quality structure that utilizes the country's resources. Thus, public financial reform (PFR) has been one of the main discussed subjects for many governments that are looking to enhance public services and goods with effectiveness and efficiencies. In addition, international donors such as United Nations, IMF,
World Bank, UK, E.U, USA, have been pushing for PFR in receiving countries to adopt sound policies in order for those countries to be eligible for financial and non-financial aid (Ahmad & Brosio, 2006; Azfar et al., 1999; Ogujiuba & Okafor, 2013; Santiso, 2006).

However, many ideas and recommendations have been offered by scholars, practitioners, and lawmakers as tools toward successful PFR, such as decentralization of PFM (Ahmad, et al., 2006; Bahl & Wallace, 2005; Lockwood, 2006), adopting common standards and indicators of allocations (Boadway, 2006), applying good governance to PFM (Albassam, 2015; Santiso, 2006; Shah, 2006), and increasing public participation in managing public finance (Allen, 2009; Schiavo-Campo & McFerson, 2014). Most studies shared some conclusions such as no one size fits all, institutional reform is a key to PFR, and reform takes time to be successful.

Countries are different economically and politically; thus, reformers need to take into account the nature of the political and economic system of a particular country. Consequently, some formulas that are applied to developed countries might not work for developing countries (Allen, 2006; Biex & Muga, 2009; von Hagen & Harden, 1995). In their analysis of PFR in countries around the world, Pretorius and Pretorius (2009) concluded that:

"Most reforms fail not because of the contents or technical aspects of the reform programmes, but because of the way in which they were implemented. Evaluations have shown, in particular, that PFM reform programmes need to be country-specific, as they cannot be divorced from their historical, political and social heritage. (p. x)"

Institutional reform is another element of a successful PFR. Applying good governance principles, including public participation, supporting accountability, fighting corruption, and enhancing regulatory quality, are all essential to PFR (Gupta et al., 2002; Moore, 2004; Simon et al., 2011). Also, fiscal institutions as well as investment rules and regulations are major aspects that need to be developed and well-managed for PFR to be successful (Barrios & Schaechter, 2008; Ogujiuba & Okafor, 2013). In a study of 57 countries from 1990-2003, Rajkumar and Swaroop (2008) found that countries with a high level of institutional quality tend to use allocations of health and education effectively; "well-functioning public institutions are critical for translating public spending into effective services." (Rajkumar & Swaroop, 2008, p. 101)

Reforms in general need time to be evaluated and adjusted if needed; however, public financial reforms need special consideration when implemented and evaluated. PFR is a long-term process with many sub-issues, which makes any reform a collective process that covers not only financial aspects of the government work, but also includes the civil service system, control system, and accounting system, etc. (Aidt et al., 2008; Barrios & Schaechter, 2008; Pretorius & Pretorius, 2009). Furthermore, budgeting processes such as preparation, execution, and control, are the heart of any public financial management and public financial reform (Allen, 2009; Lockwood, 2006; Ogujiuba & Okafor, 2013), where budgeting is "the principal vehicle through which any government conducts its core functions" (Gupta et al., 2002, p. 40). Additionally, we cannot imagine a successful PFR and a well-managed public finance system without institutional reform. In Santiso’s (2006) study, he found that:

"reform strategies based on radical reform or institutional transplant of exogenous models are likely to fail. These findings underscore the limits of institutional design and institutional import as effective reform strategies. While radical reform is sometimes warranted, it requires carefully crafted and politically astute reform tactics, both in the design and implementation of the reforms considered. (p. 104)"

New Institutionalism Theory (NIT)

This paper argues that adopting new institutionalism theory (NIT) will be a necessary path if the government wants to manage the wealth of the nation well, introduce a high level of quality of public goods and services for beneficiaries (individuals and organizations), and to achieve comprehensive and sustainable development. After exploring the importance of PFM in serving the public and supporting economic and sustainable development, now we move on to discuss concepts, factors, and tools that contribute to well-managed public finance and successful PFR by utilizing NIT. In the following section, we will discuss institutional concepts and the players who participate in shaping and
formulating those institutions. Then, new institutionalism theory (NIT) will be discussed and introduced as a tool for high-quality PFM.

Institutions

There is significant interaction between institutions on one side, and individuals’ behavior and acts, political process and outcomes, and society on the other side (Hall & Taylor, 1996; March & Olsen, 1984; Scott, 2003). According to Powell (2007), “organizations are deeply embedded in social and political environments suggested that organizational practices and structures are often either reflections of or responses to rules, beliefs, and conventions built into the wider environment” (p. 1). In addition, scholars argue that to understand how institutions work, we need to understand and analyze human behavior and individual motives, where each one influences and is influenced by the other (Cooley, 1909; Hopcroft, 1999; North, 1991).

According to North (1990), an institution is defined as “the rules of the game in a society or, more formally…the humanly devised constraints that shape human interaction” (p. 3). Furthermore, institutions are constructed and formulated through formal and informal constraints; thus, institutions have different structures and constructions based on many factors such as culture, political system, and the norms and values of a society (Meyer & Rowan, 1977; Thoenig, 2011). Hall (1986) emphasizes the importance of individuals in shaping an institution’s structure and design, and he defines institutions as “the formal rules, compliance procedures, and standard operating practices that structure the relationship between individuals in various units in the polity and economy” (p. 19). Bell (2011) shares the same definition and argues that “institutions can be defined as sets of rules, codes or tacit understandings which shape behavior.” (p. 13)

Additionally, North (1990) argues that an institution's structure plays an important role in stabilizing the economic and social status of the country and helps in analyzing economic, political, and social issues, since institutions establish “the rules of the game” (p. 3). In addition, an institution’s structure and design affect the institution’s performance, and has an influence on constructing sound policies and the way governments transform policies and programs into action (Ansell & Gash, 2008; Jansen, 2007; Provan & Kenis, 2008). Also, in order for institutions to be effective and efficient and to help collaborative governance be meaningful and successful, institutions’ designs and processes need to adopt good governance concepts such as accountability and participation from beneficiaries (Ansell & Gash, 2008; Delreux, 2013).

New Institutionalism Theory

Institutions play a critical role in shaping public services, the way organizations work, and public policy implementation and outcome. In addition, institution's structure and design are influenced by and influence individual behavior, and institutionalism contributes to the success or failure of the way a government governs (DiMaggio & Powell, 1991; Hall & Taylor, 1996; North 1991). Therefore, we could argue that theories that adopt the institution as their unit of analysis are important to understanding how public financial management and reform works.

New institutionalism theory (NIT) adopts the institution as its unit of analysis, providing an alternative to traditional public administration theories in studying how governments govern and in analyzing public policy process and outcomes, whereas the new institutionalism approach considers all players who make, implement, or benefit from decisions and policies (Delreux, 2013; Lane & Nyen, 1992; Thoenig, 2011). NIT has been utilized by many disciplines such as political science and economics to facilitate a better understanding of political processes and institutional change. On the subject of PFM, understanding how institutions work and the relationship between individuals and institutions will help in managing public finance well.

Consequently, NIT suggests that many more factors contribute to the political process (e.g., individual socioeconomic and education levels) than in other theories (e.g., rationalism and public choice theory). For example, compared to public choice theory, which suggests that politicians act in their own interests, NIT maintains that both informal relationships and formal procedures also play important roles in the policy process (North, 1990; Ostrom, 1986; DiMaggio & Powell, 1991). According to Hall and Taylor (1996), the new institutionalism approach in studying policy processes and outcomes “represents a major advance on traditional approaches that explain political outcomes largely
in terms of the force that structural variables, such as level of socioeconomic development, educational attainment or material discontent, are said to exercise directly over individual behavior” (p. 951). Therefore, NIT argues that culture and informal arrangements influence individual behavior and decisions (Furubotn & Richter, 2005; Garson, 2008; North, 1990; Powell & DiMaggio, 1991).

Accordingly, March and Olsen (1984) argue that older thinking in political science relies heavily on the effect of politics on individual behavior and society while neglecting the role that individual behavior has on a political institution’s performance and structure, and they argue that under new institutionalism, “the state is not only affected by society but also affects it” (p. 738). In addition, according to new institutionalists, an institution’s structure and design as well as the relationships among them help in explaining the political process and the behavior of individuals, as well as an organization’s processes and outcomes (Furubotn & Richter, 2005; Lecours, 2005; North, 2009). Thus, individuals, other institutions’ structures and designs, culture, and other factors such as political systems all play important roles in shaping the institution’s structure and operations (Mantzavinos, 2001; North, 1991; Powell, 2007). Selznick (1996) posits that new institutionalism is based on the argument that “the organization is highly sensitive to the cultural environment within which it lives” (p. 273). Accordingly, new institutionalists argue that all kinds of institutions (e.g., political, economic, social, and religious) interact with their environments.

Another theme of NIT is that organizations operate in a competitive environment with other organizations under the same conditions, such as rules and formal and informal constraints. In addition, goals like economic success and perceived legitimacy are the basis of competition among organizations (North, 1991; Powell, 2007; Powell & DiMaggio, 1991). Powell (2007) states that “the signature of the new institutionalism has been a focus at the field level, based on the insight that organizations operate amidst both competitive and cooperative exchanges with other organizations.” (p. 6)

In addition, NIT has introduced the transaction cost approach as a tool to evaluate the policy process. According to this approach, decisions are the outcome, and the policy process is the cost of obtaining that outcome (DiMaggio & Powell, 1991; Williamson, 1998). Additionally, North (1990) argues that transaction costs include the cost of enforcing property rights and laws. Thus, new institutionalists believe that controlling and considering transaction costs such as the cost of enforcing property rights and laws in policy analysis enhances economic growth and contributes to better governance of institutions (North, 1990; Williamson, 1998).

On the other hand, according to new institutionalists, institutional change is incremental and based on changes in “cultural constraints” (North, 1990, p. 6). In addition, under NIT, actors such as individuals and policymakers are the drivers of institutional change, while the political context and institutional design and structure are important factors in facilitating a meaningful and successful governing process and institutional change (Bevir, 2010; Gorges, 2001; Jansen, 2007; Powell & Colyvas, 2008). The same argument was raised by Thoenig (2011), who added "'[P]olitical and administrative machineries experience path dependencies. They are embedded in societal environments. They function like specific social systems. They produce social norms and cognitive references. Therefore, interactions between societal change and administrative reform become key issues.” (p. 1)

Likewise, there is a two-way relationship between governance and the structure and design of institutions (North, 1991; Stoker, 1998). Governance is a means of including all social and political actors in the decision-making process, while institutions can be seen as the rules of the game, controlling how the governance process takes place (Stocker, 2010; Williamson, 1998). According to Bell (2011), “institutions are important, because, as entities, they form such a large part of the political landscape, and because modern governance largely occurs in and through institutions” (p. 1). Additionally, both governance and new institutionalism assert the importance of both formal and informal arrangements in shaping the political process and government work (Blanco et al., 2011; Lane & Nyen, 1992; North, 1991).

Therefore, the design, structure, and function of institutions are very important in influencing both the governance process and economic development (North, 1990; Powell & DiMaggio, 1991). Institutions, by contrast, are influenced by various facets of human development, including education, health, and economic growth (Jansen, 2007; Provan & Kenis, 2007). From the PFM perspective, the structure of institutions and interaction among institutions play an important role in the quality of PFM and economic development (Blanco et al., 2011; March & Olsen, 1984; Davis et
al., 1966). Thus, to manage public finance effectively, governments need to consider NIT concepts and themes and many factors such as human behavior, socioeconomic characteristics, and cultural aspects.

**Institutionalism and Public Financial Management**

Public financial management (PFM) is considered to be the main engine of government functions. PFM organizes and arranges allocation of public expenditures and collection of public revenues. Managing public finance effectively and efficiently is the key of government successes in delivering public services and goods in a fair way among beneficiaries (individuals and organizations), strategic plan execution, and control of corruption. The current paper argues that adopting concepts of new institutionalism theory (NIT) will lead to more efficient and effective PFM.

NIT suggests that institutions influence and are influenced by the wider environment in which they work. According to Ogujiuba and Okafor (2013), "there is a systematic relationship between PFM [public financial management] and the institutional environment in which it operates" (p. 5). In addition, after arguing for the importance of institutional quality for financial performance, Santiso (2006) thinks that any successful financial reform needs to be combined with institutional and political reform. Additionally, after studying PFRs in both developed and developing countries, Allen (2009) asserts that PFR takes time, arguing that successful PFR needs to be extended into areas such as “the organization and management of the civil service, the establishment of executive agencies (the “Next Steps” program), improving the quality of public services (the “Citizens’ Charter” initiative), and devolving responsibility for delivering services to spending ministries and agencies” (p. 15). Therefore, to adopt reform and to manage public finance well, all actors (individuals, public and private institutions) must be included in the process of formulating and adopting and implementing policy, and has to be combined with the development of other institutions and systems like civil service and procurement.

One of the themes in NIT is *isomorphism*, where institutions that operate in the same work environment tend to be similar in structure and design, regardless of the institution’s mandates or reasons of creating it (DiMaggio & Powell, 1991; Pretorius & Pretorius, 2009; North, 1991). Government agencies either collect revenues or spend allocations on programs and allowances, or both, so having a well-managed public financial system requires good management of all government activities in a systematic and parallel way among agencies. One hand does not clap; it does not matter how good the financial system is; without collaborative effort from all government agencies, the financial system will be weak and poorly managed and will result in inefficient processes and outcomes.

Additionally, both formal and informal rules of the game need to be considered when managing the financial resources of a country as part of adopting the NIT program. Formal rules include legislation, rules, systems, and regulations, while the informal and often unwritten rules determine what really happens (North, 1991; Pretorius & Pretorius, 2009; Santiso, 2006). Thus, a well-managed PFM and PFR take into account both formal and informal rules of the game. In addition, not adopting and applying the same rules to all players who are part of the public financial system will result in poor governing and negative outcomes such as corruption, less collaboration among government agencies, and inefficient and ineffective public services and programs.

As discussed earlier, individuals influence institutions’ structure and design; at the same time, institutions shape behavior and manners of individuals as part of the NIT definition. Rajkumar and Swaroop (2008) think that "managing public resources to promote development requires well-trained, skillful personnel, working in an institutional setting with an incentive system that reduces fraud and promotes cost efficiency" (p.97). Thus, human development plays an important role in managing public finance and executing government plans. Furthermore, many scholars and studies have reached the conclusion that each country has its own formula of managing its resources, where imitating and duplicating other successful stories of countries that have well-managed public finance will not guarantee the same results (Albassam, 2013; Allen, 2009; Aidt et al., 2008). Therefore, following NIT, we could argue that PFM process is the collective work of all government entities, and it has to be structured, designed, and implemented with all due respect to the culture and system (political and administrative) specific to the country.

Another aspect of institutional quality is applying good governance factors to PFM, such as fighting corruption, public participation, accountability, rule of law, and transparency (Allen, 2009; Bhal & Wallace, 2005). Ahmad and Brosio (2006) emphasize "the importance of institutional arrangements, including the legal, political and administrative
aspects, and information flows to ensure that there are appropriate incentives and sanctions to generate good governance” (p. 1). A study by Borge et al. (2008) of Norway’s notably successful reform of their public financial system found that the government starts by adopting steps to enhance factors that effect the quality of institutions such as public systems and regulations, and design and structure of other government agencies (including but not limited to minister of finance and other financial institutions). The same results were found by Pushak et al. (2007) when studying the transition economies during 1992-2004, where they found a significant relationship between public sector governance, PFM quality, policies, and program outcomes. Thus, institutional design and structure are the key elements in PFM, especially in developing countries, and PFM as well as PFR will not be successful or sustainable without adopting good governance practices.

On the other hand, scholars and practitioners argue that a well-managed budgeting system will enhance the quality of PFM and treat budgetary institutions as key component of good governance; where effectiveness and efficiency of budgeting institutions contribute positively to public service and goods provided to beneficiaries (Boadway, 2006; Ogujuba & Okafor, 2013; Lockwood, 2006; Veiga et al., 2015). A study by Gollwitzer (2010) of the influence of budget institution quality on fiscal performance on African countries concluded that institution quality has a significant impact on economic and fiscal performance. According to Gollwitzer et al. (2010), “[B]udget institutions shape and regulate the policy and process of generating and allocating public resources for carrying out government functions.” (p. 4)

To summarize, all players who contribute to managing public finance, applying good governance, analyzing the behavior of individuals and organizations, considering collective reform of public and private institutions, and improving laws and regulations related to managing public finance, are all part of applying NIT to PFM. In addition, we need to take into account when applying NIT to PFM that each country has its own unique system, culture, and traditions. Finally, it is good to conclude this section by citing Pretorius and Pretorius (2009), who summarized the benefits of having high-quality PFM as well as strong budget institutions:

Strong Public Financial Management (PFM) systems are essential to improved service delivery, poverty reduction and to achievement of the MDGs [Millennium Development Goals]. Effective PFM systems maximise financial efficiency, improve transparency and accountability, and – in theory – will contribute to long-term economic success. Activities range from the preparation and fulfilment of the budget cycle, budget oversight and control, taxing and debt management and procurement, to resource allocation and income distribution, and are increasingly seen as a set of inter-related sub-systems (and organisational and political cultures), rather than a stand-alone activity. (p. iii)

CONCLUSION

Countries, international organizations, and donors are all in search for a way to improve utilization of a country's income sources (natural resources, taxes and fees, and aids) in a way that ensure good governing of public finance (collecting revenues, budgeting process, and expenditures). Additionally, public financial management (PFM) has been one of the key aspects in discussing many subjects such as fighting corruption, enhancing quality of programs and services, and implementing strategic plans. Accordingly, public financial reform (PFR) has been introduced by many countries as a way to develop the way government manages the nation’s wealth and the way government provides those services to the public.

As shown above, many countries suffer from poorly managed public finance where many reforms fail for many reasons; one of them is not choosing the right tool to manage public finance. Also, not considering all players who affect and are affected by the public finance system causes many troubles for countries in managing public finance. In addition, reforming the public financial system without reforming systems and regulations that are related to PFM has been identified by many scholars and practitioners as reasons for poorly managed public finance systems and the failure of many PFR. Moreover, low quality of institutions and bad governance lead to inadequate use of the state's income sources in enhancing the quality of services and programs provided to beneficiaries.

Therefore, by introducing new institutionalism (NIT) to public financial management (PFM) and reform (PFR) in this paper, we argue that applying and adopting NIT to PFM is the key component to achieving a high-quality public
finance system that contributes to effective and efficient government work, public services and programs, fights corruption, and supports institutional quality.

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ABSTRACT

Fast fashion industry is faced with growing complexity, fierce competition and a dynamic environment. Hence, the performances of the fast fashion firms are likely to depend on optimum management of various diverse supply chain (SC) issues such as SC agility, effective SC implementation and its management. However, the effects of these SC issues on the fast fashion firms’ competitiveness have received relatively less attention from the scholars. Based on the extant literature, a set of hypotheses are presented relating to culture, supply chain management, relationship quality, supply chain agility, and firm performance. Using a mixed method research approach, data is collected from fast fashion apparel industry. Partial least square (PLS) based structural equation model (SEM) is used for data analysis. Results indicate that supporting culture, supply chain management practice are significant predictors of relationship quality and supply chain agility, which in turn influences the performance of fast fashion apparel firms. Implications of the findings are presented.

Keywords: Fast fashion, Supply chain, Agility, Culture, Firm performance
School Principals As Businessmen

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ABSTRACT

Traditionally, school principals were chosen among the teachers and they managed the school in the given circumstances. However, development of environment caused by new technological solutions, changed mindset of key stakeholders (such as parents, legislator etc.) and society in general, put many tasks in front of them for the first time and push them out of their comfort zone. Today, school principals need to be businessmen. To become one it is necessary for them to gain new knowledge and skills such as financial management, understanding customer and demand-supply relationship, human resources management, project writing skills, building and maintaining school image, etc. The purpose of this paper is twofold: a) to explore the attitudes of school principals about the need and necessity of business knowledge to manage the school and b) to see extent to which they are willing to accept that knowledge and implement it. After the first round research, an intervention program was carried out – school principals were going through education about marketing, management and finance. After the intervention second round research was conducted to see if the intervention had any effect on school principals’ attitudes toward business knowledge.

Keywords: School Principals, Business Knowledge, Education, Market Orientation
Curriculum Quality, Ownership And Gender As Predictors Of Classroom Practices Of Colleges Of Education Graduates In South Western Nigeria
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ABSTRACT

Social Studies curriculum quality equip teachers with potentialities and ideas which guide them in understanding, where, how and when to use what they learn to teach students. Researches have shown that the implementation of curriculum differs from one institution to another due to differences in availability of resources and ownership of the college. This, in the long run, has implications for the classroom practices of teacher especially Social Studies teachers. Researches have concentrated on isolated factors which are curriculum related, ownership related or students’ factor related but not many have investigated the combination of these factors on teacher classroom practices. This study therefore, investigated Social Studies curriculum quality, ownership and gender as predictors of classroom practices of colleges of education graduates. The study adopted the descriptive survey design of the ex-post facto type. Participants were 233 males and 307 female colleges of education graduate teachers of Social Studies who attended federal and state colleges from 270 primary schools in 27 local government areas of Oyo, Ondo and Ogun states in South-Western Nigeria. These were selected through the multistage sampling technique. Two research instruments used were: Social Studies Teacher Classroom Practices Observation Scale (r = 0.82), Teachers’ Assessment of N.C.E Social Studies Curriculum Scale (r = 0.84). The study answered three research questions and tested two hypotheses. The data were analysed using descriptive statistics and multiple regression. The results revealed that there was a positive significant correlation among the independent variables and graduate teachers' classroom practices. This implies that there was a direct link between students' performance and the quality of the curriculum.

Keywords: Curriculum, Ownership, Gender, College of Education Graduates, Classroom Practices

INTRODUCTION

Recent researchers have discovered that teachers are the main determinant of quality in education especially in the primary school which is the bedrock of the entire educational system (Oni, 2006; Ogunbiyi, 2006; Adeoye, 2007 and Tomlinson, 2010). Hence, teacher education programmes in universities and colleges of education in Nigerian are designed to prepare and equip prospective school teacher with knowledge, attitude, behaviour, and skills they require to perform their task effectively in the classroom. Through these programmes teachers acquired appropriate classroom practices and behaviour through exposure to different quality curricular.

The primary goal Social Studies curriculum is to propel learners along a continuum of expertise and to ensure that students become ever more expert-like in what they learn, how they learn and what they do with what they learn (Jimoh, 2003 and Akande, 2010). It also provides opportunity for students to understand clearly and in depth how the essential information, concepts, principles, and skills work to make meaning and to be useful. Brown (2007) reported in one of his findings that Social Studies curriculum quality determined the teachers’ content knowledge and pedagogical content knowledge for high-quality instruction in the teachers’ classroom and pupils’ progress. He concluded that the classroom practices of teachers with a limited conceptual understanding fall short of providing students with powerful Social Studies experiences which will lead to values acquisition.

Studies showed a positive connection between the Social Studies curriculum quality and teachers’ classroom
practices (Amdii, 2005; Wiggins & McTighe, 2006 and Akande, 2010). In another study, however, researchers such as Jimoh, (2003) and Ogunbiyi (2006) found that teachers with higher grade point average in Social Studies had higher and positive classroom practices and this relatively influenced the performance of their pupils in achievement tests and values acquisition skills. Isaac (2013) found out that Social Studies curriculum quality had little effect on the classroom practices of the Social Studies teachers sampled for the research work. Edward (2009) and Okegbenle (2011) found that the relationship between Social Studies curriculum quality and classroom practices is very specific. General conceptual knowledge of the Social Studies concepts by teacher were found to be highly related to their classroom practices.

It has also been discovered through research that positive influence of the teachers in the organisation and management of their classroom depend largely on and influenced by the ownership of the institution attended by the teachers (Olutola, 1989 and Pritchelt and Filmer, 2009 and Babalola, 2012). However, differences in ownership of the college attended by the college graduates were found to be the dominant factor affecting student classroom practices. Research findings supported the view that there is a significant relationship between the quality of college attended in term of resources and personnel and students productivities after graduation (Ball, 2003; Bransfor, 2005; and Stockard, 2009). In supporting the above submission, Tomlinson (2010) noted that the teacher content knowledge, pedagogical skills is indeed depended on the type of training programme attended and the type of institution. Because of this, teachers of the different institutions can be expected to differ markedly in their content knowledge and pedagogical skills.

Research evidences attested to the fact that teachers’ gender is of paramount important in the teaching-learning process. Studies have found that male and female teachers different significantly in their classroom practices (Einarson, 2002; and Thomas, 2006). Findings revealed that male teachers provide a more positive atmosphere for boy and other revealed that female teachers tends to provide a more positive classroom environment. Further research studies by (Good, 2000; Lee and Smith, 2000; and Fuller & Alexander, 2004) revealed that there were relatively significant differences in the classroom management, coordination of the students, and presentation of the contents, counseling of students by male and female teacher observed in their study. Further investigation from the study revealed that students taught by the male teachers have higher overall achievement in English, mathematics and Social Studies.

Going by the submissions of earlier studies, it was discovered that the emphasis was on the academic achievement of the students within the college environment. There is scanty literature on the productivities of the college students in their classroom practices after certification. Moreover, while previous researchers have demonstrated that curriculum quality influenced the classroom practice of the college students (Okam, 2001; Ross, 2004; Oni, 2006; and Ajibade, 2008), others have shown that the implementation of curriculum differs from one institution to another due to differences in availability of resources and ownership of the college. This, in the long run has implications for the classroom practice of teacher’s especially Social Studies teachers. However, it has been noted that these previous studies have concentrated on isolated factors which are curriculum related, ownership related or students factor related but not many have integrated the combination of these factors on teacher classroom practices. This study therefore investigated Social Studies curriculum quality, ownership and gender as predictors of classroom practice of college of education graduates in Nigerian primary schools.

Statement of the Problem

The essence of schooling is to inculcate knowledge, therefore, what is taught and how it is taught becomes the main focus of schooling. The school curriculum, as the programme of studies or total experience, constitutes what is taught while how it is taught in schools constitutes the main concern when quality assurance in education is under focus. Social Studies curriculum quality equips he teachers with potentialities and idea which guide them in understanding, where, how and when to use what they learn to teach students. But, the implementation of curriculum differs from one institution to another due to differences in availability of resources and ownership of the college. This, in the long run has implications for the classroom practices of Social Studies teachers. Researches have concentrated on isolated factors which are curriculum related, ownership related or students’ factor related but not many have integrated the combination of these factors on teacher classroom practices. This study, therefore, investigated the extent to which colleges of education Social Studies curriculum quality, ownership of
institutions attended and gender determined the classroom practices and of colleges of education Social Studies graduate teachers in South-Western Nigeria.

Review of Related Literature

There is consensus in the teacher education literature that a strong knowledge of the subject taught is a core component of teacher competence which resulted from quality of the curriculum that trained the teachers (Taiwo, 2000 and Joshua, 2006). There is however, agreement among Social Studies educator that teachers must know in detail and from a more advanced perspective the Social Studies content they are responsible for teaching both prior to and beyond the level they are assigned to teach in order to excel in their classroom practices, and that, Social Studies curriculum met the requirement (Hill, 2010).

When the quality Social Studies curriculum was assessed and correlated with student performance (classroom practices), findings tend to indicate a positive relationship. The most important evidence to this effect is provided by GoldHaber and Brewer’s (2009) that higher teacher content knowledge and pedagogical content knowledge tend to be associated with the quality of the curriculum, particularly in Social Studies. Findings for the number of courses attended in the teaching subjects are inconsistent across school subjects but generally positive for Social Studies. Exposure of teachers who took more Social Studies courses during teachers training seems to have positive effects on the teacher’s classroom practices after graduation (Monk, 2004, Joshua, 2006 and Adegbite, 2011).

In his comparison of teachers in China and the United States, Monk (2004) showed that a profound understanding of fundamental Social Studies is reflected in a broad repertoire of pedagogical strategies over a range of Social Studies values concepts in the curriculum. In the curriculum the breadth, depth, and flexibility of Chinese teachers’ understanding of the Social Studies they teach afford them a broader and more varied repertoire of strategies for representing and explaining Social Studies concepts than what is available to their colleagues in the United State. Intervention studies show that enhancement of curriculum can lead to higher quality instruction in the classroom practice of the teachers. This is because through the curriculum, student teachers were exposed to several activities that a teacher should complete for good teaching, such as comprehension, transformation, instruction, evaluation and reflection (Cavaluzzo, 2004 and Shulman, 2005).

However, differences in ownership of the college attended by the college graduates were found to be the dominant factor affecting student classroom practices. Ludger (2010) studied the effect of schooling resource, educational institutions and student performance using an international database of more than 260,000 students from thirty-nine (39) countries and concluded that the student-level estimations show that international differences in student performance cannot be attributed to resources differences but are considerably related to institutional differences. Among the many institutional factors combine to yield major positive effects on student performance are centralised examinations and control mechanisms, school autonomy in personnel and process decisions, individual influence over teaching methods, influences on curriculum scope e.t.c. This means that differences in institutions attended are strongly related to international difference in student performances.

In a similar research, Bishop, (2008) and Dey (2013), also observed that significant differences in the performances of federal college graduates over their counterpart in state colleges was due to adequate and utilisation of educational resource. The only avenue to bridge the gaps is to make adequate educational resources available to state colleges for the effective implementation of the curriculum.

Research into the differences in classroom behaviour between male and female teachers has focused on the leadership style or classroom climate established and differences of a pedagogical type involving questioning, answering and correcting the students. Studies of the leadership styles of male and female teachers have sometimes found that male teachers are more direct or dominant than female teacher. From the observation of one hundred and fifty (150) teachers’ classroom practices in thirty-five (35) schools, Adams and Biddle (2009) found that male teachers’ classrooms were more centrally organized and teacher dominated than female teachers’ classroom.

Evidence of differences in pedagogical moves between male and female teachers comes mainly from Einarson (2002). He found that students did more initiating, had more opportunities to respond, gave more incorrect
answers, and seemed more willing to give when unsure of answers in the presence of female teachers. Female teachers were found to give praise following correct responses more often than male teachers, while male teachers were more likely to comment on the processes by which responses were produced. Furthermore, male teacher were more likely to persist until a student gave an acceptable response while female teachers tended to supply the correct answer or redirect the question to another student. Another related studies found that male and female teachers differ significantly in their perception of student ability and characteristics and this influences their behaviour in the classroom situation.

Research Questions

i. What is the joint contribution of Social Studies curriculum quality, ownership and gender on the classroom practices of colleges of education Social Studies graduate teachers?

ii. What are the relative contributions of Social Studies curriculum quality, ownership and gender on the classroom practices of colleges of education Social Studies graduate teachers?

iii. Which of the three variables (Social Studies curriculum quality, ownership and gender) could predict the classroom practices of colleges of Education Social Studies graduate teachers?

Research Hypotheses

The following null hypotheses were tested at 0.05 level of significance.

H01: There is no significant difference in the classroom practices of male and female colleges of education Social Studies graduates.

H02: There is no significant difference in the classroom practices of colleges of education Social Studies graduates that attended state and federal colleges.

Scope of the Study

The study investigated the extent to which Social Studies Curriculum quality, ownership and gender predicted classroom practices of colleges of education Social Studies graduate teachers. The study involved 540 colleges of education Social Studies graduate teachers purposively selected from 3 states in South-Western Nigeria.

METHOD

Research Design

This study adopted the descriptive design of the ex-post facto type. This is because the researcher had no direct control over the independent variables. The study is also correlational as it determines the relationships among the various variables in the study.

Population

The target population comprised all primary school Social Studies teachers with N.C.E. certificate in all the six states in South-Western Nigeria.

Sampling Procedure and Sample

A multi-stage sampling technique was used to select schools and respondents for the study. Through simple random sampling, Oyo, Ondo and Ogun states were selected out of the six states in the Southwestern Nigeria. Three (3) local governments were selected in each of the three (3) senatorial districts in each state, making a total of twenty-seventy (27) local governments. Purposive sampling was used to select ten (10) schools that have colleges of education Social Studies graduates, in each local government, giving a total of two-hundred and seventy (270) schools. Two (2) Social Studies teachers with N.C.E certificate as highest qualification were purposively sampled in each school making a total of five hundred and forty (540) teachers.
Research Instruments

Two instruments were used for data collection. They are:

i. Social Studies Teacher Classroom Practices Observation Scale (SSTCPOS)

ii. Teachers’ Assessment of N.C.E. Social Studies Curriculum Scale (TANSSCS)

Social Studies Teacher Classroom Practices Observation Scale (SSTCPOS)

This instrument was adapted from Isiugo-Abanihe (2007) by the researcher to observe Social Studies graduates’ teachers’ classroom practice. This performance standard articulates what the teacher should be able to do upon completion of the teacher education programme. The instrument consists of two sections. Section A sought for the background information of the teacher to be observed; such as name, class, time of observation, school, location, sex, qualification etc. Section B consisted of forty (40) items covering six (6) main sub-headings. The scoring was based on a rating scale of 4, 3, 2, and 1 representing, very good, good, fair and poor respectively for each of the lesson observed.

Experts in Teacher Education and Institute of Education, University of Ibadan, assisted in the non-empirical validation of the instrument in terms of language presentation, clarity and applicability to the level of the target participants. The items were subjected to a trial testing on comparable participants who were not part of the main study. The inter-rater and intra-rater reliability coefficients were 0.82 and 0.82 respectively.

Teachers’ Assessment of N.C.E. Social Studies Curriculum Scale (TANSSCS)

The TANSSCS was designed to gather information from colleges of education Social Studies graduate teachers on the relevance of objectives, adequacy of the content and the suitability of learning experience and evaluation of the Social Studies curriculum they were exposed to while in colleges of education. It consists of two sections. Section A sought for demographic data of the colleges of education Social Studies graduates such as name of school, college attended and gender. Section B contained twenty-two (22) items sub-divided into four parts. The twenty-two (22) items were rated on a 4-point Likert scale of Strongly Agree (SA); Agree (A), Disagree (D) and Strongly Disagree (SD). Responses were scored 4,3, 2 and 1 respectively.

The instrument was given to experts in Social Studies education in the Faculty of Education, University of Ibadan, for expert review to ascertain the content, and face validity. The instrument was trial-tested on one hundred (100) N.C.E. Social Studies graduate teachers who were not part of the study and the Cronbach alpha coefficient was calculated to be 0.84.

Method of Data Collection

The researcher obtained the consent of the headmasters/headmistress and Social Studies graduate teachers of the school to be used for the study. After necessary cooperation had been sought and given, the administration of the instruments followed:

Teachers’ assessment of N.C.E. Social Studies curriculum was administered on the selected Social Studies teachers. This was followed by classroom teaching observation of colleges of education Social Studies graduates teachers, using Social Studies teacher Classroom Practices Observation Scale (SSTCPOS). Teaching observation lasted for 35-40 minutes for each teacher observed.

Data Analysis

The data collected were analysed using descriptive statistics. Multiple regression analysis was used to determine the relationship among the independent/predictor and dependent/criterion variables.

Results and Discussion
Research Question One

What is the joint contribution of Social Studies curriculum quality, ownership and gender to the classroom practices of colleges of education Social Studies graduate teachers?

Table 1.1 presents estimates of the joint contribution of independent/predictor variables to the prediction of graduate teachers’ classroom practices.

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>DF</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>271.124</td>
<td>3</td>
<td>90.375</td>
<td>2.741</td>
<td>.043*</td>
</tr>
<tr>
<td>Error</td>
<td>17675.513</td>
<td>536</td>
<td>32.977</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>17946.637</td>
<td>539</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at p <.05

Table 1.1: Regression Summary and Estimates of the Joint Contribution of Independent Variables to the Prediction of Social Studies Graduate Teachers’ Classroom Practices.

The results in Table 1.1 show the joint contribution of the independent variables (Social Studies curriculum quality, ownership and gender) to predict the Social Studies graduate teachers’ classroom practices. The three independent/predictor variables jointly accounted for 1.0% of the total variance in predicting Social Studies graduate teachers’ classroom practices. With a multiple correlation (R) of 0.123 and adjusted R² of .010, the joint contributions of the predictor variables to the prediction of graduate teachers’ classroom practices is significance at the 0.05 level of significance (F³, 536 = 2.741; < P < 0.05).

Research Question Two

What are the relative contributions of Social Studies curriculum quality, ownership and gender on the classroom practices of colleges of education Social Studies graduate teachers?

Table 1.2 shows the relative contributions of independent/predictor variables to the prediction of graduate teachers’ classroom practices.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardised Coefficient</th>
<th>Standardised Coefficient</th>
<th>Rank</th>
<th>T</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>57.482</td>
<td>.134</td>
<td>1st</td>
<td>17.525</td>
<td>.000</td>
</tr>
<tr>
<td>Social Studies Curriculum quality Ownership Gender</td>
<td>-.134</td>
<td>.055</td>
<td>.014</td>
<td>2nd</td>
<td>-2.419</td>
</tr>
<tr>
<td></td>
<td>.225</td>
<td>.506</td>
<td>3rd</td>
<td>-1.444</td>
<td>.147</td>
</tr>
</tbody>
</table>

*Significant at p< .05

Table 1.2: Regression Estimates of the Relative Contributions of Independent Variables to the Prediction of Social Studies Graduate Teachers’ Classroom Practices.
From table 1.2, the parameter estimates of the relative contributions of the three independent/predictor variables to predict the Social Studies graduates classroom practices show that the relative contribution of Social Studies curriculum quality to predict graduate teachers’ classroom practices is significant ($\beta = .104; t = 2.419; P < 0.05$). On the other hand, there is no significant contribution of ownership and gender on Social Studies graduate teachers’ classroom practices. This is, perhaps responsible for the low joint contribution of the three prediction variables to the total variance in the prediction of graduate teachers’ classroom practices.

Research Question Three

Which of the three variables: Social Studies curriculum quality, ownership and gender could predict the classroom practices of colleges of education Social Studies graduate teachers’?

From the results in table 1.2, Social Studies curriculum quality ($B = -.134, t = -2.419, p < .05$) is the only variable that can be used to predict Social Studies graduate teachers’ classroom practices. The others variables ownership ($B = .225, t = -.444$) and gender ($B = -.894, t = -1.454$) could not predict the classroom practices of Social Studies graduates.

Research Hypothesis One

$H_01$: There is no significant difference in the classroom practices of male and female colleges of education Social Studies graduate teachers.

Table 1.3 shows the comparism of male and female college of education Social Studies graduate teachers’ classroom practices.

<table>
<thead>
<tr>
<th>Classroom Practice</th>
<th>N</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Crit-t</th>
<th>Cal-t.</th>
<th>DF</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>74</td>
<td>101.04</td>
<td>22.04</td>
<td>1.96</td>
<td>.329</td>
<td>537</td>
<td>.743</td>
</tr>
<tr>
<td>Female</td>
<td>465</td>
<td>101.80</td>
<td>17.77</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1.3: Comparism of Male and Female College of Education Social Studies Teachers Classroom Practices.

Table 1.3 shows that the female N.C.E. Social Studies graduate teachers obtained a higher mean score ($X = 101.80$) than their male counterparts ($X = 101.04$) in their classroom practices, giving a mean difference of 0.76. However, the mean difference is not significant (Crit-t=1.96, Cal.t = .329, df = 537; $P > .05$). Thus, the null hypothesis $H_01$ cannot be rejected. Hence, there is no significant difference in classroom practices of male and female Social Studies graduate teachers’

Research Hypothesis Two

($H_02$): There is no significant difference in the classroom practice of colleges of education Social Studies graduates’ that attended state and federal colleges

Table 1.4 presents comparism of male and female Social Studies graduate teachers’ classroom practices based on college attended

<table>
<thead>
<tr>
<th>Practice</th>
<th>N</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Crit-t</th>
<th>Cal-t.</th>
<th>DF</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Colleges</td>
<td>307</td>
<td>36.86</td>
<td>5.70</td>
<td>1.96</td>
<td>4.332</td>
<td>538</td>
<td>.000</td>
</tr>
<tr>
<td>Federal Colleges</td>
<td>233</td>
<td>39.05</td>
<td>6.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Significant at $p < 0.05$.

Table 1.4 Comparism of Male and Female Social Studies Graduate Teachers’ Classroom Practices Based on College Attended
Table 1.4 reveals that there was a significant difference in the classroom practices of college of education Social Studies graduate teachers who attended state colleges and those who attended federal colleges. From the table Crit-t = 1.96, Cal.t = 4.332, df = 538, P < .05 level of significance. It is shown that college of education Social Studies graduate teachers’ that attended federal college of education performed better ( =39.05) in their classroom practices than their counterparts who attended state colleges of education with a mean score of ( = 36.86). Thus, the null hypothesis H0 was rejected. It, therefore, means that there is a significant difference in the classroom practices of the Social Studies graduate teachers that attended state and federal colleges.

The findings of the study revealed a positive correlation of the three independent/predictor variables - Social Studies curriculum quality, ownership and gender with colleges of education Social Studies graduate teachers’ classroom practices. It means that the three independent variables are in good position to determine the level of classroom practices of the Social Studies graduate teachers. The result shows that the three independent variables have positive and significant predictive power on the dependent variable (classroom practices). In the study, Social Studies curriculum quality made the highest contribution to colleges of education Social Studies graduates’ classroom practices followed by gender and ownership.

This finding is in agreement with the findings of Berliner (1994) and Ball (2003) who reported that quality of curriculum influences classroom practices of teachers after graduation. This result is also in line with the finding of Ross (2004) and Ajabade (2008) who noted that the Social Studies curriculum quality correlates significantly with the classroom practices of Social Studies teachers. It was revealed from their studies that the curriculum exposes the teachers to the development and selection of tasks in the classroom, facilitates productive classroom discourse, and helps the teachers in the interpretation of pupils’ response and behaviour when it is well implemented.

Moreover, studies such as Akande (2010) and Edward (2009) showed a positive correlation between the Social Studies curriculum quality and the teachers’ classroom practices. Also, Ogunbiyi (2006) found that teachers with higher grade point average (G.P.A.) in Social Studies had higher positive classroom practices and relatively influenced the performance of their students in achievement tests and values acquisition skills.

In the assessment of colleges of education Social Studies graduate teachers classroom practices, those that attended federal colleges performed better than their counterparts in state colleges of education. This finding is in line with the observation of Goldhaber (2002) that teachers’ content knowledge depends on the selectivity of the college the teacher attended. This finding is in agreement with the findings of Jaifeoba (1994), Kaufman (2002), and Oladiipo (2000) that there is a direct link between student performance and the ownership of the institution attended (state or federal colleges). However, studies such as Edward, (2009), Gundloch and Ludger (2001), Hanushek (2006), and Shleifer, (2008) have shown that college attended determined the substantive knowledge, intellectual tolerance, life-long cognitive development, rationality and creativity the learner acquired. Other studies have provided empirical evidence that the ownership of institution (state or federal) will determine the adequacy and availability of resources and personnel for the translation of curriculum into reality. This will later have implication on the productivity of such institutions in terms of quality and dispositions of their graduates.

Moreover, the result of this study indicates that Social Studies curriculum quality could predict Social Studies graduate teachers’ classroom practices. The reason being the fact that the curriculum is adequate, relevant and suitable for producing professionally and academically competent Social Studies teachers’ as earlier discovered in this study. This agrees with the findings of Taiwo (2000). The implication of this result is that Social Studies curriculum, if adequately implemented in the colleges of education, will influence the performance of the Social Studies graduate teachers.

Summary of Findings

i. There is positive and significant joint contribution of the independent variables (Social Studies curriculum quality, ownership and gender (R = 0.123) in predicting college of education Social Studies graduate teachers’ classroom practices. The three predictor variables accounted for 1.0% of the total variance in the dependent measure.
ii. Among the three independent variables, the order of relative contribution to Social Studies graduate teachers’ classroom practices, Social Studies curriculum quality made greatest contribution (β = .104; t = -2.419) P < 0.05) followed by gender β = 0.63; t = - 1.454) and Ownership β = 0.19; t = .444).

iii. The most potent predictor of Social Studies graduate teachers’ classroom practices is Social Studies curriculum quality (β = .104).

iv. There was no significant difference in the classroom practices of male and female Social Studies graduate teachers’.

v. There was a significant difference in the classroom practices of Social Studies graduate teachers’ that attended state and federal colleges.

CONCLUSION

The classroom practices, of the colleges of education Social Studies graduates depend largely on the Social Studies curriculum quality, ownership of institution attended and gender. The result of the finding has specifically shown that Social Studies curriculum quality is the variable that can predict the classroom practices of graduates teachers. This is because Social Studies curriculum equipped the college graduates with adequate and suitable content knowledge and appropriate pedagogical skills for teaching and inculcating values into their pupils in the classroom situation. Therefore, in-light of these efforts should be taken to ensure continuous review of Social Studies curriculum in colleges of education. Also effective implementation of this curriculum should be priority of the curriculum planners.

Recommendations

In the light of the summary of findings of this study, the following recommendations are made:

The federal government through National Commission for College of Education (N.C.C.E) should ensure that funds and material resources meant for the development of state colleges of education are not diverted, so that there will be no discrepancies in the facilities and resources available in federal and state colleges of education, which duly influences the implementation of the curriculum and their product performance.

Teachers, apart from being stakeholders in education, are also the key players in matters of curriculum and instruction at the classroom level. Their daily interactions with the learners bring them face-to-face with the realities of the educational programme they are given to transact. Their instruction and dispositions in school will influence their product either positively or negatively. Therefore, Social Studies teachers must be helped in discharging this duty by motivating them with commensurate remuneration and prompt payment of salaries and allowances and other welfare benefits.

Seminars and workshops should be organised periodically by Social Studies organisation through the Nigerian Union of Teachers for Social Studies teachers. There should be a follow-up supervision through on-the-job inspection of teachers who attended to ensure that the knowledge gained is used to the benefit of the pupils in the classroom situation. Seminars and workshops should also be sponsored by the government.

The headmasters/headmistresses who constitute internal supervisors should make it mandatory for Social Studies teachers to use effective methods, which are appropriate for different concepts presented in the classroom. All the teachers observed in this study are colleges of education graduate teachers. It is, therefore, recommended that these teachers should be given opportunities to update their knowledge through in-service training in recognised universities. This will enable them to get accustomed to new improvement in the teaching and learning process which will enhance effective curriculum delivery of Social Studies.

Limitations of the Study

i. This research focused on only three variables in relation to teachers’ performance in the classroom situation. There are others variables that can equally determine all the dependent variables in the study.
ii. Since the study involved the classroom observation of Social Studies teacher, three states were only covered and accessibility to some schools was very difficult.
iii. Since data collection involved observation of Social Studies teachers, there was resistance from some schools and teachers.

Suggestions for Further Research

The following suggestions for further studies are made:

i. The study should be replicated using other variables and more teachers so that a more valid generalisation can be made.
ii. Variables examined in this study can also be used to examine the on-the-job performance of teachers in other Social Science subjects in primary and secondary schools.
iii. Any other variable not considered in this study such as age, marital status and socio-economic background can be explored.

Contributions to Knowledge

This study has contributed to knowledge in the following ways:

i. It has provided insight that Social Studies curriculum is capable of equipping Social Studies teachers with adequate and relevant knowledge which will influence their classroom practices and dispositions.
ii. It has shown that institution attended by teachers has impact on their performance
iii. Also, it has shown that concerted efforts have to be made to ensure effective and efficient implementation of Social Studies curriculum in colleges of education.
iv. Furthermore, the study has shown that adequate materials and personnel have to be provided at the colleges of education levels to facilitate the achievement of the objectives of Social Studies curriculum.

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Integrating Computational Thinking Across K-12 Curriculum
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ABSTRACT

Computational thinking is an integral part of higher-order thinking and problem-solving. The proposed strategies address the International Society for Technology in Education (ISTE) and Computer Science Teachers Association (CSTA) standards and also assimilate the content of newer courses like Exploring Computer Science (ECS) and Computer Science Principles (CS-P) being offered in schools across the country. The following principles help guide the activities: (1) Rigorous (or in other words, essential and intense) content; (2) Engaging pedagogy; (3) Active reasoning; (4) Appeal to females and minority students; (5) Effective team-building exercises; and (6) Promoting creativity through multidisciplinary scenarios. The strategies range from developing measurable student understanding of social implications of computing, to being able to develop algorithms and models that provide solutions to computational problems, to being able to employ abstraction techniques. The presentation will discuss specific examples of activities that have proven valuable in multiple school settings.
Social Justice Issues Explored Through Theater Arts In The Classroom
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ABSTRACT

In a current cultural climate ripe with discussions of social ethics, how can we provide an emotionally safe and empathetically explorative context for students in our classrooms to engage with hot button social justice issues? How do we shape our curriculum to help students learn to answer questions about racism, homophobia, sexism, and other identity-based issues?

At foundry10, we’ve explored this idea through many iterations of a social justice theater arts program in several middle and high schools in the Seattle area. In each, we paired a teacher with a teaching artist to co-create tailored curriculum for their student populaces and subject areas, respectively. For example, in a series of podcast classes, students analyzed classic plays like “Raisin in the Sun” and “Fences” that deal with issues of racism and classism, wrote new stories based off of a character with whom they identified from the play and developed a story that might have happened to that character outside of the scripted play. Students reported finding emotional connections to characters with whom they didn’t physically identify, and felt they had a platform or voice to speak about issues like race that they have previously felt afraid to address. In not only writing but playing these characters they were empathizing and elaborating on these stories, connecting them to real life and achieving the CORE standards in ELA for these writing exercises. After listening to each other’s recorded podcasts, students engaged in an empathetic and illuminating discussion that resulted in greater allyship amongst classmates.

Research has shown that providing students, both those unfamiliar and those familiar with theater arts, the opportunity to physically and emotionally engage with hot button issues from another’s point of view, has drastically improved not only student-reported understanding of topics but it has fostered cohesion among students in these classrooms. Throughout our research we have found many surprising themes, which in addition to exercises and curriculum developed for this program we are eager to share with other educators. Participants will also be introduced to resources to use in their own classrooms as well as ways to connect with us to further the discussion and possibly run similar programs within their schools.
Faculty Development And Engagement
In The Online Environment

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ABSTRACT

Multiple proactive initiatives were deployed specific to increasing faculty engagement for online facilitators in the College of Humanities and Sciences. Previously, efforts to engage online faculty had been primarily corrective in nature as a response to classroom reviews or student complaints. A robust strategic plan tailored to faculty needs, coupled with attention to solicited feedback from faculty, resulted in a more positive, supportive, and dynamic culture and climate of faculty interaction and engagement. Descriptions of best practices and lessons learned are discussed.
Expressive Arts In Supervision And Its Influence On Professional Development For Master's Students In Practicum

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ABSTRACT

This paper explores how practicum students perceive a different modality of supervision, using arts in the supervisory process and how this modality affects their learning as well as professional and personal growth. Semi-structured, individual or focused group interviews with practicum students in a master counseling program were collected as data. Consensual qualitative research (CQR) was adopted as a specific strategy for data analysis for this project. Research results illuminate how personal and professional development of the practicum students was facilitated by expressive arts. Themes from the results are shared in findings. Discussions about the meaning and limitations of this study are included.

Keywords: Practicum Supervision, Art Supervision, Counseling Supervision, Teaching Supervision
Recognizing Impacts Of One’s Personal Consumer Behaviors Through A Consumer Challenge
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ABSTRACT

For those who teach marketing, the need to remain current and relevant while providing a quality, learning environment is paramount. Experiential efforts that enhance the learning environment and directly impact students are many. The Consumer Challenge presented lets students understand and recognize the impact of everyday decisions on their lives.

RATIONALE FOR THE CONSUMER CHALLENGE

Experiential exercises to improve learning abound. Historically, for those teaching advertising, projects involving the development of advertising campaigns are often assigned. In marketing research courses, surveys and experiments are readily available to augment the learning process. In salesmanship courses, competitive role-playing and making formal sales pitches are recommended activities (Widmier, Loe & Selden, 2007). In retail management courses, requiring interviews of store managers and reporting on findings are often part of the learning effort. Similarly, other marketing courses can be augmented with experiential exercises.

For instance, Wooldridge (2006) introduced an exercise that demonstrates differentiation and branding impact in principles of marketing courses. Firat and Kumcu (1994) discussed how a simulation game could be used to examine channels of distribution. Anselmi and Frankel (2004) discussed how the teaching of business-to-business marketing could be improved through experiential exercises. Abernathy and Gray (2000) presented the idea marketing education could be improved by incorporating financial decision making into the marketing decision process through spreadsheet applications and analyses. Other specific activities can be used to not only enhance the learning environment but also to improve one’s career outlooks since many of these exercises lend themselves to preparing students for the real world.

Budden and Budden (2012) discussed how case analyses coupled with simulated press conferences could be used to enhance crisis management skills in marketing public relations courses and prepare students for active careers. And recently, Edmiston’s (2016) expectation students produce a 60-second personal brand “pitch” that can augment social media marketing and even personal branding courses provides students with experiences capable of both improving self-knowledge and career success and progress.

While many marketing courses are readily adaptable to experiential exercises to augment learning, one course always seemed to elude the authors in developing a suitable learning exercise that went beyond those found in texts. That course – Consumer Behavior – was a puzzle. How do you get students to recognize their daily decisions, especially consumption behaviors can impact their lives in both the short and long term?

Thus, after much trial and error, and continuing efforts to improve the learning environment in the course, the Consumer Challenge was initiated in the consumer behavior course. It has proven successful at increasing the understanding of how one’s personal behaviors impact consumer behaviors and lives. For those who are familiar with the practice of Catholics during the Lenten season who change or suspend a behavior for the season, the Challenge will sound familiar. Students for the semester are expected to change a personal behavior with a specific goal to
improve their situation and must track and report on the impacts of that change and on their progress towards their goal.

THE CONSUMER CHALLENGE

At the beginning of the course students are instructed to change some form of personal behavior and to track the impact of the change on their lives and their consumption behaviors. When possible, tracking of the behavior and changes that take place is conducted through a “blog.” The blogs allows students to follow others’ progress and to provide encouragement where appropriate.

Improving written and oral communication skills, improving critical thinking skills, and improving one’s understanding of consumer behavior and its impact on marketing strategy are among the major objectives of the Consumer Behavior course. The Consumer Challenge addresses all of these objectives.

Appendix A details the Challenge expectations and how it relates to the goals of the course. It also details the emphasis on which students’ grades are determined. A more detailed description of each criteria is provided to students in the class.

STUDENT OPINIONS OF THE CHALLENGE

The Challenge has been conducted in Consumer Behavior courses each spring and fall semester beginning with Spring 2014. Personal goals (challenges) set by students vary. Losing weight, saving money, improving health (through exercise and/or diet), reducing the consumption of fast food and even improving grades by limiting social outings were among the more popular challenges. Others included reducing the amount of internet/phone use, reducing television viewership, reducing reliance on social media, and even one student whose challenge was to “be nice.”

At the conclusion of each semester students are surveyed to ascertain their feelings about the challenge and their own progress towards their goal. In short, the Challenge has been well received. Of the 163 questionnaires returned (of 168), 143 students (88%) felt the challenge was “a great idea,” while almost 12% felt it was an “okay” idea. In addition, 97% (158 respondents) recommended that the Challenge be continued as an exercise in future Consumer Behavior classes. Surprisingly to the researchers, over 68% of the students felt all business students should be required to participate in such a challenge. And finally, more than 88% of the respondents believed they would continue the change in their behavior begun as a result of the challenge.

The Consumer Challenge outlined here has been utilized for five semesters at two universities. It has been popular with students and many have reported permanently changing some behaviors as a result (e.g., stopped smoking). It augments the learning environment. It improves communication skills. It demonstrates consumer behavior impacts. It has changed lives. The student whose goal was to be “nicer” received a promotion at work with a raise. Another said it brought her and her husband closer together. Not bad for an experiential exercise in one course.

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APPENDIX A

Consumer Behavior Challenge Assignment

The assignment is to get you to think more deeply about the psychology of consumer behavior. This assignment has several goals including encouraging you to understand the influences behind your purchasing or consumption behaviors, helping you to gain a more in-depth understanding of the concepts and theories presented this semester by applying them to your own behavior, and helping you understand how this information is used by companies in their marketing strategies.

The assignment involves the following steps.

Step 1: Identify an area of your consumer behavior that you might like to change.
Step 2: Design your personal challenge including the specific behavior that you’d like to change.
Step 3: Begin the Challenge by keeping a journal or log while conducting your challenge.
Step 4: Critically analyze the results of your challenge.
Step 5: Write a Blog including a description of the challenge, including the timeframe and goals. Be specific, including the nature of the challenge, the time period, goals, and any rules or exceptions.

Grading will be based on three main criteria:

1) Your ability to effectively communicate the role the concepts learned in the study of consumer behavior play in your life.
2) The sufficiency with which you think critically about the experience.
3) The clarity and effectiveness of your communication.
Improving Communication Through A Formal Interview In A Collegiate Setting

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ABSTRACT

Employers and accrediting agencies expect graduates to possess oral and written communication skills. As a result, colleges often include communication components in a variety of courses so as to maximally develop such skills across disciplines. A formal interview requirement is one way to improve communication skills.

Those who teach college level courses need to remain current and relevant and provide a quality-learning environment. Augmenting courses with an interview is an exercise capable of accomplishing departmental goals involving improving the communication skills of students while contributing to university goals involving student-real-world interaction.

Keywords: Retailing, Interview, Communication, Interpersonal Skills, Listening

RATIONALE FOR THE INTERVIEW

Professors regularly seek new and better methods of explaining and delivering material covered in classes. The current vogue is to find innovative experiential exercises – exercises and activities outside of the traditional classroom environment that augment and expand on student knowledge in ways traditional lecture and in-class exercises may be incapable of providing. Finch, Nadeau and O’Reilly (2013) mention a driving force behind trying to improve the learning environment through the implementation of experiential exercises is the dissatisfaction many employers have with the transferability of skills of college graduates to the workplace. As Alam (2014) states, business schools are working to improve their teaching to better prepare students to meet industry demands. Exercises that will increase skills development, including communication skills development, and accomplish university and college goals are desired.

For instance, marketing education deals with a discipline that is applied communications (real-world) oriented. As such it lends itself to a variety of creative exercises. Historically, for those who teach advertising, projects involving the development of advertising campaigns are often assigned. In marketing research, surveys and experiments are readily available to augment learning, enhance analytical thinking and provide opportunities for written and oral communication skills development. In salesmanship courses, competitive role-playing and the making of formal sales pitches are recommended (Widmier, Loe & Selden, 2007). Other marketing courses can be augmented with innovative, experiential exercises.

Wooldridge (2006) introduced an innovative exercise that demonstrates differentiation and branding impact in principles of marketing courses. Recognition of product differentiation and the resulting branding impact are largely attributable to communication programs. Smith-Ducoffe and Tucker (2004) recommended the use of an innovative exercise to improve the learning environment relative to teaching price setting. Gravois, Lopez and Budden discussed how challenging their consumer behavior students to change a personal behavior improved the learning environment in consumer behavior courses. Firat and Kumcu (1994) discussed how a simulation game could be used to examine channels of distribution. Anselmi and Frankel (2004) discussed how the teaching of business-to-business marketing could be improved through experiential exercises. Budden and Budden (2010) described the use of press conferences addressing a crisis could improve communication skills in the teaching of public relations. Abernathy and Gray (2000) presented the idea marketing education could be improved by incorporating financial decision making into the
marketing decision process through innovative spreadsheet applications and analyses. Such applications and analyses involve analytical thinking and communication of results.

Other specific activities can be used to not only enhance the learning environment but also to improve one’s career outlooks by improving their communication skills. Making a “perfect pitch” video can not only improve social media marketing courses but can positively impact a student’s career efforts (Edmiston, 2016). Budden, Baraya and Juban (2005) believe business students, including graduate students, can benefit from the inter-cultural communication experiences provided through study abroad. Thus, innovative exercises can improve the learning environment in courses at both the undergraduate and graduate levels while making the material more relevant to students. Ostensibly, at the same time, communication skills can be further developed.

The current educational environment with its emphasis on meeting accreditation standards requires faculty to assess and demonstrate how course materials and activities impact learning expectations and course goals. Indeed, AACSB reports the fundamental purpose of its accreditation process is “to encourage business schools to hold themselves accountable for improving business practice through scholarly education and impactful intellectual contributions” (AACSB Accreditation Standards Preamble: Engagement, Innovation and Impact 2013). Further, the latest accreditation standards of AACSB (updated July 2017) list improving written and oral communication skills as the first expectation under general skills areas for bachelor, master’s and doctoral programs in business. Among the other general skills needed are interpersonal skills, analytical thinking, reflective thinking and applications of knowledge (AACSB, 2017, p. 34). It can be argued that these general skills areas are all impacted by one’s communication skills set.

As a result, the decision to incorporate exercises into the classroom capable of developing communication skills has taken on a role of increased prominence. Like many faculty, business faculty can utilize experiential exercises to improve the learning environment and accomplish course expectations – especially those related to improving communication and interpersonal skills. An interview with a store manager can accomplish course expectations, improve skills development and serve to bridge the academic – real world divide.

In our department, retailing is one of the more popular elective courses and is taken by the majority of both marketing and supply chain management majors. In line with the college assessment process, the Department (and College) has enumerated four primary goals for each course. For retailing, those specific goals or outcomes students are expected to embrace include the ability to:

1. Recall, recognize, or identify the principles, policies, and practices related to retail management.
2. Give examples or explain principles in effectively managing a retail business.
3. Apply or use the principles of retail management to understand retailing strategies.
4. Arrive at conclusions or make decisions about retail business ventures based on factors of ownership, location, pricing, marketing, legal issues, management control and international influences.

In addition, departmental course objectives have explicit skills development expectations relating to students’ 1) interpersonal skills and 2) written and oral communication skills. Thus, exercises capable of contributing to the course accomplishing its goals and improving both interpersonal skills and communication skills are needed. While a variety of exercises (eg., marketing plan development, store simulations, reports using secondary sources) have been tried and shown useful in addressing some areas in marketing, the one exercise that has proven successful in addressing the four course goals and interpersonal and communication skills development, including listening skills expectations involves a personal interview with a store manager culminating in a written report and oral presentation.

Similarly, in a course to prepare freshmen for the rigors of college study – SE 101 – a formal interview is required. SE 101 at Southeastern is a required, freshmen level orientation course aimed at developing study skills, communication skills, and time management skills while introducing students to the campus.

SE 101 is a course that requires a formal interview of an experienced individual who is advanced in their career. The interview culminates in a formal research report that is graded. The assignment requires a formal, structured interview. The project is worth 50 points in that course.
THE INTERVIEW AND END PRODUCTS

At the beginning of the retailing course students are charged with conducting an interview of a retail manager as part of the course’s requirements. Course “points” associated with the interview are slightly more than a major exam (120 points vs. 100 points). The interview is to result in a written paper and an oral presentation (with slides). The written paper is worth 100 points and the oral presentation is worth 20 points for the 120 points total for the project.

Directions for the interview are included in the syllabus. The syllabus explains that students are required to conduct an interview of a retail manager. Names and locations of stores involved must be approved prior to contacting store managers in order to prevent two or more students from contacting the same manager. Students are advised to individually prepare a list of probing questions and to plan on taking one-hour to conduct the interview. Additionally, they are encouraged to dress professionally and to be on their best behavior. Students are directed not to ask personal questions (e.g., how much do you make). Questions are expected to center on management decision making relative to the business and the retail environment. Information on a firm’s use of social media, traditional media and public relations are expected.

Finally, the project requires students to conduct a person-to-person interview – it is not to be conducted over a phone, via email, texting or some other technology-based process. Students must go to a retailer and conduct the interview in person. Students may not use projects that were completed previously or simultaneously as a requirement in another course.

The resulting paper is expected to written well and devoid of errors. Directions mention at a minimum the following topics should be discussed: manager background, store history, target market, location characteristics, products and services offered, promotion and advertising, control and crime prevention, human resources, days and hours of operation, pricing and competition. Students are expected to discuss the topics covered using appropriate terminology and concepts learned in the course. For instance, relative to the location, students are expected to evaluate the location given a list of location characteristics discussed in class. Copies of the slides to be used in the oral presentation are required to be attached to the paper.

Complete manager contact information – name, title, phone number and email address must be provided in the paper. The date and time of the interview and a photo of the student with the manager is also required. Contact information allows for verifying interviews took place as described. The photos (with permission) can be used (and are used) on departmental social media promotions.

Similarly, SE 101 students prepare and report on their findings from the interview. They are expected to interview an individual in their intend field of study and they are to report the impact of the interview on their intended career field.

The interviews present an unparalleled opportunity to develop oral and written communication skills among the participants. Interpersonal skills development in a professional setting is a major benefit of the effort. The interview places students in a situation where they must take control, develop the questions, guide the discussion and conduct themselves in a professional manner with a professional manager.

GRADING SCHEME

Assuming the retail manager contact information is provided, grading the written paper is straight forward enough that a checklist is used. A simple form enumerating each of the 11 required topics is used to grade each paper. Each of the required 11 topics is worth 8 points and the grammar/clarity of the paper is worth 12 points for a total of 100 points. The checklist makes for quicker grading and provides a clear record to the student as to how the paper was graded and where points, if any, were lost. The oral presentation complete with slides is worth 20 points for a total of 120 points for the project. Correct spelling and terminology, and creativity are expected as part of the oral presentation.
The SE 101 interview is worth 50 points. It carries the most weight of any project. Grading is straightforward as well, since the student is expected to ask questions from a prepared list of questions, though they are encouraged to ask their own questions.

RESULTS OF THE INTERVIEW

The interview project has been required in each fall and spring retail management class for the previous five years, while SE 101 just began requiring the interview in their course sections. Initially, some students have been reluctant to contact someone they do not know and ask for an interview. One challenge is for international and out of state students who may have limited knowledge or contacts with local retailers. To overcome that obstacle, the professor keeps a ready list of retailers located adjacent to or on the campus. Stores and retailers that serve students and that are adjacent to the campus or on campus like the university bookstore, are prime examples and often have managers willing to be interviewed.

After overcoming any initial reluctance, students have reported they have been pleased with the results. Only one student in the past five years said they did not enjoy the exercise. The great majority of students reported they were able to match theory with practice as a result of the exercise. What many have found are managers happy to share their knowledge of retailing with college students. The pride of the managers as seen in the smiling photos with the students says much about their feelings.

The interview project has been successful in accomplishing each of the four goals of the course: recalling or recognizing principles of retail management, understanding applications of retail management principles, understanding retail strategies and being able to arrive at specific decisions regarding a variety of retail factors including location and control. Its impact on interpersonal skills development, especially with business professionals is apparent. The paper addresses expectations as to written communication skills development and the oral presentation helps in developing oral communication skills. In short the project has been successful at contributing to the knowledge and skills of marketing and supply chain management students. Additionally as an added bonus, in the last three years five students mentioned they were offered jobs by the managers they interviewed including one who is now managing a store in Florida as a result of the interview.

An added bonus is that the university’s administration, as a result of its accreditation expectations, is now encouraging student-business interactions in what it calls its “real-world ready” initiative. Besides accomplishing college and departmental goals, the interview has become a central component of our departmental and college real-world ready efforts. The interview helps students grasp the course materials, make appropriate inferences regarding retail strategies, develops written and oral communication skills, helps develop listening skills and develops interpersonal skills on a professional level. The college and university use the exercise in its business outreach and real-world ready initiatives.

Finally, in a similar fashion, an interview project could be incorporated in a variety of disciplines in order to improve communication skills of students. Accounting professors may require students to interview professional accountants. Finance professors may require interviews of bankers and others in the fields of finance. Management professors may require interviews of managers. Economics professors may require interviews of professionals in economics. To improve oral, written and even listening skills, interviews in a professional setting can do it all.

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An Examination Of Leadership Skills Needed To Succeed As An Accountant

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ABSTRACT

Among the many skills needed by today’s accounting professionals is that of strong leadership qualities. Furthermore, as accountants ascend through the ranks within their firm, the leadership skills expected of them evolve. The question that naturally arises for accounting professionals who would like to enhance their prospects for career advancement is “What are the specific leadership skills that I should be focusing on to advance my career?”

This study builds upon prior research by identifying specific leadership skills that professionals believe are important for success at specific stages of one’s career. While certain leadership attributes may be needed at all stages of one’s career, it is likely that certain leadership skills are uniquely important for success at particular career stages. This study examines the perceived importance of leadership traits and skills by rank. The traits and skills that are examined are those that prior research has found to be important to overall success as a business professional.

This study extends the prior research by surveying accounting and other financial professionals regarding the specific importance of these traits and skills for each of the three specified career stages. Nearly 300 professionals representing various career tracks and career levels participated in the study. Their responses were recorded using a 7-point Likert scale, which captured their perceptions of the relative importance of 21 specific leadership characteristics previously identified as being important to overall career success. The results offer useful and interesting insight into how the importance of these specific leadership skills evolve as one advance through the various stages of their career.
Building A Robust Secondary STEM Continuum: Supporting Students From Project To Publication
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Mark W Springel, Journal of Emerging Investigators, Inc., USA
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ABSTRACT
Systematic instruction of 21st-century reading, writing, speaking and listening for STEM is a well-documented weakness in secondary classrooms. The Journal of Emerging Investigators, Inc. (JEI) and EduChange, Inc. are two organizations seeking to address these weaknesses in STEM communication, therefore, we exchanged our experiences and reflected on relevant studies to formulate a joint effort to bolster communication skills in students. The core competencies of JEI and EduChange blend nicely, and our respective programs can combine to create a learning continuum that engages students in relevant inquiry and STEM communication skills, all the way through to publication in a scientifically-reviewed journal. Both JEI and EduChange seek to expand participation in their respective programs, and believe that such a complete and supportive continuum can help us both reach more and different kinds of students than we would alone. In this article, we reflect on how a collaboration between our two organizations might take form.

THE JOURNAL OF EMERGING INVESTIGATORS (JEI): AN INTRODUCTION
The Journal of Emerging Investigators, Inc. (JEI) is a non-profit organization dedicated to enhancing scientific literacy in middle and high school students. JEI was established by graduate students at Harvard Medical School to provide scientific outreach to Boston-area middle and high school students and, in particular, to teach students the importance of articulate scientific communication.

The JEI organizational structure mimics that of a scientific journal, with teams of scientific editors, copy editors, and reviewers who evaluate manuscripts submitted by students. Students are motivated to write about their experiments in a professional manuscript format in order to become published authors, and thereby receive recognition for their work. Our scientific editors, who serve as mentors for student authors, provide feedback on students’ experimental design, execution of the experiment, and writing skills. Meanwhile, our scientific reviewers, who often hold a PhD in the student’s field of interest, provide professional guidance and suggest additional experiments for students to make their studies more rigorous. After several months of working with JEI, students not only publish their research, but also develop fluency in scientific data analysis, critical thinking, and communication.

Middle and high school students have limited avenues through which to communicate their research with a larger scientific community. JEI gives students an opportunity to submit original research, receive mentorship on their work from expert scientists through the scientific review process, and have their work published. Through the process of submission and publication in JEI, students develop skills as scientific communicators. The scientific review process helps students understand the strengths and weaknesses of their paper, to think more deeply about the science they are presenting, and to improve their experiments. Peer review is a key aspect of communication in the culture of science that secondary students rarely experience prior to committing to a university-level track in research. JEI student authors, like real scientists, deepen conceptual understanding and develop new ideas about their research from their publication review team through the process of scientific review. Students who may not have performed novel science experiments themselves also learn that science experimentation is interdisciplinary, as each JEI manuscript details real-world applications using multiple facets of classroom subject matter.
JEI presents an opportunity for teachers to further challenge highly capable and motivated students, but perhaps most significantly, JEI manuscripts can be used as teaching resources in the classroom. For teachers looking to expose their students to primary scientific literature, professional articles that use abstruse language and unfamiliar methods may overwhelm and demotivate students. Scientific articles seeking to answer relatable questions and employing language that students comprehend can better engage students in their education and impart new depth to classroom discussion. JEI generates polished scientific articles written at a secondary school level relating to themes in the school science curriculum and concerning subjects that appeal to students.

The EduChange Integrated Science Program: An Introduction

EduChange, Inc. is an instructional design firm providing curricula, teacher professional development, and leadership support to a variety of for-profit, non-profit and governmental educational organizations. Founded in 2000 in New York City, EduChange focuses on secondary, post-graduate, and adult education initiatives and has particular expertise in some of the most difficult areas for educators to address, including: STEM (science, technology, engineering, math), teaching and assessing 21st-century skills, supporting diverse learner profiles, and systematizing literacy across the content areas. All EduChange team members, now located around the globe, each have more than fifteen years of experience as teachers, administrators, researchers, STEM professionals, professors and instructional designers.

In 2001, EduChange engaged with STEM researchers at The Rockefeller University in NYC to observe a completely interdisciplinary, international research teams at work. It looked very, very different from a traditional secondary science classroom. EduChange Head Scientific Advisor Dr. Sandy Simon asked, “If neither nature, nor science, nor technology is constrained by single disciplines, why is science education still compartmentalized?” In addition to other educational questions, the EduChange team decided to pursue the question of secondary STEM integration—could it be done in a way that meets standards and other requirements? From 2002-2008, EduChange collaborated with ten schools in NY and The Navajo Nation, with an independent evaluator, and with Rockefeller University scientists, on the small-scale implementation of our personalized, integrated program, whose original purpose was immersive professional development that could be personalized for each teacher. 2012-2016 marked the digital, international delivery of an expanded and updated program, utilizing Sustainable Open Education Resources (SOER). In 2017 EduChange opens the door for more large-scale implementation world-wide.

EduChange designers and implementing teachers collaborate to teach students how to learn, using a completely competency-based assessment system and authentic STEM contexts, by:

- dismantling disciplinary silos across the individual sciences;
- driving the program through current STEM issues that affect people personally, locally, and globally
- integrating technology, engineering and applied math;
- emphasizing critical reading, writing, speaking & listening for STEM;
- building capacity for uncertainty, complex problems, and multiple answers to the same questions;
- demanding autonomous thinking and performance, including metacognition;
- fostering collaboration on lab teams and via oral and written peer review protocols;
- addressing ethical, economic and social concerns through empathy-building;
- practicing a range of hands-on laboratory skills multiple times over the years with standard lab equipment;
- instilling a deep understanding of measurement and data collection, organization & analysis;
- engaging students in rigorous experimental and engineering design challenges;
- spiraling all of the above toward incremental deepening of conceptual understanding and increased levels of difficulty.

Through ten years of multi-faceted data collection and analysis by internal and third parties, The Integrated Science Program has demonstrated the ability to move learners from diverse demographics along a positive growth trajectory across a multitude of desirable STEM competencies. EduChange also puts forth a comprehensive instructional design, with four different implementation models, that heretofore has not existed in secondary sciences anywhere in the world. Further, the design simultaneously serves as immersive professional development for teachers at every stage
Two Relevant Realities in Secondary STEM Classrooms

The core competencies of JEI and EduChange blend nicely, and our respective programs can combine to create a learning continuum that engages students in relevant inquiry and STEM communication skills, all the way through to publication in a scientifically-reviewed journal. Since a collaboration could take several forms, and since neither organization has received outside funding to support the work, it is important for us to probe both our individual program goals as well as the teaching and learning environments of secondary classrooms. In order for a collaboration to be strategic, we need to pursue an honest answer to the question: “What are the current realities of our shared audience, and could our collaboration serve that audience better than each organization could on its own?” In this section, we reflect on two significant issues facing our partnering schools.

The systematic instruction of 21st-century reading, writing, speaking and listening for STEM is a well-documented weakness in secondary classrooms across all demographics. Since a collaboration would necessarily involve a joint effort to bolster STEM communication skills, we exchanged our own experiences and reflected on relevant, larger studies. It is clear to the professionals in our circles, as well as those who publish about education, that critical reading, writing, speaking and listening are essential for success at all levels of STEM. However, secondary STEM teachers have received little training on how to develop these types of literacies in their students. In fact, neither have their Humanities teacher counterparts. Dana Goldstein (2017) shines a light on US teacher training programs:

> The root of the problem, educators agree, is that teachers have little training in how to teach writing and are often weak or unconfident writers themselves. According to Kate Walsh, president of the National Council on Teacher Quality, a scan of course syllabuses from 2,400 teacher preparation programs turned up little evidence that the teaching of writing was being covered in a widespread or systematic way (Why Kids Can’t Write, para. 11).

Based on professional development work inside over 400 secondary schools, EduChange confirms that the writing process—to include the development of ideas, drafting, revision based on feedback, editing, and ultimately publication—found its way into none of the observed secondary classrooms tasked with teaching the core science or math curriculum. Dedicated research classes, International Baccalaureate (IB), and sometimes Advanced Placement (AP) courses require secondary research and accompanying thesis papers. Unfortunately, for many students this is both their first exposure event and a high-stakes performance task, causing undue anxiety for many students. While students have written countless lab reports by this point, the writing process accompanying original STEM research looks and feels quite different. JEI notes that the amount of guidance that students receive from their mentor, particularly in the revision of their manuscripts, appears to be a key factor in whether a submission progresses to publication.

While teachers feel more comfortable as readers, they do not necessarily feel more comfortable as teachers of reading, particularly in secondary STEM classrooms. Long viewed by these teachers as “not their job,” reading instruction can take the shape of one or two generic note-taking strategies; more often, students avoid their homework reading and await the teacher’s digest of information in the form of notes on PowerPoint slides. Of course, this does not help students negotiate meaning for themselves, and all but eliminates the opportunity to ask questions—questions that might lead to original experimentation and engineering design. The 2015 NAEP Reading Assessment results (also known as The Nation’s Report Card) reports that only 38% of grade twelve students attained a score of “Proficient” or above, which this was not significantly different from 2013 outcomes, and lower as compared to 1992 outcomes (U.S. Department of Education, 2015).

The reading of informational text is further complicated by the type of reading JEI and EduChange jointly want students to undertake: reading primary source journal articles. Journal articles have particular conventions, structures, and purposes that are unlike other informational texts. JEI notes that only some submitting students are already familiar with journal articles. EduChange found very few teachers supplementing class reading with scientific journal articles in high school classes, particularly with students aged 14-16. EduChange has observed no use of journal articles in middle school classrooms over a 17-year period. Discomfort with technical vocabulary and/or professional journal
writing styles, a lack of access to these journals, and a lack of understanding of how journal articles help document the legacy of the scientific enterprise, were common issues observed by EduChange. In discussions with teachers, JEI reports that teachers often lament not having time or expertise to incorporate substantial primary literature into the normal curriculum.

The traditional core curriculum in secondary science and math classrooms is packed, leaving teachers few options to incorporate journal reading, authentic student research and technical writing. Middle and high school STEM teachers have a remarkable task, and neither JEI nor EduChange sees any of them skirting their responsibilities. Teachers want what is best for students, but government regulations, standardized exam-based courses, perceptions of what colleges want, and pressure to incorporate technology all compete for precious class time. For over seventeen years, EduChange team members have investigated curricular time structures and implementation efficiencies. Were teachers exaggerating their plight? Perhaps teachers were not being totally efficient in the classroom?

EduChange found that after logging two years of successful classroom experience, teachers who are prepared for class can teach the same lessons within very similar timeframes, regardless of other differences among the teachers. Teachers who consistently finished their prepared lessons on a weekly basis truly did not have enough time, over the course of a year, to include experiences like reading primary source journal articles. But upon closer inspection, EduChange also found that the unit-by-unit (or project-to-project) structure of traditional secondary science curriculum, punctuated by exams and summative assessments, is horribly inefficient. Teachers of single courses like Biology I really do not have enough time to cover everything in their course, but a multi-year program makes content coverage and competency practice more efficient, not to mention more effective for learning. As it turns out, the teachers aren’t wrong—their curricular designs are.

Another development has helped schools reconsider how time is structured during the school day. In recent years, STEAM, Maker Spaces, project/problem-based learning, a push for more creativity, and the construction of modern learning environments have made schools rethink weekly schedules. Single or extended periods of time offered once or more per week provide students with an opportunity to pursue their own interests and to design what some teachers call “passion projects.” These newly-created blocks of time for student choice have created both opportunities and confusion about original student research and design projects. EduChange team members have received information from a small number of teachers trying this new approach at the secondary levels, and apparently it works well for some students and not for others. Teachers report that some students don’t know what to do, or where to start, when left to their own devices. Some teachers also report that they are unclear how to help.

It is clear that these two major issues—the lack of systematic teacher preparation for reading and writing instruction and the inefficient time structures of traditional science and math courses—pose formidable barriers. However, by capitalizing on our strengths and by articulating specific strategies for serving schools at various points along their journey, we believe that these and other barriers to participation can be overcome through collaboration. The following sections outline our shared goals, as well as the data we used to inform them.

**Improving Student Readiness for Research & Article Submission**

As we each learned more about the other organization, it was clear that different stakeholders faced challenges and reaped rewards as they intersected with our respective programs. Both JEI and EduChange seek to expand participation in their respective programs, and believe that such a complete and supportive continuum can help us both reach more and different kinds of students than we would alone.
Over 50% of manuscripts submitted to JEI are returned to the student after an initial pre-review, due to issues relating to formatting and improper sections, lack of a clearly defined hypothesis or experiment, or unclear language. Because these manuscripts are not yet ready to proceed to reviewers, JEI returns the manuscript with a pre-review letter that details the manuscript’s weaknesses and how the authors might address them. Manuscripts falling into this category are sometimes resubmitted with all problems addressed, but pre-review nonetheless represents a major stage of attrition and prolongs review of students’ manuscripts. Consequently, it is more difficult for students of these manuscripts to obtain valuable feedback on the nuances of their science experiments, and their publication is delayed. If students were better prepared and understood the basics of scientific communication, they would be more equipped to take advantage of their JEI review team’s broad scientific expertise.

Here, we examine three areas of student readiness identified by JEI, and how a collaboration would expand and improve student readiness. Students who ultimately submit an article to JEI benefit from rich feedback extended by professional scientists, gain the experience of writing a professional manuscript, and learn firsthand how scientists communicate their findings with one another. JEI has identified three major areas of focus for students, that their editorial teams revisit each time. For each area, we show how preparation in the EduChange Integrated Science Program can build readiness prior to article submission:

**Clear articulation of a testable question and accompanying hypothesis** – Teachers know that this is difficult for secondary students, yet most classroom lab report preparation does not include a review of authentic research. Teachers are rightfully daunted by this, as it seems like endless time must be given to the task. JEI encourages students to search for scientific literature around their topic of interest to learn what other scientists have done, and gain an understanding of how others present and discuss their research. In this way, students learn through experience how to fit their own questions into context with those of other researchers in the field. Finding the context for their scientific inquiry helps a student make an informed hypothesis, or prediction of what they expected to happen in their experiment. While their hypothesis does not have to be completely novel, JEI does expect that it is novel to the student – the student through their experiments must have learned something new about their inquiry that they had not known at the beginning.

EduChange also values the contextualization of experimentation and engineering design, and has incorporated this readiness into the Integrated Science Program. Since the program is driven by STEM storylines such as childhood asthma, the obesity epidemic, and the promise & perils of hydropower, the text that students use to build background knowledge is designed to contextualize the STEM phenomena. Students read authentic reports, interpret actual data sets, and learn about what real STEM professionals wake up to tackle on a daily basis. Upon analysis of the JEI article archive, EduChange believes that excerpts from JEI articles that clarify concepts, reasoning or data about the topic can be integrated seamlessly. The assessment system includes a master rubric of twenty-six Inquiry & Design competencies, organized according to the sections of a scientific paper. Students build these competencies gradually as part of the normal laboratory experience and post-lab writing tasks. However, unlike traditional curriculum, students do not write complete papers at first. They delve more deeply into select competencies aligned to the lab experience, such as question and hypothesis formulation. An instructional cycle that proceeds from a discussion of models—which
can include those from JEI articles going forward—student practice, feedback, and revision ensues. In years 3-4 (As early as Grade 10) of The Integrated Science Program, students attend to multiple competencies at once, ultimately producing a complete scientific paper. However, middle school students are exposed to these rituals and may have enough confidence to submit to JEI at an earlier age.

Procedure Design and Data Work – Again, many teachers attend to these skills already, but perhaps not in ways that authentically align with professional STEM experiences. The JEI editor team provides students some guidance on how they perform their experiments and how to analyze their data to attain a meaningful answer to their inquiry. Yet, at first, many students fail to appreciate the amount of time and many cycles of revisions necessary to professionally publish scientific work. After observations of over 1000 traditional secondary classrooms, EduChange determined that many students view labs as one-and-done experiences, making few connections across lab experiences. Sure, their data tables and graphs got a bit better and they were better able to craft a procedure according to the teacher’s format. But students were not internalizing the purposes of data collection, how the choice of materials and methods relate to the type of data collected, and why measurement uncertainty dictates that data are not “truths,” they are open to interpretation and disagreement. The Integrated Science assessment system articulates seven distinct Materials & Methods competencies and six Results competencies. An additional seventeen competencies in the STEM Communication master rubric builds student readiness in their interpretation of a variety of 21st-century STEM genres to include: diagrams, maps, 2D & 3D physical and digital models, animations, online databases, infographics, etc. Students attend to all thirty competencies not only during laboratory work, but also in performance tasks, while reading the background text, during activities leading up to the laboratory experience, and during post-lab activity extensions. Once again, JEI articles may be incorporated into these experiences, to offer exposure to student work and make the possibility of original research and article submission more real.

Writing the Analysis & Discussion – JEI finds that the process of combining their own data with their background knowledge to deeply discuss the results of their experiment tends to be the most difficult for students. There can be several reasons for this, including but not limited to: the way traditional lab reports make the study seem final, merely because it has reached completion; limited writing skills or writing phobias; immature critical thinking and questioning skills; and a misunderstanding prior to the launch of the experimental/engineering design as to how the work is situated in a larger context. Through the editorial process, JEI encourages students to see their research as a single contribution to a much grander scale of scientific inquiry with always more questions to explore. No single experiment can definitively prove a hypothesis, and all research answers lead to other research questions or other possible hypotheses. Editors and reviewers pose further questions and possible caveats based on the results for the student authors to consider in their discussion. We emphasize that doing research is not about being right or wrong in the end. It shows growth and critical thinking for a young scientist to see that their hypothesis was not supported by the data, and then develop a new hypothesis based on their new knowledge. Through the experience of scientific review, students begin to truly discourse and problem solve like professionals in STEM careers.

EduChange has worked with senior literacy specialists and writing professors to craft a multi-year process that readies students to be more effective informational writers across different writing purposes. Students in Years 1-2 get daily practice with autonomous, informal “writing to learn” tasks that are coupled with reading strategies inside their personalized digital text. As discussed above, students also write to practice distinct Inquiry & Design competencies, and as interpretations of 21st-century STEM resources across a variety of genres. The Integrated Science Program highlights the well-studied connections among reading, writing and critical thinking (to include inquiry). Experts in writing instruction know that many teachers assign formal writing assignments prematurely, before students have enough time to work out their reasoning. As everyone who has sat in front of a blank document and a blinking cursor knows, it is nearly impossible to write if you have no idea what to say. The Integrated Science Program incorporates more writing than any other extant STEM program designed for secondary students. Even though teachers have not been trained in writing instruction, EduChange data shows that STEM teachers can execute well-designed activities designed to engage students as writers. And this readiness is critical for post-secondary education and the workplace.

Strengthening the Peer Review Continuum

Although JEI offers a rigorous and enriching education opportunity for students, oftentimes students do not progress far enough to appreciably profit from the experience. As discussed, a very high number of submissions are not ready
for the scientific review team, and many student authors do not resubmit. However, of those passing pre-review, 23% of all manuscripts that are assigned to JEI editorial teams and undergo peer-review are not resubmitted after receiving feedback. Furthermore, JEI's annual submission-to-publication yield has gradually decreased in recent years, largely due to a reduction in personalized back-and-forth mentorship as JEI started receiving more submissions. JEI is recruiting more volunteer editors and reviewers to manage the rapidly increasing submission rate, but the job of an editorial team is not to hand-hold authors from initial submission to publication. The capacity to respond to constructive feedback and revise their work is a reasonable expectation of secondary students with the right experience under their belts. Furthermore, students who enter the JEI review process hungry for feedback and scientific support are rewarded by a confidence boost that cannot be understated. One student attested:

*It was a really good feeling every time I submitted a new edit. I put a lot of work into each edit and with each edit the paper just got better and better. You could see that. And getting suggestions and comments and reviews back was also pretty fun. I think [working with JEI] really proves that you’re interested in science and that you really do want to do research. Rather than passively sitting in class, you’ve shown that you’re an active scientist (personal communication, 2014).*

![JEI Growth By Year](image)

**Figure 2:** JEI's total manuscript submissions and publications from 2011 through 2017 (anticipated).

JEI's data on attrition rates from initial submission to article publication might reflect a widespread assessment issue in schools rather than a problem with the JEI review process. And it is an issue that EduChange has encountered and addressed in their assessment designs. Many secondary teachers hold misconceptions and misguided beliefs about the purpose of feedback on student work, and about the timing of feedback delivery. Subsequently, students are not used to using feedback to improve their work, and often don’t know where to begin. In the scientific review process, as in all writing processes, feedback is given to inform decisions the author needs to make prior to finalizing the article. Authors can choose to disregard some or all of the feedback, but the process offers insights into how members of their intended audience are receiving the work, and gives authors information to help them reach their ultimate goal: publication.

With most secondary school lab reports and other secondary writing tasks, students move directly from draft to grade. While the grade serves as feedback, it is often final. A grade neither helps students understand what is strong about the work, nor does it improve the quality of the final product. In his book *Embedded Formative Assessment*, Dylan Wiliam (2011) cites a 1988 study by Ruth Butler in which secondary students were split into three groups: one receiving only grades on their work, one receiving only written feedback, and the third receiving both scores and feedback from the teacher. It is always surprising to secondary teachers to learn that the only group whose work improved from task to task was the group receiving only feedback; grades accompanied by comments made no difference. In the context of scientific review, students and teachers must view feedback from JEI scientists as well-timed data that can be used to achieve successful publication. And JEI really makes an effort to reward all students
who persist through the process, which is perfectly appropriate in a secondary context when students are still learning about STEM journals.

The Integrated Science Program shifts assessment processes toward a growth model, with well-timed feedback from different players supporting improvement over time. Every week, students engage in low-stakes oral feedback and reciprocal teaching by sharing their writing or a rendered graphic with a partner via a guided protocol. Through the protocols, EduChange prompts students to give and receive a variety of types of feedback. Teachers lead class discussions where students are asked to model positive behaviors based on the Community master rubric, demonstrating desirable questioning, active listening, feedback delivery and receipt, metacognition, and empathy. In-class performance tasks tap the same Inquiry & Design master rubric used to build toward a complete scientific paper, and add Conceptual Understanding competencies that assess comprehension of the natural phenomena being studied. Even in Years 1-2, EduChange data from the first phase of implementation showed growth on these competencies across all learner profiles.

A collaboration with JEI will allow us to examine the alignment of these competencies with those currently valued in their review process. In Years 3-4, as students write complete sections of a scientific paper and complete longer analysis assignments, longer peer review times are also allocated. Students move from guided to more personalized feedback sessions. Formal writing competencies are introduced at this time. Eventually, students choose which Inquiry & Design and Communication competencies they want to use as an assessment guide, and learn to ask for specific types of feedback they desire. It is possible for JEI and EduChange to consider the addition of one or two advanced students to the JEI review team. This may prove to be an outstanding opportunity for students to participate with JEI in an additional capacity.

Expanding Curricular Connections

To better understand whether a collaboration JEI would align to the content and pedagogies of the Integrated Science Program, EduChange analyzed the 115 articles authored or co-authored by students in the JEI online archive. JEI tags articles using the following categories: Biology, Chemistry, Environmental Sciences, Health Sciences, Physics, Engineering, and Mathematics. The Integrated Science Program categorizes thirty-eight modules into the following Strands: Environmental Dynamics, Genetic Unity & Diversity, Food, Nutrition & Fitness, The Quest for Energy, Health, Drugs & Disease. We defined “alignment” between a single Integrated Science module and a single JEI article in question if (a) both addressed the same topic (e.g., antibiotic resistance, photovoltaics); (b) both utilized the same laboratory methods (e.g., serial dilution, titration); (c) both utilized similar quantitative analysis (e.g., certain statistical methods); and/or (d) both incorporated the complete engineering design process.

With this in mind:

- 36/38 Integrated Science modules and 3/3 stand-alone case studies aligned to JEI articles.
  - 22/23 of the modules spanning Years 1-2
  - 14/15 of the modules spanning Years 3-4
- 111/115 JEI articles aligned to Integrated Science modules.
- 25/38 Integrated Science modules aligned to 3 or more JEI articles and 11/38 modules aligned to 7 or more.
- 6/7 JEI categories aligned directly to Integrated Science modules. Only one JEI article was tagged as a Mathematics article. All JEI articles and all Integrated Science modules include quantitative work and applied math.

We were struck by the even spread of such a high number JEI articles and categories across Years 1-4 of the Integrated Science Program. This is likely due to two main design features that are absent from traditional secondary science programs: disciplinary integration and globally relevant STEM storylines. It was encouraging that experiments designed by students and sometimes co-designed by actual researchers mapped to these storylines and investigative methods so naturally. This demonstrates relevance and engagement in the chosen Integrated Science storylines, suggesting that it may not be too difficult to use JEI articles to light a spark in other students.
Expanding Benefits to Other Stakeholders

The JEI model offers unique benefits to each of the stakeholders involved, including high school students, teachers, graduate student editors, and school administrators. Teachers who have submitted multiple manuscripts to JEI from their students report that JEI has yielded benefits to students studying a variety of different subject matter. One teacher said:

*I found that the JEI experience really took these research projects to the next level. Working with the scientific review editors in particular prompted my students to really go back and reconsider their data. One of my groups even realized that their results were different than they had originally thought, due to going back and reviewing their data again (A. Lambert, personal communication, 2017).*

However, teacher-mentors must work closely with students to support them during the review process in order to keep students from getting discouraged from the large amount of scientific and writing feedback. Of course, this requires teachers to volunteer out-of-class time they really do not have.

EduChange teacher data are consistent with those from the field: not one of the 50+ teachers in ten years of small-scale implementation had any training in 21st-century reading or writing instruction. The Integrated Science Program was originally conceived as an immersive teacher professional development model, giving experienced teachers real on-the-job training connected to a supportive coaching and peer community. All of our teachers, and their supervising administrators, observed strong growth in these literacy areas and, as a result, appreciated the importance of frequent student practice. The reading-writing-critical thinking connection is built into the program’s design, empowering teachers to see and feel that type of instruction in their classrooms, without attending endless workshops or earning digital badges, which do not support or model classroom execution. A collaboration with JEI would allow us to see whether students can work through the scientific review process more autonomously, and would allow us to determine how the use of JEI articles impact learning in core secondary STEM classrooms.

Graduate students comprise most of the JEI editorial teams, and they gain valuable experience they receive nowhere else in their own degree pathways. A recent survey conducted by JEI across United States research universities found that 59% of graduate programs had no formalized coursework in critical analysis and review of primary literature. Through JEI, graduate students learn which methods of written communication are most effective and how to spot flaws in logic, while working with manuscripts that are straightforward and easy to understand. Indeed, 57% of JEI editors reported moderate or significant improvement in critique skills, and both editors and reviewers perceived the largest benefit in identifying the strengths and weaknesses of experimental design, according to a survey by Johnson and Fankhauser (in press). Likewise, a majority of JEI editors and reviewers also reported improvements in communication skills and self-perceived career-readiness. EduChange literacy experts can support JEI to build capacity for graduate student editors, based on research-based models of reading and writing instruction.

Other stakeholders who might benefit greatly from seeing this collaboration in action are school and district administrators. EduChange has a great deal of experience working with these leaders to support strategic academic programming in general, as well as the administrators whose schools participated in the Integrated Science Program. Our data show that Integrated Science influences pedagogical and assessment practices in upper-level STEM courses, a shift celebrated by administrators. By seeing a full continuum—core STEM learning leading to independent student projects leading to publication in an age-appropriate scientifically reviewed journal—administrators could build awareness of what a real commitment to 21st-century STEM looks like.

Expanding the Article Library

As JEI’s rich repository of scientific articles grows and the subject matter broadens, the potential for use of these articles across high school STEM subjects becomes more compelling. In recent years, JEI has focused on recruiting more editors in math, computer science, and engineering to support an increasing proportion of submissions exploring these areas. JEI is confident that by better supporting students as they tackle manuscript revisions, students will publish more manuscripts and consequently fill subject matter gaps within JEI’s article library. As the above curricular analysis demonstrates, schools using The Integrated Science program will have more opportunities to use JEI articles inside
the regular curriculum, as this kind of work fits seamlessly into their model.

One of JEI’s loftiest aspirations is to encourage a vibrant scientific community within the JEI ecosystem, where students critically read previously published JEI articles, find a flaw or outstanding scientific question, and execute an experiment to test their hypothesis stemming from this idea. Although there are a handful of articles that do cite other JEI articles, oftentimes these are from student authors publishing a second paper as follow-up to the first, or from repeat senior authors. In collaboration with EduChange, JEI hopes that guided critical analysis of published articles will spark passion in students and instill an eagerness to complement these articles with their own experiments. In this manner, each JEI article becomes its own thesis in a larger debate regarding a scientific topic, a microcosm of the professional scientific community.

Increasing Participation Across Demographics

Since 2012, JEI has published 115 student articles. These publications represent 205 student authors from 103 unique schools, across 26 states within the United States and 8 other countries. 69% of published articles come from students at public schools, while 11% are from home schooled students, indicating that conducting science that is fit for JEI is completely accessible for students from various backgrounds and without private funding. However, JEI reports more success from students in well-funded public schools or private schools than students from urban public schools, where the few manuscripts we do receive often do not progress past pre-review.

EduChange completed its ten-year small-scale implementation period in 2016. Since the Integrated Science Program is a comprehensive multi-year program, and since implementation spanned two phases (print vs. digital deliveries), EduChange (2017) valued the collection of multi-faceted data in schools from a wide array of demographics. The data collection went deep instead of wide, allowing the EduChange team and external evaluators to support teachers in urban, semi-urban, suburban, and rural communities in the USA, Malaysia, Brazil, Japan and Mexico. Students from every USA-described income level were observed in public and independent schools. Schools with 100% native English speakers to 100% non-native English speakers were included. These experiences will inform a collaboration with JEI, particularly regarding the types of support some students may require. Our collective hope is that by increasing the yield on submissions and providing more support for students from all demographics, more students will achieve publication, particularly those students who do not have pre-existing support structures at home or at school.

Building a Case for Collaboration: Next Steps

Canadian educational researcher Michael Fullan and Joanne Quinn (2015) identify two of the four main drivers of whole system change as cultivating collaborative cultures and deepening learning through clear goals and strong pedagogy. Building coherent instructional continua, such as the one that EduChange and JEI envision through collaboration with schools and students, is an important part of this process. Data from the field clearly implicate a need for capacity-building in STEM reading and writing at multiple age levels. After delving into our own data, it appears that a strategic partnership would benefit our collective audience as well as each other. The next steps for JEI and EduChange will include a collaborative process of objective-setting based on the information presented here. It will be important to name specific action steps to launch the partnership.

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Exploring Gamification and VR to Improve Chemical Engineering Learning Outcomes

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ABSTRACT

Practice-based learning environments for biopharmaceutical engineering involves the use of large-scale labs with highly specialized equipment (e.g., bioreactors) that are costly, complex and potentially dangerous to operate. Carefully crafted lab activities that involve physical interaction with such equipment will lead to enhanced learning outcomes that can produce work-ready students and trainees. This is also often necessary to ensure safe and proper handling of such equipment. However, the prohibitive cost of these equipment and their consumables mean that dedicated hands-on access will be limited, which in turn inhibits the potential for optimal learning experiences. We explore the use of a gamified virtual reality (VR) training environment for learners in biopharmaceutical engineering, in order to augment the limited hands-on sessions in typical lab environments. The development of a first-playable prototype of the gamified VR environment on the HTC Vive platform is presented, along with a set of initial design learnings from the process.

Keywords: Virtual Reality, Gamification, Game-based Learning, Learning Outcomes, Biopharmaceutical
An Exploration Of Global Integrated Marketing Communication Effectiveness Trends
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ABSTRACT

Integrated Marketing Communications (IMC) has become one of the most important aspects of successful marketing (Percy 2008) but is challenging to measure (Barger and Labrecque 2013; Brinker 2016; Clarke 2001; Clarke and Flaherty 2005). Effectiveness is important as practitioners are increasingly being held accountable for their outcomes. Organizations benefit when IMC efforts are well-managed, efficient, and effective (Eagle et al. 1999; Madhavaram et al. 2005). The extant literature revealed that IMC effectiveness is often assessed in one of three ways: models and equations, metrics, and outcomes from advertising campaign competitions. This research focuses on IMC effectiveness associated with top performers in competitions because they represent some of the very best work from industry. There were over 450 global advertising competitions last year with over half incorporating creativity as the most heavily weighted judging criterion. Creativity is believed to have the strongest impact on effectiveness (Goldenberg, Mazursky, and Solomon 1999), yet others challenge this belief and contend there are problems associated with judgments of creativity as an indicator of campaign success (Ang and Low, 2000, Ang, Lee, and Leong 2007; Smith et al. 2007; Till and Baack 2005).

The Effie Awards (Effies) awards were established to represent a global symbol of industry achievement. The name Effie is based on the word effectiveness and supports the idea that the very best campaigns have effectively achieved client objectives. The primary competition is the Global Effies but Effie Worldwide also holds regional competitions in the Asia-Pacific, the Middle East/North Africa, North America, and Latin America. As compared to other competitions, the Effies are the only globally-based competition that assesses campaign effectiveness separate from creativity. To win an Effie, campaigns must score well in strategic and creative components such as campaign objectives, the idea, and executing the idea, and campaign effectiveness. Although effectiveness is not the dominant element, it is considered to be a valuable component of campaign success.

To explore IMC trends, data was analyzed from over 400 winning campaigns from the Global Effie Awards database. Following the methodology of Quesenberry et al. (2012), entry form data was recorded and categorized. Results indicate drastic changes over time based on the unique interactions that consumers have with brands, often referred to as ‘contacts’ or ‘touchpoints’. The most successful campaigns relied most heavily on interactive media, TV, and print. Recently, additional non-traditional media contact areas of IMC emerged, highlighting the increased complexity and choices available to marketers. This study provides a richer historical understanding of media contact usage in relation to winning a global advertising award that considers integrated marketing communications effectiveness. We encourage future research to extend this study we anticipate that the hundreds of other advertising competitions will continue to evolve as well.

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3D Printing And Public Policy
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ABSTRACT

3D Printing is a physical process that prints an object from a three-dimensional digital model, typically by laying down many thin layers of a material, usually plastic, in succession. In the 1980s, firms in France and the United States filed patents for the technique, which was then called Additive Manufacturing. Since then, it has been commercialized in manufacturing, especially for rapid prototyping. There are applications in food, particularly chocolate and candy, as well as in fashion design for shoes and clothing. The medical field uses 3D Printing for implants and prosthetics. As technology advanced and costs dropped, 3D Printing has entered the hobbyist and consumer markets.

The current relevant public policy regarding 3D Printing comprises three areas: intellectual property, product liability and data protection. 3D Printing also brings about health and safety concerns.

In this paper, we examine the relevant United States legislation that covers 3D Printing, raise questions on issues where policy lags, and discuss global concerns.
Leadership Competencies Of Social Entrepreneurs In Taiwan
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ABSTRACT
Social enterprises adopt commercial business model of financial sustainability to solve social and environmental problems, bringing new hopes to improve human welfare. The success of social enterprises depends on the social entrepreneurs to conquer the challenges of both social and financial goals. However, the organizational patterns are different between social enterprises and commercial business. It is doubtful whether prior leadership theories can be applied to social enterprises or not. Therefore, this study investigates leadership competencies of social entrepreneurs in Taiwan. The results reveal that the three most important competencies are the ability to solve problem, the ability to build effective teams, and the ability to develop collaborative relation. Compared with the research in the United States by Miller, Wesley, & Williams (2012), the first two importance competencies are the same, however, the rest have differences in ranking. The results of this study will provide social entrepreneurs in Taiwan to develop useful leadership competencies for achieving sustainable social enterprises.

Keywords: Social Enterprise, Social Entrepreneurs, Leadership Competencies

1. INTRODUCTION
Over the past three decades, the research has gradually paid attention to the entrepreneurs who solve the social needs, called "social entrepreneurs". They are the leader of social enterprise and operate the business by commercial activities. However, the purpose is to achieving social mission, not personal profit (Battilana & Dorado, 2010; Pache & Santos, 2013). For example, Muhammad Yunus, an economist from Bangladesh, founded the Grameen Bank in 1983 to help the poor to start a business with micro-credit and get rid of the poverty of life, thus winning the Nobel Peace Prize, is the best example of social enterprise. The success of social enterprises must rely on social entrepreneurs to overcome the challenge of pursuing social and financial goals at the same time. If there is no social entrepreneur's insistence and leadership, it may be dominated by the interests, deviate from the original social purposes, and thus have to terminate the operation of the organization (Smith, Besharov, Wessels, & Chertok, 2012). However, whether the leadership theory developed from the commercial enterprise is suitable for the social entrepreneur is questionable, so it is worth further exploration.

The past research has discussed the competencies required for profit-seeking entrepreneur (Kuratko, 2005; Rubin & Dierdorff, 2009). However, the organizational patterns of social enterprise and commercial enterprise are different. Whether the past leadership theory can be used in social enterprises is questionable. In the past, there has been little research on the issue of social enterprise leadership. Miller, et al. (2012) collect the competencies of social entrepreneurs from the literature, interview social entrepreneurs, and find out 35 social entrepreneurs’ competencies. Based on the research of Miller, et al. (2012), some researchers explore the social entrepreneurs’ competencies in different countries to compare the differences (Wronka-pośpiech, 2016). This project echoes this kind of study to explore the competencies of social entrepreneurs in Taiwan to help social enterprises sustain and create a better society.

2. LITERATURE REVIEW
Social enterprises make profit through commercial activities to achieve the social purpose. The mission of social enterprises is to solve social problems, for example, by creating job opportunity, assisting enterprise management or public welfare activity and so on to promote the social cohesion (Organisation for Economic Co-operation and
The Department of Trade and Industry of United Kingdom defined it by the value created by social enterprise. The social enterprises not only solve social problem, but also have economic goal. They operate business through the commercial behavior and make the enterprise stable development (Department of Trade and Industry-DTI, 2002). The significant characteristic of the social enterprise is that the income of the business activities needs to reach more than 50%. From the perspective of DTI, it is to maintain the operation of social enterprise by commercial behavior and necessary to have a certain level of financial autonomy to be called the social enterprises. Because the social enterprise and the profit-making enterprise have the difference, therefore the leadership issues of social enterprises need to be explored further.

There are some similarities between the public sector, the business sector and social enterprises in leadership competencies. Thach & Thompson (2007) interviewed the leaders of the profit and nonprofit sectors and analyzed 20 leadership skills based on the data from interviews, the results found that ranking is similar and integrity, cooperation and inspiring others’ development is the top three important competencies. Therefore, it can be assumed that the managers of social enterprises have similar characteristics, skills and abilities to detect opportunities in the environment, just like the managers in the business and public sector. But the differences are that they combine social missions and profit strategies, hire marginalized people, or sell products or services that have a direct impact on specific social issues. Some studies argue that their goal is longer-term than the managers of business sector (Kirby, 2003). This is in line with the research of Thompson (2002), who advocates that business and social entrepreneurs have similar needs, but that social missions, the availability of external donations, and past experience and tacit knowledge make the two types of entrepreneurship pattern different.

Miller, et al. (2012) collected the competencies of social entrepreneurs from the literature, including management, entrepreneurship and non-profit management (Boyatzis & Saatcioglu, 2008; Kuratko, 2005; Man, Lau, & Chan, 2002; Rubin & Dierdorff, 2009), the research on the field of social entrepreneurship (Austin, Stevenson, & Wei-Skillern, 2006), and educational resources, such as the Ashoka Social Entrepreneurship Education Handbook (Ashoka & Brock, 2010). They interviewed the social entrepreneurship experts and got 35 social entrepreneurs’ competencies. Through a questionnaire survey, the respondents pointed out the importance of competencies of social entrepreneurs. The online survey is in the United States, a total of 150 responses, including social entrepreneurs, founders, senior managers and social venture capitalists. The results reveal that the top ten most important competencies include: (1) ability to problem solve; (2) build effective teams; (3) management of financial capital; (4) ability to lead/develop others; (5) ability to communicate with customers, suppliers and other stakeholders; (6) interpersonal communication skills; (7) ability to sell and/or market the organization; (8) manage strategy development; (9) capacity to measure outcomes; and (10) ability to develop collaborative relation.

Based on the research of Miller, et al. (2012), Wronka-Pośpiech (2016) explored the competencies of Polish social entrepreneurs from the managerial perspective. The author investigated 100 social enterprises and found 10 important competencies, among which "creative use of minimal resources" was rated as the most important competency. There was no stable financial source, so entrepreneurs must be aware of the various sources of funding and the possibility of sponsorship and develop viable options in situations where sponsorship or non-sponsorship is possible. The ranking of the other competencies is: (1) ability to relate/evaluate the feasibility of/implementation of business plan; (2) conflict resolution skills; (3) ability to communicate with customers, suppliers, and other stakeholders; (4) identification with the idea, actors and activities of the social economy; (5) confidence to succeed at challenging task; (6) ability to manage administrative work; (7) optimism; (8) ability to identify social problems; (9) ability to lead and develop others. Compared with the research of Miller, et al. (2012), it is found that the competencies of American and Polish social entrepreneurs is only partly different, but the ranking is different.

3. RESEARCH METHOD

3.1 Research Object and Data Collection Procedure

This study adopted the questionnaire survey method to collect data for analysis. The respondents are social enterprises founder, senior executives or experts and scholars of social enterprises. First of all, with the social enterprise related network platform, this research establishes the contact information of each social enterprise and contacts by telephone whether they will accept the questionnaire survey or not. Then this study sends out the questionnaire by mail, and all
is attached with the questionnaire agreement. Secondly, supplemented by the assistance of experts and friends in the industry, this study adopted snowball sampling to find suitable objects. Through the two methods mentioned above, 32 questionnaires were collected at last.

There were 32 participants in the questionnaire, of which the males were 21 (65.6%) and females 11 (34.4%). In terms of age, most of them are 31-40 years old, a total of 15, accounted for 46.9%, followed by 51-60 years old (6, 18.8%) and 41-50 years old (5, 15.6%). In terms of marriage, unmarried are 8 (25.0%) and married 24 (75.0%). In terms of education, most of them are concentrated in bachelor (14, 43.8%) and master (11, 34.4%). In terms of the title, the responders (or founders) are a total of 14 (43.8%), followed by the salaried supervisor (9, 28.1%) and salaried staff (8, 25%). The social enterprise's seniority is more decentralized, 2 years (including) under and 3-4 years each has 7 (21.9%), 7-8 years 6 (18.8%), 11 years or more 5 (15.6%).

3.2 Measurement

The questionnaire of this study includes three parts. The first part is the social enterprise profile, refer to the study of Huang and Huang (2015), including how to establish, organization type, purpose, helping object, needed assistance, main challenges, main source of revenue, annual turnover, and rate of goal attainment. The second part is the leadership competencies of social entrepreneurs, mainly reference to the research of Miller, et al. (2012), consisting of 10 questions. The third part is the basic data of the respondents.

4. Data Analysis

After a descriptive statistical analysis of the competencies of social entrepreneurs, the results reveal that each competency is valued by respondents, averaging more than 4.31. Among them, the ability to solve problems is the most important, reaching to 4.84. This may be the social enterprise faced with multiple problems, these problems are different from the profit enterprises, so respondents think that social entrepreneurs are very much in need of problem-solving ability. The second is to build effective teams, up to 4.72. Social enterprise partners include full-time staff and volunteers. This is different from the profit enterprises, so the establishment of effective team is specially needed. The third important is the ability to develop cooperative relations, reaching 4.66. Social enterprise needs the cooperation of different stakeholders and the resources of all parties, therefore, how to develop cooperative relations is also very important. The fourth is the ability to sell and/or market the organization, reaching 4.62. Due to the general public awareness of the social enterprises is still inadequate, and many social enterprises are mostly new ventures, so the leaders need to have marketing ability. The fifth is the ability to lead and motivate others to develop, reaching 4.59. The focus goal of social enterprises is to achieve social purpose. Therefore, how to motivate others is also a very important task of leaders.

The last 5 competencies are the development of management strategies (4.53), the ability to communicate with customers, suppliers and other stakeholders (4.47), the ability to measure performance results (4.41), interpersonal communication skills (4.34), and the management of financial capital (4.31). Among them the management of financial capital is especially need to be paid attention, the respondents think that this ability is relatively unimportant, however, it is ranked in third in the United States. This will need further exploration.

Comparing with the research of Miller, et al. (2012) in the United States, both the ability to solve problems and build effective teams are all the most important first two competencies. However, social enterprises in Taiwan particularly need the ability to develop cooperative relations while it is ranked the tenth importance in the United States. Social enterprise in the United States believes that financial capital management is very important, ranked in third, while it is ranked tenth in Taiwan. The ability to market the organization ranked fourth in Taiwan, but ranked seventh in the United States. Interpersonal communication skills ranked sixth in the United States, but ranked ninth in Taiwan. Since average score of each competency is above 4 points, Taiwanese respondents still think that these competencies are all important. It is possible that the differences of culture, humanities and laws so that the importance of some competencies ranking are different.
5. CONCLUSIONS AND SUGGESTIONS

5.1 Conclusions and Implications

This study tries to explore the leadership competencies of social entrepreneurs in Taiwan. The results reveal that social enterprises in Taiwan need the most management assistance is marketing technology and creative development, followed by professional production technology and website erection technology. In the face of the major challenges, mainly focused on the public understanding of social enterprises, market size, and lack of marketing or promotion channel. This results provide the cooperative issue for industry, government, and education sectors to understand how to assist social entrepreneurs to overcome these problems.

Second, the discovery of leadership competencies provides social entrepreneurs with the ability to understand what they need. Both Taiwanese and American social enterprises argue that the abilities to solve problem and build effective teams are especially important. Therefore, social entrepreneurs should think about how to develop these abilities. Taiwan education sectors should also consider how to provide relevant courses to foster better social entrepreneurs.

5.2 Research Limitations and Future Research Suggestions

There is no complete database about social enterprises in Taiwan. The questionnaire survey is very difficult. This study suggests that government departments can establish more complete social enterprise data for research to expand the sample number to facilitate the comparison of different types of social enterprises. Second, future research can expand leadership competencies research to explore what factors will affect the competencies of social entrepreneurs. Finally, a comparative study between different countries can be conducted to explore why social enterprises in different countries have different ranking in the importance of competencies.

REFERENCES


Long Run And Short Run Impacts Of Macroeconomic Variables On Exchange Rate Volatility In Iran

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ABSTRACT

Given the need to reduce exchange rate volatility in the market, identifying the factors affecting this volatility is certainly necessary. In this study we have tried to model and estimate the impact of variables such as imports, liquidity, oil revenues and inflation on exchange rate volatility using Johansen - Juselius co-integration and the ARDL models during 1991Q1 to 2012Q4. The results of both methods show that the coefficient of oil revenues is insignificant in the long run. Also, the coefficients of the liquidity and in inflation are positive and negative respectively. In general, the findings show that in the long run with higher inflation people tend to engage in the real-estate market and speculative activities in the foreign exchange market.

Keywords: Exchange Rate Volatility, Co-Integration Variables Fundamental Variables, ECM

INTRODUCTION

Exchange rate fluctuations have an undeniable impact on all economic activities in any economic system. For this reason a study of factors impacting exchange rates is important in all countries in general and in developing countries in particular. Iran has been exposed to some of the harshest international sanctions in the last 30 years and the shortage of hard currencies has become an acute problem. At the outset it is appropriate to go over some of the main developments of the exchange rate market in Iran during the period of this study (1991:Q1 – 2012:Q4). At the end of the Iran-Iraq war in 1989 a major effort was taken by the Iranian government to organize the exchange rate market. Three different exchange rates were offered by the Iranian Central Bank. One was the “Official Rate” which would be used for the importation of the basic and essential items such as medicine and food items. The second rate called the “Competitive Rate” by the government was mainly used for the importation of intermediate goods for different manufacturing industries. The last rate which was called a “Floating Rate” was for all the other markets. Then in 1993 the government accepting the chaos in the exchange rate markets decided to have a uniform exchange rate. At this time most of the imports into the country were taking place using the a floating exchange rate set by the Central Bank while it was unable to meet the demand for foreign currencies of the other sectors of the society. For this reason the exchange rate shut up drastically in 1994. At this point the government decided to abandon the implemented exchange rate policy that it had adopted in 1989 (Khotae and Sayfipoor, 2007). In 1990 the price of oil went up considerably. As a result the exchange rate market experienced a relative calm during the next two years. When OPEC decided to cut down production in 1992 to offset oil price declines oil prices started going up again. So, beginning in 1993 there were signs of economic improvements and falling exchange rates. This situation continued through 1995. At the beginning of 1996 with a continuation of oil price increases the government decided to pursue the policy of a uniform exchange rate system. But this time the government decided to create an independent institution to overlook all foreign exchange transactions in the country to act as a go between commercial banks and the public demanding foreign currencies where exchange rates would be overseen by this institution based on legitimate demands for foreign currencies and not speculative arbitrage motivations. But with start of the fourth quarter of 2001 we witness a sharp difference between the official exchange rate and the free-market exchange rate. This was created mainly because the

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government had decided to pursue a policy of abolishing all subsidies across the board for almost everything in the country including utilities (Bagheripormehr and Mousavinick, 2033).

Theoretical Background

Assuming rational expectations, exchange rate fluctuations are attributed to predictable and unpredictable factors. Predictable factors include observable macroeconomic variables such as money supply. Unpredictable factors include developments which are asymmetric in nature and since we cannot foresee them we cannot accurately forecast future exchange rate fluctuations which in turn bring about misallocation of resources. This situation which in economic literature is referred to as exchange rate variability calls for a closer scrutiny and study to avoid erratic exchange rate variations. In a two-country model to estimate exchange rate variations we assume that our goal is to only assess the trade relation between the two countries. Given such an assumption it is obvious that the exports of a country are equal to the imports of the other country. Furthermore, it goes without saying that the economic policies of the trading countries affect both countries. For this reason we assume that the demand for a country’s exports as the expense of foreigners’ on the home countries goods and services is a function of the other country’s real income, home country’s prices and the nominal exchange rate.

\[ X^d = f(Y^f, P^d_x, E) \] (1)

In equation (1) \( X^d \) is the demand for a country’s exports, \( Y^f \) is the foreigners’ real income, \( P^d_x \) is the price of the exportable goods in the home country and \( E \) is the nominal exchange rate. On the other hand the supply of a country’s exports depends on the foreign price of the exportable goods, exchange rate variability, and the terms of trade:

\[ X^s = f(P^f_x, h, TOT) \] (2)

In equation (2) \( X^s \) is the supply of the exportable, \( P^f_x \) is the foreign price of exportable goods, \( h \) is the exchange rate variability and \( TOT \) is the terms of trade. Taking log of both sides of equations (1) and (2) except for \( h \) (since it could be negative) we get equations (3) and (4):

\[ \ln X^d = a_0 + a_1 \ln Y^f + a_2 \ln P^d_x + a_3 \ln E + U_1 \] (3)

\[ \ln X^s = \beta_0 + \beta_1 \ln P^f_x + \beta_2 h + \beta_3 \ln TOT + U_2 \] (4)

\( U_1 \) and \( U_2 \) are the residual terms. Solving the above equations for the equilibrium price we get:

\[ X^d = X^s \]

\[ P^f_x = P^d_x = P_x \] (5)

Substituting from (5) in (4) and solving for \( h \) we get:

\[ \ln X^s = \beta_0 + \beta_1 \frac{\beta_0 - a_0 + \beta_2 h + \beta_3 \ln TOT - a_1 \ln Y^f - a_3 \ln E}{(a_2 - \beta_1)} + \beta_2 h + \beta_3 \ln TOT \] (6)

\[ (a_2 - \beta_1) \ln X^s = (\alpha\beta_0 - \alpha_0 \beta_1) - \alpha_1 \beta_1 \ln Y^f - a_3 \ln E + a_2 \beta_3 \ln TOT + a_2 \beta_2 h \] (7)

\[ a_2 \beta_2 h = (\alpha_0 \beta_1 - \alpha_2 \beta_0) + (a_2 - \beta_1) \ln X^s + \alpha_1 \beta_1 \ln Y^f + a_3 \ln E - a_2 \beta_3 \ln TOT \] (8)

\[ h = \frac{(\alpha_0 \beta_1 - \alpha_2 \beta_0) + (a_2 - \beta_0) \ln X^s + a_1 \beta_1 \ln Y^f + a_3 \ln E - a_2 \beta_3 \ln TOT}{a_2 \beta_2} \] (9)

Equation (9) shows that exchange rate volatility depends on the foreigners’ real income (trading partner), the exchange
rate, terms of Trade and the level of Trade volume (exports plus imports). Following this approach we can incorporate other relevant economic variables in the model to study their effect on the exchange rate volatility (Udoh et al., 2012).

**Literature Review**

Grossmann, A. et al. (2014) using a Panel-VAR model concluded that exchange rate variability significantly depends on real GDP, foreign reserves, equity returns and the interest rate. The authors found that the feedback effects from exchange rate volatility to be much stronger in the developing countries compared to developed countries. They found that a major difference is the fact that exchange rate variability in the developing countries is more sensitive to economic variables than developed countries.

Wang T. (2005) in a study used the SVAR model to investigate the relative significance of different macroeconomic shocks in causing variation in real exchange rates during 1985-2003. The results indicate that supply and demand shocks are the main factors behind exchange rate instabilities.

Zameer and Siddiqi (2010) used an ARDL model to show the impact of exports, foreign direct investments (FDI), external debt on the exchange rate variations in Pakistan over the period 1960-2008. Their results indicate the existence of a cointegration relationship in the empirical model. They showed that a one percent increase (decrease) in exports will increase (decrease) exchange rate variability by 2.0043 while a one percent increase (decrease) in FDI and foreign debt will decrease (increase) exchange rate variability by 0.6 and 1.41 respectively.

Udoh et al. (2012) used a Vector ECM for the period of 1968-2010 and showed that imports, the rate of the use of manufacturing capacity, the interest rate on commercial banks loans, foreign private investment and the dummy variable (representing the impact of trade openness policy) have a significant impact on exchange rate variability in the long run. But in the short run foreign reserves, inflation, interest rate on bank loans, foreign private investment, imports and the rate of use of manufacturing capacity had a significant impact on exchange rate variability.

Kyereboah Coleman and Agyire Tettey (2008) used a Garch model to estimate real exchange rate variability and its impact on FDI. Their results indicate that exchange rate variability has a negative impact on FDI. They also showed that the market size does not play a major role in FDI decisions in Gana.

Chit and Judge (2009) studied the role of financial developments in impacting exchange rate variations on the exports of five East Asian countries using a GMM model. Their findings show that the impact of exchange rate variability is influenced by the state of financial developments in these countries. Specifically, they showed that economies with weak financial development are more vulnerable to exchange rate fluctuations. They concluded that countries with a fixed exchange rate policy which have a weak financial development system have a better growth rate and export level than countries with a floating exchange rate system.

Abbasian et al. (2012) used a simultaneous system of equations over the period 2008-1975 to study the impact of real exchange rate uncertainty on economic growth with independent variables of foreign investment, private investment and level of exports. Their results show that exchange rate uncertainty has a negative impact on growth via these three variables. They also showed that there exists a direct relation between the inflation rate and the real exchange rate. So, they conclude that if the rate of inflation is stabilized we could witness a higher rate of foreign investment in the country.

In another study Zamanian and Behrad Amin (2014) studied the impact of exchange rate uncertainty on the demand for imports in Iran during 2012-1980. They used an EGARCH approach for the logarithm of time series variances, a GARCH approach for exchange rate uncertainty and an ARDL approach to study the co-integration property of the model. Their findings indicate that only the real effective exchange rate and imports are co-integrated and have a long run relationship. The results of the estimated ECM model showed that despite the fact that there is no long run relationship between exchange rate uncertainty and imports the negative impact of exchange rate uncertainty on imports in the short run is significant. In other words, in the short run an increase on the real exchange rate uncertainty via a reduction in demand for imports can improve the country’s balance of payments while at the same time adversely affect manufacturing outputs through a cut in the importation of intermediary and capital goods. Therefore, stabilizing
the real effective exchange rate by using nominal exchange rates of major currencies seems necessary.

**METHODOLOGY OF THE STUDY**

**Exchange Rate Volatility**

An important property of economic time series data is “cluster variability” which implies that the greater the past shocks are the greater will be the variance of current shocks and that the probability that current shocks are larger rises. Therefore, with time series data it is possible that the changes in a variable such as exchange rate to increase during the period under study implying variance non-constancy. In a symmetric GARCH model, the volatility (variance) for both positive and negative shocks is the same. So, for instance the impact of positive and negative shocks on the exchange rate variance is considered to be symmetric. And in general the effect of an oil price rise and fall on an economy is considered to be symmetrical. However, there is no reason for the effect of such shocks to be symmetric. For this reason GARCH models have been developed in such a way to be able to handle and incorporate the impact of positive and negative shocks in an asymmetric pattern as well. One of such models developed by Nelson (1991) is called Exponential GARCH Model (Soori, 2014). Before estimating the econometric model we present a basic function that exhibits exchange rates growth rates. Following Box-Genkin’s approach we determined the number of ideal lags using the Schwarz-Bayesian criteria. Over the period under study, while accounting for seasonality, the optimal number of lags while establishing a stationary long run relationship for exchange rate growth rates turned out to be zero lags. For this reason the Moving Averages technique was used to measure exchange rate variability as shown in equation (10):

\[ DLesa = R_\text{e} = \mu + u_t \]  

Where \( DLesa \) is the derivative of the natural log of seasonally adjusted market exchange rate. The dependent variable in (10) cannot be estimated based on its past values because it is absolutely random and follows no certain pattern.

**The ARDL Approach**

We can apply the Auto-Regressive Distributed Lag model (ARDL) developed by Shin and Pesaran (1997) to estimate the long run coefficients after we first ascertain that there does exist a long run relationship among the variables of the model. Compared to other techniques this approach has many advantages. For instance we can use this approach regardless of whether or not the variables we are working with are stationary. Moreover, we can estimate the model for existence of a short run relationship. Also the short run adjustment rate for any time interval to reach long run equilibrium is computable. By choosing the correct number of lags an ARDL model can provide us with consistent long run variable coefficients. If, as in equation (11), \( Y_t \) is the dependent variable and \( X_i \)’s are the explanatory variables we would have the following ARDL model:

\[ C(L, P)Y_t = \mu + \sum_{i=1}^{k} B(L, q_i) X_{it} + U_t \]  

The above equation shows the short-run relationship among the variables of the model such that:

\[ C(L, P) = 1 - \gamma_1 L - \gamma_2 L^2 - \cdots - \gamma_P L^P \]

\[ B(L, q_i) = \beta_{10} + \beta_{11} L + \cdots + \beta_{iq} L^{q_i} \]

\( \mu \) is a constant, \( L \) is the lag operator, \( P \) is the number of lags used for the dependable variable \( Y_t \) and \( q_i \) is the number of lags used for the independent variables \( X_{it} \). After estimating the dynamic equation we need to test to see if there exists long run equilibrium. For this we need to do the following t-test:

\[ t = \frac{\sum_{j=1}^{p} \gamma_j^{-1}}{\sum_{j=1}^{p} S_{\gamma_j}} \]  

Where gamma \( (\gamma_j) \) are the coefficients of the lagged- dependable variable and \( S_{\gamma} \) is the standard deviation of the
lagged-dependent variable. If the absolute value of the calculated statistic is less than the Banerjee, Dolado & Mester (1992) statistic the null hypothesis of no long run equilibrium is accepted. Once we are sure that there exists a long run relationship we can then proceed to interpret such long run relationships. Based on the Granger Representation Theorem the existence of long run equilibrium among a number of variables implies that there exists a short run Error Correction Model (ECM) by which one can evaluate short run dynamics and its tendency towards an equilibrium state.

Model Presentation

Based on the theoretical background and literature review the following factors affecting exchange rates in the Iranian economy were chosen:

\[ Lh = (LOILG, LMQG, LTIM, LCPI, X) \]  \hspace{1cm} (13)

In the above equation \( Lh \) is the natural logarithm of the exchange rate volatility in the free market, \( LOILG \) is the natural logarithm of the ratio oil revenues to GDP (%), \( LMQG \) is the natural logarithm of liquidity to GDP (%), \( LTIM \) is the natural logarithm of imports of goods and services to GDP (%) and \( LCPI \) is the natural logarithm of the consumer price index with 2004 as the base year. Beginning with the year 2002 the Iranian government took up a managed floating exchange rate system for the entire country. The dummy variable \( X \) represents the period under which the country was under the managed floating exchange rate system. So, for years before 2002 \( X \) is 0 and 1 after 2002.

DATA

The data used are seasonal data from 1991 to 2002. The sources are Iran’s Central Bank and Iran Data Center.

FINDINGS

Estimating the Volatility of Exchange Rate Growth

We use an exponential model, EGARCH (1, 1, 1), to estimate exchange rate variability:

\[ R_t = \mu + u_t \]
\[ h_t = \ln \sigma_t^2 = a_0 + a_1 \frac{|u_{t-1}|}{\sigma_{t-1}} + \gamma \frac{u_{t-1}}{\sigma_{t-1}} + \beta \ln \sigma_{t-1}^2 \]  \hspace{1cm} (14)

Where \( h \) is the short run conditional variance and \( R \) is the exchange rate growth rate which is a stationary time series data. We used Eviews8 to estimate equation (14). The results are presented in Table 1:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Coefficient</th>
<th>Standard deviation</th>
<th>Z-statistic</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \mu )</td>
<td>0.021883</td>
<td>0.001610</td>
<td>13.58959</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Variance equation
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Coefficient</th>
<th>Standard deviation</th>
<th>Z-statistic</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>( a_0 )</td>
<td>-4.019146</td>
<td>1.90e-05</td>
<td>-211072.3</td>
<td>0.000</td>
</tr>
<tr>
<td>( a_1 )</td>
<td>-0.578007</td>
<td>0.236062</td>
<td>-2.448539</td>
<td>0.0143</td>
</tr>
<tr>
<td>( \gamma )</td>
<td>0.954360</td>
<td>0.218179</td>
<td>4.374204</td>
<td>0.0000</td>
</tr>
<tr>
<td>( \beta )</td>
<td>0.210408</td>
<td>0.016545</td>
<td>12.71731</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

As can be seen from Table 1 the estimated coefficient of Gamma (\( \gamma \)) is significant at 5% significance level. This shows that the shocks imposed on the growth rate of exchange rates in the unofficial market (free-market) are asymmetric. In other words the impact of negative shocks is greater than the impact of positive shocks.

Before we proceed with model estimation, we need to examine the stationary properties of the model variables using conventional unit root tests. We use the Dickey Fuller- Generalized least Squares test for the case with intercept and trend which is a much more flexible test (Maddala and Lahiri, p.557, 2009). The results of unit root tests are
summarized in Table 2. The unit root test results for the 5 variables at level show that they are not stationary at the 5% level. But after taking the first difference all the variables become stationary.

Table 2: Results of Unit Root Test (Dickey Fuller- Generalized Least Squares test)

<table>
<thead>
<tr>
<th>variable at level</th>
<th>LOG(h)</th>
<th>LOG(MQGsa)</th>
<th>LOG(TIMsa)</th>
<th>LOG(OILGsa)</th>
<th>LOG(CPIsa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statistic</td>
<td>-2.125943</td>
<td>-1.591609</td>
<td>-2.362481</td>
<td>2.785000</td>
<td>-1.269048</td>
</tr>
<tr>
<td>Results</td>
<td>non-stationary</td>
<td>non-stationary</td>
<td>non-stationary</td>
<td>non-stationary</td>
<td>non-stationary</td>
</tr>
<tr>
<td>First Difference</td>
<td>LOG(h)</td>
<td>LOG(MQGsa)</td>
<td>LOG(TIMsa)</td>
<td>LOG(OILGsa)</td>
<td>LOG(CPIsa)</td>
</tr>
<tr>
<td>Conclusion</td>
<td>Stationary</td>
<td>Stationary</td>
<td>Stationary</td>
<td>Stationary</td>
<td>Stationary</td>
</tr>
</tbody>
</table>

Estimating the ARDL Model

If the data we are using is of time series nature there exists several approaches such as Co-integration, Error Correction Model and Auto-Regressive Distributed Lag model for a long run and short run estimations. In recent years however, the use of the ARDL model has become more common to study the long run relationships compared to other models. To estimate a long run relationship The ARDL model is applied in two stages. First one needs to ascertain that there exists a long run relationship among the variables of the model. Then in the next stage we need to estimate the long run and the short run coefficients of the model using ARDL and ECM approaches respectively. Based on theoretical backgrounds we have used the following equation for our estimation:

\[
Lh_t = \mu_0 + \mu_t X + \sum_{l=1}^{p} \gamma_l Lh_{t-l} + \sum_{j=0}^{q_1} \beta_{1j} TIM_{1t-j} + \sum_{j=0}^{q_2} \beta_{2j} OILG_{2t-j} + \sum_{j=0}^{q_3} \beta_{3j} MQG_{3t-j} + \sum_{j=0}^{q_4} \beta_{4j} CPI_{4t-j} + U_t \tag{15}
\]

The optimum number of lags can be determined using any of Ackaic (AIC), Shwards Bayzian (SBC), Hanan Quin (HQ), R squared. The model was estimated using the Microfit 4.1, SBC and ARDL (1,0,0,0,3) based on 4 lags. The results are presented in Table 3.

Table 3: Estimation Results ARDL(1,0,0,0,3)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>statistic t</th>
<th>[Prob]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lh(-1)</td>
<td>0.48687</td>
<td>5.0556</td>
<td>0.000</td>
</tr>
<tr>
<td>LTIM</td>
<td>-0.19636</td>
<td>-5.56599</td>
<td>0.573</td>
</tr>
<tr>
<td>LOILG</td>
<td>-0.11152</td>
<td>-0.86260</td>
<td>0.391</td>
</tr>
<tr>
<td>LMQG</td>
<td>1.6397</td>
<td>2.7860</td>
<td>0.007</td>
</tr>
<tr>
<td>LCPI</td>
<td>-6.0562</td>
<td>-1.7740</td>
<td>0.080</td>
</tr>
<tr>
<td>LCPI(-1)</td>
<td>28.4008</td>
<td>4.7775</td>
<td>0.000</td>
</tr>
<tr>
<td>LCPI(-2)</td>
<td>-31.5695</td>
<td>-4.9188</td>
<td>0.000</td>
</tr>
<tr>
<td>LCPI(-3)</td>
<td>8.9377</td>
<td>2.2405</td>
<td>0.028</td>
</tr>
<tr>
<td>C</td>
<td>-9.7305</td>
<td>-2.8097</td>
<td>0.006</td>
</tr>
<tr>
<td>X</td>
<td>0.25903</td>
<td>0.74603</td>
<td>0.458</td>
</tr>
</tbody>
</table>

\[ R^2 = 0.60526 \] , Functional Form: CHSQ(1)=1.3373 [0.248] , Durbin’s h – statistic = -0.34798 [0.7228] , Normality: CHSQ(2)=1.2636 [0.532]

In Table 3 the coefficient of exchange rate volatility is almost 0.49 and significant. As the table shows the inclusion of Imports and the oil revenues to the model does not impact the exchange rate fluctuations much while consumer price index affects it significantly for 3 lags. For a one percent increase in the consumer price index decreases exchange rate fluctuations by 30 percent. The table also shows that the liquidity variable has a positive and significant impact on exchange rate volatility while the dummy variable in no significant.

Before we proceed to the long run equilibrium condition we need to perform the co-integration test among the variables of the model. Because the necessary condition for the ARDL model to merge to the long run equilibrium is
that the sum of coefficients of varying lags of the dependent variable be smaller than one. The t-statistic for such a test is:

\[ t = \frac{0.48687 - 1}{0.096304} = -5.328 \]

Since the critical t-value is -4.03 and is less than the calculated t the null hypothesis is rejected and we conclude that there exists a long run equilibrium relationship among the variables of the model. The long run estimation results of ARDL (1,0,0,0,3) are presented in Table 4 below:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>T - Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>LTIM</td>
<td>-0.38267</td>
<td>-0.57924</td>
</tr>
<tr>
<td>LOILG</td>
<td>-0.21733</td>
<td>-0.85588</td>
</tr>
<tr>
<td>LMQG</td>
<td>3.1954</td>
<td>2.6280*</td>
</tr>
<tr>
<td>LCPI</td>
<td>-0.55998</td>
<td>-1.8058**</td>
</tr>
<tr>
<td>C</td>
<td>-18.9630</td>
<td>-2.7007*</td>
</tr>
<tr>
<td>X</td>
<td>0.50481</td>
<td>0.76695</td>
</tr>
</tbody>
</table>

Note: Asterisks * and ** represent 5% and 10% significance levels respectively.

As can be seen from the above table the coefficient imports are not significant which clearly explains Iran’s dependence on imports. We can conclude that the level of import variations does not impact exchange rate fluctuations. The increase in the consumer price index sets the ground for future exchange rate fluctuations cuts in the long run. On the other hand a one percent increase in liquidity brings about a 2.62 percent exchange rate fluctuations. This could be explained by the fact that most of the foreign reserve (income) is used to import luxury items, shipped out of the country through black market which in turn causes shortage of hard currencies and higher exchange rates. Such situations in the long run push the economy towards a state of chaos and arbitrage which in turn result in more erratic and asymmetric exchange rate volatility. Based on the results in the long run the impact of oil revenues on the exchange rate fluctuations is not significant. This maybe because of the creation of an official foreign reserve account for the long run national development programs that the government has set up. The coefficient of the dummy variable accounting for the time period implementing a managed floating exchange rate regime was insignificant.

As explained before in an Error Correction Model the variable differences along with long run error terms, called error correction terms (residuals), are considered along with dependent variable difference terms. The results of the error model with respect to ARDL (1,0,0,0,3)are presented in Table 5. The ECM coefficient shows the percentage of correction in each period in the short run in order to reach the long run equilibrium. In other words it shows how many cycles it takes before the exchange rate variability returns to its long run trend. The coefficient of ECM in this case is -0.51 which is significant at 95% confidence level. In other words in each period 51% of disequilibrium will be resolved (vanish). A point to notice is that the consumer price index as a whole has a positive impact on the exchange rate flexibility. In other words in the short run the shortages and surpluses of foreign exchanges result in the increase of fluctuation and variability of the exchange rates. But as explained before overall the impact of this variable in the long run is positive. In other words increasing the consumer price index will give incentives to people to engage in other economic activities too. Therefore, we should see a reduction in the foreign exchange market activities resulting in less exchange rate volatility.
Table 5: Result of Estimation Model Correction Error

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficients</th>
<th>T - Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>dLTIM</td>
<td>-0.19636</td>
<td>-0.56599</td>
</tr>
<tr>
<td>dLOILG</td>
<td>-0.11152</td>
<td>-0.862260</td>
</tr>
<tr>
<td>dLMQG</td>
<td>1.6397</td>
<td>2.7860 *</td>
</tr>
<tr>
<td>dLCPI</td>
<td>-6.0562</td>
<td>-1.7740 **</td>
</tr>
<tr>
<td>dLCPI1</td>
<td>22.6319</td>
<td>6.2144 *</td>
</tr>
<tr>
<td>dLCPI2</td>
<td>-8.9377</td>
<td>-2.2405</td>
</tr>
<tr>
<td>dC</td>
<td>-9.7305</td>
<td>-2.8097</td>
</tr>
<tr>
<td>dX</td>
<td>0.25903</td>
<td>0.74603</td>
</tr>
<tr>
<td>ECM(-1)</td>
<td>-0.51313</td>
<td>-5.3282</td>
</tr>
</tbody>
</table>

Note: Asrerisks * and ** represent 5% and 10% significance levels respectively.

Assessing the Stability of the Estimated Model

In ARDL models we can use the simultaneity of the short run model to assess the stability of the model in the long run. We use the Cumulative Sum (CUSUM) and CUSUMSQ to test the constancy of the estimated coefficients. As can be seen from Figure 1 and Figure 2 there exists no point where the plotted graph crosses the critical lines. For this reason we can claim that there is no structural break in the model and conclude that the ARDL model coefficients are stable.

![Plot of Cumulative Sum of Recursive Residuals](image1)

Figure 1: CUSUM

![Plot of Cumulative Sum of Squares of Recursive Residuals](image2)

Figure 2: CUSUM squares
CONCLUSION AND POLICY SUGGESTIONS

In this study we used an exponential GARCH model to evaluate and model exchange rate volatility rate using Iranian seasonal data from 1991 to 2012. Based on the findings of this study the shocks incurred by the exchange rate happen in an asymmetric pattern. In fact the negative shocks are more common than the positive shocks. In order to study the long run impact of variables such as exchange rate fluctuation rate, imports, oil revenues, liquidity and the rate of inflation and estimating the stability of long run and short run coefficients of the these variables an ARDL and ECM approaches were applied.

The results show that there exists a long run equilibrium relationship among the variables under study such that the import and the oil revenue variables do not have a significant impact on the exchange rate variability. But liquidity and the rate of inflation have a significant positive and negative impact respectively. The results in general show that with an increasing inflation rate and higher liquidity, in the long run, people tend to invest in real wealth and speculative type activities in the exchange rate market.

The findings of the ECM show that in the short run imports and oil revenues have no major impact on exchange rate volatility. But the rate of inflation was shown to have a positive impact on exchange rate volatility. The stability tests show that the results obtained are stable at 95% confidence level. The dummy variable used to capture the impact of managed floating exchange rate system was not significant in either the short run or the long run. This implies that the exchange rate regime in Iran has in fact been a fixed rate regime in under the control of the government. As for policy implication we suggest that central bank and related bodies should pay special attention to the Special Foreign Reserve and Development Account set up by the government even out exchange rate volatility impacts on the country’s economic growth. Based on the results of our study the setting up and keeping such an account can stabilize exchange rate variations in such a way to accommodate sustained economic growth. Our results also show that over the period of study exchange rate variations were mainly impacted by liquidity. Therefore, a policy implication would be to keep the cap on liquidity growth and channeling liquidity to productive sectors of the economy to stop it from finding its way to exchange rate markets and to cut down on the arbitrage and speculative activities.

REFERENCES


Examining How We Think About What We Think: A Look At Assumptions
Russell Clayton, Saint Leo University, USA
Kenny Embry, Saint Leo University, USA

ABSTRACT

This poster session aims to provide faculty members with a teaching technique that can be used to help business students evaluate their assumptions when analyzing an ethical dilemma. Rooted in the work of Brookefield’s (2012) classification of assumptions, this exercise first exposes students to three types of assumptions and then offers the student an opportunity to provide a resolution to a problem within a case study. Any suggested resolution is examined through the lens of the student’s assumptions.

THE TECHNIQUE

1) Faculty members who wish to use this teaching technique will lead a discussion with their students regarding three types of assumptions: paradigmatic assumptions, prescriptive assumptions, and causal assumptions (Brookfield, 2012). Below is a table that provides a general overview of the three types of assumptions.

<table>
<thead>
<tr>
<th>Types of Assumptions (Brookefield, 2012)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paradigmatic Assumptions – these are assumptions that frame how we view the world (i.e., The facts as we know them to be true)</td>
</tr>
<tr>
<td>Prescriptive Assumptions – these are assumptions about how we think the world should work and how people should behave (i.e., what ought to happen in a particular situation)</td>
</tr>
<tr>
<td>Causal Assumptions – these are assumptions we have about why things happen the way they do (i.e., If I do A then B will happen)</td>
</tr>
</tbody>
</table>

2) Students then read the teaching case “World-Class Bull” (Humphreys, Ahmed, and Pryor, 2009).

3) Students then list:
   a) the assumptions they believe Samantha Williams (VP of HR) is operating under
   b) the assumptions they believe Jeremy Silva (VP of Sales) is operating under

4) Students attempt to distinguish what type of assumption each is (paradigmatic, prescriptive, or causal). The instructor facilitates discussion to help students properly identify and classify the assumptions from the case.

5) A resolution to the case is written by each student. Any suggested resolution is examined through the lens of the student’s assumptions.

REFERENCES

EXAMPLE

Below is a picture of the whiteboard from the authors’ class and examples of the assumptions students picked out from the case.
Development And Validation Of Early Childhood Self-Esteem Assessment Tool
Je, Hui-Seon, Pusan National University, South Korea
Hwang Hae-Ik, Pusan National University, South Korea

ABSTRACT
The purpose of this study was to develop assessment items and criteria geared toward having a teacher observe and rate the self-esteem of preschoolers that might be revealed in their behaviors. For this purpose The behavioral self-esteem of the children is observed from the perspective of character strengths in positive psychology and draft was developed to consider cultural specificity. The research process is as follows. First, Delphi research was implemented to develop items and criteria. A Delphi panel was composed of five experts in theories of early childhood self-esteem, positive psychology and assessment and nine experts in teaching, and a Delphi survey was conducted three times. The participants were asked to evaluate the content adequacy and necessity of the items developed by this researcher and to suggest what modifications should be made. After the third survey was completed, the draft of early childhood self-esteem inventory was finalized and 30 items, criteria for each item was developed. The criterion for each item describes children's behavior in three level that is often seen in the classroom so teachers can then make relatively objective assessments by consider this. Second, To check the item quality and test appropriateness of the draft, main survey was conducted on 339 five-year-old preschoolers in the city of Busan, South Gyeongsang Province in Korea. As a result of making an exploratory factor analysis and Confirmatory factor analysis, three factors were selected, which were respectively named relationship, self-value, achievement. Also Cronbach alpha of this tool was .975. So the inventory turned out to be an inventory to make a valid assessment of preschooler self-esteem.

Keywords: Early childhood Assessment , Self-Esteem, Positive Psychology, Character Strengths
General Strain Theory And The Libor Fraud
Mark Lokanan, Royal Roads University, Canada

ABSTRACT

The London Interbank Offered Rate (Libor) is considered to be the most important interest rate in finance upon which trillions in financial contracts are decided. In 2008, it was revealed that the Libor traders were rigging the interest rates. Yet, there is an unresolved question that regulators and banking officials did not address in their quest to seek answers to the fraud: Were the banks under financial strain when they underreported their Libor rates? To answer this question, the paper posits that the pressure to meet market expectations led the banks to experience financial strain. Data were gathered from 2005 to 2008 on the banks that were involved in the fraud (fraud banks) and matched with a control group of non-fraud banks. The results from a logistic regression model found sufficient statistical evidence to support the claim that fraud will be greater in banks characterized by a higher level of organizational complexity.

Variables such as percent of outside directors, board members on the audit committee, CEO chair of bank and CEO on other committees were all found to be statistically significant. It may be that outside directors are more aware of industry-wide threats and having board members on the audit committee may lead banks to achieving financial targets with methods that are not always legitimate.
Vision Matters: Sustaining An 18-Year STEM Edtech Journey
Catherine Saldutti, President, EduChange, Inc.

ABSTRACT

At the beginning of the latest EdTech boom in education, educators didn’t believe what is probably the most persistent technology truth: change is rapid and unforgiving. Schools were wooed by shiny gadgets to the tune of hundreds of millions of dollars globally, only to find out that the “latest and greatest” was to be replaced by a better cool tool in less than a year. Propelled by venture capital and marketing campaigns previously unseen in school conference rooms and trade shows, the EdTech race was on. In 2000, our team at EduChange assessed the landscape and developed our mission: to design curricular architecture for real-world educators driven by learning. By keeping teaching and learning at the forefront, our instructional systems have the right stable elements and the right flexible elements. And so, in 2018 we can report another truth: the most robust and sustainable EdTech curricula will always put learners first.

This hands-on workshop demonstrates, through our multi-faceted data collected over ten years of small-scale implementation, why instructional design is perhaps the most important EdTech. The workshop will explore why:

- project-based learning is best sustained without projects;
- curricular architecture can be built to welcome the uncertainty of a rapidly-changing technology environment;
- traditional temporal structures (unit, project, course, etc.) pose barriers to personalized learning;
- the integration of STEM subjects and 21st-century skills covers content more efficiently than one that maintains traditional silos;
- master competencies tracked and practiced through performance tasks over multiple years create more student rigor with less anxiety than do traditional or standardized tests; and
- immersive professional development in a comprehensive EdTech curriculum is more efficient than traditional, online or micro-credentialed professional development.

Participants will experience select curricular materials from our STEM program, learn about global partnerships, and dialogue with fellow participants about steering STEM education in their communities.
Exploring Teacher’s Motivation And Inclusion Strategies For All Learners During Mathematics Activities
Julie Bergeron, Université du Québec en Outaouais, Canada
Geneviève Lessard, Université du Québec en Outaouais, Canada
Nathalie Anwandter-Cuellar, Université du Québec en Outaouais, Canada

ABSTRACT

Teacher’s motivation regarding mathematics and their strategies to teach were explored during a qualitative and inductive 2 years longitudinal action research with 6 primary teachers and their classrooms. It was found that while testifying to have low self-efficacy in mathematics, teachers felt more secure when using strict, pre-planned and multi-steps activities in mathematic. During the action research, teachers experimented with their classrooms diverse strategies of exploration, hands on task and more active pedagogies in mathematics. They were able to analyse, over time, their own self-efficacy perception changing while experimenting new strategies. The strategies developed by the teachers were qualified by themselves as more inclusive and motivating to the diverse learners in their classrooms.
A Case Study Focusing On Programming Education For Demotivated Students

Hitoshi Sasaki, Takushoku University, Japan
Ayumu Hano, Takushoku University, Japan
Shunichi Okamoto, Takushoku University, Japan

ABSTRACT

Atmosphere of programming education seen progressing rapidly and global. Both old and young are passionate about acquiring programming skills in Japan, too. On the other hand, some students majoring in computer science have a certain number of students who dislikes programming. The percentage of students who are feeling hate about programming are 25% in elementary courses of first year, in department of computer science in our University. To make matters worse, the more they learn programming, the more become dislike of programming. It is not easy for such students to keep learning programming.

As a cause of this, we can think of various things. In this research, we focused on the following two. (1) Just by copying and pasting someone's program, they can complete programming exercises. (2) Because they are not used to the keyboard, the typing speed is very slow, they cannot listen to the teacher's explanation.

Based on these, we develop a role-playing game as one of programming learning tools for students who have consciousness of programming difficulties. In this presentation, we mainly report on the following things: (1) Characteristics of our educational game, (2) Results of case studies.

Keywords: Edutainment, Programming Education, Mastery Of Programming Skill
A Comparison Of Stock Returns For Banks And Business Development Companies

Jimmy D. Moss, Lamar University, USA
Gisele J. Moss, Lamar University, USA

ABSTRACT

The purpose of this study is to develop regression models to explain the stock returns for both commercial banks and business development companies (BDCs). We then compare and contrast the two models to determine similarities and differences. A sample of week ending values of an index of BDCs and another for commercial banks are used as proxies for the two industries. The weekly closing interest rates for the 13-week Treasury bill, 2-year Treasury note, 5-year Treasury note, 10-year Treasury bond, the 30-year Treasury bond, a measure of the yield curve, an index for junk bonds, and the SP500 stock index are used in the study. Data is taken from February 2013 through November 2017. Therefore, a total of approximately 247 cases of weekly observations are included in the study. All variables are converted to a stationary series by taking first differences of the prices of each series. This step is necessary because regression techniques assume a normal distribution of the data. Descriptive statistics and correlation coefficients were run first. Multiple linear regression techniques were then used to find the variables that best explain the bank and the BDC indices. A stepwise procedure was used to identify those variables with the strongest relationships in a multi-variable equation. The results of the study help to fill a gap in the literature for BDCs and have practical implications for investors and for BDC managers.
The Effects Of Goal Clarity And Goal Commitment On The Assurance Of Learning In The Business Strategy Game

Brad Mayer, Lamar University, USA
Kathleen Dale, Minnesota State University, USA
Marilyn L. Fox, Minnesota State University, USA

ABSTRACT

This study investigates the effects of goal clarity and goal commitment on various assurance of learning outcomes in student teams tasked with running a simulated company. The results of this study support past research that suggests that the success of a student’s strategy in simulations requires an understanding of the various strategic options necessary to achieve a desired performance outcome (Cadotte, 1995). The results of this research will help to identify how student engagement in goal setting may lead to more effective student performance within a business simulation. It may also unlock the potential for simulation learning as a transferable skill in the workplace. The framework for this research uses the Business Strategy Game, (Thompson, Stappenbeck, Reidenbach, & Thrasher, 2013) but it may also be applied to other business simulations and/or learning environments.

Like great companies, student teams involved in a business simulation can execute strategy more effectively by setting up a process within their team that focuses on setting clear objectives. John Kotter of Harvard Business School states that managers who get results have two things in common: (1) they focus on a few clear goals, and (2) they keep their team engaged by consistent evaluation and measurement (Kotter, 2008). Student teams working on a business simulation or other learning environments can only achieve extraordinary results when they are clear about their core goals.

Since each decision year represents one week, students should set a Wildly Important Goal that will help them perform in their business simulation on a weekly basis. Students often struggle in identifying how to deliver a single “from X to Y by When” goal when faced with a complex business scenario. Even if student teams are clear on their performance outcomes, they may get limited buy-in from the other members of their team. However, teams that have both goal clarity and commitment tend to have higher assurance of learning scores in many areas within the Business Strategy Game.
The Effects Of Tensions On The Rate Of Social Goal Attainment Within Social Enterprises
Dr. Chi-Shiu Lai, National Yunlin University of Science and Technology
Dr. Chin-Fang Yang, Da-Yeh University, Taiwan
Yen-Chih Pan, Hsiuping University of Science and Technology, Taiwan

ABSTRACT
This study adopts questionnaire survey to explore the tensions problems of Taiwan social enterprises, conduct differentiation analysis of tensions and try to understand the relationships between tensions and rate of social goal attainment. Concerning the differentiation analysis on tensions within social enterprises, enterprises with high annual turnover consider tensions problems more serious than those with low annual turnover do, female respondents regard tensions problems more serious than male ones do, and respondents with high job tenure regard tensions problems more serious than those with low job tenure. As for the relationship between tensions within social enterprises and the rate of social goal attainment, this study finds that performing tensions and the rate of social goal attainment is negatively related, while organizing tensions and the rate of social goal attainment is positively related. However, belonging tensions and learning tensions have no significant relationships with the rate of social goal attainment. Based on the results, the study provides management implications and recommendations for future research. The results provide social enterprises in Taiwan to understand and manage the tensions problems to achieve multiple objectives for creating a better society.

Keywords: Social Enterprises, Performing Tensions, Organizing Tensions, Belonging Tensions, Learning Tensions

1. INTRODUCTION
In recent years, studies on social enterprise are dramatically increasing. Numerous academic activities and scholars are working on issues around this topic, such as conferences (NYU Annual Social Entrepreneurship Conference), special issue (Academy of Management Learning and Education, 2012; Journal of Business, 2012), and exclusive periodicals like Journal of Social Entrepreneurship first published in 2010. Results from these studies provide theoretical foundation for succeeding studies, and present more consistent viewpoints on the definition of social enterprise.

However, what is a social enterprise? The social enterprise is an innovative form of organizations, which adopt profit-seeking and financially sustainable model to address social and environmental problems (Battilana & Lee, 2014; Dees, 2007). For instances, Muhammad Yunus founded the Grameen Bank, a microcredit bank, to help the poor to get rid of poverty. Aurora Social Enterprise is the first enterprise officially registered as a social enterprise in the Department of Commerce, MOEA, Taiwan. Either Grameen Bank or Aurora makes a successful case. Nevertheless, tensions generated by the mixture of social and commercial goals become a double-edge sword. On one hand, these tensions stimulate innovative solutions, promoting long-term sustainability; on the other hand, tensions may lead to detrimental conflicts, and finally force these enterprises to stop operation. Therefore, solutions to tensions encountered by social enterprises deserve further considerations.

What tensions problems are confronted by social enterprises? Smith, Gonin, & Besharov (2013) conduct literature review and explorations on tensions issues, and divided tensions into performing tensions, organizing tensions, belonging tensions, and learning tensions, based on categorization proposed by Smith & Lewis (2011). In addition, the study refers to institutional theory, organizational identity, stakeholder theory and paradox theory to investigate previous studies and give advice for future research. Doherty, Haugh, & Lyon (2014) regards social
enterprise as a hybrid organization and carries out literature review and discussions, especially on issues regarding mission, financial resources, and human resources before they present results of social enterprise tensions and suggestions for future research.

To sum up, many researchers have been attentive to issues regarding tensions within social enterprises. However, the related research is lack in Taiwan. This study adopts questionnaires to explore the current situation of tension in Taiwan's social enterprises, compares perspectives of tensions among different enterprises and individuals, and finally understands how tensions relates to the rate of social goal attainment by social enterprises. Thus, this study expects to help enterprises understand tension issues, fulfill multiple purposes, and eventually create a better world.

2. LITERATURE REVIEW

2.1 Tensions within Social Enterprises

Di Domenico, Haugh, & Tracey (2010) defines social enterprises as which can achieve specific social goals through selling products and/or services, and accomplish financial sustainability without government fund or other grants. Social enterprises do not pursue profits like profit-seeking businesses, but also achieve social goals like non-profit organizations. Thus, social enterprises have dual goals: financial goal and social goal.

Dees (1998, p. 57) stresses “new sources of revenue can pull an organization away from its original social mission,” implying that tensions shows up when non-profit organizations adopt market strategies. Margolis & Walsh (2003) uses “tension” precisely to specify the relationship created by social and economic goals. Dacin, Dacin, & Matear (2010) suggests that this field of social studies can be examined by institutional theory, especially conflicting logics. Other studies use case studies to explain tensions evoked by contradictory goals, for example, the study on British social enterprise Aspire (Teasdale, 2010), or that on American social enterprise DePaul (Dorado & Shaffer, 2011).

Organizational theory indicates that even though social enterprises can produce social and economic values simultaneously, it is still yet uncertain whether they are commercial organizations or philanthropic ones. In a nutshell, these theories all come to the same conclusion that because they are in an unusual position, social enterprises are continuously encountered by particular tensions from either inside or outside. Recently, empirical research has partially identified the existing challenges of social enterprises, but little attention is paid to substantial solutions to these challenges.

2.2 Categories of Tensions within Social Enterprises

Smith & Lewis (2011) conduct literature review of tensions with social enterprises, and divide tensions into performing tensions, organizing tensions, belonging tensions, and learning tensions. Battilana & Lee (2014) investigate hybrid organizations, and divide the tensions within social enterprises into internal tensions and external ones. The current study conducts measurement and investigations based on categorization of Smith & Lewis (2011), and discussions on different tensions being provided as follows. Performing tensions refer to that generated between different results such as goals and stakeholders. How can success be defined among different goals by organizations and leaders, especially when one event is success in one field, but seen as failure in another? For instance, when Jay (2013) conducts an analysis on Cambridge Energy Alliance, certain index is regarded successful in measuring social mission, but considered harmful to financial goals. Organizing tensions refer to that caused by internal dynamics, including structure, culture, practice, and procedure. For example, should organizations hire disadvantaged minorities with limited abilities to achieve social mission or should they hire more capable employees to achieve economic goals? In pursuit of social and financial goals, social enterprises must decide upon which organizational structure they should adopt, i.e., non-profit organizational form or pro-profit form (Battilana, Lee, Walker, & Dorsey, 2012). To solve the dilemma, some enterprises established two different organizations (Bromberger, 2011), while others adopt hybrid organizational form (Battilana et al., 2012). Belonging tensions refer to that generated from diverse identities among sub-groups or that exists between sub-groups and the entire organization. Some stakeholders prefer to fulfill social missions, for example, sponsors or foundations. Other stakeholders prefer to pursue commercial benefits, for example investors and suppliers. Therefore, how can social enterprises tackle identity issues by serving the interests of diverse
stakeholders? Learning tensions refer to a long-term tension caused by organization growth and escalation. Social goals require longer span of time to fulfill, while financial goals are expected to be done as soon as possible. Therefore, how can social enterprises reach short-term and long-term goals at the same time? Moreover, structural expansion in order to increase influence on social mission may jeopardize the achievement of social mission (Dees, Anderson, & Wei-Skillern, 2004), which may be compromised due to structural expansion.

3. RESEARCH METHODS

3.1 Subjects and Data Collection

This study investigates tensions issues around social enterprises, collecting data for further analysis by issuing questionnaires to respondents, who are constituted by social entrepreneurs, their employees or volunteers. First, research staff of this study searches online for potential respondents on network platforms, such as Social Enterprise Insights, Taiwan NPO Self-Regulation Alliances, International Entrepreneur Initiative Taiwan, Social Enterprise Development Association, and official websites of other social enterprises. Second, research staff telephone potential respondents if they are willing to take the survey before research group send out questionnaires, which the respondents have been asked either to mail back the attached files or to complete the questionnaire via google forms. Each returned questionnaire is attached with consent form. Next, research staff ask experts and friends in the industry to find qualified respondents via snowball sampling. Finally, 51 copies of questionnaire are collected.

The sample is composed of 24 males (47.1%) and 27 females (52.9%). As for age distribution, the largest age group is 31-40 years old with 23 respondents accounting for 45.1% of the sample, 11 respondents, or 21.6% of the sample, aged 41 through 50, and 7 respondents, that’s 13.7% of the sample, aged 51 through 60. Basically, this sample is mostly constituted by young and middle-aged respondents. For education, 26 respondents have college or junior college degrees, accounting for 50.9% of the sample, 19 respondents having master degrees for 37.3%, and 3 respondents having doctoral degrees. Education level for the sample is high. As for the hierarchical position, 23 of the respondents are responsible persons or founders of the companies, accounting for 45.1% of the sample; 15 respondents are paid management, or 29.4% of the sample; 12 respondents are paid employees, or 23.5% of the sample. As for seniority, 13 respondents (25.5%) have less than 2 years in the present company, another 13 have job tenure between 3 and 4 years, and 12 respondents have job tenure of above 11 years in the present company, accounting for 23.5% of the sample. Regarding the seniority in the social enterprise sector, 16 respondents, or 31.4% of the sample, have job experience less than 2 years; 10 respondents have more than 11 years of job experience in this sector, that’s 19.6% of the sample; 9 respondents, 17.6% of the sample, have job experience of 3-4 years. Thus, it can be seen from this data that most of the social enterprise personnel has relatively little work experience with only a few exceptions. 27 respondents (52.9% of the sample) have volunteering experience, averaging 2.80 years.

3.2 Questionnaire Design

Each questionnaire for this study is composed of three parts. The first part is about an overview of social enterprises. For this part, questionnaire refers to that proposed by Huang & Huang (2015) with items including date of establishment, number of employees, background of establishment, type of organization, goals of establishment, objects to help, need for assistance in terms of operation capacity, major challenges, main source of revenue, annual turnover, and rate of goal attainment. The second part is about tensions encountered by social enterprises. This study consults categorization proposed by Smith & Lewis (2011), and divide tensions into performing tensions, organizing tensions, belonging tensions, and learning tensions. After examining results of the interviews, this study creates relevant question items, including 4 questions of performing tensions, 4 questions of organizing tensions, 5 questions of belonging tensions, and another 5 questions of learning tensions, totaling 18 items. The third part is about the personal data of respondents.
4. ANALYSIS RESULTS

4.1 Level of Tensions within Social Enterprises

This study investigates tensions encountered by social enterprises. In terms of mean, the highest tension is “Employees or volunteers in different fields have different organizational identity” in the belonging tension category, averaging 3.45. The second highest is in the performing tension category, including “It is extremely difficult for us to attain social and economic goals simultaneously” (3.33), and “The social purpose we pursue is different from that of profit-seeking enterprises, so it is difficult to measure whether we have achieved performance” (3.31). The other questions are “In order to attain government grants and other funding, our organization has to meet many requirements and limitations” (3.29) in the belonging tension category, “We are very disturbed about whether we should adopt centralized structure or power-sharing management” (3.27) and “When we are expanding, we will face with great challenges regarding operation model” (3.27) in the learning tension category. The above-mentioned question items are those with higher tension level.

Items of medium tension level include “Leaders feel very disturbed about simultaneously leading employees and volunteers with different goals.” (3.20) in the belonging category, “It is difficult to persist on the commitment to social causes for a long period of time” (3.18) in the performing tension category, “It is difficult to make decisions whether to pursue short-term financial performance or long-term social cause” (3.16) in the learning tension category, “It always takes higher costs to adapt disadvantaged groups to organizational culture” (3.14) in the organizing category, “Over time profit-seeking goals often outweigh social goals” (3.12) in the performing tension category, and “In the company, some staff identifies with social goals, while other identifies with profit-seeking goals, that’s why conflicts arise.” (3.10)

Items of lower tension levels include “Company feels disturbed if it should hire disadvantaged groups, or those with better skills” (3.06) and “Company offers disadvantaged groups job opportunities at the cost of work efficiency.” (3.04) in the organizing tension, “When the company expands, some factors like relationship with local communities, trust, and ideals of founders, are negatively affected.” (2.86) in the learning tension category, “The company feels disturbed when it has to satisfy different stakeholders like investors, donators, and employees.” (2.76) in the belonging tension category, and “When the organization is getting bigger in size, it is more difficult to achieve social goals.” (2.75) in learning tension category.

4.2 Differentiation Analysis on Tensions within Social Enterprises

In this section, this study explores differences of viewpoints on social enterprise tensions from the perspective of different enterprises and individuals. This study will have respective analysis on factors like annual turnover, gender, and job tenure in social enterprises.

5. DIFFERENTIATION ANALYSIS ON ANNUAL TURNOVER

Discovered from collected data, this study found that enterprises vary in size. Owing to limited number of collected questionnaires, this study divides enterprises into those (25 enterprises) of low annual turnover, which is under 5 million NT, and those (26 enterprises) of high annual turnover, which is over 5.01 million NT. The results show that “Over time profit-seeking goals often outweigh social goals” in the performing tension category reveals significant difference ($M_{low\ annual\ turnover} = 2.72$ vs. $M_{high\ annual\ turnover} = 3.50$; $t = -2.728, p<0.01$). Next, “When the organization is getting bigger in size, it is more difficult to achieve social goals” ($M_{low\ annual\ turnover} = 2.28$ vs. $M_{high\ annual\ turnover} = 3.19$; $t = -2.934, p<0.01$) and “When the company expands, some factors like relationship with local communities, trust, and ideals of founders, are negatively affected” in the learning tension category ($M_{low\ annual\ turnover} = 2.60$ vs. $M_{high\ annual\ turnover} = 3.12$; $t = -1.788, p<0.1$) also show significant difference. All these three items indicate that tension issues are more serious in enterprises of high annual turnover that in those of low annual turnover.
6. DIFFERENTIATION ANALYSIS ON GENDER

In the aspect of gender, among the respondents, 27 are female, 24 male. The results show that “Over time profit-seeking goals often outweigh social goals” in the performing tension reveals significant difference (M\text{female} = 3.54 vs. M\text{male} = 2.74; \( t = 2.863, p < 0.01 \)). Next, both “Employees or volunteers in different fields have different organizational identity” (M\text{female} = 3.71 vs. M\text{male} = 3.22; \( t = 1.862, p > 0.1 \)), and “Leaders feel very disturbed about simultaneously leading employees and volunteers with different goals.” in the belonging tension category (M\text{female} = 3.63 vs. M\text{male} = 2.81; \( t = 3.083, p < 0.01 \)) show significant differences. Finally, “When the organization is getting bigger in size, it is more difficult to achieve social goals” (M\text{female} = 3.17 vs. M\text{male} = 2.37; \( t = 2.484, p < 0.05 \)), “When the company expands, some factors like relationship with local communities, trust, and ideals of founders, are negatively affected” (M\text{female} = 3.33 vs. M\text{male} = 2.44; \( t = 3.272, p < 0.01 \)), and “When we are expanding, we will face with great challenges regarding operation model” (M\text{female} = 3.67 vs. M\text{male} = 2.93; \( t = 2.687, p < 0.05 \)) in learning tension category show significant differences. As far as these items are concerned, females think that tension problems are more serious than men do.

7. DIFFERENTIATION ANALYSIS ON JOB TENURE IN SOCIAL ENTERPRISES

As job tenure in social enterprises is concerned, this study categorizes respondents with job tenure under 2 years and those with job tenure between 3 and 4 years in the category of low job tenure. Thus, 25 respondents are in the category of low job tenure, 26 in that of high job tenure. The results show that “Over time profit-seeking goals often outweigh social goals” in the performing tension reveals significant difference (M\text{low job tenure} = 2.84 vs. M\text{high job tenure} = 3.38; \( t = -1.832, p < 0.1 \)). Next, “It always takes higher costs to adapt disadvantaged groups to organization culture.” (M\text{low job tenure} = 3.40 vs. M\text{high job tenure} = 2.88; \( t = 1.743, p < 0.1 \)) in the organizing tension reveals significant difference. Third, “Leaders feel very disturbed about simultaneously leading employees and volunteers with different goals.” (M\text{low job tenure} = 2.92 vs. M\text{high job tenure} = 3.46; \( t = -1.941, p < 0.1 \)) in the belonging tension reveals significant difference. Finally, “When we are expanding, we will face with great challenges regarding operation model” (M\text{low job tenure} = 3.00 vs. M\text{high job tenure} = 3.54; \( t = -1.852, p < 0.1 \)) show significant differences. Except for organizing tension, the other three items indicate that respondents with high job tenure regard tension problems more serious than those with low job tenure.

7.1 Relationship between Tensions and Rate of Social Goal Attainment

This study conducts regression analysis on the relationship between tensions and the rate of social goal attainment, with gender and social job tenure as control variables. The result indicates that performing tension and the rate of social goal attainment is negatively related (β = -0.404, \( t = -2.102, p < 0.05 \)); that is, higher performing tension will jeopardize the attainment of social enterprise goals. In contrast, organizing tensions and the rate of social goal attainment is positively related (β = 0.509, \( t = 3.134, p < 0.01 \)), indicating that higher organizing tension leads to higher rate of social goal attainment. The phenomenon is worth further discussion. Belonging (β = -0.208, \( t = -1.138, p = 0.262 \)) and learning tensions (β = -0.241, \( t = -1.106, p = 0.275 \)) have no significant relationship with the rate of goal attainment, but both in negative direction.

8. CONCLUSION AND SUGGESTION

8.1 Conclusion

This study finds that of all the personnel in Taiwan-based social enterprises, females are more than males, and most of the respondents are young or middle-aged, highly-educated, but have less experience in the social enterprise. As for the general situation of social enterprises, most of them are still young, mainly under 3 years of establishment. As the number of employee is concerned, most of the social enterprises are small-medium in size, and newly-founded, and most are incorporations in terms of organization type. Enterprises are primarily founded to achieve goals such as providing job opportunities, helping disadvantaged groups, and protecting environment. For those who are committed to helping disadvantaged groups, their objects are chiefly composed of the mentally retarded, the senior, children, and juvenile. Most of the enterprises are in need of marketing skills and creativity development when they need assistance in operation. The major challenges the enterprises confront are the public lack of understanding of social enterprises.
and limited market scale. The major value for social enterprises come from profit-seeking revenue, but low in annual turnover. The self-assessed rate of social goal attainment averaged 6.96 points, which require more growth.

As for tension within social enterprises, each category of social tension has items of higher values, among which the highest is “Employees or volunteers in different fields have different organizational identity” in the belonging tension category. The second highest are items of performing tension, including “It is extremely difficult for us to attain social and economic goals simultaneously” and “The social purpose we pursue is different from that of profit-seeking enterprises, so it is difficult to measure whether we have achieved performance.” Then, the items are composed of “In order to attain government grants and other funding, our organization has to meet many requirements and limitations” in the belonging tension, “We are very disturbed about whether we should establish separate organizations for social purpose or commercial purpose or be integrated into a hybrid one” in the organizing tension, and “We are disturbed about whether we should adopt centralized structure or power-sharing management when it comes to corporate governance,” and “When we are expanding, we will face with great challenges regarding operation model” in the learning tension category.

Concerning the differentiation analysis on tensions within social enterprises, enterprises with high annual turnover consider tensions problems more serious than those with low annual turnover do, female respondents regard tension problems more serious than male ones do, and respondents with high job tenure regard tension problems more serious than those with low job tenure. In terms of turnover, high turnover may hint larger scale of enterprises, so learning tension and performing tension are gradually standing out. As job tenure in social enterprises is concerned, high job tenure implies rich experience, which lead to more sensitivity of tension problems. However, those respondents with low job tenure are more sensitive to the item “It always takes higher costs to adapt disadvantaged groups to organization culture.” The tendency is probably more obvious in the initial phase, while in the long run enterprises must have creative measures to help the disadvantaged groups to adapt to organizational culture; that’s why the senior employees have become unaffected by this problem. Finally, the reason why females regard tensions problems more serious than males do cannot be explained by now. The question needs further examination.

As for the relationship between tensions within social enterprises and rate of social goal attainment, this study finds that performing tension and rate of social goal attainment are negatively related, while organizing tension and the rate of social goal attainment are positively related. According to the perspective of institutional theory, organizations have to meet conflicting institutional demands (Pache & Santos, 2010); therefore, one of the challenges social enterprises have to encounter is the concurrent commitment to social missions and commercial profits, which evokes performing tension and has a negative impact on the attainment of social goals. However, why does organizing tension have a positive relationship with the rate of social goal attainment? In comparison with other organizational theories which stress maximization of stakeholders’ demand and profits, the stakeholder theory advocates that organization is actually working in a bigger ecological system, and has to shoulder responsibility for the system (Donaldson & Preston, 1995; Freeman, 1984). Organizing tension is related to stakeholder theory in that tension arises when the organization has to decide on whether to achieve social goal by hiring disadvantaged group with limited abilities or to attain economic goals by hiring more competent employees. Since many Taiwan-based social enterprises are founded with goals to help disadvantaged groups (27, 52.9%), when encountered with tension, these enterprises are more likely to come up with creative operation models for the disadvantaged groups and attain their goals to help.

Why learning tension reveals no significant relationship may be elucidated by the fact that many Taiwan-based social enterprises are still in their embryonic stage, so they are still not encountered by the problem, which shows no significant relationship. However, the whole picture still requires further investigation. Belonging tension shows not significant relationship, either. Many scholars on organizational identity assert that different identities at the same time will give rise to conflicts and controversies among conflicting sub-groups inside the organization (Glynn, 2000; Golden-Biddle & Rao, 1997), and undermine organizational performance (Voss, Cable, & Voss, 2008). This perspective is also worth further investigation.

8.2 Managerial Implications

This study finds that most Taiwan-based social enterprises are small or medium in size, and mostly are newly founded. What these enterprises need are marketing skills and creativity development; thus, we suggest that schools
or education unites devise techniques to cooperate with social enterprises, to provide appropriate training regarding pertinent skills, and to develop into entrepreneurs applicable abilities.

Concerning the major challenges the social enterprises may come across, most of them are due to the lack of public understanding of social enterprises and limited market scale. This study considers these two causes inter-related in that when the society knows better about social enterprises, products and service of the social enterprises are more acceptable to the public, and the market size is accordingly expanded. Thus, this study suggests that industries, public sector, and academic organizations work together to create suitable platforms to offer opportunities for the public to understand social enterprises and feel happy to join in their activities. Meanwhile, this study also finds that the item “In order to attain government grants and other funding, our organization has to meet many requirements and limitations” in the belonging tension category is highly approved by respondents. Therefore, whether they are government agencies or other funding organizations, they should have better understanding of social enterprises and remove unnecessary limitations.

Concerning the differentiation analysis, enterprises with high annual turnover consider tension problems more serious than those with low annual turnover do. This finding requires more attention from social enterprises because as the organization is getting bigger, learning tension and performing tension are showing up and ask for swift reaction. We suggest that social enterprises regularly investigate if the tension problem related to employees or stakeholders has occurred, and consult pertinent cases for potential solutions.

As for the relationship between tensions within social enterprises and the rate of social goal attainment, performing tension and the rate of social goal attainment are negatively related; thus, enterprises are suggested to pay more attention to issues concerning performing tension, especially about those items “It is extremely difficult for us to attain social and economic goals simultaneously” and “The social purpose we pursue is different from that of profit-seeking enterprises, so it is difficult to measure whether we have achieved performance,” because these two items have higher scores. As for cooperation between industries and academic organizations, we suggest these sectors collaborate to construct measurement scale to assess performance of social enterprises. This study also suggests that enterprise refers to experiences and cases in other countries to formulate creative models for social enterprises, to alleviate tension problems surrounding social goals and economic goals.

8.3 Research Limitations and Suggestions for Future Research

Most of the previous studies adopt case study or qualitative approach instead of the questionnaire survey. With the trend of increasing social enterprises, the questionnaire approach is more suitable for a mass survey. Unfortunately, there is no comprehensive data of enterprises, so this study searches for enterprise information via web search and friends by snowball sampling. But, since the size of sample is limited, results from relevant analysis are limited in applied statistics. This study suggests that industries, public sectors, and academic sectors collaborate to create more comprehensive basic data of social enterprises for questionnaire survey. Next, this study finds that female perceive more tension than males; thus, this study suggests that future study can focus on gender’s role in social tension. Finally, this study finds that organizing tension and rate of goal attainment are positively related, while belonging tension and learning tension have no significant relationship with the rate of social goal attainment; therefore, this study suggests that given sufficient size of sample, future research can investigate whether moderating factors, i.e., the scale of organization, life span of the organization, exist to understand the roles that each tension plays in social enterprises.

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Defining And Measuring The High Performance Organization
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INTRODUCTION

Since the publication of the seminal work ‘In Search of Excellence’ (Peters and Waterman, 1982) organizations have been interested in becoming a high performance organization (HPO). This interest became even fiercer after the phenomenal success of the books ‘Built to Last’ (Collins and Porras, 1994) and ‘Good to Great’ (Collins, 2001), the increasing globalization and accompanying intense competition, and the economic recessions (caused by the IT bubble bursting at the beginning of this century, and the financial scandals at the end of the first decade of the 21st century). Managers were looking for techniques to strengthen their organization in a way that it could not only cope with these developments and threats, but could also quickly take advantage of opportunities and thus grow and thrive. The academic and especially the practitioner fields reacted on this ‘thirst for high performance knowledge’ with a plethora of books and articles on the topic of HPOs. These publications each came with their own description of an HPO, such as an HPO: achieves growth rates that are higher than those of the peer group over a prolonged period of time (Collins and Porras, 1997; Wiersma, 2001; Barchiesi and La Bella, 2014; Barnett, 2014); shows the ability to react and adapt to changes quickly (Quinn et al., 2000; Weick and Sutcliffe, 2001); shows a long-term orientation (Miller and Breton-Miller, 2005; Light, 2005); has integrated management processes (i.e. strategy, structure, processes and people are aligned throughout the organization) (Kirkman et al., 1999; O’Reilly and Pfeffer, 2000); and has great working conditions and development opportunities for the workforce (Kling, 1995; Lawler et al., 1998; Underwood, 2004). As researchers approach the topic of HPO from different backgrounds and angles and with different goals, it comes as no surprise that there is no univocal definition of the HPO. However, if such a definition is not available then the construct of the HPO cannot be operationalized in measures with which an organization can be properly measured and subsequently transformed into an HPO. This is unfortunate because HPOs in today’s fierce competitive world are considered to be ‘guiding lights’ as they are the example of how to manage and operate an organization in such a way that it creates the most added value for their stakeholders. It is also unfortunate because the lack of definition and proper measurement means that organizations can be ‘mislead’ in their efforts to become HPO by following ideas, so-called best practices and advices which turn out to be ineffective and sometimes even damaging. This is illustrated by the fact that we have seen organizations that, although they were designated to be HPOs in the well-known books ‘In Search of Excellence’ (Peters and Waterman, 1982) and ‘Good to Great’ (Collins, 2001), fail in the mid or short term: many of these organizations ran into serious economic trouble shortly after publication of the books they were profiled in and some did not even survive (Kirkby, 2005). Subsequently, researchers have shown that the criteria the authors of these books used to define and measure the HPO and on the basis of which they designated organizations to be high performing were not adequate and accurate (Niendorf and Beck, 2008; Resnick and Smunt, 2008; Raynor et al., 2009). Therefore, in this article – based on a review of the HPO literature - we attempt to answer the following research question: How can an HPO be defined and measured? We do not focus on the high performance individual or high performance team, our scope is strictly the organization. With the answer on our research question we aim to fill the current gap in the definition and measurement literature on HPOs and thus hope to move the research into HPOs forward.

The remainder of this article is structured as follows. In the next section we describe our research approach, i.e. the literature review, and the results of this review. We then synthesize our findings into a proposal how to define and measure an HPO. The article ends with a conclusion, limitations of the research and future research opportunities.

RESEARCH APPROACH AND RESULTS

We started the research with an extensive literature search. The criteria for including studies in our literature review were: (1) The study was aimed specifically at identifying characteristics of a HPO, i.e. applied a holistic view on the organization, its performance and its causes; (2) The study consisted of either a survey with a sufficient large number
of respondents so that its results could be assumed to be (fairly) generic, or of in-depth case studies of several companies so the results were at least valid for more than one organization. The study preferably contained more than one industry in more than one country because multiple industries, sectors and countries provide a broader base of knowledge; (3) The study employed triangulation by using more than one research method (i.e. a questionnaire and interviews); and (4) The written documentation contained an account and justification of the research method, research approach and selection of the research population, a clear analysis, and clear retraceable conclusions and results. This way the quality of the research method could be assessed. For the literature search, the Business Source premier, Emerald and Science Direct databases were reviewed, and Google was also used to look for relevant sources. In addition, books were reviewed, most of these from the business and management fields. As search words we used: the accountable organization, the adaptive enterprise, the agile corporation, the flexible organization, the high performance organization, HPO, the high performance work organization, the high-performance work system, the high reliability organization, the intelligent enterprise, the real-time enterprise, the resilient organization, the responsive organization, the robust organization, and the sustainable organization. Based on the four search criteria, the literature search yielded 487 studies over the period 1966 - 2014 which satisfied the criteria completely or partly. For the purpose of answering our research question we limited ourselves to the studies that satisfied all four criteria, which were 42 studies.

These 42 studies were summarized by the author and two additional persons, so in total three researchers. This summary contained, where available, a definition of a high performance organization, the ways to measure high organizational performance, the results an HPO achieves, and the characteristics which make up an HPO. No further evaluation of the content quality of the studies themselves was undertaken because we conducted a descriptive review, not a systematic review. For the purpose of the research described in this paper we focus on the definition and measurements, which are given in Appendix 1.

ANALYSIS

From the literature review it is notable that in 33,3 percent of the studies the high performance organization is not defined at all, which might be seen as an indication of the difficulty to describe this construct (and at the same time the urgent need to define it). In the majority of the studies which do define HPO the construct is defined in terms of a comparison to competitors in the peer group (26,2 percent) which makes sense as a comparison has to take place otherwise how can we be sure that we are dealing with high performance (Collins, Kaynak & Hartley, Keller & Price, McFarland, McKiernan & Purg, Navarro, Samson & Challis, Simon, Underwood, Van den Berg & De Vries, Van der Zwan). From the remaining definitions 21,5 percent are drafted in terms of what an HPO does not so much what it is (Crutchfield et al., Foster & Kaplan, Gupta, Kling, Lawler et al., Light, Miller & Le Breton-Miller, O’Regan & Ghobadian, Wiersma). This basically renders these definitions useless as the sources of high performance are not the same as the nature of high performance (Sigalas and Pekka Economou, 2013). In 9,5 percent of definitions a time indication is given or implied in the definition, i.e. that high performance is about long-term sustainability (Collins & Hansen, Collins & Porras, Mason & Brown, Park et al.). Finally, 9,5 percent of definitions can be seen as basically meaningless as the authors define an HPO in terms of their own model (Hope & Fraser, Jennings, Joyce et al., Rosen et al.). Thus, it seems to make sense to make the general definition of an HPO relative to its competitors and long-term of nature: A High Performance Organization is an organization that achieves results that are better than those of its peer group over a long period of time.

Appendix 1 shows that in the examined studies, competitive advantage is mainly measured with a three measurements: management/business practices and strategies applied by the organization (in 60,0 percent of the studies), financial indicators (46,7 percent) and non-financial indicators (31,1 percent). In 15,6 percent of the studies the HPO was measured by a plethora of measures, such as life-cycle data, national culture indicators, competing values framework, priorities & organizational values & principles, decisions rules applied and leadership factors. It is no wonder than that the sources from which the data for the measurements is derived are mainly the opinion of respondents (from surveys and/or interviews; 66,7 percent of the studies), information from company reports (31,1 percent) and (financial) databases (24,4 percent). In several studies alternative sources were used, such as expert opinion (8,9 percent), case study observations (8,9 percent) and others (literature review, financial indexes, 4,4 percent). Thus it seems that the main way to measure whether an organization is an HPO is by evaluating the management and business practices it applies, which is measured by a survey and/or interviews inquiring into the perception of respondents...
(often managers) of the effectiveness of their organizational practices and their organizational performance compared to those applied by the competition (Roberts and Dowling, 2002). This approach makes sense as the purest method of measuring high performance - comparing the performance of the organization on a limited set of selected practices against the performance of all the most important competitors on the same practices (Chandler and Hanks, 1993) - is often not feasible: information on the organizational practices of competitors might not be available in the public domain; competitors can describe their practices in a different way; the organization and its competitors might not be comparable; organizations might not want to disclose their practices; and in a large scale study it takes too much time and effort to collect all the required information (Dess and Robinson, 1984; Mansour et al., 2014). In addition, many studies have shown that the subjective measure of respondents’ perception of organizational practices and their resulting performance is a good proxy of real organizational performance as these studies found strong correlations between perceptual and objective performance data, i.e. the perception of respondents on how well their firm performed (measured in a subjective and relative way) was consistent with how the firm actually performed (Dess and Robinson, 1984; Geringer and Hebert, 1991; Bommer et al., 1995; Delaney and Huselid, 1996; Glaister and Buckley, 1998; Dawes, 1999; Deshpandé et al., 2004; Heap and Bolton, 2004; Murphy and Callaway, 2004; Wall et al., 2004; Jing and Avery, 2008; Vij and Bedi, 2016). This makes it possible for researchers to use subjective performance measures when access to objective performance data is restricted or collection of the information is just not feasible.

An added advantage of this is, as Newbert (2008) remarked, that any a priori assumptions on the part of the researcher regarding what ought to constitute an HPO in a specific context can be avoided by asking respondents to answer the question: “How did your organization perform compared to its competitors over the past five years: better, the same, or worse?”

CONCLUSION, LIMITATIONS AND FUTURE RESEARCH

In this paper we looked for an answer on the research question: How can an HPO be defined and measured? By looking at the literature on high performance organizations concept closely related to that of ‘high performance’, we were able to obtain a list of definitions and measurements for an HPO. The common denominator in these definitions and measurements turned out to be respondents given their opinion on the performance of their organizational practices and organizational performance vis-à-vis that of competitors. We concluded therefore that an HPO should be defined and measured relative to competitors and should be based on the perception of managers and employees of the organization. This is well possible because there is a strong correlation between the perception of people on performance and actual performance compared to competitors. To make the perception measurement of the HPO context independent, we proposed to ask the perception question in general terms and not ask for specific indicators. This way respondents will for themselves evaluate the performance of their organization against competitors on the various aspects and indicators important in their industry, and reach a verdict on the overall performance level of their organization against that of competitors.

There are several limitations to our research. Despite an extensive literature search it is possible that we have missed important and relevant literature sources which should have been included in the Appendix. Future research could cast its net even wider during a literature search to prevent omissions. Another limitation is that we have not checked our definition and proposed perceptual measurement with experts. Future research could do this, for instance through a Delphi approach. Future research should also check in practice whether our proposed definition and the measurement ‘fit’ actual HPOs.

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## APPENDIX 1
### OVERVIEW RESULTS LITERATURE REVIEW

<table>
<thead>
<tr>
<th>Author</th>
<th>Title</th>
<th>Year</th>
<th>Definition / description</th>
<th>Measured by</th>
<th>Source of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accenture</td>
<td>When good management shows</td>
<td>2002</td>
<td>Not given.</td>
<td>(a) Return on invested capital (b) Business strategies applied</td>
<td>(a) Value Line and Stern Stewart databases (b) Opinions of executives</td>
</tr>
<tr>
<td>Bailom, Matzler &amp; Tschemernjak</td>
<td>Enduring success</td>
<td>2007</td>
<td>Not given.</td>
<td>Financial indicators, market position, business strategies</td>
<td>(a) Company reports (b) Opinion of respondents</td>
</tr>
<tr>
<td>Bloom and Van Reenen</td>
<td>Measuring and exp-laining management practices across firms and countries</td>
<td>2006</td>
<td>Not given.</td>
<td>Management practices applied along three operations-focused dimensions: (1) performance monitoring, (2) target setting, and (3) incentives/people management</td>
<td>Opinion of respondents</td>
</tr>
<tr>
<td>Bloom, Genakos, Sadun &amp; van Reenen</td>
<td>Management practices across firms and countries</td>
<td>2012</td>
<td>Not given.</td>
<td>Management practices along three operations-focused dimensions: (1) performance monitoring, (2) target setting, and (3) incentives/people management</td>
<td>Opinion of respondents</td>
</tr>
<tr>
<td>Collins</td>
<td>Good to great</td>
<td>2001</td>
<td>A high performance organization is an organization that has at least a three times bigger cumulative stock return than the general market.</td>
<td>(a) Financial and operational indicators (b) Business practices applied</td>
<td>(a) Company reports (b) Opinion of respondents</td>
</tr>
<tr>
<td>Collins &amp; Hansen</td>
<td>Great by choice</td>
<td>2011</td>
<td>Companies that thrive in uncertainty and chaos.</td>
<td>(a) Stock returns (b) Life-cycle data (c) Business practices applied</td>
<td>Historical company chronologies</td>
</tr>
<tr>
<td>Collins &amp; Porras</td>
<td>Built to last</td>
<td>1994</td>
<td>An organization that has survived through the years, that has been resilient in bad times.</td>
<td>Business practices applied</td>
<td>(a) Expert/ &amp; respondents opinions (b) Company reports (c) Fin. databases</td>
</tr>
<tr>
<td>Crutchfield &amp; McLeod Grant</td>
<td>Forces for good</td>
<td>2008</td>
<td>Organizations that have a high and sustained social impact by influencing and transforming others in</td>
<td>(a) Sales growth (b) Business practices applied</td>
<td>(a) Opinion of respondents (b) Case</td>
</tr>
<tr>
<td>Author(s)</td>
<td>Title of the Study</td>
<td>Year</td>
<td>Methodology</td>
<td>Findings</td>
<td></td>
</tr>
<tr>
<td>---------------------------</td>
<td>----------------------------------------</td>
<td>------</td>
<td>----------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Deshpandé, Farley &amp; Webster</td>
<td>Triad lessons</td>
<td>2000</td>
<td>Not given.</td>
<td>Marketing and organizational culture indicators</td>
<td></td>
</tr>
<tr>
<td>Deshpandé, Farley &amp; Bowman</td>
<td>Tigers, dragons and others</td>
<td>2004</td>
<td>Not given.</td>
<td>Marketing, innovativeness and national culture related indicators</td>
<td></td>
</tr>
<tr>
<td>Foster &amp; Kaplan</td>
<td>Creative destruction</td>
<td>2001</td>
<td>A high performing organization is a company that has found the balance between creation and destruction, that matches its speed of change to the change level of the market it operates in, who involves employees and partners in the decision making processes, and lets go of conventional ideas about tight control without letting management slip.</td>
<td>Financial and other organizational data (no specification given)</td>
<td></td>
</tr>
<tr>
<td>Gupta</td>
<td>Cultural basis of high performance organizations</td>
<td>2011</td>
<td>In a high performance work organization the basic premise is to create an internal environment that supports customer needs and expectations.</td>
<td>Organizational and societal practices and values</td>
<td></td>
</tr>
<tr>
<td>Hope &amp; Fraser</td>
<td>Beyond budgeting</td>
<td>2003</td>
<td>It is an organization that implements the 12 beyond budgeting principles.</td>
<td>Management processes</td>
<td></td>
</tr>
<tr>
<td>Jennings</td>
<td>Less is more</td>
<td>2002</td>
<td>An organization that uses the ‘Less is More’ framework.</td>
<td>Productivity factors</td>
<td></td>
</tr>
<tr>
<td>Joyce, Nohria &amp; Roberson</td>
<td>What really works</td>
<td>2003</td>
<td>A Winner is a company that follows the 4+2 practices-formula.</td>
<td>Total return to shareholders</td>
<td></td>
</tr>
<tr>
<td>Kanter</td>
<td>Evolve!</td>
<td>2001</td>
<td>Not given.</td>
<td>E-culture practices applied</td>
<td></td>
</tr>
<tr>
<td>Kaynak &amp; Hartley</td>
<td>Exploring quality management practices and</td>
<td>2005</td>
<td>High performing high tech firms have implemented quality management more extensively in an</td>
<td>(a) Total inventory turnover, product quality, and sales growth (b) Quality</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Study observations</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>McKinsey Corporate Performance Database</td>
<td></td>
</tr>
<tr>
<td>Opinion of respondents</td>
<td></td>
</tr>
<tr>
<td>Opinion of respondents</td>
<td></td>
</tr>
<tr>
<td>Company information</td>
<td></td>
</tr>
<tr>
<td>Data on companies and management practices, from the Evergreen Project</td>
<td></td>
</tr>
<tr>
<td>(a) Opinions of respondents (b) Case study observations</td>
<td></td>
</tr>
<tr>
<td>Author(s)</td>
<td>Title</td>
</tr>
<tr>
<td>---------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Keller &amp; Price</td>
<td>Beyond performance</td>
</tr>
<tr>
<td>Kling</td>
<td>High performance work systems and firm performance</td>
</tr>
<tr>
<td>Lawler, Mohrman &amp; Ledford</td>
<td>Strategies for high performance organizations</td>
</tr>
<tr>
<td>Light</td>
<td>The four pillars of high performance</td>
</tr>
<tr>
<td>Mannion, Davies &amp; Marshall</td>
<td>Cultures for performance in healthcare</td>
</tr>
<tr>
<td>Author(s)</td>
<td>Title</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Mason & Brown                 | High growth firms in Scotland                                        | 2010 | Enterprises with average annualized growth in employees or turnover greater than 20 percent per annum, over a 3 year period, with more than 10 employees at the beginning of the observation.                                                                                                                                                                                                 | (a) Financial indicators  
(b) The activities, competences and history of the organization                      |
| McFarland                     | The breakthrough company                                             | 2008 | A high performance organization is an organization that has at least a three times bigger cumulative stock return than the general market.                                                                                                                                                                                                                                                                   | (a) Financial and operational indicators  
(b) Business practices applied                                                              |
| McKiernan & Purg              | Hidden champions in CEE and Turkey                                   | 2013 | A ‘hidden champion’ is number 1, 2 or 3 in the global market, or number 1 on its continent, in terms of market share; has revenue below $4 billion; and has a low level of public awareness.                                                                                                                                                                                                 | (a) Financial indicators  
(b) Competitive practices of the organization                                               |
| Miller & Le Breton-Miller     | Managing for the long run                                            | 2005 | A high performing family controlled business is managing not for the short-term profits but for the very long-term market success and for the benefit of all organizational stakeholders.                                                                                                                                                                                                                                                                         | Priorities and philosophies applied in the organization                                  |
| Navarro                       | Always a winner                                                     | 2009 | An ‘Always a winner’ organization is an organization that performs better than competitors in all phases of the economic cycle.                                                                                                                                                                                                                                                                   | Stock price performance  
Data from the S&P 500 index                                                                  |
| O’Regan & Ghobadian           | Drivers of performance in small- and medium-sized firms, an empirical study | 2004 | High performing firms are firms that give a greater degree of emphasis to the attributes of culture, leadership and strategic planning associated with the performance criteria, compared with low performance firms.                                                                                                                                                                                                 | Strategic planning, strategic leadership and organizational culture variables          |
| Park, Zhou & Ungson           | Rough diamonds                                                      | 2013 | ‘Rough diamonds’ are exemplary breakout firms that are capitalizing on the (a) Financial and operational indicators  
(b) Business practices                                                                  | (a) Business reports (b) Opinion of respondents                                            |
<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Title</th>
<th>Year</th>
<th>Citation</th>
<th>Methodology</th>
<th>Data Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raynor &amp; Ahmed</td>
<td>The three rules</td>
<td>2013</td>
<td>Not given.</td>
<td>Decision rules applied by organizations (i.e. how these companies think)</td>
<td>Compustat data with 'company observations'</td>
</tr>
<tr>
<td>Rosen, Digh, Singer &amp; Phillips</td>
<td>Global literacies</td>
<td>2000</td>
<td></td>
<td>Characteristics most common to successful global leaders, and leadership factors</td>
<td>Opinion of respondents</td>
</tr>
<tr>
<td>Samson &amp; Challis</td>
<td>Patterns of excellence</td>
<td>1999</td>
<td></td>
<td>Management principles applied</td>
<td>Opinion of respondents</td>
</tr>
<tr>
<td>Simon</td>
<td>Hidden champions</td>
<td>1996</td>
<td></td>
<td>(a) Financial indicators (b) Competitive practices of the organization</td>
<td>(a) Financial reports (b) Opinion of respondents</td>
</tr>
<tr>
<td>Stadler</td>
<td>The 4 principles of enduring success</td>
<td>2007</td>
<td>Not given.</td>
<td>(a) Total shareholder return (b) business strategies</td>
<td>(a) Financial databases (b) Company reports (c) Opinion of respondents</td>
</tr>
<tr>
<td>Sull &amp; Escobari</td>
<td>Success against the odds</td>
<td>2005</td>
<td>Not given.</td>
<td>Operating and financial variables</td>
<td>(a) Financial databases (b) Expert opinion (c) Opinion of respondents</td>
</tr>
<tr>
<td>Sull &amp; Wang</td>
<td>Made in China</td>
<td>2005</td>
<td>Not given.</td>
<td>(a) Financial data (b) Expert opinion</td>
<td>(a) Company information (b) Opinion of experts</td>
</tr>
<tr>
<td>Underwood</td>
<td>What's your corporate IQ?</td>
<td>2004</td>
<td></td>
<td>‘Smart companies’ are different from their counter-parts because they</td>
<td>17 variables that measure organizational behavior (in the areas)</td>
</tr>
<tr>
<td>Authors</td>
<td>Title</td>
<td>Year</td>
<td>Description</td>
<td>Sources</td>
<td></td>
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<td>--------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Van den Berg &amp; De Vries</td>
<td>High performing organizations</td>
<td>2004</td>
<td>It is an organization that outperforms its competitors, because it has established a superior organizational climate. It is an organization that produces fast and durable results, without making concessions to quality and trustworthiness.</td>
<td>42 items which have to do with purposeful decision-making and handling of an organization</td>
<td></td>
</tr>
<tr>
<td>van der Zwan</td>
<td>Koplopers en achterblijvers in de bedrijvenwereld</td>
<td>1987</td>
<td>Organizations that have better investment policies than other organizations in their industry.</td>
<td>Cash flow generation (a) Financial reports (b) Opinion of experts (Delphi method)</td>
<td></td>
</tr>
<tr>
<td>Varadarajan &amp; Ramanujam</td>
<td>The corporate performance conundrum</td>
<td>1990</td>
<td>Not given.</td>
<td>Key strategic and organizational factors (Articles on the companies)</td>
<td></td>
</tr>
<tr>
<td>Wiersma</td>
<td>The new market leaders</td>
<td>2001</td>
<td>It is a company that tries to serve all customers in the market and does not hold back on any methods.</td>
<td>(a) Financial and market indicators (b) business practices Sales-Growth Index and Market-Value Index</td>
<td></td>
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<tr>
<td>Wolf</td>
<td>Transcending paradox</td>
<td>2009</td>
<td>Not given.</td>
<td>(a) Employee engagement, patient satisfaction, employee turnover, internal productivity measures, and superior performance in both financial and quality outcomes (b) Business practices applied Case study observations</td>
<td></td>
</tr>
</tbody>
</table>
A Study On Teacher’s Perception Of Character And Character Education In Early Childhood Through Metaphor Analysis

Hea Ik Hwang, Pusan National University, South Korea
Reena Park, Pusan National University, South Korea

ABSTRACT

Currently, character education in Korea is compulsory, and it is also emphasized legally beyond the curriculum. It is important to explore what young children’s character and how it is perceived by teachers who conduct character education in the field of early childhood education. Therefore, in this study, we explore what the character of young children is and how the character education in early childhood tends to be. Metaphor analysis will be used for this purpose. In this study, we chose a teacher who was responsible for toddlers, ages 3 to 5 years of age, distributed questionnaires to 100 teachers sampled arbitrarily in Korea, and withdrew the questionnaire in question 86. The questionnaire was constructed to complete the blank in two sentences that ‘young children character is ~’, ‘character education in early childhood is ~’. The answer to the reclaimed questionnaire was analyzed in 6 stages; naming and labeling - sorting - deciding the unit of analysis - categorization - establishing the inter-rater reliability rate - analyzing date quantitatively by referring to other antecedent studies, focusing on the procedure of Moser (2000). The study explored teachers’ perception through analyzing the metaphor of character and character education in early childhood. As a result, the character of young children has been recognized as being 8 types; ‘starting point of development and human growth’, ‘changes depending on the environment’, ‘requiring continuous management’, ‘as an ideal character’, ‘Changeable’, ‘Represents’, ‘the young child-self’, ‘basis of society’, ‘as a necessary virtue, and the character education in early childhood has been recognized as being 8 types; ‘necessary education for human life’, ‘starting point and future’, ‘education through modeling’, ‘teaches the direction of life’, ‘naturally occurring education in everyday life’, ‘requiring individual support requiring a lot of effort’, ‘needs to be repeated and be continued’.

Keywords: Character of Young Children, Character Education In Early Childhood, Metaphor Analysis
Impacting Women In Computer Science At Undergraduate Institutions: Engagement Research And Mentoring The Keys
Joan E. DeBello, St. John’s University, USA

ABSTRACT

Women are making strides in STEM careers, but are still not evenly matched with their male competitors, especially in the area of Computer Science. Although enrollment is making a move in the right direction with more women enrolling as Computer Science majors, there is still a need to improve this enrollment and to engage, retain and graduate successful women computer science majors. This paper will discuss the impact and suggested steps for recruiting, retaining and graduating successful women computer science majors. Engagement through Learning Community Activities, Academic Service Learning Activities and scholarly research, along with faculty and peer mentorship can lead to improved enrollment, retention and graduation rates. Positive role models and outreach to middle school and high school students can also lead to increasing the number of women computer science majors. This paper will discuss the many ways that colleges and universities can increase the number of women computer scientists through their college programs utilizing their successful faculty and students to inspire students to major in computer science, engage the students while enrolled and ultimately provide necessary skills and research to succeed upon graduation.

Keywords: Computer Science Education, Gender Equity, Peer Mentoring, Engagement, STEM, Retention, Persistence, Active Learning, Undergraduate Research, Co-Curricular activities

AUTHORS NOTE

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The process of accreditation is designed to be a statement to others of quality in business education. It is a message to faculty, parents, and students, that the school has standards in place. Accreditation represents an “umbrella” of prestige for the university. According to The Association to Advance Collegiate Schools of Business (AACSB) (2017), they are, “Synonymous with the highest standards of excellence since 1916, AACSB provides quality assurance, business education intelligence, and professional development services to over 1,600-member organizations and nearly 800 accredited business schools worldwide”. However, the entire process is lengthy and costly, not only to the schools that are being accredited but also to the faculty involved. In addition, the question arises as to whether or not students are even aware of the benefits that accreditation provides them, both now and in the future. The purpose of this paper is to analyze the costs and benefits of AACSB accreditation. Approximately two hundred fifty-nine students at a public, southeastern university were surveyed as to their knowledge of accreditation and its relevance to their future. In addition, various faculty members previously were interviewed as to their opinion of the accreditation process and benefits that it provides. In this paper, the authors will analyze the material gathered through these interviews and surveys and present an analysis of the AACSB accreditation process that is enlightening and relevant to the times.
to meet a set of prescribed standards, accreditation necessarily reduces options for flexible change, and this is incongruent with today’s turbulent economic environment” (Ashkanasy, 2008). Therefore, the question of whether or not accreditation is beneficial to business schools has been a concern for the authors since their university became accredited in the early 1990s. In an attempt to gain some insight as to the benefits and costs of the process, the faculty and students of a small southeastern public university have been interviewed and surveyed, respectively, in order to gain insight into their perceptions of this prestigious organization and process.

METHODOLOGY

The study was both quantitative and qualitative in nature. The quantitative portion consisted of a brief seven question survey which was distributed by members of the business faculty in an AACSB accredited program to their respective classes at the mid-point of the semester. Therefore, business students from a small public university in a southeastern state were the population. A total of 195 surveys were analyzed from a captive population of 259 students representing 12 business courses. The effective response rate of 75.29% was attained. The purpose of the study, as well as the voluntary nature of participation was disclosed to the participants. Research procedures were properly followed which assured the students’ anonymity and privacy of the information, as well as to avoid duplication of participants. Students who were taking more than one course in the business program were asked to respond to the survey only once.

FINDINGS OF THE STUDY

Table 1 shows the demographic information collected from the surveys. The majority of the students were full-time, female students. Approximately half of the students were seniors, and the other half consisted of juniors and sophomores. Only 1% of the students surveyed were freshman. The response rate by emphasis is presented with HealthCare Management having the largest percentage of respondents. This is not consistent with the College of Business overall, in which Management/Marketing has the largest percentage of students. Sixty-Nine percent of the students surveyed plan to work after graduation. Twenty four percent plan to attend graduate school, while seven percent were undecided.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Class</th>
<th>Business</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>42%</td>
<td>Freshman</td>
</tr>
<tr>
<td>Female</td>
<td>58%</td>
<td>Sophomore</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Junior</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Senior</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Emphasis</th>
<th>Status</th>
<th>Plans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting</td>
<td>Full-time</td>
<td>Work 69%</td>
</tr>
<tr>
<td>Econ/Fin.</td>
<td>Part-time</td>
<td>Graduate School 24%</td>
</tr>
<tr>
<td>Health Care</td>
<td>Other</td>
<td>7%</td>
</tr>
<tr>
<td>Mgmt/Mkt.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2 (below) consists of analysis of the quantitative data of six simple questions regarding student’s knowledge of
accreditation. The purpose of the survey was to determine to what extent the students were aware of accreditation. Also, the current results of the surveys were compared to the survey results from a study conducted in 2009 by Shurden, Natvig, & Shurden.

Table 2

<table>
<thead>
<tr>
<th>Questions</th>
<th>2017</th>
<th>2009**</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Prior to this semester, did you know what it meant for a business school to be accredited?</td>
<td>Yes</td>
<td>*73% 56%</td>
</tr>
<tr>
<td>2. Do you currently know what it means for a business school to be Accredited?</td>
<td>79%</td>
<td>82%</td>
</tr>
<tr>
<td>3. Do you know what The Association to Advance Collegiate Schools of Business (AACSB) is?</td>
<td>51%</td>
<td>57%</td>
</tr>
<tr>
<td>4. Prior to this semester did you know that the XXXX School of Business was AACSB accredited?</td>
<td>*67%</td>
<td>47%</td>
</tr>
<tr>
<td>5. Was your decision to attend XXXX influenced by the XXXX School of Business being AACSB accredited?</td>
<td>22%</td>
<td>17%</td>
</tr>
<tr>
<td>6. Do you believe that it will be beneficial to you to have graduated from an AACSB accredited business school?</td>
<td>93%</td>
<td>96%</td>
</tr>
</tbody>
</table>

* significant at .05 alpha

**Previous year information information from Shurden, Natvig, and Shurden, 2009.

Question 1 and 2 pertained to the student’s knowledge of accreditation both prior to fall semester and at the time of survey. Seventy three percent of the students indicated they were aware of accreditation prior to this semester, and 79% indicated they were currently aware of what accreditation meant. These numbers were compared to 2009 responses, and there was a significant difference between the answers with 73% of the students from 2017 knowing what it meant for a business school to be accredited compared to 56% in 2009. Although question 2 had no significant difference between the two years, it is interesting that a larger percentage (82%) of the students in 2009 “currently” knew what it meant for a business school to be accredited compared to 79% in 2017. This difference is attributed to the fact that there was a massive educational movement in 2009 to inform students about accreditation as a review was about to occur. Faculty were asked to talk to their classes, and a booklet was prepared and distributed to the students that year which informed them of the accreditation process and the AACSB organization, as well as to identify the goals for the business program. Therefore, significant improvement has been made both then and over the past 8 years in educating and informing students in this area.

Questions 3 and 4 relate to AACSB accreditation, which is the accrediting body for this College of Business, although the university falls under the “umbrella” of SACS accreditation. Fifty one percent indicated they currently knew what AACSB accreditation was, while prior to this semester, 67% indicated they knew that this university was accredited by AACSB. The difference in question 3 and 4 can possibly be explained by the fact that in the lobby of this College of Business, there is a large AACSB emblem over the doorway to the classrooms. The emblem has AACSB in large letters without explaining what these letters stand for or mean. Students obviously saw the emblem many times and knew that this business program was accredited by AACSB without knowing what it meant. Comparing the 2017 to the 2009 results, the 2009 results were much lower with only 57% knowing what AACSB meant and only 47% knowing the business program in the study was accredited by AACSB. There is a significant difference in question #4. The answer to the low results for 2009 goes back to the emblem that is above the door. It was not there in 2009 but was added in 2011.

Questions 5 and 6 identify whether students chose to come to this University because of it being accredited by AACSB

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and whether this accreditation will benefit students. What is of interest is that only 22% of the students were influenced to attend this university because of its being AACSB accredited, yet 93% believe graduating from an AACSB school will be beneficial to them. These numbers are not significantly different from the results of 2009 with 17% of students saying they came to this university in 2009 because of AACSB accreditation and 96% saying it will benefit them. It is assumed that some of these students who responded positively to the benefits of accreditation will be attending graduate school. In fact, the demographics indicate 24% of the 195 students plan on attending graduate school in the future.

An additional question was added in Table 3 which was a “tie in” to question five. Of the 78% in 2017 who were not influenced by AACSB in their decision to attend this university, their reasons for attending varied. Of the 44% which indicated “Other”, an assumption by the author is that this percentage mostly represented athletes or academic scholars who had obtained scholarships.

Table 3

<table>
<thead>
<tr>
<th>Question</th>
<th>Near Family</th>
<th>Lower Cost</th>
<th>Parental Influence</th>
<th>Friends Attend</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>If answer to number five was No, why did you attend Lander?</td>
<td>27%</td>
<td>25%</td>
<td>1%</td>
<td>4%</td>
<td>44%</td>
</tr>
</tbody>
</table>

From a previous study by the authors (Shurden, Natvig & Shurden, 2009) which consisted of interviews with the university provost, dean, and department chair, as well as interviews with three faculty members. The following interview questions were asked.

*What benefits do you believe there are for the students to be a part of an accredited department of business?* Answers to this question were as follows:

1. The accreditation process gives students more of a role in the formation of programs within the university.
2. Graduates should make more monetarily and be more successful in their careers.
3. Graduation from an AACSB accredited school should provide them with a better advantage when they apply to graduate school.
4. Students benefit from the improvements made in the content of their courses and in the way that the courses are taught.
5. AACSB accreditation provides students with more recognition from other universities, as well as employers.
6. Changes in the curriculum and program activities occur based on the data collected from assessments, and not from the “whims” of faculty members.
7. Students receive the benefits of programs that have recognized standards.
8. AACSB accredited universities have to prove evidence of learning through assessments.
9. Curriculums are improved because of the accreditation process.

*What benefits do you believe there are for the faculty to be part of an accredited department of business?* Various responses to this question are as follows:

1. It provides standards for faculty in the areas of teaching, research, and the assessment of program outcomes.
2. There is a benefit in using AACSB standards to determine whether or not faculty applicants meet academic and/or professional qualifications during the hiring process.
3. Faculty is involved in making program changes because the accreditation process is “faculty-driven”.
4. Faculty receives recognition from other universities once it is discovered that they teach at an AACSB accredited school.
5. Faculty learns how to work effectively as a team through the accreditation process.
6. Faculty should receive higher salaries when teaching at accredited schools.
7. Having teaching experience in an AACSB accredited program should make it easier for a faculty member to move from one accredited university to another.
8. Faculty development is allowed to flourish through enhanced resources, technology and opportunities.
9. Faculty is empowered with more responsibility over the educational process.

In analyzing the benefits of AACSB accreditation, it is true that AACSB imposes more stringent requirements in terms of furthering intellectual contributions as required to keep faculty qualifications. Additionally, faculty is more empowered in their responsibility for delivering a high quality educational program. Likewise, job recognition is enhanced which allows faculty to easily be more mobile in seeking employment from one university to another.

However, one faculty member referred to accreditation as being “political” in nature, which could be an indication of the competitive nature of accreditation, especially with regard to competing for students in the area where this university is located (Shurden, Natvig, & Shurden, 2009). This particular area is a hub in which it is surrounded by numerous non AACSB colleges. On the very “outskirts” of this hub are two major universities with significantly large, accredited, business schools. The smaller university where this survey was conducted feels enormous pressure to obtain students! One professor indicated that accreditation actually allows smaller universities like the one in question to “run with the big dogs” (Shurden, Natvig, & Shurden, 2009). Therefore, AACSB accreditation may be most beneficial in recruiting students into the university’s business program.

There are however, significant disadvantages involved to AACSB accreditation. One of these disadvantages is the cost of getting and maintaining AACSB accreditation. An application fee of $2000 is required just to begin the process. The Process Acceptance fee is $6500 with a one-time Initial Application fee of $5950. The initial visit fee is $15,000. Once the school gets accredited, the annual fee for business is $5950 and for accounting is $3,650. The host school must pay for all expenses related to a team visit. These costs do not include the costs associated with sending administrators and faculty to AACSB meeting, workshops, and seminars. Also, if a school is placed on a review, the costs would be $5500 extra (AACSB.edu, 2017). A combined total of the fees and travel expenses for faculty can put a substantial burden on small universities, especially in dire economic times when state budget cuts threaten the ability of business schools to continue to provide the “quality” standards that are promoted by AACSB. Additionally, accreditation standards require that university faculty consist of approximately 40% SA (Scholarly Academic), who command higher salaries than faculty members who do not meet the educational and publication requirements for SA status, thus driving up the salaries for business faculty. Particularly during the economic downturn, these hiring strategies impose tremendous “stress” for the administration and on interdepartmental relationships, especially if faculty positions in other departments are not filled or if employees are being terminated in other areas in order to meet budget.

Another “cost” of accreditation is the time involved in becoming and maintaining accreditation. In relation to time, one faculty member indicated that not only does one have to consider the initial time involved in obtaining accreditation, but the “opportunity costs” of lost time that could be used in improving class preparation, working with students outside of class, and interacting with internal and external stakeholders (Shurden, Natvig, Shurden, 2009). Faculty spend a substantial amount of time developing strategies, creating assessment tools, collecting and analyzing data, developing new interventions, writing reports, and attending meetings to ensure the accreditation process is progressing well.

CONCLUSIONS

In conclusion, the major benefits of AACSB accreditation is student related in terms of obtaining improved curriculum and a quality teaching experience. This “quality” results from continued assessment of the curriculum, assessment of students and assessment of faculty qualifications. Additionally, the very recognition of being an accredited business program is a “plus” for students when applying to a good graduate program, as well as in their future when seeking
employment that pays better than average. A second benefit of AACSB accreditation which applies to faculty is that they become involved in the process of providing that quality education to students as they are active participants in the curriculum and assessment process, as well as faculty are required to enhance their intellectual contributions to their profession which will also allow them to command a higher salary. A third benefit to the university is that accreditation allows them to compete more effectively with other universities to maintain and increase enrollment of high quality students.

The overall detriment to the AACSB accreditation process is the cost, both monetarily and in terms of opportunity costs. Smaller schools could find the costs to be prohibitive both initially and in the future, especially if the school is financially limited. One individual interviewed by Shurden, Natvig, and Shurden, (2009), mentioned the law of diminishing returns where the time and effort needed to maintain the process becomes difficult, especially in terms of hours needed to prepare for teaching multiple classes with several preparations. However, faculty members in that study indicated that withdrawing or losing accreditation once a university has received that recognition could have a negative impact not only on the reputation of the institution but also on students and faculty alike. Consequently, weighing the benefits and costs of AACSB accreditation (or any form of business accreditation) is imperative and those benefits and costs should be carefully considered before taking that monumental step.

REFERENCES

Moving Beyond Accessibility: Universal Design For Learning In The University Classroom
Kaylea Berard, Bryn Mawr College, USA

ABSTRACT
This hands-on workshop is designed to provide faculty, staff, and administrators with an introduction to the principles of Universal Design (UD) and Universal Design for Learning (UDL). In this proactive and flexible approach, individual differences become an asset in the classroom. Participants will be provided with examples of how university faculty have incorporated UDL into their courses and tools to help to move beyond compliance with disability law in the effort to build an innovative and inclusive educational environment.

AUTHOR BIOGRAPHY
Kaylea Berard is Senior Lecturer and Language Program Coordinator in the Department of Spanish at Bryn Mawr College. She holds a Ph.D. in Spanish Applied Linguistics / Second Language Acquisition from Georgetown University. In her 17 years of teaching, she has made her courses accessible to students of all learning styles and abilities. She has served as the faculty representative of Bryn Mawr College’s Accessibility Leadership Committee for the last three years and conducts UDL workshops to raise awareness of the benefits of being proactive regarding accessibility.
The Role Of Technology And Computational Chemistry In Undergraduate Education

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ABSTRACT

As one of the oldest of science subject, chemistry has evolved in a plethora of ways. Whether a student wants to go into medicine, dentistry, pharmaceuticals, or engineering, chemistry is a core underlying subject that helps lay the foundation for transition into these professional fields. Therefore, a thorough understanding of key concepts and ideas of chemistry is imperative. However, modern day students are no longer like previous generations. This batch of students are more technology savvy, and demand instantaneous gratification and rewards, even in the education. As any science subject, it not only takes practice, but also experience accumulations. This demands chemistry to be taught in more effective manner. This study will explore more thoughtfully integration of technology that not only teaches chemistry but also attracts and encourages student to explore further. By using a simple amino acid molecules, this case study will incorporate and weave the difficult concepts such as ligand (crystal) field theory, hydrogen bond, Zwitterion, enantiomer and potential energy surface. This practice will require some set up and basic training, however, the decent graphic interface of most modeling software is intuitive for students to self-explore further. This case will demonstrate the effectiveness of the computational chemistry in undergraduate education.

1. INTRODUCTION

Among the STEM fields (Science, Technology, Engineering and Mathematics), Chemistry probably is one of the oldest science subject that can be traced back to every ancient civilization. From extracting metals from ores during the bronze and iron ages to the material manufacturing and drug discovery in the modern times, you can see the chemistry everywhere. Despite the fact that chemistry is central to technology and engineering fields in many ways, students describe chemistry as one of the toughest and most boring science courses they must pass. On the other hand, when examining the current undergraduate curriculum, one can see that chemistry, along with physics and math are all part of core curriculum that almost every freshmen student must encounter and pass. Though, depend on the major and discipline, there might be different flavor of chemistry such as “Chemistry for Engineering”, “Chemistry for Health Science”, “Chemistry for Technology”, or “Chemistry for Science majors”. The differences of these chemistry courses are the emphasis, choice of topics, especially the depth of topics. While the chemistry department is trying very hard to satisfy the demand of new generation of undergraduate students, students nowadays are distracted more than ever with extra-curriculum activities and electronic gadgets. The focus span of students is getting shorter and shorter. One can’t have a class without students looking over the cellphone from time to time, not to checking the times but text messaging or playing games or watching a video. Educators are scrambled to find solutions before we lose the next generation to the deep hole of technology. One of the major themes of such efforts is incorporate technology into teaching. Instead of creating distraction in the classroom, a recent article by Mareco [i] suggested the benefits of technology in the classroom ranging from student’s engagement and collaborating learning, especially the technology’s ability to accommodate all learning styles. Therefore, correctly utilizing technology in the classroom can empower students to be more creative and readily connected with classmates and teacher. Unlike the traditional passive learning model, teacher in this teaching model becomes the encourager, adviser, coach or facilitator. As a such, majority of educators consider technology a positive impact in the education process and recognize the importance of developing students’ technological skills [ii].
On the other hand, there is the vast existing amount information that needs to be taught in the limited class time, evidenced by the thicker and more expensive chemistry textbook. To make matter worse, students’ preparation and college readiness are deteriorating [iii], which showed more than half of incoming students must take remedial courses at more than 200 campuses. How to change the perceptions of chemistry being difficult and boring becomes the daunting task of the first day of class. The PI of this project, Dr. Fan has been teaching chemistry for the last 15 years. Switching from traditional chemistry textbook to atom-first textbook helps the reshape the way chemistry was taught. Because chemistry studies matters and its properties and to study the properties, understanding and mastering the electron structures of matters are the key to grasp and explain the concepts and phenomenon. After all, electrons act as glue to bind atoms together. In this paper, we will demonstrate how the technology combines the computer hardware and software to solve the typical chemistry and biological questions. Particularly to understand the electronic configurations, and Gibbs Free energy help students learn the functionality of invisible electrons in bulky properties such as geometry, conformations and hydrogen bonds.

2. METACOGNITION AND TECHNOLOGY IN LEARNING

As the classic Bloom’s Taxonomy of educational objectives were defined by six hierarchical level of cognitive process: knowledge, understand, apply, analyze, synthesize and create, a more modern version of Bloom’s Taxonomy use a non-hierarchical definition of learning (knowledge, comprehension, application, analysis, synthesis, and evaluation) as shown in Figure 1.

Even though the words of these versions are similar, the approach to assist students’ learning is quite different. The classic hierarchical approach assumes students’ progress gradually from bottom up, while the non-hierarchical approach assumes students’ learning at all levels and all aspects. These different learning skills were developed concurrently, therefore training of these skills need to be applied correspondingly. Computational chemistry and modeling tools actually enable students to apply, analyze and synthesize the chemical concepts embedded in the question through the data generating, collecting, and analyzing. Here, we will demonstrate some of the modeling modules adopted and developed to illustrate how computational chemistry can effectively explain and visualize the VSEPR, geometry, electron structures, orbitals and interactions.
Figure 2. The pedagogy, subjects, and technology (PST) relationship in education

It is beneficial to understand the links between technology and education. Researchers in the past such as, Mishra and Kohler (2006) proposed a Technological, pedagogical, and content knowledge (TPACK) relationship. A revised triangular relationship among the pedagogy approach, subject disciplines, and technology (PST relationship) in education applications are shown in Error! Reference source not found. This PST relationship consists of three primary outlines which include pedagogy (P) knowledge, subject content (S) knowledge, and technology (T) knowledge. To carry out an effective teaching strategy with technology, it would require an understanding of the representation of concepts using technologies. Every educator understands there is difference between the learning and teaching. Just because one knows the subject content does not automatically transform a person into a good teacher. How to teach is an art. Therefore, the first overlap in translating the subject content to student is to apply the Pedagogical (P) Knowledge to translate the subject content (S) knowledge to students, the PS overlap. This overlap includes educators create content outlines and lesson plans that might help their students learn effectively. The second overlap area is where the technological (T) knowledge assist an educator to explain certain subject content (S) knowledge more effectively, the ST overlap. This overlap actually shows how technology influences the content that is being taught in the classroom. Being a novice educators, many will learn to apply either pedagogical (P) knowledge or technological (T) knowledge when they charted into the educational business, carefully following the teaching outlines or lesson plans, applying the fancy shows from time to time. Many will soon to realize that these T and P application either takes much of time to prepare or has to be modified when new ideas generated, or simply became distraction in the classroom. Because the third overlap area PT only focuses on the pedagogical (P) knowledge and technological (T) knowledge. Although PT can work together to create a spectacular show, which would grab students’ attention, overly application of S & T might create distraction, and without the actual subject content, such show will be only a show. Therefore, the ultimate balance is reached when an educator realizes only when the pedagogical (P) knowledge, subject content (S) knowledge, and technological (T) knowledge strike a balance can one deliver an effective learning. Pedagogy, subject content, technology influence and complement each other in quite efficient manner. Incorporating different aspects of technology within the classroom overall, through the successful overlap of the three main groups of PST, instructors are provided with a basis to effectively teach their students, and also enhance the ability of the student to learn and advance higher learning skills such as analysis and synthesis on the modern Taxonomy chart. Those difficult concepts such as electrons, geometries, 3-D conformations, and atomic orbitals that have historically been difficult to teach are suddenly become vivid and quite simple to teach through the integration of technology. The main goal behind this was to constructively find ways to represent different concepts of subjects along with effective ways to teach content. Many universities and learning institutions have adopted this as their primary way of teaching.
3. APPROACHES

Since electrons is invisible to human eyes and move at speed of light, that’s why the chapters about electronic structures are difficult and too abstract to our students. This includes the valence shell electron pair repulsion model, hybridization model, and molecular orbital theory. The fundamental Schrödinger equation in the Quantum Mechanics, coupled with Born–Oppenheimer approximation provides reasonable mathematic solution to understand the electronic movement and electronic structure of interactions in the matters. Based on QM solution to Schrödinger equation, there are Pauli Exclusion Principle, Aufbau Principle, Hund's Rule, and Heisenberg's uncertainty principle or Heisenberg's indeterminacy principle. All of these jargons govern the movement of electrons in the matters. While it is not necessary for an undergraduate student to understand the different density functional or basis sets, they are so tech-savvy, most of them in a week can start produce some modeling results, and can already provide relative accurate description of a chemical structure or insight into a chemical reaction profiles such reaction mechanism, activation energies for kinetics and thermodynamic parameters such as enthalpy, entropy and Gibbs free energies. Therefore, molecular modeling or computational chemistry does have advantage over the bench work of mixing chemicals and has little or no safety hazards. However, one must be very cautious of such actions as the traditional wisdom says “Garbage in, garbage out.” Furthermore, if a student is not diligently looking for “why’s” of all these operations, he probably will not gain much the important chemical concepts but rather just scratch the surface and still being clueless. In this paper, we will use computational chemistry and visualization modeling tools (T knowledge), design various molecule forms and optimized under various terms (P knowledge) to illustrate the structure and property relationship between the electronic structure and geometry representation (S knowledge). With this PST approach, we will be able to teach the hard to understand concepts in much easy to accept and grasp manner.

4. RESULTS AND DISCUSSION

To illustrate the PST knowledge based application in chemistry education, here we will use a simple histidine amino acid as an example where students will learn the relationship between geometry, conformation, hydrogen bonding, electronic structure (S knowledge) and computational chemistry modeling, different construction of starting point for calculations, various modeling results, different functional and basis set (P and T knowledge). While there are 20 amino acids in our body, histidine is one of very unique ones, along with Arginine, Aspartic Acid, Glutamic Acid, Histidine, Lysine that can form ionic format. The other 15 amino acids will only be wither polarized or nonpolar form. Such property provides educator an excellent venue to teach various chemical and biological structure-and-property relationships. In the following sections, we will demonstrate the application of PST modeling in explanation of zwitterion form, naming the amino acids, D and E forms of histidine, modeling methods, different functions in density functional theory and basis set.

In order to better explore these different bindings, we employed the density functional theory (DFT) to compare the different functional (B3LYP, TPSS and ωB97XD) along with solvation (SBD) modeling to identify the most effective modeling approach. These different functional were set up on through a Linux server. Before any actual data could be collected, the first step that needed to be taken was to learn how to model and create the different forms of histidine. This was done via a chemistry modeling software developed for Linux workstations to create different chemical and biological molecules from scratch known as GaussView. With GaussView an individual is able to quickly and efficiently construct different molecular systems and molecules. This program incorporates a variety of user friendly features which enables a user to adapt and begin constructing without any prior knowledge of the program. Because of the simple graphic user interface of this program, student was quickly able to adapt and begin constructing my molecules of histidine with given functional of DFT.

4.1 Zwitterion Form in Amino Acids

Amino acids are the well-known examples of zwitterions, formally known as dipolar ion. The amine group deprotonates the carboxylic acid where the proton (H) from –COOH group will move to –NH2 group. Eventually, instead of having –COOH and –NH2 groups, the amino acid will have negative charged –COO- and positive charged –NH3+ groups. Studies have shown that, depending on the pH value of the histidine solution, amino acid can have four forms of different protonation states: A, HA, H2A, and H3A where “A” here represents the basic framework of histidine and “H” represents the protons from solution that can be added/attached to the base framework (iv). This
variation of protonation states of histidine earned it name of polyprotic acid. At pH=8, histidine will be at its neutral state can form a zwitterion form as shown in Figure 3.

![Neutral histidine state (left) and its zwitterion form (right) at pH=8.](image)

With some guidance and explanation, students indeed reproduced the optimized geometry where zwitterion is 3.14 kcal/mol lower in energy than the neutral form (left) as shown in Figure 4.

![B3LYP optimized geometry of neutral and zwitterion forms of histidine using SBD model](image)

4.2 Naming Amino Acids and Different Protonation Sites

One of most confusing concepts of histidine is the different protonation sites on the histidine. To clarify and to be consistent, the naming nitrogen atoms on the imidazole ring of histidine in this study follows 1983 recommendation by the IUPAC-IUB Joint Commission on Biochemical Nomenclature (JCBN) [v]. This nitrogen atoms is the most confusing part of histidine nomenclature because biochemists generally number the nitrogen atom closest to the β-carbon as 1, while organic chemists designate it as 3 as shown in Figure 5. Therefore, in this paper we shall adopt JCBN nomenclature where the nitrogen atom closest to the β-carbon is designated as pros (mean ‘near’, abbreviated as π) and the furthest from the β-carbon is designated as tele (means ‘far’, abbreviated as τ).
Figure 5. Naming histidine according to 1983 JCBN convention. The left is E form and the right is D form.

The difference between the D and E forms of histidine is the different protonation of imidazole nitrogen. These two tautomers shown above that the D form has pros (mean ‘near’, abbreviated as π) nitrogen atom of amidazole ring protonated (right) while the E form has tele (means ‘far’, abbreviated as τ) nitrogen atom of amidazole ring protonated (left). According to the titration results, the deprotonation order suggest that the pKα values is –COOH group < tele nitrogen atom of amidazole ring < –NH₃⁺ group. The calculation between the D-form and E-form of histidine showed that E forms is slightly lower in energy as well. One possible explanation is that in the E form, the protonation of COOH can form a hydrogen bond with this tele nitrogen atom of amidazole ring, which provide the stabilization of this E form.

4.3 Student Feedback

Throughout the process of creating these molecules in various forms and conformation, it was necessary to go back and edit the structure along with clean up little errors within the molecules themselves. This learn by own mistakes tactic was a highly effective learning experience due to consistent repetition of checking over finished work and making certain that there were no mistakes along the way of constructing these molecules. Without the careful examination of these “finished” products, it could not be assured that meaningful data would be produced due to possible errors. With the learning of GaussView also came the long but rewarding process of learning the Linux operating system and commands that went along with it. This was very beneficial in long run when time came to run these molecules in the server to collect data. As time progressed, the skills and understanding of Linux operating system, chemical concepts and methodologies developed in way which helped students to become very knowledgeable in the field of computational chemistry and further progress my research methods. For example, Figure 6shows that one student created sp3 carbon in a wrong starting conformation, which results a “convergency failure” error in modeling output. The modeling would not yield correct geometry until student fixed the sp3 carbon into corrected tetrahedral initial conformation.
After a thorough checking, along with the help of the skills learned with the “vi editor” command in Linux, these previously mentioned molecules were ready to be submitted as “.job” files through the “qsub” command. Once submitted and running, these jobs being would take up to twenty-four hours to come to a full completion. After the completion of a job, without any given errors, data was to be collected and reported comparing different energies of these Histidine forms. Also, bond lengths and possible bond interactions between molecules were also observed.

While the Technological and pedagogical knowledge would aid student learning, a great amount of efforts needs to be in place assisting student’s set-up, curtailing the learning curve by setting up a strong supporting mechanism. Peer-to-peer teaching and tie-level hierarchy assist learning system is equally important as faculty-led mentoring structure. It is much manageable for faculty to coach a few advanced-students, and easier for students to overcome their shyness or fear of being judged to ask their fellow students for help. Students can save a lot of time by text message or groupme technology to get their question answered than spending time walking across campus to find the faculty or mentor. They will save the toughest questions for faculty.

Due to advances in technology and science, many professors, teachers, researchers, and ordinary students are finding betterment in their lives. For instructors, the proper integration of different technological methods has produced effective teaching methods for previously known difficult topics. For researchers, these technological integrations such as computational chemistry methods have created a path to explore unknown territories and discover new ways to advance well known topics. In the classroom, many new generation students are now able better grasp difficult concepts through the implementation of technological methods by instructors. Through first-hand experience, it quite easy to say that technology and learning complement each other very well. Content that is taught in the classroom is effectively applied outside of the classroom in research and laboratory settings which have high degrees of innovation and advancement within them. This has led to a positive increase in students who want to further their educational advancements through research and also explore everything that the science fields have to offer. Furthermore, in this day and age, it is necessary to have a strong link between science and technology to not only keep the interest of students, but also instructors who have the most critical job in preparing the future leaders and innovators of the world.

5. CONCLUSIONS

As above modeling results demonstrated, students were able to reproduce the textbook results through the computational chemistry modeling software and draw their own conclusions by siphoning through the vast amount of modeling data. Students have been taught to implement basic chemistry skills learned in the classroom with the computational chemistry practices set forth during this research adventure. The investigation of the different conformations of the well-known amino acid in either neutral or charged form, in different protonation states, students were taught advanced topics such as the hydrogen binding, zwitterion conformation, D- and E-form of histidine with different protonation of nitrogen atom on imidazole ring that eventually would provide different binding sites for metal ions.

Figure 6. The importance of initial reasonable conformation for modeling results
6. ACKNOWLEDGEMENTS

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Abilities And Competencies Of Changemakers: The Berea Way
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ABSTRACT

**Purpose:** What are the critical abilities and competencies required to become effective social impact leaders? How are changemaker abilities and competencies different than skills? How might a college design an initiative to promote social innovation and social impact across a variety of disciplines at Berea College?

**Design/methodology/approach:** Social entrepreneurs use innovative and market-based methods to address social problems which simultaneously preforming against financial objectives as a means of avoiding dependence upon donor markets. This paper reviews 5 global programs, a review of the literature, and online resources for social entrepreneurs to identify the range of abilities and competencies education program are addressing. We adopt a blended framework with implications for how liberal arts schools and educators can design, implement and measure the social entrepreneurship program. The framework stresses both economic and social value creation and presents a unique opportunity and environment for liberal arts colleges and their faculty to teach courses focused on the theory and practical skills needed to educate future social entrepreneurs.

**Findings:** Findings from the literature review informs a taxonomy of abilities and competencies which offers a catalogue of skills and behaviors associated with being competent as a changemaker. The majority of programs focus overwhelmingly on teaching skills, versus supporting students to discover and build their abilities and competencies. Abilities, like self-reflection and empathy, boldness and resilience are required to turn theoretical knowledge into practically applicable competencies.

**Research limitations / implications:** The Changemakers abilities and competencies form the basis of the beliefs of the faculty at Berea College which are a supported by the insights from social entrepreneur practitioners.

**Practical implications:** The Changemaker abilities and competences will be used by the Berea College faculty in the enhanced design, approval and review of courses, to ensure that social innovation and social impact are embedded. The academic faculty can refer to these abilities and competencies when designing assessments and for inspiration toward innovative teaching practice.

**Originality / value:** The findings of this study will provide a point of reference for other higher education institutions as they look for guidance on embedding social innovation and social impact into their curriculum.
Rethinking Copyright In Music Industry Of China & The U.S. Using An Economic Analysis
Ying Zhen, Wesleyan College, USA

ABSTRACT
Starting from telling the true story of Jingqing Xu, composer of Journey to the West TV series, the study compares U.S. and China’s music copyright laws and their enforcement. A major difference in the copyright laws of the U.S. and China is that China does not criminalize copyright infringement conducted without the intent of making profits; while in the U.S., judicial proceedings is the only solution to a copyright infringement. An analysis on the cultural, social and legal factors behind such differences is conducted. Economic principles that govern the music industry have been highlighted in the study, and music is considered as an economic good that is protected by copyright law. An economics approach is used to explore the two countries’ common issue—monopoly in music industry. It shows that copyright would lead to both a welfare gain and loss; therefore, a balance is needed. The study also analyzes the copyright issues of music industry in the digital age, which reveals the importance of legal reform in music industry copyright in both countries.
Professional Skepticism: 
Development To Application In The 
Decision Making Process
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Kelli Lynn Fellows, Pfeiffer University, USA

ABSTRACT
An organizational culture steeped in continuous and process performance improvement utilizes a spectrum of strategies to achieve business outcomes. This orientation is achieved through internal control and employees' adherence therein. In theory, development and implementation of internal controls will optimize business continuity, organizational performance, minimize risk. With increasing incidence of financial fraud across organizational contexts, and reduce fraud. Achieving these outcomes, though, is contingent upon individual decision makers. Professional skepticism is the ability to view situations with a questioning mindset. The role of professional skepticism is projected by individual's decisions. However, decisions are not made in a vacuum. Multiple variables contribute to and constrain the decision making process. The current thought leadership presentation examines the notion of professional skepticism - from development to application. Additionally, multiple research questions emerge: (a) does professional skepticism increase with professional experience and/or formal education? (b) Does the perception of job stability lead to a decrease in professional skepticism, which could result in weakened internal controls? This research will examine the components of professional skepticism and discuss the implications that professional skepticism has on an organization using the COSO Model as a guide to strengthen internal controls and deter fraud.

The current thought leadership exploration will explore the role of professional skepticism from the perspectives of educators, managers, and individuals entering the workforce; with a desire to increase awareness of professional skepticism within the organization.
Is The Year-Long Internship A Better Option
Gwen McAlpine, Kennesaw State University, USA
Sohyun An, Kennesaw State University, USA
Charlease Kelly Jackson, Kennesaw State University, USA
Cherry Steffen, Washburn University, USA

ABSTRACT

This paper presents the advantages and disadvantages of a yearlong field experience, compared to the traditional one-semester field experience. For this study, the authors surveyed former student teachers who had conducted their internships in five elementary schools in the last five years. These five elementary schools worked on a grant-funded* Professional Development Program, together with one middle school and one high school. The findings of this study (and other grant studies involving the middle school and high school) were overwhelmingly positive in favor of the yearlong field experience. To put them in a larger context, these findings are related to literature on the psychological and academic benefits of each of the internship models. The long-term result of this program is that most of the local school districts have adopted the model of the extended field experience, a new model for these schools that could remain in place for years.

Keywords: Teacher Preparation, Yearlong Field Experience, Professional Development Schools (PDS)

INTRODUCTION

For more than 150 years, teacher education reform has been a constant topic of discussion (Conaway & Saxon, 2000; Imig & Switzer, 1996, & Mitchel, 2013). Research shows a greater emphasis on teacher quality and how to effectively reform schools and teacher preparation programs in an effort to improve student achievement of all students (Mitchel, 2013; Steffen et al., 2015). Although many programs have undertaken major changes, there is still limited research on the impact yearlong and one-semester field experiences have on teachers’ practice, effectiveness, entry and retention (Ducharme & Ducharme, 1996; Conaway & Saxon, 2000; Steffen et al., 2015). Steffen and colleagues (2015) reported that university supervisors who had experience with both one-semester and yearlong interns believed students who participated in a yearlong field experience were better prepared for the classroom. The purpose of this study was to compare the experiences of interns who participated in a yearlong and one-semester field experience. This article will highlight the advantages and disadvantages of both models from the perspective of former teacher candidates who are now classroom teachers.

BACKGROUND AND RATIONALE FOR THE PROGRAM

Using federal funds, Kennesaw State University (KSU) in partnership with Cobb County School District (CCSD) in Georgia developed an innovative professional development school (PDS) model to address inconsistencies between the two entities and reform K-12 teacher preparation. The PDS model focused on critical issues, including culturally and linguistically relevant pedagogy, differentiation, family engagement, and instructional technology in five, urban CCSD elementary schools. The two-year model, termed the Urban Education (UE) option, allowed interns the opportunity to take courses and participate in consistent field work (including a one-year internship) in the PDS (Steffen et al., 2015).

Traditionally during the first semester of the senior year, teacher candidates at KSU would take the methods block, which included four methods courses (ten weeks) and four weeks of full time field experience. The traditional student teaching field placement assigned teacher candidates in a one-semester practicum in which they completed approximately 100 field hours. During the second semester, teacher candidates were placed in a different school and a different grade level. The school districts randomly assigned the placements. Under this model, candidates were not expected to co-teach with their assigned collaborating teacher (CT). Candidates gradually accepted responsibility for
the planning and implementation of all subject areas; the CT acted as a facilitator. Teacher candidates were assigned a different university supervisor for each of the two semesters (Steffen et al., 2015).

In contrast, teacher candidates in the yearlong model at KSU complete approximately 200 hours of field experience spread over the school year. Under this model (UE), the candidates stayed with the same CT and students the entire year. As in the traditional model, teacher candidates completed the methods block during the first semester. However, these courses were offered in the PD schools and co-taught by a university faculty and elementary school teacher. Unlike the traditional (one-semester) model, yearlong candidates began their experience during pre-planning and continued until the end of the school year. In addition, teacher candidates and their CT were paired using a personal and professional compatibility instrument and interview. The expectation was that the CT and the teacher candidate would work closely together to plan, implement and assess instructional units throughout the year. One of the goals of the yearlong model was to ensure teacher candidates were well acclimated to the daily routines of the classroom. Consequently, teacher candidates were assigned one university supervisor for the entire year (Steffen et al., 2015).

**REVIEW OF LITERATURE**

As described by researchers at the Learning Policy Institute, the yearlong model for internships has a history as one component of a residency model used in medical colleges and some Master of Arts in Teaching Programs (Guha et al., 2016). The medical field led the way with reformers such as Flexner and Pritchett (1910) calling for internships and a rewriting of superficial curriculum.

The traditional one-semester internship has been the routine requirement for decades in teacher education. In the last few decades, the yearlong model has been tried by many teacher education programs, especially by those with a PDS model and by those universities following The Holmes Group model. Students take five years of coursework, graduating with a master’s degree, in universities following The Holmes Group model for school reform (Abdal-Hagg, 1998; Darling-Hammond & Youngs, 2002; Lanier, 1986; Kleinsasser et al., 2000; Morris et al., 2000; Nieto, 2003; Strieker et al., 2014).

An early study of the effect of a yearlong internship concluded that this longer internship was preferable and should be undertaken in a “teaching school” that would be “similar in function and culture to a teaching hospital for physicians” (Evertson et al., 1985, p. 8). Several studies seemed to show a positive relationship between extended internships and favorable outcomes for full-time teaching (Colvin & Ridgewell, 2014; Fives, Hamman, & Olivarez, 2007; Spooner, Flowers, Lambert, & Algozzine, 2008). Darling-Hammond (2006) notes that extended internship experiences have a positive influence on preservice teachers’ development of professional skills with the PTs learning from mentor teachers in a P-12 classroom. Furthermore, Darling-Hammond (2006) states that “program designs that include more practicum experiences and student teaching, integrated with more coursework, appear to make a difference in teachers’ practices, confidence, and long-term commitment to teaching” (p. 411). Spooner et al. (2008) arrived at a series of conclusions that seemed to demonstrate the positive influence of the extended internship model: PTs in the yearlong internship had a closer relationship with their PTs; better knowledge of school policies and procedures; and a more favorable attitude toward the longer internship experience. These findings were statistically significant.

A review of the literature in the last 20 years shows that most research points to strong favorable findings for the extended internship, but these findings are tempered by the reality of the public classroom. Naturally, there are a variety of influences on the success of any program in an environment as changeable and challenging as a school. In fact, several studies seemed to indicate more positive results from the semester-long internship, as contrasted with the yearlong internship (Boyd et al., 2009; Clark et al., 2015; Clambers & Hardy, 2005; Ronfeldt & Reininger, 2012). For example, a study by Clark and her colleagues surveyed teachers who believed themselves to be more skilled in performing instructional tasks than those former students who had taken the one-year internship. The reason for this unexpected finding seemed to be that those PTs in the shorter internship experienced more verbal support and modeling from their school-based mentors (Clark et al., 2015). As Clark et al. (2015) concluded, “simply extending the culminating field-based experience without sufficient mentoring, support, and modeling may be less helpful and less meaningful in building teacher self-efficacy” (p. 66).
Several studies stated directly that the length of an internship did not appear to matter if the internship does not provide the PTs with a high-quality experience (Chambers & Hardy, 2005; Colvin & Ridgewell, 2014; Grossman, 2010; & Moore, 2010). According to another study by Ronfeldt and Reininger (2012), for the teacher education program to be successful, PTs need an internship that features strong CT mentors and a school instructional practice consistent with the practices learned in their university. Similarly, Colvin & Ridgewell (2014) learned from both their PTs and university supervisors [US] that having capable CTs who were well matched with PTs had a big impact on the quality of the internship. The same study called for co-teaching training to be offered to both PTs and their CTs (Colvin & Ridgewell, 2014). In another insight similar to Ronfeldt and Reininger’s insight, the CTs, USs, and the PTs all asked that the university course work be closely aligned with school classroom experiences and not contain “excessive readings” (Colvin & Ridgewell, 2014). The aforementioned Spooner et al. (2008) study also reported no difference in the strength of teacher efficacy for the two groups, those with the traditional semester internship and those with the yearlong internship. Teacher efficacy here is defined as an educator’s perception that s/he has gained the necessary professional skills to perform successfully in the classroom and achieved the desired results, a definition developed by Tschannen-Moran et al. (1998). Likewise, whether a yearlong internship is more effective than semester-long internship or not seems to depend on situational contexts.

Meanwhile, several studies show in what ways yearlong internship benefits preservice teachers, which includes classroom management, relationship building, and student achievement. For example, given the extended time in a year, the PT has the opportunity to master classroom management, thus allowing the PT to focus more on teaching skills, especially by the first year of full-time, contractual teaching (Colvin & Ridgewell, 2014; Evertson et al., 1985). The CTs, USs, and PTs told Colvin & Ridgewell that the PTs had gained in “confidence, initiative, and classroom management skills with the largest difference noted between the first and second semester” (2014, p. 9). Furthermore, in another study, surveys conducted by Spooner et al. (2008) of yearlong internships appeared to show a statistically significant increase in PTs’ professional knowledge, relationship with their CTs, and PTs’ attitude toward a lengthier internship. Little has been written about the effects of an extended internship on public school students, but the majority of CTs interviewed by Colvin & Ridgewell (2014) stated that the students in their classrooms benefitted from the extended internship. These CTs had initially been concerned about the new, longer internship, fearing this situation:

That their K-5 students would not get enough attention because they would be focusing too much time on the intern, [but] they found the opposite to occur. K-5 students benefitted from more individualized attention and help because the interns were more student-focused after the first few weeks (Colvin & Ridgewell, 2014, p. 9).

Additionally, Andrew (1990) studied PTs in a five-year undergraduate program with a lengthy internship and concluded that these PTs spent more time evaluating their students’ work and used a wider variety of teaching strategies than did PTs in a traditional four-year undergraduate program with the one-semester internship. Especially pertinent to our study that involved Title 1 urban schools in an urban setting, research conducted by McKinney et al. (2008) concluded that teaching in an urban school is too demanding for most PTs to tackle in only one semester.

**METHODODOLOGY**

**Context of Study**

Our qualitative case study (Creswell, 2007; Patton, 1990; Yin, 2003) focused on the impact of the yearlong field experience compared to the impact of the traditional one-semester internship taken by undergraduate students in the researchers’ teacher education program. The overall guiding research question was: what are the advantages and disadvantages of the yearlong field experience when compared to a traditional semester-long internship model? We decided to answer the question from the perspectives of former students in researchers’ teacher education program who completed either yearlong or semester-long internship and are currently teaching at an elementary school. The rationale was that the former students who are teachers currently would be able to provide authentic, longitudinal impacts of the two different internship models regarding preparing PTs for teaching.
Research Participants

The target participants were former students of our teacher education program who took either semester-long or yearlong internship from 2012 to 2015, and are currently teaching at an elementary school. We contacted target participants via emails and social media (Facebook groups), and asked for voluntary participation in the study. Eighteen agreed to participate in the study and completed online survey. Among those 18 participants, nine completed the semester-long internship while nine completed the yearlong internship. These participants’ average years of teaching was 2.5 years, ranging from 1 year to 4 years. The level of their teaching also varied, from grade prekindergarten to 5th grade.

Data Collection and Analysis

An online survey was used for data collection because it was a time- and cost-efficient way to access the participants (Sue & Ritter, 2007). The survey was divided into two parts (see Appendix). The first part consisted of four questions designed to capture participants’ professional backgrounds including years of teaching, grade levels and schools in which they have taught, and the types of internship they completed. The second part contained seven open-ended items regarding participants’ experiences and beliefs regarding advantages and disadvantages of two internship models.

For data analysis, inductive analysis (Patton, 1990) was used. This approach allowed researchers to “explore the data without prior hypothesis.... It permits the researcher to discover reality without having to fit it into a preconceived theoretical perspective” (Best & Kahn, 1998, p. 242). By reading the data multiple times, we individually coded the data set and recorded a rationale for the classifications and prepared a research memo in which we developed broad coding categories based on emerging patterns from the data. Then, we shared our analyses. Together, we refined and merged our coding categories. In the few cases where we each had different findings, we revisited the data until we reached an agreement. From this process, we developed broad themes (Miles & Huberman, 1984) that led us to the findings presented here.

The Results: Depth vs. Width

Participants regardless of their internship type had a similar evaluation of the two internship types. Overall they agreed on what are the advantages and disadvantages of each of the two. The overarching theme of their evaluation of the two programs was the depth vs. width. Ideally both are important to have a successful teacher internship and teacher preparation. However, if they had to choose, they would prefer the yearlong internship. Looking back, they appreciated or wished to have yearlong internship. Looking forward, they preferred to have yearlong interns to work with as a CT.

Advantages and Disadvantages of the Yearlong Program

Most participants in our study commented on the limited experience offered in the yearlong internship, featuring one class in the same school for the entire experience. The shorter internship featured field experiences in two schools with different CTs and students. Participants noted this perceived shortcoming of the yearlong model regardless of the internship model in which they were enrolled.

As Table 1 shows below, two of the most salient themes from participants’ answers to what are the advantages of the yearlong internship were building strong rapport/relationship/trust with students as well as CTs or principal. Also the majority pointed out experiencing the entire school year from beginning to end was an important benefit of the model. A third of participants mentioned seeing student growth from beginning to end and more time for teaching, learning, experience in general as an advantage. In contrast, the overwhelming majority pointed out the limited experience as the disadvantage.
Table 1
Advantages and Disadvantages of the Yearlong Program

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Build student rapport/relationships/trust</td>
<td>• Scheduled for a limited experience (1 class, 1 teacher, 1 admin) 12/16 (75%)</td>
</tr>
<tr>
<td>10/18 (55.6%)</td>
<td></td>
</tr>
<tr>
<td>• See year from beginning to end (procedures,</td>
<td></td>
</tr>
<tr>
<td>routines, classroom management) 10/18 (55.6%)</td>
<td></td>
</tr>
<tr>
<td>• Build strong relationship with CT or</td>
<td></td>
</tr>
<tr>
<td>principal 8/18 (44.4%)</td>
<td></td>
</tr>
<tr>
<td>• See student growth from beginning to end</td>
<td></td>
</tr>
<tr>
<td>6/18 (33.3%)</td>
<td></td>
</tr>
<tr>
<td>• Have more time (teaching, learning,</td>
<td></td>
</tr>
<tr>
<td>experience) 6/18 (33.3%)</td>
<td></td>
</tr>
</tbody>
</table>

Advantages and Disadvantages of the Semester-long Program

Unsurprisingly, the width of the experience was noted as the advantage of the semester long whereas the lack of depth of experience was pointed out as the disadvantage of the semester long. As Table 2 shows, the salient themes from participant answers to what are the advantage of semester long were varied experiences of different instructions, different school/classroom/student contexts. In contrast, lack of depth of the experience such as not seeing the entire year of schooling, not being able to build a strong relationship with students, teachers were noted as disadvantages. Experience of varied school/class/student setting could be disadvantage too.

Table 2
Advantages and Disadvantages of the Semester-long Program

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Having multiple experiences (pedagogy,</td>
<td>• Not scheduled to work there a full year 6/17 (35.3%)</td>
</tr>
<tr>
<td>strategies) 7/17 (41.2%)</td>
<td>• Not able to build strong rapport/relationship (Students/CT) 8/17 (47.1%)</td>
</tr>
<tr>
<td>• Scheduled for a different Setting/class/</td>
<td>• Having a different setting (students, teacher, school) 6/17 (35.3)</td>
</tr>
<tr>
<td>students 11/17 (64.7%)</td>
<td>• Given a short experience/time 4/17 (23.5%)</td>
</tr>
<tr>
<td>• Given more flexibility 2/17 (11.8%)</td>
<td></td>
</tr>
</tbody>
</table>

Looking Back and Looking Forward: Choosing Yearlong Over Semester Long

While participants noted each internship model has both pros and cons, they viewed yearlong as more beneficial overall than the semester long. When they looked back on their own experience as teacher intern, most appreciated or wished they had yearlong. Now as classroom teachers, they generally preferred to have yearlong intern for his/her own learning as well as their work as CT.

Looking back, 68.8% (11/16) of the respondents believed that interns in the yearlong program had a greater experience regardless of their internship types.

Although not the majority, some participants appreciated having been scheduled for the semester-long internship. For example, one teacher stated that “I loved that I was able to experience a semester in the states and a semester abroad.”
Now looking forward as their role as potential CTs, participants overwhelmingly preferred to have a yearlong intern in their classrooms. Twelve out of 17 (70.6%) said they would like to work with a yearlong whereas 5 out of 17 (29.4%) preferred to work with a semester long intern.

Although not majority, some participants noted the advantages of the semester-long internship. For example, one teacher shared, “I do think that there are times when a semester long program may be more appropriate for some interns. For example, interns who are considering teaching multi-age or wanting to teach inclusion may benefit from experiencing two different grade levels and/or schools.”

**DISCUSSION AND IMPLICATIONS WITHIN A FRAMEWORK OF PSYCHOLOGICAL BENEFITS**

As the findings show, most participants believed the yearlong internship to be more fulfilling than a one-semester internship. Apparently, most of our preservice teachers [PTs] learned the school culture and felt more supported in our five Title I schools by spending a year there. The qualities of our yearlong internship align with Thies-Sprinthall’s recommendations to promote psychological growth during an apprenticeship: Having (1) Role-taking experiences; (2) Careful and continuous guided reflection; (3) A balance between real experience and discussion reflection; (4) Both personal support and challenge; and (5) Continuity (programs must be at least six months in length with meetings at regular intervals) (Thies-Sprinthall, 1984, p. 54; Warner, 2015).

These psychological benefits agree with the expectations of a well-functioning PDS program, according to various research studies conducted over the last 20 years (Abdal-Haqq, 1998; Darling-Hammond, 1994; Darling-Hammond & Bransford, 2005). Basically, these expectations feature an extended internship offering PTs greater support and more experience with professional decision-making. Our PDS model provided PTs with more time in the schools in which to complete their internship, thus meeting this PDS model and Thies-Sprinthall’s quality 5 for “continuity” (Abdal-Haqq, 1998, pp. 13-14; Darling-Hammond, 1994; Darling-Hammond & Bransford, 2005, p. 415). One participant who had been enrolled in the yearlong internship stated that s/he could clearly “see the growth of myself and my students [during the second semester] because the students were the same and their achievement could be compared with validity [with] academic, behavioral, and life-skill achievement all considered.” Moreover, these PTs received support in the form of frequent opportunities for supervision and feedback, meeting the PDS model expectations and Thies-Sprinthall’s quality 4 for support and challenge. One participant stated that “the yearlong candidates would have a better (more solid) support system throughout the process and smoother transitions” during the academic year.

The PDS model sees to it that all education professionals from the university and school--university supervisors, coaches, collaborating teachers [CTs], and others--provide PTs with detailed feedback (Abdal-Haqq, 1998; Darling-Hammond, 1994; Darling-Hammond & Bransford, 2005). Thus, it meets Thies-Sprinthall’s quality 2 as well (1984). Our PTs were observed by coaches, CTs, and university supervisors; often school administrators also observed them. Further, these PTs took courses from instructors from both the PDS schools and from the university. PTs gained experiences such as learning about social justice from special education and ESOL teachers. This feature of our PDS Program meets Thies-Sprinthall’s quality 3 for having authentic experience with reflection (1984). Model PDS schools involve PTs in decision making, team planning, and research activities (Abdal-Haqq, 1998, pp. 13-14; Darling-Hammond, 1994; Darling-Hammond & Bransford, 2005, p. 415). Our PTs engaged in all of these activities and in service activities benefitting the community. These PDS expectations align with Thies-Sprinthall’s qualities 1 and 2 for role-taking and reflection (1984). As an example, in our program, a co-taught course required PTs to conduct a mock interview with the school principal who was one of their two instructors in a university course. This enabled these PTs to prepare for a real-life experience in their final year in college, honing their skills with an administrator who made final hiring decisions. This task meets the PDS model expectation for providing PTs with support, experience and opportunities to make decisions (Abdal-Haqq, 1998; Darling-Hammond, 1994; Darling-Hammond & Bransford, 2005).

**CONCLUSION**

Again, our PTs learned the school culture in our five Title I schools by spending a year there, student teaching in one of the schools and taking co-taught courses in these five schools. One of the implications of co-teaching in this PDS model was that the CT did not fully relinquish teaching tasks; instead, this co-teaching involved both the CT and
the intern in teaching side by side. Thus, this approach strengthened interns’ role-taking experiences, quality in Thies-Sprinthall’s paradigm (1984) for role-taking and the PDS model concepts of support, experience, and decision-making opportunities (Abdal-Haqq, 1998; Darling-Hammond, 1994; Darling-Hammond & Bransford, 2005).

Additionally, interns began to learn the curricula and educational standards of these schools. One essential aspect of the PDS model involved having highly trained university supervisors (with an average of 25 years in leadership roles in education) evaluate PTs using professional standards (American Association of Colleges for Teacher Education, 2013; Strieker et. al, 2014).

Even though the grant is complete and its funding exhausted, it may have the lasting effect of replacing the traditional field experience with 100 hours across one semester with a yearlong experience with 200 hours. Those schools’ principals and district school boards who had been involved in the grant have requested that the yearlong internship remain in place. Recent research indicates, though, that yearlong internship is no more effective than the traditional semester-long internship without strong “mentoring, support, and modeling” provided by the school (Clark et al., 2015, p. 66). Our goal with this study is to inform all stakeholders of the best approaches to field experiences planned together by schools and universities.

AKNOWLEDGEMENT

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APPENDIX

Interview Questions for Former Student Teachers from Both Internship Models 2016-2017 Study

1. If you have a teaching contract, how many years have you been a teacher?
2. If applicable, what grade levels have you taught?

In your opinion and to the best of your knowledge—

3. What are the advantages of the year-long program?
4. What are the disadvantages of the year-long program?
5. What are the advantages of the semester-long program?
6. What are the disadvantages of the semester-long program?
7. Compare the growth of interns in the final semester in the year-long program to the other program.
8. If you had a choice, would you prefer to supervise an intern from the semester-long program or from the year-long program? Please explain your answer.
When faced with the need for additional funding, corporations have two methods to raise additional capital. The first method is to simply issue more stock. The second method is to borrow money. There are pros and cons associated with each option.

If additional stock is issued, it means that the corporation is owned by more shareholders. For example, if a corporation originally issued 500,000 shares at $10 each, shareholder equity would be $5,000,000 as it begins operations. Corporations are a legal entity and the number of shares it can issue is documented in its Articles of Incorporation. More often than not, a company will not issue all the shares it is authorized to issue at its initial public offering (IPO). Therefore, if the company in the example above is authorized to issue 1,000,000 shares, it can still issue an additional 500,000 shares. While it would likely not issue all of the remaining shares it is authorized to issue, it is probable that it could issue a lower number of shares, for example 250,000 additional shares. If it issues these shares at $15 each, it will raise an additional $3,750,000. The benefit of issuing additional shares is that the corporation is not obligated to make fixed interest payments. This alleviates some of the pressure placed on corporate management if earnings fall short of projections. If a set interest amount is owed at specific intervals, the company could risk going into default if it does not make adequate income to make each payment. If the funds are raised by issuing shares, no such obligation exists. Certainly corporate management would be held accountable if reasonable dividends are not paid, but failure to pay dividends would not threaten the solvency of the corporation. In all likelihood, corporate management would be replaced.

From the perspective of existing shareholders, a drawback to the corporation issuing more shares is the fact that their relative ownership percentage is diluted (unless they buy a certain portion of the new stock issue). In addition, the existing shareholders will now have to share dividends with the new shareholders. In theory, the capital raised by the additional issue should negate the drawbacks, and result in higher dividends for all shareholders.

Most shareholders focus on a corporation’s Return on Shareholder’s Equity (ROE):

**Net Income/Average Shareholder’s Equity**

The higher the ROE, the better. A higher ROE means that the corporation earned more per dollar of shareholder equity at its disposal than a lower ROE would indicate. The objective is to maximize earnings for every dollar of capital invested. Sometimes the best way to maximize ROE is to issue more debt as opposed to issuing more stock. This is called financial leverage.

Financial leverage can be demonstrated using the corporate example used above. If a corporation raises $5,000,000 in an IPO and earns net income of $250,000 and pays no dividends, its ending shareholder’s equity (after taxes) will be $5,175,000 if the corporate tax rate is 30%. Corporate management believes that net income can be greatly improved if an additional $3,750,000 in assets are utilized. This additional capital will be raised soon after the corporation’s first year of operations. The corporation is faced with two choices. It can issue an additional 250,000 shares at $15 each or it can make a $3,750,000 bond issue paying 6% annually (i.e. $250,000 interest expense). How would ROE be effected if income before earnings and taxes is $1,250,000 in year two (assuming no dividends are paid)?
ROE if Bonds are Issued:

Earnings Before Interest and Taxes $ 1,250,000
Interest Expense $ 225,000
Income before Income Taxes $ 1,025,000
Tax Expense $ 307,500
Net Income $ 717,500
Beginning Shareholder’s Equity $ 5,175,000
Ending Shareholder’s Equity $ 5,892,500

Net Income/Average Shareholder’s Equity = $717,500
$5,175,000 + $5,892,500/2
= $717,500
= 12.97%

ROE if Additional Stock is Issued:

Earnings Before Interest and Taxes $ 1,250,000
Interest Expense $ -
Income before Income Taxes $ 1,250,000
Tax Expense $ 375,000
Net Income $ 875,000
Beginning Shareholder’s Equity $ 5,175,000
Plus Additional Investment $ 3,750,000
Ending Shareholder’s Equity $ 9,800,000

Net Income/Average Shareholder’s Equity = $875,000
$5,175,000 + $9,800,000/2
= $875,000
= 11.69%

In this example, the ROE is 12.97% if bonds are issued and 11.69% if additional shares are issued. The existing shareholders will be happier earning the slightly higher ROE. There are situations where the difference can be significantly higher. If bonds are issued, it doesn’t increase the amount of shareholder equity. As a result, while net income is lower due to interest expense that net income was earned using $3,750,000 less in capital. Therefore, the smaller net income is spread out over fewer shares. If additional shares are issued, net income is $157,500 higher, but the fact that these earnings came as a result of issuing 250,000 additional shares. The net result was a 1.28% lower ROE. This example demonstrates the reason why it makes sense to issue debt instead of additional shares. Under the right circumstances, issuing debt results in a higher ROE than issuing more shares.

Issuing Bonds

The process of issuing bonds can take several months. It is a legalistic process. It isn’t a simple matter of deciding to borrow money and then borrowing it the next day. Underwriters are hired to create the formal bond issue.

Often the interest rate in effect at the time the bond is actually issued, is not the same rate that was in effect when the bond was created. Typically, the interest rate is higher. For example, if a company decides to borrow money and the market interest rate is 6%, the bond issue will be written using 6%. If the market rate increases or declines, the amount of money collected at the time the bonds are issued will differ from the stated amount on the bonds. If the interest rate increases, the bonds will be issued at a discount. If the interest rate decreases, the bonds will be issued at a premium. Every bond issue has a stated amount of money borrowed (which is also the same amount of money which must be repaid at maturity), a stated interest rate, stated dates when interest is due, and a stated date when principle is due (i.e. maturity).
The following example can be used to demonstrate how interest expense is calculated on bonds issued at stated value, at a premium, and at a discount:

A $3,750,000 bond issue. Date of issue is January 1, 2015. It is a 10-year bond. The stated rate of interest is 6%, payable semi-annually.

**Bonds Issued at Stated Amount**

If the market rate is 6% when the bonds are issued, the present value of the bonds, including interest, should equal the issue price. No adjustment is necessary.

Typically, one can find the needed value in a present value table chart. However, it is important to understand the formula used to derive the needed figure:

\[
\text{Present Value Factor} = \frac{1}{(1+i)^n} = i = \text{interest rate, } n = \text{number of compounding periods}
\]

In this example:

\[i = 3\% \text{ (market rate of interest, which equals stated rate, divided by 2 because it is semiannual)}\]

\[n = 20 \text{ (interest is due on the bond semi-annually for 10 years, which equals 20 periods)}\]

\[
PV = \frac{1}{(1+.03)^{20}} = \frac{1}{1.80611} = .55368
\]

\[
$3,750,000 \times .55368 = $2,076,300
\]

Obviously, this amount is not equal to the $3,750,000 issue price. The difference is the present value of the 20 semi-annual interest payments. These interest payments constitute an ordinary annuity. The present value of the annuity could be calculated by taking each $112,500 interest payment ($3,750,000 x 6% x ½ year) and calculating its individual present value. In terms of time value of money calculations, the interest rate used will equal whatever market rate is in effect at the time the bonds are issued. However, the interest amount will always remain at $112,500. Therefore, you would calculate the total present value of the interest payments by multiplying $112,500 times the present value factors of: 1/(1.03)^{20}, 1/(1.03)^{19}, 1/(1.03)^{18}, etc…all the way through to 1/(1.03)^{2}, 1/(1.03)^{1}. This would be quite tedious, so the Present Value of an Ordinary Annuity formula is used:

\[
\text{Present Value of an Ordinary Annuity} = \frac{1-1/(1+i)^n}{i}
\]

\[
1-1/(1.03)^{20}/.03 = (1 - .55368)/.03 = 14.87733
\]

\[
14.87733 \times $112,500 = $1,673,700 = \text{present value of the interest payments}
\]

If you add the present value of the principal, $2,076,300 and the present value of the series of interest payments, $1,673,700, the total equals $3,750,000.

The journal entry to record this bond issue would be:

\[
\begin{align*}
\text{Cash} & \quad $3,750,000 \\
\text{Bonds Payable} & \quad $3,750,000
\end{align*}
\]
Bonds issued at a Discount

If the market rate of interest has risen to 7% by the time the bond is actually issued, the amount of money collected has to be adjusted. The reason for this is that no one would lend money to someone at 6% when the market rate is 7%. To adjust for this difference, the bond is issued at a discount.

The amount of the discount is determined as follows:

First, the present value of $3,750,000, 10 years from now has to be determined.

\[ \text{Present Value Factor} = \frac{1}{(1+i)^n} \]

\( i = \text{interest rate, } n = \text{number of compounding periods} \)

In this example:

\( i = 3.5\% \) (market rate of interest, not the stated rate of interest, divided by 2 because it is semiannual)

\( n = 20 \) (interest is due on the bond semi-annually for 10 years, which equals 20 periods)

\[ \text{PV} = \frac{1}{(1+.035)^{20}} = \frac{1}{1.98979} = .50257 \]

\[ \text{$3,750,000 \times .50257 = $1,884,638} \]

\[ \text{Present Value of an Ordinary Annuity} = \frac{1-1/(1+i)^n}{i} \]

The interest and number of periods used to calculate the present value of an annuity, are the same values used in calculating present value.

\[ 1-1/(1.035)^{20}/.035 = (1-.50257)/.035 = 14.21229 \]

\[ 14.21229 \times $112,500 = $1,598,883 = \text{present value of the interest payments} \]

If you add the present value of the principal, $1,884,638 and the present value of the series of interest payments, $1,598,883 the total equals $3,483,521.

Unlike the situation where the interest rate and market rate were equal at the time of issuance, if the market rate increases above the stated rate on the bonds, the total present value of the bonds will be less than the stated issue price. In this case, the total present value is $3,483,521, however, the stated amount on the bonds is $3,750,000. That is a difference of $266,479.

This poses a problem. From the perspective of the bond issuer, it would be nice to borrow money at 6% when the market rate is 7%. From the perspective of the lenders, they would not buy a bond that pays 6% when the market rate is 7%. Why would they invest in something earning 6% when they could just as easily invest at 7%? The answer is they won’t.

The bond issuer has to adjust for the increase in the market rate of interest. This is done by adjusting the amount of money actually borrowed. The bond issuer will borrow only $3,483,521, not the full $3,750,000 it is obligated to pay at maturity. The lesser amount borrowed makes up for the fact the bond interest rate is lower than the market rate of interest. The $266,479 difference is called a discount.

The journal entry to record this bond issue would be:

\[ \text{Cash} \hspace{1cm} $3,483,521 \]

\[ \text{Discount on Bonds Payable} \hspace{1cm} $266,479 \]

\[ \text{Bonds Payable} \hspace{1cm} $3,750,000 \]

Bonds Issued at a Premium

If the market rate of interest has dropped to 5% by the time the bond is actually issued, the amount of money collected has to be adjusted, but it is just the opposite of a discount situation. The reason for this is that no one would borrow
money at 6% when the market rate is 5%. To adjust for this difference, the bond is issued at a premium. The amount of the discount is determined as follows:

First, the present value of $3,750,000, 10 years from now has to be determined. Present Value Factor = \( \frac{1}{(1+i)^n} \) = \( i \) = interest rate, \( n \) = number of compounding periods

In this example:

\[ i = 2.5\% \text{ (market rate of interest, not the stated rate of interest, divided by } 2 \text{ because it is semiannual)} \]
\[ n = 20 \text{ (interest is due on the bond semi-annually for } 10 \text{ years, which equals } 20 \text{ periods)} \]
\[ \text{PV} = \frac{1}{(1+.025)^{20}} = \frac{1}{1.63862} = .61027 \]
\[ 3,750,000 \times .61027 = 2,288,513.00 \]

Present Value of an Ordinary Annuity = \( \frac{1-1/(1+i)^n}{i} \)

The interest and number of periods used to calculate the present value of an annuity, are the same values used in calculating present value.

\[ 1-1/(1.025)^{20}/.025 = (1-.61027)/.025 = 15.58920 \]
\[ 15.58920 \times 112,500 = 1,753,785 = \text{present value of the interest payments} \]

If you add the present value of the principal, $2,288,513 and the present value of the series of interest payments, $1,753,785 the total equals $4,042,293.00.

Unlike the situation where the interest rate and market rate were equal at the time of issuance, if the market rate decreases below the stated rate on the bonds, the total present value of the bonds will be greater than the stated issue price. In this case, the total present value is $4,042,293, however, the stated amount on the bonds is $3,750,000. That is a difference of $292,293.

This poses a problem. From the perspective of the bond issuer, it would make no sense to borrow money at 6% when the market rate is 5%. From the perspective of the lenders, it would be nice to invest in a bond that pays 6% when the market rate is 5%. The borrower isn’t going to borrow money at 6%.

The bond issuer has to adjust for the decrease in the market rate of interest. This is done by adjusting the amount of money actually borrowed. The bond issuer will borrow more than the stated amount. They will borrow $4,042,293, not the $3,750,000 it is obligated to pay at maturity. The greater amount received at the time of issue makes up for the fact the bond interest rate is higher than the market rate of interest. The $292,293 difference is called a premium.

The journal entry to record this bond issue would be:

<table>
<thead>
<tr>
<th>Cash</th>
<th>$4,042,293</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premium on Bonds Payable</td>
<td>$292,293</td>
</tr>
<tr>
<td>Bonds Payable</td>
<td>$3,750,000</td>
</tr>
</tbody>
</table>

**Accounting for Bond Interest**

If the market rate of interest is equal to the stated rate of interest on the bonds at the date of issuance, the journal entries will be:

| Interest Expense | $112,500 |
| Cash | $112,500 |

This entry is made semi-annually, for the next 20 periods.
At the end of 20 periods, the principle is repaid:

<table>
<thead>
<tr>
<th>Bonds Payable</th>
<th>$3,750,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>$3,750,000</td>
</tr>
</tbody>
</table>

The present value of the interest payments is $1,673,700. That amount is almost the same as the amount calculated using the present value of an annuity formula.

If the market rate and interest rate are the same, interest every period will always be the same. There is no reason to adjust interest.

<table>
<thead>
<tr>
<th>Bond Issued at Face Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face Amount:</td>
</tr>
<tr>
<td>Stated Rate:</td>
</tr>
<tr>
<td>Number of Periods:</td>
</tr>
<tr>
<td>Stated Interest:</td>
</tr>
<tr>
<td>Market Rate:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Payment #</th>
<th>Interest</th>
<th>Present Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$112,500.00</td>
<td>$109,223.30</td>
</tr>
<tr>
<td>2</td>
<td>$112,500.00</td>
<td>$106,042.04</td>
</tr>
<tr>
<td>3</td>
<td>$112,500.00</td>
<td>$102,953.44</td>
</tr>
<tr>
<td>4</td>
<td>$112,500.00</td>
<td>$99,954.79</td>
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<tr>
<td>5</td>
<td>$112,500.00</td>
<td>$97,043.49</td>
</tr>
<tr>
<td>6</td>
<td>$112,500.00</td>
<td>$94,216.98</td>
</tr>
<tr>
<td>7</td>
<td>$112,500.00</td>
<td>$91,472.80</td>
</tr>
<tr>
<td>8</td>
<td>$112,500.00</td>
<td>$88,808.54</td>
</tr>
<tr>
<td>9</td>
<td>$112,500.00</td>
<td>$86,221.88</td>
</tr>
<tr>
<td>10</td>
<td>$112,500.00</td>
<td>$83,710.57</td>
</tr>
<tr>
<td>11</td>
<td>$112,500.00</td>
<td>$81,272.39</td>
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<td>12</td>
<td>$112,500.00</td>
<td>$78,905.24</td>
</tr>
<tr>
<td>13</td>
<td>$112,500.00</td>
<td>$76,607.03</td>
</tr>
<tr>
<td>14</td>
<td>$112,500.00</td>
<td>$74,375.75</td>
</tr>
<tr>
<td>15</td>
<td>$112,500.00</td>
<td>$72,209.47</td>
</tr>
<tr>
<td>16</td>
<td>$112,500.00</td>
<td>$70,106.28</td>
</tr>
<tr>
<td>17</td>
<td>$112,500.00</td>
<td>$68,064.35</td>
</tr>
<tr>
<td>18</td>
<td>$112,500.00</td>
<td>$66,081.89</td>
</tr>
<tr>
<td>19</td>
<td>$112,500.00</td>
<td>$64,157.18</td>
</tr>
<tr>
<td>20</td>
<td>$112,500.00</td>
<td>$62,288.52</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>$1,673,715.92</strong></td>
</tr>
</tbody>
</table>
There are two methods to account for interest when a bond is issued at a discount.

a) The Effective Interest Method
b) The Straight-Line Method

\[
\begin{array}{cccccc}
\text{Payment \#} & \text{Principal} & \text{Interest Expense} & \text{Difference between Bond and Actual Interest} & \text{Carrying Value} & \text{Discount Amortized} \\
1 & $3,483,521.00 & $121,923.24 & $9,423.24 & $3,492,944.24 & $9,104.57 \\
2 & $3,492,944.24 & $122,253.05 & $9,753.05 & $3,502,697.28 & $9,104.57 \\
3 & $3,502,697.28 & $122,594.40 & $10,094.40 & $3,512,791.69 & $9,104.57 \\
4 & $3,512,791.69 & $122,947.71 & $10,447.71 & $3,523,239.40 & $9,104.57 \\
5 & $3,523,239.40 & $123,313.38 & $10,813.38 & $3,534,052.78 & $9,104.57 \\
6 & $3,534,052.78 & $123,691.85 & $11,191.85 & $3,545,244.62 & $9,104.57 \\
7 & $3,545,244.62 & $124,083.56 & $11,583.56 & $3,556,828.19 & $9,104.57 \\
8 & $3,556,828.19 & $124,488.99 & $11,988.99 & $3,568,817.17 & $9,104.57 \\
9 & $3,568,817.17 & $124,908.60 & $12,408.60 & $3,581,225.77 & $9,104.57 \\
10 & $3,581,225.77 & $125,342.90 & $12,842.90 & $3,594,068.67 & $9,104.57 \\
11 & $3,594,068.67 & $125,792.40 & $13,292.40 & $3,607,361.08 & $9,104.57 \\
12 & $3,607,361.08 & $126,257.64 & $13,757.64 & $3,621,118.72 & $9,104.57 \\
13 & $3,621,118.72 & $126,739.16 & $14,239.16 & $3,635,357.87 & $9,104.57 \\
14 & $3,635,357.87 & $127,237.53 & $14,737.53 & $3,650,095.40 & $9,104.57 \\
15 & $3,650,095.40 & $127,753.34 & $15,253.34 & $3,665,348.74 & $9,104.57 \\
16 & $3,665,348.74 & $128,287.21 & $15,787.21 & $3,681,135.94 & $9,104.57 \\
17 & $3,681,135.94 & $128,839.76 & $16,339.76 & $3,697,475.70 & $9,104.57 \\
18 & $3,697,475.70 & $129,411.65 & $16,911.65 & $3,714,387.35 & $9,104.57 \\
19 & $3,714,387.35 & $130,003.56 & $17,503.56 & $3,731,890.91 & $9,104.57 \\
20 & $3,731,890.91 & $130,616.18 & $18,116.18 & $3,750,007.09 & $9,104.57 \\
\hline
& $2,516,486.09 & $266,486.09 & & $182,091.50 & \\
\end{array}
\]

In the case of a discount, the difference between the lesser amount received and the amount actually due (i.e. discount) results in an increase in interest as the discount is amortized.
The first journal entry to record interest would be:

\[
\begin{align*}
\text{Interest Expense} & \quad $121,923.84 \\
\text{Discount on Bonds Payable} & \quad $9,423.24 \\
\text{Cash} & \quad $112,500.00
\end{align*}
\]

The last journal entry to record interest would be:

\[
\begin{align*}
\text{Interest Expense} & \quad $130,616.18 \\
\text{Discount on Bonds Payable} & \quad $18,116.18 \\
\text{Cash} & \quad $112,500.00
\end{align*}
\]
Every journal entry to record interest would be:

Interest Expense $125,823.95  
Discount on Bonds Payable $ 13,323.95  
Cash $112,500.00

The effective interest method is based on a bond’s carrying value. Each period the market rate is multiplied by the market rate of interest. As a result, the interest expense increases each period. Under the straight line method, interest expense is the same every period and the discount is amortized by the same amount every period.

It should be noted that while the effective interest method produces a different interest expense each period, the present value of the interest expense remains constant. Conversely, while the straight line method produces the same interest expense each period, the present values of the interest expense changes each period. The same concept applies to a bond premium and the effective interest method.

**Bond Interest if Bond is Issued at a Premium**

Just as it is with bonds issued at a discount, there are two methods to account for interest when a bond is issued at a premium.

**c) The Effective Interest Method**

**d) The Straight-Line Method**

<table>
<thead>
<tr>
<th>Bond Issued at Premium: Effective Interest Method</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Face Amount:</td>
<td>$ 4,042,293.00</td>
</tr>
<tr>
<td>Stated Rate:</td>
<td>3%</td>
</tr>
<tr>
<td>Number of Periods:</td>
<td>20</td>
</tr>
<tr>
<td>Stated Interest:</td>
<td>$112,500</td>
</tr>
<tr>
<td>Market Rate:</td>
<td>2.5%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Payment #</th>
<th>Principal</th>
<th>Interest Expense</th>
<th>Stated and Actual Interest</th>
<th>Carrying Value</th>
<th>Premium Amortized</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4,042,293.00</td>
<td>101,057.33</td>
<td>(11,442.68)</td>
<td>4,030,850.33</td>
<td>11,163.59</td>
</tr>
<tr>
<td>2</td>
<td>4,030,850.33</td>
<td>100,771.26</td>
<td>(11,728.74)</td>
<td>4,019,121.58</td>
<td>11,163.59</td>
</tr>
<tr>
<td>3</td>
<td>4,019,121.58</td>
<td>100,478.04</td>
<td>(12,021.96)</td>
<td>4,007,099.62</td>
<td>11,163.59</td>
</tr>
<tr>
<td>4</td>
<td>4,007,099.62</td>
<td>100,177.49</td>
<td>(12,322.51)</td>
<td>3,994,777.11</td>
<td>11,163.59</td>
</tr>
<tr>
<td>5</td>
<td>3,994,777.11</td>
<td>99,869.43</td>
<td>(12,630.57)</td>
<td>3,982,146.54</td>
<td>11,163.59</td>
</tr>
<tr>
<td>6</td>
<td>3,982,146.54</td>
<td>99,553.66</td>
<td>(12,946.34)</td>
<td>3,969,200.20</td>
<td>11,163.59</td>
</tr>
<tr>
<td>7</td>
<td>3,969,200.20</td>
<td>99,230.01</td>
<td>(13,269.99)</td>
<td>3,955,930.21</td>
<td>11,163.59</td>
</tr>
<tr>
<td>8</td>
<td>3,955,930.21</td>
<td>98,898.26</td>
<td>(13,601.74)</td>
<td>3,942,328.46</td>
<td>11,163.59</td>
</tr>
<tr>
<td>9</td>
<td>3,942,328.46</td>
<td>98,558.21</td>
<td>(13,941.79)</td>
<td>3,928,386.68</td>
<td>11,163.59</td>
</tr>
<tr>
<td>10</td>
<td>3,928,386.68</td>
<td>98,209.67</td>
<td>(14,290.33)</td>
<td>3,914,096.34</td>
<td>11,163.59</td>
</tr>
<tr>
<td>11</td>
<td>3,914,096.34</td>
<td>97,852.41</td>
<td>(14,647.59)</td>
<td>3,899,448.75</td>
<td>11,163.59</td>
</tr>
<tr>
<td>12</td>
<td>3,899,448.75</td>
<td>97,486.22</td>
<td>(15,013.78)</td>
<td>3,884,343.97</td>
<td>11,163.59</td>
</tr>
<tr>
<td>13</td>
<td>3,884,343.97</td>
<td>97,110.87</td>
<td>(15,389.13)</td>
<td>3,869,045.85</td>
<td>11,163.59</td>
</tr>
<tr>
<td>14</td>
<td>3,869,045.85</td>
<td>96,726.15</td>
<td>(15,773.85)</td>
<td>3,853,271.99</td>
<td>11,163.59</td>
</tr>
<tr>
<td>15</td>
<td>3,853,271.99</td>
<td>96,331.80</td>
<td>(16,168.20)</td>
<td>3,837,103.79</td>
<td>11,163.59</td>
</tr>
<tr>
<td>16</td>
<td>3,837,103.79</td>
<td>95,927.59</td>
<td>(16,572.41)</td>
<td>3,820,531.39</td>
<td>11,163.59</td>
</tr>
<tr>
<td>17</td>
<td>3,820,531.39</td>
<td>95,513.28</td>
<td>(16,986.72)</td>
<td>3,803,544.67</td>
<td>11,163.59</td>
</tr>
<tr>
<td>18</td>
<td>3,803,544.67</td>
<td>95,088.62</td>
<td>(17,411.38)</td>
<td>3,786,133.29</td>
<td>11,163.59</td>
</tr>
<tr>
<td>19</td>
<td>3,786,133.29</td>
<td>94,653.33</td>
<td>(17,846.67)</td>
<td>3,768,286.62</td>
<td>11,163.59</td>
</tr>
<tr>
<td>20</td>
<td>3,768,286.62</td>
<td>94,207.17</td>
<td>(18,292.83)</td>
<td>3,749,993.78</td>
<td>11,163.59</td>
</tr>
<tr>
<td></td>
<td>1,957,700.78</td>
<td>$ (292,299.22)</td>
<td></td>
<td>$ 223,271.71</td>
<td></td>
</tr>
</tbody>
</table>
In the case of a premium, the difference between the higher amount received and the lower the amount actually due (i.e. premium) results in an increase in interest as the premium is amortized.

The first journal entry to record interest would be:

Interest Expense $101,057.33
Premium on Bonds Payable $ 11,442.67
Cash $112,500.00

The last journal entry to record interest would be:

Interest Expense $94,207.17
Premium on Bonds Payable $18,202.83
Cash $112,500.00

<table>
<thead>
<tr>
<th>Payment #</th>
<th>Principal</th>
<th>Interest Expense</th>
<th>Stated and Actual Interest</th>
<th>Carrying Value</th>
<th>Premium Amortized</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$ 4,042,293.00</td>
<td>$ 97,885.35</td>
<td>($14,614.65)</td>
<td>$4,027,678.35</td>
<td>$ 14,258.20</td>
</tr>
<tr>
<td>2</td>
<td>$ 4,027,678.35</td>
<td>$ 97,885.35</td>
<td>($14,614.65)</td>
<td>$4,013,063.70</td>
<td>$ 13,910.43</td>
</tr>
<tr>
<td>3</td>
<td>$ 4,013,063.70</td>
<td>$ 97,885.35</td>
<td>($14,614.65)</td>
<td>$3,998,449.05</td>
<td>$ 13,571.16</td>
</tr>
<tr>
<td>4</td>
<td>$ 3,998,449.05</td>
<td>$ 97,885.35</td>
<td>($14,614.65)</td>
<td>$3,983,834.40</td>
<td>$ 13,240.15</td>
</tr>
<tr>
<td>5</td>
<td>$ 3,983,834.40</td>
<td>$ 97,885.35</td>
<td>($14,614.65)</td>
<td>$3,969,219.75</td>
<td>$ 12,917.22</td>
</tr>
<tr>
<td>6</td>
<td>$ 3,969,219.75</td>
<td>$ 97,885.35</td>
<td>($14,614.65)</td>
<td>$3,954,605.10</td>
<td>$ 12,602.17</td>
</tr>
<tr>
<td>7</td>
<td>$ 3,954,605.10</td>
<td>$ 97,885.35</td>
<td>($14,614.65)</td>
<td>$3,939,990.45</td>
<td>$ 12,294.80</td>
</tr>
<tr>
<td>8</td>
<td>$ 3,939,990.45</td>
<td>$ 97,885.35</td>
<td>($14,614.65)</td>
<td>$3,925,375.80</td>
<td>$ 11,994.92</td>
</tr>
<tr>
<td>9</td>
<td>$ 3,925,375.80</td>
<td>$ 97,885.35</td>
<td>($14,614.65)</td>
<td>$3,910,761.15</td>
<td>$ 11,702.36</td>
</tr>
<tr>
<td>10</td>
<td>$ 3,910,761.15</td>
<td>$ 97,885.35</td>
<td>($14,614.65)</td>
<td>$3,896,146.50</td>
<td>$ 11,416.94</td>
</tr>
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$1,957,707.00 ($292,293.00) $227,830.15
Effective Interest Versus Straight Line Method

Per Generally Accepted Accounting Principles (GAAP), a company may use either method so long as it does not result in a material difference. If a material difference occurs, then the company is required to use the effective interest method.

An analysis of the interest amounts reported for a bond discount highlights some of the differences in values between the effective interest method and the straight line method. In this example the difference between the respective present values is $7,273.85. This would not be considered material, but this example involves only a 1% difference between the stated and discount rates.
Similarly to the analysis of a bond discount situation, a bond premium situation does not result in material present value difference.

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1,957,700.78 $1,957,707.00 ($6.22) $1,396,946.71 $1,391,186.07 $5,760.64
Teaching Capital Investment Analysis

Carl B. McGowan, Jr., Norfolk State University, USA
John C. Gardner, University of New Orleans, USA
Jim Chen, Norfolk State University, USA

In this teaching note, we provide an integrated Excel worksheet that demonstrates how to teach and solve the example problem in Chapter 25 of Managerial Accounting, Carl S. Warren, James M. Reeve, and Jonathan E. Duchac, 11th Edition, South-Western Publishing Company, 2012.

The spreadsheet demonstrates how to compute average rate of return, cash payback period, net present value, and internal rate of return for two projects with the same investment and different cost structures. The spreadsheet can be modified to create unlimited numbers of examples and exam questions.

This teaching note demonstrates how to conduct a capital investment analysis. Capital investment analysis is used by firms to evaluate long-term investments. Capital budgeting is the process by which management plans, evaluates, and controls investments in fixed assets. We discuss average rate of return, cash payback period, net present value analysis, and internal rate of return analysis. The analysis can be extended to include income taxes, unequal project lives, uncertainty, inflation, and leases versus buy analysis.

This teaching note provides PPT slides to accompany a lecture, a Word handout that outlines the material covered in the chapter, and Excel solutions for the Cost-Volume-Profit Example.

Objectives

1. Explain the nature and importance of capital investment analysis.
2. Evaluate capital investment proposals, using the following methods: average rate of return, cash payback, net present value, and internal rate of return.
3. List and describe factors that complicate capital investment analysis.
4. Diagram the capital rationing process.

Capital investment analysis is used to evaluate long-term investments. Capital budgeting is the process by which management plans, evaluates, and controls investments in fixed assets.

Average Rate of Return

\[
\text{Estimated average annual income AROR} = \frac{\text{Average investment}}{\text{Average investment}}
\]

AROR measures the average income as a percent of the average investment in fixed assets.

The numerator is the average of the annual income expected over the life of the investment. The denominator is the average book value of the investment after deducting depreciation.

If the firm uses straight line depreciation and assumes no residual value, the average investment over the useful life is equal to one-half of the original cost.
Cash Payback Period

The cash payback period is the expected period of time before the original investment is recovered.

Cost

\[
CPP = \frac{\text{Expected Period}}{\text{Annual Net Cash Flow}}
\]

Net Present Value Method compares the discounted present value of future net cash flows to the original cost of the project.

\[
NPV = \sum \frac{\text{Net Cash Flow}(t)}{(1 + \text{Required Rate of Return})^t}
\]

\[
NPV = 0 = \sum \frac{\text{Net Cash Flows}(t)}{(1 + \text{IRR})^t}
\]

Factors that Complicate Capital Investment Income

- Tax
- Unequal Proposal Lives
- Lease versus Capital Investment
- Uncertainty
- Changes in Price Levels
- Qualitative Considerations

Capital Rationing
Chapter 25
Capital Investment Analysis

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Chapter 25 Capital Investment Analysis


Carl B. McGowan, Jr., Faculty Distinguished Professor, Norfolk State University
John C. Gardner, KPMG Accounting Professor, University of New Orleans
Jim Chen, Professor, Norfolk State University
Objectives

- Explain the nature and importance of capital investment analysis.
- Evaluate capital investment proposals, using the following methods: average rate of return, cash payback, net present value, and internal rate of return.
- List and describe factors that complicate capital investment analysis.
- Diagram the capital rationing process.
Capital Investment Analysis

- Capital investment analysis is used to evaluate long-term investments.
- Capital budgeting is the process by which management plans, evaluates, and controls investments in fixed assets.
Average Rate of Return

- Estimated average annual income
- \( \text{AROR} = \frac{\text{Average annual income}}{\text{Average investment}} \)
- Average investment
- \( \text{AROR} \) measures the average income as a percent of the average investment in fixed assets.
- The numerator is the average of the annual income expected over the life of the investment.
- The denominator is the average book value of the investment after deducting depreciation.
- If the firm uses straight line depreciation and assumes no residual value, the average investment over the useful life is equal to one-half of the original cost.
Cashback Payback Period

• The cash payback period is the expected period of time before the original investment is recovered.

• Cost

• CPP = ----------------------------

• Annual Net Cash Flow
Net Present Value Method

- Net Present Value Method compares the discounted present value of future net cash flows to the original cost of the project.

- \[ \text{Net Cash Flow}(t) \]
- \[ \text{NPV} = \sum \frac{\text{Net Cash Flow}(t)}{(1+ \text{Required Rate of Return})^t} \]
Internal Rate of Return

- Net Cash Flows (t)
- \( \text{NPV} = 0 = \sum \frac{\text{Net Cash Flows (t)}}{(1+\text{IRR})^t} \)
Factors that Complicate Capital Investment

• Income Tax
• Unequal Proposal Lives
• Lease versus Capital Investment
• Uncertainty
• Changes in Price Levels
• Qualitative Considerations
Capital Rationing
Modern Textile Manufacturing
And The Millennial Workforce:
A Behavioral Economics Approach
Karen Middleton, North Carolina State University, USA
Helmut Hergeth, North Carolina State University, USA

ABSTRACT
While manufacturing companies and politicians are talking about reshoring, workers and potential workers aged 20 to 35 are not seeing or liking the job opportunities resulting from reshoring. At the same time, companies state that they cannot find any workers for manufacturing nor for management positions.

A recent study at NC State University attempts to shed some light at the apparent disconnect between companies searching for talent, and talent seeking employment opportunities. A behavioral economics approach is used to analyze feedback from companies and a survey among 20 to 35 year old workers/potential workers.
Quality Management And Organizational Culture A Look At Sportswear Companies
Yathiraja Kumuda Neeraja Chakravarthula, North Carolina State University, USA
Helmut Hergeth, North Carolina State University, USA

ABSTRACT

The study investigates the influence of Organizational Culture on Quality Management in sportswear companies. A qualitative study was conducted with the research design including the collection and analysis of primary data including four semi-structured interviews.

The analysis of the interviews supports claim that organizational culture has a significant influence on quality management systems and quality management implementation in a sportswear company.
Learning Vocabulary By Using Modern Technology
Miad Alazmi, Indiana University of Pennsylvania, USA

ABSTRACT

This poster presents how modern technology helps people to enrich vocabulary by using modern technology. There are a lot of websites that students can use to learn vocabulary, but in this poster I will describe a news' website and another website that students can be interested in. These websites have a lot of great materials that students can use to learn vocabulary and also how to pronounce it. I had a personal experience by using these websites, so I think it will be useful.
Using Technology Of Stochastic Multi-Criteria Decision-Making To Evaluate Service Quality In Restaurants
Kuo Yipin, Chang Jung Christian University, Taiwan

ABSTRACT

The catering industry is a kind of service industry that can achieve a more stable operating profit. It can provide a large number of employment opportunities as well. However, the catering industry is highly competitive. It usually faces many competitors. The serving quality of the restaurant is the important index of competitiveness in the catering industry.

Therefore, the evaluation of serving quality in restaurants is an important issue. The aim of this study is to develop a framework to improve serving quality in restaurants and to provide useful strategies for restaurants. Based on the proposed method, each restaurant can understand its quality of service and its competitive position according to the opinions from a large number of consumers. In order to make readers understand our method, several examples will be used to explain the proposed method. In the future, the conclusions and future studies will be discussed.

Keywords: Restaurant Management, Linguistic Variable, Stochastic Multi-Criteria Decision-Making
The Determinants Of FDI In India
Manish Sharma, Doshisha Business School, Japan

ABSTRACT

In the mainstream economic discourse, foreign direct investment (FDI) is long considered to be one of the catalysts for sustainable development and growth. Though some studies argue against the validity of this perspective, many countries continue to reset policies and revise regulations to attract foreign direct investment.

Indian developmental juggernaut is considered by many to be puzzling as the main driver of the fast GDP growth has been the spurt in the domestic consumption and the surprising rise of the services sector in the past couple of decades. Many studies question the sustainability of this model.

The recent pronouncements by the Indian government seek to correct the distortion of the services led job-less growth for a populous emerging economy. The Make in India, campaign is a manifestation of this new manufacturing led approach. Through the use of statistical modeling, this paper tries to identify the key drivers of foreign direct investment in India. The significance of this study lies in the fact that there are no detailed studies that have examined the effectiveness of the newly announced measures to attract FDI.
Keynote Presentation:
Designing An Efficient And Effective Course For The Traditional Classroom Or Online Delivery
Don Forrer, Hodges University, USA

ABSTRACT
This presentation will discuss the importance of motivation to both businesses and academia. Motivation theory is not just one aspect of management. It covers several aspects of the leader/employee or professor/student relationship. To successfully motivate employees and students, it is critical that every aspect of motivation theory is implemented. This presentation will break down important elements of motivation in a fun way that keeps the audience engaged and interested. Aspects of human relations, expectancy, and leadership will be covered in a theory to practice delivery designed for all conference participants.

AUTHOR BIOGRAPHY
Don Forrer has a Doctorate in Business Administration and serves as management professor at Hodges University of Naples, Florida. Additionally, Don is the CEO of Cybernetics Concepts, a management consulting team specializing in utility economics. He previously served as a professor at Troy State University, Strayer University, Central Michigan University, Embry-Riddle University, South University, & International College. He has lectured on management topics in Taiwan, Japan, Guam, London, and throughout the United States. Don has presented his research at prestigious international conferences in the areas of utility economics and online learning. Additionally, Don has been published in several international journals. Since retiring from the U.S. Army in 1992, Don has held senior leadership positions as the Operations Director at Troy State University and the Director of Information and Management for the City of Cape Coral, Florida. Additionally, Don served as the Director of Online Learning and the MBA Program Director at Hodges University. Don currently provides consulting for small businesses and provides workshops for new businesses in southwest Florida. He served for several years as a member of the prestigious Rates and Charges Committee of the American Water Works Association (AWWA). This committee writes the M1 manual that defines rates and charges for the water and wastewater industry. Additionally, Don serves on the board of the Clute Institute and is an editor for the Review of Business Information Systems.
Cognitive Load Theory
Fatimah Alenazi, Southern Illinois University, USA

INTRODUCTION

Cognitive load implies to a theoretical perspective that is associated with the increasingly central role when it comes to the educational research literature. The simple idea linked with Cognitive Load Theory is that there is a restricted cognitive capacity in the working memory which implicates that, in case a learning task needs too much capacity, then the learning process will definitely get disadvantaged. Currently, Cognitive Load Theory has considerably advanced educational research whereby it has been used in explaining a large set of experimental findings (De, 2010, pp. 105-134). However, the theory has recently been subjected to a variety of criticism in regard to its conceptual clarity as well as its methodological approaches. Cognitive Load Theory aims at differentiating cognitive load into three major types which comprise of intrinsic, extraneous and germane cognitive load. The three types of cognitive load prompt Cognitive Load Theory to have a variety of applications particularly when it comes to the field of mathematics.

APPLICATIONS OF COGNITIVE LOAD THEORY

Improving the Learning of Basic Mathematics by the Use of Animated Texts

In the present days, a variety of technological systems have significantly launched a sphere of prospects that are meant for all level instructors which has greatly helped in improving and promoting various cognitive processes that aim at making the understanding and learning process possible. The modern computer tools are aiming at making sure that it is possible for the teachers to come up with smart and adaptable teaching electronic-based materials which provide various information in different forms such as text and images, different moving graphics elements and a synchronized verbal information (Luzón, & Letón, 2015, pp. 119-128). A variety of specialized research that has been carried out in the past two decade in the field of cognitive psychology has significantly contributed to an unending empirical studies whereby certain features of the instructional material appears to facilitate the acquisition of knowledge as well as the advancement of different learning approaches and effective tools when it comes to the work of intellectuals.

As per the simple principles associated with cognitive theory of multimedia learning, sight and hearing are the main means in which information is received. It is then proximately conveyed to the sensory memory where it gets to be stored for a short duration of time usually two seconds before it fades away. The second step which greatly requires a person’s attention process to control it, it involves the selection of the applicable information acquired from the sensory memory as well as its transmission to the working memory. When it comes to the third phase, it is based in the manner in which the information is organized. Lastly, it involves the creation of a new model resulting from the integration of the newly established model in association with the already prevailing knowledge model that gets to be repossessed from the long-term memory. As a result, there is an active processing that is carried out by the learners in their determination to comprehend end results in the appearance of a meaningful learning.

Improving the Effectiveness of Worked Examples in Learning Mathematics

The use of collaborative learning and worked examples are greatly known to facilitate the learning process. A variety of researchers ranging from visual arts to mathematics clearly demonstrates that, when one is learning for example novel material, use of guided instructions through various worked examples, it is very effective when it comes to novice learners as compared to a strategy involving conventional problem-solving. Starting with the effect of worked example, it aims at providing a step-by-step solution to a certain problem and it is a form explicit instructions which aim at ensuring that instead of acquiring new information through problem-solving, learners get to be shown a variety of worked examples for them to study. Use of worked examples is known in providing an expert’s solving problem model from which a student can be able to study and learn as he or she able to focus on understanding a certain solution instead of focusing to solve a problem (Retnowati, Ayres, & Sweller, 2017, pp.666-679). It is argued that working in a
collaborative setting may be natural and effortless as it is a biologically primary activity that humans have evolved to take part in.

Looking at collaborative learning, it takes place when students get to learn by collaborating instead of studying on their own. The research has it that collaborative learning has a substantial academic, social, as well as psychological paybacks. Particularly focusing on learning mathematics, small group learning has led to significant outcomes in comparison to traditional methods employed in teaching. Focusing on evolutionary psychology which is combined with collaborative learning, it is used as a base for Cognitive Load Theory. This perspective of cognition can be employed in providing a new notion when it comes to some of the new perceptions on some of the critical foundations of collaborative learning.

Configuration Comprehension in Computer-Supported Geometry Problem-Solving

There are a variety of researchers which has been investigating on instituting whether the supposed cognitive load was any dissimilar at the time of geometry problems in association with various configuration understanding level that were being explained. Also, researchers have been aiming at establishing whether movements of the eye in the process of understanding geometric problems shows foundations of cognitive loads. In secondary textbooks addressing the aspect of geometry problems, they aim at providing a simple instructional text that is modeled with a certain diagram. Normally, geometry problems tend to constantly call for the presentation of a certain diagram considered dominant to the problem. The diagram greatly provides a valuable, readily visualized representation of a certain problem. According to a variety of researchers in cognitive load, it has been established that there are different geometric configurations which freely apply the suitable theorems (Lin, & Lin, 2014, pp. 605-627). Mostly, cognitive load theorists’ employs geometric problems with an objective of examining the impacts of the tasks such as the advancement of expertise from a mean-ends approach towards a forward scheme.

Focusing on the eye movement in configuration understanding, they eye-tracking approach has been employed with an objective of studying online cognitive processing when it comes to reading and problem-solving (Lin, & Lin, 2014, pp. 605-627). Though the approach has only been functional towards studying the design codes of teaching material, it greatly provides researchers with a very promising way towards studying the various ways in which people tend to think every time they see something. The eye-tracking approach is known to significantly contribute to the understanding of how certain instructional design tends to influence students. For example, adopting of different eye movement indicators based on the eye fixations with an objective of investigating the perceptual processing of a student when learning.

Improving a Student’s Problem-Solving Performance in Mathematics

Context-based problem-solving instructions has a very significant impact when it comes to the performance of mathematics students. Research has it that, Cognitive Load Theory is an instructional theory that is highly based on a variety of aspects of human cognition that are associated with the performance of learners in problem-solving. Furthermore, Cognitive Load Theory considers the approach of worked-out examples as an instructional device that aims at providing a model that is meant to solve a certain type of problems through presenting the solution in a step by step fashion (Dhlamini, 2016, pp. 27-36). The main purpose of the approach is to provide a student with an expert’s solution which he or she can employ as a model of his own problem-solving.

Cognitive Load Theory employs the current knowledge regarding human cognitive architecture with the objective being to generate instructional techniques that do promote learning in order to improve problem performance (Dhlamini, 2016, pp. 27-36). According to researchers, cognitive architecture is considered as an underlying conceptual infrastructure that does influence the cognitive processes when it comes to an intelligent system such as human being.

The point drawn here is that through the use of the assumption of Cognitive Load Theory, then it is possible to provide a plausible explanation when it comes to the observed learners’ accelerated problem-solving performance. Element interactivity may appear to be very high in case the context of the problem is not familiar to the students, hence heightening the extraneous load that may hamper the problem-solving performance.
Learning of Mobile Application Interfaces

Currently, the aspect of mobile learning is a cognitively demanding application and more often the universal nature associated with mobile computing strategies that have seen mobile devices being applied in cognitively demanding settings. Due to the universal aspect of mobile devices, the usage of the human-computer interaction is majorly being apprehensive with the simplicity of their usage as well as their learnability. As a result of mobile devices being used in various sidetracking settings, various interruptions tend to greatly affect the user’s cognitive resources. Moreover, mobile devices are becoming very advanced and powerful which prompts for more sophisticated applications that require being used on them (Deegan, 2013, pp. 27-36). As a result, such kind of applications are now cognitively demanding, however, the usage of mobile devices for the purpose of learning also brings a more significant demand when it comes to the various cognitive resources. In this case, Cognitive Load Theory aims at explaining how the mind of human being tends to interact with instructional materials when it comes to learning and is associated with a variety of strategies that are used in assisting the design of teaching materials that are employed for learning.

Cognitive Load Theory is mainly apprehensive with the cognitive loads linked with learning as well as its teaching design. However, Cognitive Load Theory can be implemented beyond teaching and learning of various application interface and distractions. As a result, the usability aspect of the mobile can benefit by comprehending the capacity for the user to distinguish different sources of cognitive load.

Unpacking the Intricacy of Linear Equations

The process of unpacking various linear equations at the operational level as well as relational lines greatly prompts the cataloguing of the linear equations when it comes to the categorized level of complexity. Usually, equation solving process involves representing an integral part of the mathematics prospectus (Ngu, & Phan, 2016, pp. 95-118). In normal cases, the way in which people tend to learn and comprehend materials is very key when it comes to load theory. Cognitive Load Theory clearly states that the degree of element interactivity acts as the determiner for the complexity of the material and hence the intrinsic cognitive theory. Usually, the learning materials tend to have a low element interactivity in case one learn individual elements separately.

Addressing the aspect of sequencing linear equations with an objective of reducing working memory load, mathematics instructors tend to argue that it is more sensible to sequence linear equations under the basis of the hierarchical level of the complexity in handling linear equations. According to CLT, working memory has the capability of only processing a few elements that usually constitute of information that is completely unfamiliar (Ngu, & Phan, 2016, pp. 95-118). However, its drawback tends to disappear at the time of processing any information that is learned and which is easy to retrieve from the long-term memory. On the other hand, the long-term memory tends to be limitless when it comes to its volume as it has the capability of storing significant quantity of information in different degree of specificity. The point being drawn here is that complication of linear equations is greatly influenced by the degree of element interactivity as well as the nature of the element in the linear equations.

CONCLUSION

In the field of mathematics, Cognitive Load Theory is greatly associated with a variety of applications considering the fact that there is a limited cognitive capacity in the working memory. The first application involves the aspect of improving the learning of basic mathematics by the use of animated texts. The second application involves improving the effectiveness of worked examples in learning mathematics. Configuration comprehension when it comes to the computer-supported geometry problem solving is the other application. The other application involves improving a student’s problem-solving performance in mathematics. Also, Cognitive Load Theory is associated with the application involving learning of mobile application interfaces. The last application involves unpacking the complexity of linear equations which helps in simplifying complex equations. For future research, researchers should pay more attention to the cognitive load theory when they design specific lessons to teach mathematics by using technology.
REFERENCES


