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Contents

Table of Contents Continued on the Next Page

Table of Contents Continued

Introduction

Welcome to this issue of the ***Business Education Innovation Journal***.

> The purpose of this journal is to assemble researched and documented ideas that help drive successful learning and motivate business students to learn. The intention is to draw ideas from across both methods and disciplines and to create a refereed body of knowledge on innovation in business education. As a result, the primary audience includes business education faculty, curriculum directors, and practitioners who are dedicated to providing effective and exciting education.

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Peter J. Billington
Editor

Business Education Innovation Journal

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Social Presence Theory And Experiential Learning Games

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ABSTRACT

This study performs a comparative assessment of a pair of educational games with different design features. One game emphasizes the integration of computer games into the traditional classroom environment. The other emphasizes the replacement of the classroom with the online gaming activity

The first game was expected to be preferable to the second game because the research literature predicts that instructional, experiential simulation games are most effective when they supplement traditional face-to-face instructional methods, but not when they replace other methods. This prediction is also consistent with social presence theory.

However, respondents did not consistently prefer the first game. Instead, when respondents chose their preferred game over the other, they tended to think much more highly of their preferred game's entertainment value and emotional outputs, than respondents who chose the alternative game. They did not think much more highly of their preferred game's instructional or accessibility characteristics, or ability to improve cognition or knowledge.

Keywords: Cognitive complexity theory, Experiential learning, Role-playing simulation games, Social presence theory

INTRODUCTION

One of the byproducts of the recent explosion of internet technologies has been the soaring popularity of games on web-enabled devices. From the relatively simple challenges of FarmVille and Angry Birds, to the role-playing adventures of The Sims and the World of Warcraft, such games have entered the mainstream of contemporary American culture (Lamb et al., 2012).

In the academic realm, role-playing simulation games have long been utilized to supplement other instructional methods because the games immerse learners in experiential activities. And today, the growing popularity of web-based games creates enhanced opportunities to utilize internet platforms for such simulations.

A recent meta-analysis by Sitzmann (2011) noted that instructional, experiential simulation games are most effective when they supplement traditional face-to-face instructional methods, but not when they replace other methods. Specifically,

…Trainees learned more, relative to a comparison group, when … the simulation game was a supplement to other instructional methods rather than stand-alone instruction. However, trainees learned less from simulation games than comparison instructional methods when the instruction the comparison group received as a substitute for the simulation game actively engaged them in the learning experience. (pg. 489)

Thus, if computer gaming activities are to be integrated as supplemental learning activities into traditional academic curricula, the design of the computer games may need to complement face-to-face classroom based discussions.

The purpose of this study is to perform a head-to-head comparative assessment of a pair of educational games with equivalent educational goals, but with different design features. One game utilizes web pages and electronic files to communicate information, but is designed as a supplemental resource for instructors and learners who meet face-to-face in a role playing simulation. The other game fully immerses the learners in a stand-alone, online virtual world.

In other words, one game's design emphasizes the integration of computer games into the traditional classroom environment. The other game's design emphasizes the replacement of the traditional classroom environment with the online gaming activity.

According to the findings of Sitzmann (2011), the first game should be more effective than the second game. This prediction is also consistent with social presence theory, which posits that communication between individuals is more effective when the parties sense that they are in the social presence of their counterparts (Short et al., 1976).

What were the outcomes of this study? As expected, a group of educational technology instructors and researchers overwhelmingly expressed a preference for the first game. However, a group of accounting professors overwhelmingly expressed a preference for the second game. Furthermore, a group of graduating seniors in an accounting program equally split in their preferences.

The following sections present and interpret the preferences of these three groups. These sections include a literature review, a description of the experimental design and results, and a discussion of conclusions and implications.

LITERATURE REVIEW

Traditional education requires a process of communication. The classic lecture format of instruction revolves around the verbal elucidation of facts and concepts during live face-to-face communications between instructors and learners (Freeman, 2014).

Although the uni-directional nature of lecture based instruction has often been criticized as inferior to interactive and experiential learning (Freeman, 2014), live face-to-face communications between instructor and learners continue to produce certain positive outcomes that cannot be replicated easily by web based platforms (Jaggers, 2014). One such outcome is the effect of social presence, representing the sense that one is in direct physical proximity to another during a communication activity (Kraten, 2007a).

Social presence theory, as a theory of communication, first gained prominence during the 1960s. During this era, researchers at AT&T's Bell Labs developed the Picture Phone, an early ancestor of today's web based videoconferencing services. John Short, a senior researcher at Bell Labs, theorized and then demonstrated that a video call can be more effective than a traditional audio call because a visual communication process can be enhanced by body language, facial expression, and other forms of nonverbal communication (Short et al., 1976).

The theory is relevant to education because it is believed that certain topics are more effectively addressed through face-to-face classroom conversation than through online learning platforms (Kraten, 2007). As an extension of this theory, synchronous online conversations are likewise found to be better suited for certain learning activities than asynchronous human interactions (Hastie, 2007).

Furthermore, complexity theory, as a theory of cognition, impacts decisions to use educational role-playing simulation games as a supplement for (or in place of) traditional lecture methods. According to Vannoy (1965),

Although various writers have given somewhat different meanings to the concept of cognitive complexity, it has generally been postulated that some persons are prone to employ few dimensions when they perceive and evaluate stimuli, or are inclined to make only very gross discriminations among dimensions of meaning. Other persons are believed to employ many dimensions and/or to make fine discriminations along the dimensions they employ. (pg. 385)

This theory is relevant to the field of instructional design because the curriculum for any diverse group of individuals should be structured in a manner that caters to the cognitive characteristics of all students. But how can

an instructor design a single learning activity, to be completed simultaneously by a diverse audience of students, who all maintain very different levels of cognitive complexity?

The application of gaming principles can be employed to answer these questions. An important feature of gaming is that a game designer can create a game with multiple paths to winning, i.e. to acquiring and retaining knowledge.

In other words, by incorporating a game into a learning activity, an instructor can ensure that certain paths to victory are customized for cognitively complex individuals and different paths are customized for other individuals. Thus, educational activities that incorporate theories of social presence, cognitive complexity, and gaming should achieve optimal learning outcomes in a carefully designed curriculum.

But what factors impact the effectiveness of such activities? Malone (1981) noted that effective learning activities utilize games that employ the features of Challenge, Fantasy, and Curiosity to generate a sense of intrinsic motivation. Garris et al. (2002) later demonstrated that such factors can be arranged within an Input-Process-Output (IPO) model that consists of the following sections:

(a) Inputs: instructional content and game characteristics;
(b) Processes: the game cycle of judgments, behavior, and feedback;
(c) Outputs: learning outcomes.

Malone's trio of factors have been explored, enhanced, and greatly expanded by numerous researchers over several decades. This study relies upon the factors that were mentioned, relatively recently, in the Sitzmann (2011) meta-analysis of computer based simulation games.

Sitzmann (2011) did not utilize the Garris et al. (2002) IPO format to categorize these factors. In fact, Garris et al. (2002) noted the difficulty that is posed by any attempt to apply the IPO model across different studies, stating that,

Although many have noted the potential benefits that may be gained from incorporating game characteristics into instructional applications, there is clearly little consensus regarding how these essential characteristics are described. This suggests that either the characteristics of games are so varied and diffuse that attempts to categorize them are likely to be futile or that different researchers are using different approaches and terms to describe similar game dimensions. We believe the latter is the case. (pg. 446)

Consistent with this belief, Table 1 (below, in the following section) presents an IPO model approach to categorizing the factors that are mentioned in the Sitzmann (2011) meta-analysis. The following section also describes the design of an experiment that utilizes a survey methodology to assess these factors.

EXPERIMENTAL DESIGN

A pair of role-playing games was designed for graduating seniors in a capstone accounting course at a regional college in the northeastern United States. The games were created to teach the scientific method and critical thinking skills in a manner that emphasizes internal controls and risk management concepts.

One game, entitled *Save The Blue Frog*, an integrated accounting case involving valuation, sustainability, controls and risk, and ethics, is a multi-player experience that utilizes web pages and electronic files to communicate content to individuals who play the game while interacting with fellow learners and instructors in a traditional face-to-face environment. The content of the game is available online, in the public domain at no cost, at www.savethebluefrog.com.

The other game, entitled *Audit Experience*, an interactive training video game with an emphasis on ethical behavior, is likewise a multi-player experience, albeit one that is fully immersed in an online video game style virtual world. The content of the game is available online, in the public domain at no cost, in the region entitled SCU2 within the service known as Second Life.

The games were initially presented at annual meetings of the American Accounting Association. *Audit Experience* was recognized with the Innovation in Teaching Award at the 17th Annual Symposium on Ethics Research in

Accounting in 2012. And the behavioral research component of *Save The Blue Frog* was recognized with the Best Research Paper award at the Strategic and Emerging Technologies Workshop in 2014.

More recently, the two games were presented to (and discussed with) a group of educational technology instructors and researchers at the 2nd Annual Biz Ed Innovation Conference in 2014, a group of accounting professors at the Annual Meeting of the Rhode Island Association of Accounting Professors in 2014, and a group of graduating seniors in the capstone class of the accountancy program of Providence College in 2014.

Each game incorporates the theories of social presence, cognitive complexity, and gaming in its design. *Save The Blue Frog* integrates its online content into a traditional face-to-face classroom experience, one that optimizes the social presence of instructors and learners. *Audit Experience*, however, generates a lesser sense of social presence by employing humanoid avatars in a virtual world to enable verbal conversations between individuals.

Although the games maintain different levels of social presence, they feature equivalent levels of cognitive complexity and gaming activities. Both represent multi-player games that encourage learners to choose from an array of different approaches to achieve their learning goals. And both incorporate twelve factors in their designs, as listed below in Table 1.

Table 1: Game Factors Arranged Within The Input - Process - Output Model

Input	Processing	Output
(A) Entertainment value	(D) Extent of interactive processes	(E) Ability to generate … an affective sense of self-efficacy
(B) Level of active instruction		(F) Ability to generate … an affective sense of motivation
(C) Accessibility to students		(G) Ability to generate … an affective reaction
		(H) Ability to generate … behavioral effort
		(I) Ability to improve … cognitive declarative knowledge
		(J) Ability to improve … cognitive retention
		(K) Ability to improve … skill sets of procedural knowledge
		(L) Ability to improve … the transfer of skill sets of knowledge

Specifically, In the *Audit Experience* game, learners play the roles of staff accountants who must visit a manufacturing facility to investigate internal control irregularities. They can either walk from the initial raw materials inspection areas to the final finished goods shipping and delivery areas in a sequential room-by-room manner, or fly over the entire facility for a singular perspective.

Likewise, in the *Save The Blue Frog* game, learners play the roles of staff accountants who must proceed through a set of four diverse and yet interrelated analyses in order to develop and present a set of recommendations to a senior partner about a prospective client that has engaged in internal control irregularities. They can either move through each of the four analyses in sequence, or employ a more holistic approach to developing their recommendations.

Each participant in the group of educational technology instructors and researchers, the group of accounting professors, and the group of graduating seniors in an accounting program was asked to select the game that (s)he preferred on an overall "bottom line" basis. All participants were expected to prefer *Save The Blue Frog* because of its greater degree of social presence.

Each participant was also asked to assess the twelve IPO Model characteristics of each game. A scale of 1-to-7 was utilized for assessment purposes, where: 1 = very ineffective, 2 = moderately ineffective, 3 = modestly ineffective, 4 = neither ineffective nor effective, 5 = modestly effective, 6 = moderately effective, and 7 = very effective.

The results of the assessment process are presented in the following section. Although all of the findings can be explained, certain findings are inconsistent with social presence theory.

EXPERIMENTAL RESULTS

Twelve educational technology instructors and researchers who attended the 2015 Biz Ed Innovation Conference completed the assessment process in its entirety. Eleven of these twelve respondents preferred *Save The Blue Frog* over *Audit Experience* on an overall "bottom line" basis (see Table 2, below).

Twelve accounting professors who attended the 2015 Annual Meeting of the Rhode Island Association of Accounting Professors likewise completed the assessment process in its entirety. However, eleven of these twelve respondents, preferred *Audit Experience* over *Save The Blue Frog* (see Table 2).

Eighteen graduating seniors in the capstone accountancy class at Providence College completed the assessment process in its entirety. Nine of these respondents preferred the *Blue Frog* game, and the other nine preferred the *Audit Experience* game (see Table 2).

Table 2: Game Preferences By Survey Group

Games	Technology Conference	Accounting Professors	Accounting Students
Audit Experience	1	11	9
Save The Blue Frog	11	1	9
Total	**12**	**12**	**18**

At first glance, these three groups appear to have yielded completely different outcomes, with only the first group expressing a preference that is consistent with social presence theory. However, a detailed analysis of the scores of each of the twelve IPO Model characteristics of each game provides an explanation for their preferences.

Tables 3 through 5, presented below, summarize the means and the standard deviations of each group's survey responses. Table 3 indicates that the technology conference instructors (i.e the first group) produced higher mean scores for *Save the Blue Frog* than for *Audit Experience* for eight of the twelve factors, and equal scores for two factors, consistent with social presence theory.

Table 3: Technology Instructors And Researchers - Assessment Scores: Means And (St Dev)

Factors	Audit Experience	Save The Blue Frog
(A) Entertainment value	5.7 (0.65)	5.3 (1.29)
(B) Level of active instruction	6.0 (0.74)	6.1 (0.90)
(C) Accessibility to students	6.1 (0.90)	5.3 (1.22)
(D) Extent of interactive processes	5.5 (0.90)	5.5 (1.24)
(E) Ability to generate … an affective sense of self-efficacy	5.3 (0.75)	5.4 (1.16)
(F) Ability to generate … an affective sense of motivation	5.3 (0.65)	5.9 (0.79)
(G) Ability to generate … an affective reaction	4.9 (1.08)	5.8 (1.11)
(H) Ability to generate … behavioral effort	5.4 (0.79)	6.0 (0.43)
(I) Ability to improve … cognitive declarative knowledge	5.0 (1.04)	5.9 (1.00)
(J) Ability to improve … cognitive retention	5.6 (0.90)	6.0 (0.95)
(K) Ability to improve … skill sets of procedural knowledge	5.9 (0.79)	5.9 (1.08)
(L) Ability to improve … the transfer of skill sets of knowledge	5.6 (0.79)	5.7 (1.23)

Table 4, however, indicates that the accounting instructors (i.e. the second group) produced higher mean scores for *Audit Experience* than for *Save The Blue Frog* for all twelve factors. These outcomes are not consistent with social presence theory.

Table 4: Accounting Professors - Assessment Scores: Means And (St Dev)

Factors	Audit Experience	Save The Blue Frog
(A) Entertainment value	6.7 (0.49)	5.3 (1.23)
(B) Level of active instruction	6.5 (0.52)	5.8 (1.47)
(C) Accessibility to students	6.5 (0.67)	6.3 (0.97)
(D) Extent of interactive processes	6.5 (0.67)	5.6 (1.38)
(E) Ability to generate … an affective sense of self-efficacy	6.1 (0.90)	5.8 (1.14)
(F) Ability to generate … an affective sense of motivation	6.3 (0.97)	5.8 (1.19)
(G) Ability to generate … an affective reaction	6.3 (0.78)	6.1 (1.16)
(H) Ability to generate … behavioral effort	6.2 (0.83)	6.0 (0.85)
(I) Ability to improve … cognitive declarative knowledge	6.3 (0.75)	6.2 (0.83)
(J) Ability to improve … cognitive retention	6.3 (0.75)	5.8 (1.14)
(K) Ability to improve … skill sets of procedural knowledge	6.3 (0.75)	5.9 (1.16)
(L) Ability to improve … the transfer of skill sets of knowledge	6.3 (0.62)	5.9 (0.90)

Table 5 indicates that the graduating seniors in the accounting program (i.e. the third group) produced higher mean scores for *Audit Experience* for all three Input factors and the one Process factor, but produced higher mean scores for *Save The Blue Frog* for four of the eight output factors. Conversely, they produced higher means scores for *Audit Experience* for three of the eight output factors, and scored the two games equally on one output factor. These outcomes are not consistent with social presence theory.

Table 5: Accounting Capstone Students - Assessment Scores: Means And (St Dev)

Factors	Audit Experience	Save The Blue Frog
(A) Entertainment value	5.7 (0.91)	5.0 (1.37)
(B) Level of active instruction	5.6 (0.92)	5.4 (0.78)
(C) Accessibility to students	5.9 (1.06)	5.4 (1.38)
(D) Extent of interactive processes	5.9 (1.39)	5.2 (1.20)
(E) Ability to generate … an affective sense of self-efficacy	5.3 (1.14)	5.2 (1.26)
(F) Ability to generate … an affective sense of motivation	5.3 (1.23)	5.5 (1.42)
(G) Ability to generate … an affective reaction	5.3 (1.03)	5.7 (1.19)
(H) Ability to generate … behavioral effort	5.4 (1.20)	5.7 (1.37)
(I) Ability to improve … cognitive declarative knowledge	5.2 (0.92)	5.6 (0.98)
(J) Ability to improve … cognitive retention	5.6 (0.98)	5.6 (0.86)
(K) Ability to improve … skill sets of procedural knowledge	5.8 (0.99)	5.5 (1.15)
(L) Ability to improve … the transfer of skill sets of knowledge	5.7 (0.83)	5.4 (1.29)

How do the data in Tables 3 through 5 provide an explanation of the preferences of the groups of survey respondents? In order to understand this explanation, further data analysis is necessary.

Specifically, when the data of the forty two respondents are resorted into two new groups (i.e. a group of twenty one respondents who prefer *Audit Experience*, and a group of twenty one respondents who prefer *Save The Blue Frog*), a consistent explanatory pattern becomes evident.

Table 6, shown below, presents mean and standard deviation data for each of the twelve factors for the respondents who prefer *Save The Blue Frog*. Unsurprisingly, they produced higher mean scores for *Save The Blue Frog* than for *Audit Experience* for nine of the twelve factors, and scored the two games equally on another factor.

Table 6: Individuals Who Prefer Save The Blue Frog - Assessment Scores: Means And (St Dev)

Factors	Audit Experience	Save The Blue Frog
(A) Entertainment value	5.5 (0.81)	5.5 (1.21)
(B) Level of active instruction	5.8 (0.77)	5.9 (0.94)
(C) Accessibility to students	6.1 (0.85)	5.4 (1.32)
(D) Extent of interactive processes	5.8 (1.03)	5.6 (1.07)
(E) Ability to generate … an affective sense of self-efficacy	5.2 (0.93)	5.6 (0.86)
(F) Ability to generate … an affective sense of motivation	5.1 (0.89)	6.0 (0.92)
(G) Ability to generate … an affective reaction	5.0 (0.97)	6.1 (0.77)
(H) Ability to generate … behavioral effort	5.5 (0.75)	6.1 (0.57)
(I) Ability to improve … cognitive declarative knowledge	5.3 (0.85)	5.8 (0.87)
(J) Ability to improve … cognitive retention	5.6 (0.86)	6.0 (0.80)
(K) Ability to improve … skill sets of procedural knowledge	5.8 (0.83)	6.0 (0.86)
(L) Ability to improve … the transfer of skill sets of knowledge	5.6 (0.81)	5.8 (1.14)

Likewise, Table 7, shown below, presents mean and standard deviation data for each of the twelve factors for the respondents who prefer *Audit Experience.* Unsurprisingly, they produced higher means scores for *Audit Experience* than for *Save The Blue Frog* for eleven of the twelve factors.

Table 7: Individuals Who Prefer Audit Experience - Assessment Scores: Means And (St Dev)

Factors	Audit Experience	Save The Blue Frog
(A) Entertainment value	6.4 (0.67)	4.9 (1.31)
(B) Level of active instruction	6.1 (0.91)	5.6 (1.16)
(C) Accessibility to students	6.1 (1.01)	5.8 (1.21)
(D) Extent of interactive processes	6.1 (1.24)	5.1 (1.39)
(E) Ability to generate … an affective sense of self-efficacy	5.9 (1.01)	5.2 (1.45)
(F) Ability to generate … an affective sense of motivation	6.0 (1.07)	5.4 (1.36)
(G) Ability to generate … an affective reaction	6.0 (1.07)	5.6 (1.40)
(H) Ability to generate … behavioral effort	5.8 (1.26)	5.6 (1.29)
(I) Ability to improve … cognitive declarative knowledge	5.6 (1.21)	5.9 (1.04)
(J) Ability to improve … cognitive retention	6.0 (0.97)	5.5 (1.08)
(K) Ability to improve … skill sets of procedural knowledge	6.2 (0.87)	5.5 (1.33)
(L) Ability to improve … the transfer of skill sets of knowledge	6.1 (0.70)	5.5 (1.21)

Although Tables 6 and 7 do not individually provide an explanation of the preferences of the groups of survey respondents, the data in these tables can be utilized to calculate the data in Table 8. That final table, shown below, distills all of the factor preference data of all of the respondent groups into a single analysis.

Table 8: Differences Between Mean Scores In Tables 6 And 7

Factors	Audit Experience	Save The Blue Frog
(A) Entertainment value	0.9	0.6
(B) Level of active instruction	0.3	0.3
(C) Accessibility to students	0.0	(0.4)
(D) Extent of interactive processes	0.3	0.5
(E) Ability to generate … an affective sense of self-efficacy	0.7	0.4
(F) Ability to generate … an affective sense of motivation	0.9	0.6
(G) Ability to generate … an affective reaction	1.0	0.5
(H) Ability to generate … behavioral effort	0.3	0.5
(I) Ability to improve … cognitive declarative knowledge	0.3	(0.1)
(J) Ability to improve … cognitive retention	0.4	0.5
(K) Ability to improve … skill sets of procedural knowledge	0.4	0.5
(L) Ability to improve … the transfer of skill sets of knowledge	0.5	0.3

Note: _In 22 of the 24 cells of Table 8, the directions of these differences was consistent with expectations. However, the directions of the differences for factors (C) and (I) in the Save The Blue Frog column were inconsistent with expectations. For these factors, individuals who preferred Audit Experience rated Save The Blue Frog more highly than individuals who actually preferred Save The Blue Frog._

Table 8 simply calculates the differences between the mean data in Table 6 and the mean data in Table 7. A relatively large number in a cell in Table 8 means that individuals who preferred that column's game produced a much higher mean score for that factor than individuals who preferred the other game.

So which factors generally garnered the largest numbers (i.e. the greatest differences) in Table 8? The only input factor with scores greater than 0.5 for both games was (A) Entertainment Value; it featured scores of 0.9 for _Audit Experience_ and 0.6 for _Save The Blue Frog_. The only output factor with scores greater than 0.5 for both games was (F) Ability to Generate … an Affective Sense of Motivation; it featured scores of 0.9 for _Audit Experience_ and 0.6 for _Save The Blue Frog_.

Furthermore, the only other individual cells with scores greater than 0.5 all represented factors that involve the ability to generate affective responses. These cells included the _Audit Experience_ factors for (E) Ability to Generate … An Affective Sense of Self-Efficacy and (G) Ability to Generate … An Affective Reaction.

And what of the input factors involving the nature of the instruction, the accessibility of the games, the extent of interactive processes, and the ability to improve cognition or knowledge? None of these cells in Table 8, for either game, featured scores greater than 0.5.

In other words, when respondents (across all three original groups) chose one game over the other, they tended to think much more highly of their game's capabilities for entertainment value, and for producing emotional outputs, than respondents who chose the alternative game. Conversely, they did not think much more highly of their game's instructional or accessibility characteristics, or of their game's ability to improve cognition or knowledge.

CONCLUSIONS AND IMPLICATIONS

Only one of the three original groups of respondents overwhelmingly preferred *Save The Blue Frog,* the game that encompassed a greater degree of social presence and thus represented the expected choice of this study. Another group overwhelmingly preferred *Audit Experience*, and the third split its preference between the two games.

When the respondents in the three groups were re-categorized into a pair of new groups, however, their preferences appeared to be more consistent. Individuals who preferred *Audit Experience*, regardless of their original group affiliation, tended to assess the entertainment value of that game much more greatly than individuals who preferred *Save The Blue Frog*. Conversely, those who preferred *Save The Blue Frog* tended to assess the entertainment value of that game much more highly than individuals who preferred *Audit Experience.*

Similar findings were produced for certain output factors addressing affective outcomes. But no such findings were produced for factors addressing active instruction, accessibility, interactive processes, or cognition or knowledge.

Of course, we cannot therefore conclude that the respondents did not care at all about these latter factors. In fact, according to Tables 3, 4, and 5, many of the mean values of these factors equaled or exceeded 6.0 on a 1-to-7 scale.

Nevertheless, this study produced several findings that may enable curriculum content designers to develop more emotionally motivating, more entertaining, and thus more effective customized learning activities. And with such customization practices, educators may better adapt the theories of social presence, cognitive complexity, and gaming to the needs of their students.

But why did each of the three original groups produce such different assessments of the emotional motivational value and entertainment value of the games? Is it possible, for instance, that each group was more emotionally motivated and entertained by the learning activity which posed the greater novelty?

Did educational technologists, for instance, prefer *Save The Blue Frog* because they appreciated that game's novelty of a senior accounting partner appearing as a character in a web based game and then "stepping out of the web page" to interact with students? That was a unique feature of that particular game, and it may have seemed more novel to educational technologists than to accounting instructors who interact frequently with senior accounting partners.

Likewise, did business school professors who are accustomed to textbook oriented learning activities prefer *Audit Experience* because they appreciated the novelty of a video game approach to accounting education? The video game format may have seemed less novel to educational technologists.

Such implications, though not addressed by this study, represent potential avenues for future research. This study, nevertheless, provides curriculum designers with a cautionary warning that students will not necessarily always prefer experiential role-playing games with greater degrees of social presence.

REFERENCES

Freeman, S., Eddy, S., McDonough, M., Smith, M., Okoroafor, N., Jordt, H. & Wenderoth, M. (2014). Active learning increases student performance in Science, Engineering, and Mathematics. *Proceedings of the National Academy of Sciences*. 111 (23), 8410-8415.

Garris, R., Ahlers, R., & Driskell, J. (2002). Games, motivation, and learning: A research and practice model. *Simulation & Gaming.* 33 (4), 441-467.

Hastie, M., Chen, N., & Kuo, Y. (2007). Instructional design for best practice in the synchronous cyber classroom. *Educational Technology & Society.* 10 (4), 281-294.

Jaggers, S. (2014). Choosing between online and face-to-face courses. *The American Journal of Distance Education*. 28 (1).

Kraten, M. (2007). Social presence, power, and the behavior of negotiators: New insights for internet communication media. *Journal of Digital Business*. 2, 47-56.

Kraten, M. (2007a). Negotiating transfer prices: A managerial accounting approach to integrating the theories of Economics, Psychology, and Information Systems. *Journal of Theoretical Accounting Research.* 3 (1).

Lamb, C., Hair, J. & McDaniel, C. (2012). *Marketing*, *12th edition*. Boston: Cengage Learning.

Malone, T. (1981). Toward a theory of intrinsically motivating instruction. *Cognitive Science.* 4, 333-369.

Short, J., Williams, E., & Christie, B. (1976). *The social psychology of telecommunications*. London: John Wiley and Sons.

Sitzmann, T. (2011). A meta-analytic examination of the instructional effectiveness of computer-based simulation games. *Personnel Psychology.* 64, 489–528.

Vannoy, J. (1965). Generality of Cognitive Complexity-Simplicity as a personality construct. *Journal of Personality and Social Psychology*. 2 (3), 385-396.

Teaching Business Students the Art and Science of Innovation

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ABSTRACT

Today the ability to innovate has become a core and sought after business competency. While innovation is often taught in capstone business courses as a topic, this paper argues that the time is right to make innovation the central theme in teaching strategic management. The McKinsey &Company framework is used to teach students the eight essential ingredients of innovation and its execution. The opportunities to integrate previous knowledge about other business functions into the teaching of innovation is outlined. The critical business lessons that can be imparted to business students through the McKinsey framework is discussed.

Keywords: Strategic management curriculum, innovation, innovation framework, business competencies.

INTRODUCTION:

Strategic management is a capstone course in most undergraduate business degree programs in U.S. institutions. The strategic management course integrates fundamental business concepts from accounting, finance, production, human resources, marketing, and leadership and challenges students to apply these integrated concepts in order to learn how to run a business. This gives students a deeper understanding of the many challenges that CEOs face in ensuring the success and sustainability of their company in the face of rapid changes. They realize that while hindsight is easy, consistent and high-quality execution is not.

One of the key factors today in ensuring the long-term success and sustainability of any business is the art and science of innovation. The rise of the new economy, characterized by intense global competition, advanced information technologies, a virtual 24x7 workforce, and an almost ubiquitous world of online business transactions free of geographical boundaries, has made information, knowledge, and innovation integral and invaluable in creating and managing sustainable competitive advantage. In other words, it is not enough if our students understand the fundamental concepts of business and how to apply them to a business setting. Instead, today they should know how to apply core business concepts through the lens of speed, innovation, and customer service. This paper focuses on how to integrate the fundamentals of innovation into the strategic management curriculum.

There are at least three challenges in teaching innovation to undergraduate students.

1. <u>What does it mean</u>? Not only students, but business owners and leaders too, sometimes struggle to define innovation in meaningful, concrete and operational terms, although many understand it intuitively. Words such as creative, unique, transformation, revolution, etc. come to mind, but how can we teach students to translate this into operational concepts that can be executed for the long-range success of a company?
2. <u>Company size:</u> Most students are familiar with the big brands. Ask them for examples and they gravitate toward Walmart, Starbucks, Apple, Nike and other big brands. However, the bigger the company, the greater the challenge in being innovative with a few exceptions like Apple. Instead, the Silicon-valley, born-yesterday companies are ideal examples of innovation and students are often unfamiliar with these companies.
3. <u>How to be innovative?</u> It is one thing to understand innovation as a concept and its importance. It is quite another to be innovative. How can we teach students to become innovative, to recognize untapped opportunities, and to successfully execute innovative ideas?

In spite of these challenges that many faculty face in teaching this topic, innovation is an ideal concept that deserves special attention in all strategic management courses. This is because innovation is cross-functional and requires understanding and integrating key concepts from different business functions into a cohesive whole. This ability to think holistically is the foundation of all capstone courses which challenges students to integrate complex concepts from multiple business functions and to execute transformational ideas by building meaningful systems, structures, processes, and principles.

FRAMEWORK FOR TEACHING INNOVATION:

McKinsey & Company has identified a holistic framework that captures the eight essentials of innovation for any company, regardless of size, industry, geographical location, product or service. This framework is simple and can be used in teaching innovation and in integrating innovation into solving business case studies that are often an essential component of strategic management.

Table 1: McKinsey framework for innovation

Phases of Innovation	How to implement
Aspire	Set clear goals and objectives to target and execute ongoing innovation
Choose	Choose projects that are innovative and risk-oriented and create a strong portfolio for innovation for the entire organization
Discover	Identify the value proposition of how innovative ideas and projects can be translated into competitive advantage and profits
Evolve	Identify how existing business models should be modified or new business models should be created to absorb and benefit from innovative ideas
Accelerate	Identify the rate of speed to implement innovation that aligns with the culture and capacity of the organization
Scale	Analyze if innovative ideas, products and services can be scaled and sustained appropriately
Extend	Identify external networks and partners that can be leveraged to yield greater returns on investment in innovation.
Mobilize	Motivate and train employees to participate and contribute to innovation

Each of these phases is explained below:

1. **Aspire**: In several business courses, students learn how to set goals and objectives that are specific and measurable. Often, innovation as a goal is missing in these objectives. By including the specifics of innovation as an integral part of goal-setting, both in the short-term and long-term, whether it is a case study or an assignment, students learn to make an innovation a core component of all business discussions and decisions.

2. **Choose**: Students learn quickly that this phase is often not as easy as it may seem. In particular, students struggle with identifying innovative projects within large and well-established companies, such as Starbucks. Hence this phase is a great way to challenge the creativity and innovative abilities of students. In addition, this compels students to study and understand the risk profile of a given company or industry. Not all companies or even industries have the same risk personality and students learn to assess and determine where a company falls on the scale between risk-prone and risk-averse and the positive and negative consequences of its existing risk profile. Identifying innovative projects for a give company can be a group project or an assignment where the entire class participates. Students can be asked to rank the ideas generated by other students. Listening to the innovative ideas and perspectives of others helps a student to expand their own thinking about what it means to innovate.

3. **Discover**: Innovative ideas are great, but ideas by themselves do not generate profits. In this phase, students are challenged to identify how an idea will add competitive advantage to the firm. How can they ensure that innovative ideas translate into profits? What is the unique value proposition of this idea? McKinsey recommends addressing this issue by looking at the cross-section of three key factors:
   a. A meaningful problem to solve
   b. A technology solution to a nagging problem
   c. A creative business model that generates money by meeting customer needs

   This phase helps students to develop strengths in the area of execution. The world is not short on great ideas, but very few are truly skilled at executing great ideas. It is the execution skills that separates the winners from the losers and students learn this key lesson in this phase.

4. **Evolve**: It goes against the grain of human thinking to tweak a good thing. Most businesses hang on to existing business models, sometimes even in the face of compelling evidence that the model is facing sweeping threats from upstarts. But the evidence is compelling that the companies that have survived the

trials and tribulations of economic downturns and technological waves are those that have repeatedly revisited their business models, looking for opportunities to create, revise, or expand existing revenue sources through innovation. This phase helps students to better understand the meaning and value of a business model in addition to teaching them that no model is permanent and that all models need to be continuously monitored and revised.

5. **Accelerate:** Balancing the need for control and the need for innovation is never easy. The former demands systematic and meticulous thinking, structure, and systems, while the latter demands speed, freedom from stifling rules and bureaucracies, and willingness to experiment. In strategic management and other business courses, students are taught about the importance of systems and structures. Teaching innovation as a core component of strategy challenges them to learn how and when to abandon, modify or get around systems and structures in the interest of innovation, while following legal and financial protocols.

6. **Scale:** Grand ideas need even grander resources. Students are often fully engaged in the idea generation stage, but may sometimes lack the ability to configure the resources needed to execute innovative ideas. This phase teaches students to rethink the resources and capabilities of the organization. The differences between resources and capabilities and its relationship to the competitive strength of an organization are key concepts that are covered in books on strategy. By incorporating the issues related to scaling innovation, not only are these concepts strengthened but sometimes students realize that balancing resources and capabilities within the innovation imperative can be tricky. It highlights the pressures of financial constraints on organizations even as they strive to be innovative.

7. **Extend:** This phase helps students to recognize the importance of co-petition: the merging of competition and collaboration. Students are challenged to actively think about external networks that can add value to the execution of innovative ideas within a company. Limited resources, high stakes competition, economic pressures, rapid global disruptions of entire industries, powerful technological forces, and the ever-increasing and dynamic needs of customers have made it imperative for businesses to partner with external constituencies. It has challenged businesses to redefine value propositions.

8. **Mobilize:** Finally, no innovation is possible without talented and motivated people. The student is challenged in this phase to apply the concepts learned in Human Resources, Organizational Development, and Leadership courses on how to motivate, engage, and inspire people to take risks, be creative, learn from failures, and think futuristically. Innovative ideas can disrupt established structures, create fears and anxieties, lead to resistance, and even sabotage among those who may view innovation as a threat to their stability and security. Students must take all these factors into account to show how their change management strategy can help translate innovative ideas into competitive strengths.

INNOVATION AS A CORE COMPONENT OF STRATEGY:

Today many chief executives understand the meaning of "disruptive innovation," a term coined by Harvard Professor Clayton Christensen, not because they read about it, but because their industry or company has either experienced it through great returns or to great agony or they have witnessed the power of disruptive innovation around them. Professor Christensen points out that all good decisions at some point become bad decisions because the environment has changed significantly, while the CEO is still making decisions as if the environment is static and stable. As disruptive innovation increasingly becomes the norm, business students of today will be able to survive and grow only if they have a deeper understanding and experience with what it takes to innovate. Business curriculum is today facing its own disruption and survival of business schools will depend among other things on its graduates being able to make innovation a core component of strategic management. This means that discussions about innovation and its execution cannot be relegated to a chapter, but instead, must take center-stage. Core business principles from different functional areas must be viewed through the lens of innovation because some of these functions themselves may become outdated over the long run. By challenging students to come up with innovative ideas and examine its impact and relationship to the competitive advantage of a firm, students will be better prepared to lead and to add value to future employers.

VALUABLE LESSONS

Innovation has now become a key and critical focus area for business executives. The myth that creativity is an inborn trait or that only a few people are capable of being creative and innovative has been systematically refuted and disproven. Hence, it becomes imperative for business students to understand the business world and its opportunities and challenges through the lens of innovation. By providing them basic training in innovation, students

acquire crucial soft skills such as creativity, problem-solving, critical thinking, and leadership. They will be better prepared to lead a company when they enter the workforce. There are many valuable lessons that students gain from this approach. These include:

1. Understanding the key concepts of innovation and learning that everyone has the capacity to innovate and to be creative. It helps students to map bridges to creative collaboration (Lugar-Brettin,2014)
2. Developing innate skills to be innovative and generating innovative ideas to advance business goals.
3. Learning how to prioritize and rank innovative ideas, products and services while keeping the firm's resources and capabilities in mind.
4. Learning that innovation is not a one-person game, and thereby understanding the importance of building external partners and networks.
5. Understanding the importance of change management, leadership and motivation to ensure the successful execution of innovative ideas.

CONCLUSION:

The McKinsey & Company framework for innovation is one of the efficient ways to teach innovation to business students as it identifies eight essential components of successful innovation. The ideal platform to introduce the teaching and training of innovation is through the capstone strategic management course. This paper shows how this can be done and the many benefits and soft skills that students learn within this framework.

REFERENCES

Abaho, E., Olomi, D. R., & Urassa, G. C. (2015). Students' entrepreneurial self-efficacy: Does the teaching method matter? *Education + Training, 57*(8/9), 908-923.

Bogers, M., & Sproedt, H. (2012). Playful collaboration (or not): Using a game to grasp the social dynamics of open innovation in innovation and business education. *Journal of Teaching in International Business, 23*(2), 75.

Bruton, D. (2011;2010;). Learning creativity and design for innovation. *International Journal of Technology and Design Education, 21*(3), 321-333.

Cheng, K. (2011). Enhancing students' business creativity through adoption of an innovative teaching strategy in taiwan. *Journal of Hospitality, Leisure, Sports and Tourism Education (Pre-2012), 10*(2), 109.

Degen, R. J. (2013). Teaching entrepreneurship students the practice of innovation: A brain-based guided experience approach. *Revista De Ciências Da Administração, 15*(37), 92.

deJong, M. and Marston, N. (2015). The Eight Essentials of Innovation, McKinsey Quarterly, www.mckinsey.com/insights.

Elmes, M. B., Jiusto, S., Whiteman, G., Hersh, R., & Guthey, G. T. (2012). Teaching social entrepreneurship and innovation from the perspective of place and place making .*Academy of Management Learning & Education, 11*(4), 533.

Gennadyevna, N. N., Mikhailovna, Z. N., & Vadimovich, K. V. (2015). Use of innovative forms of teaching students to create business discourse. *International Education Studies,8*(5)

Hadjilouca, R., Constantinou, C. P., & Papadouris, N. (2011). The rationale for a teaching innovation about the interrelationship between science and technology. *Science & Education, 20*(10), 981-1005

Hampden-Turner, C. (2010). Teaching innovation and entrepreneurship: The Singapore experiment. *Revision,30*(3), 69-78.

HARKEMA, S. J. M., & SCHOUT, H. (2008). Incorporating Student-Centered learning in innovation and entrepreneurship education. *European Journal of Education, 43*(4), 513-526.

Karimi, S., Biemans, H. J. A., Lans, T., Aazami, M., & Mulder, M. (2014). Fostering students' competence in identifying business opportunities in entrepreneurship education. *Innovations in Education and Teaching International, ,* 1-15.

Knodt, J. S. (2009). Cultivating curious minds: Teaching for innovation through open-inquiry learning. *Teacher Librarian,37*(1), 15.

Lodgher, A. and Bellam, K. (2011) Teaching Innovation to Graduate Students in Computer Science. Communications of the IIMA. V. 11, No. 3, pp 1-9

Lugar-Bretin, S. (2014). Mapping Bridges to Creative Collaboration. Business Education Innovation Journal. V. 6, No. 1, pp 24-27.

Ma, Z. (2010). Cultivation of students' scientific and technological ability for innovation. *Asian Social Science,6*(4)Emo, W. (2015). Teachers' motivations for initiating innovations. *Journal of Educational Change, 16*(2), 171-195.

Maritz, A., & Donovan, J. (2015). Entrepreneurship and innovation: Setting an agenda for greater discipline contextualization. *Education & Training, 57*(1), 74-87.

Norton, W. I., & Hale, D. H. (2011). Protocols for teaching students how to search for, discover, and evaluate innovations. *Journal of Management Education, 35*(6), 808-835.

Rivers, B. A., Nie, M., & Armellini, A. (2015). University teachers' conceptions of "change-maker": A starting point for embedding social innovation in learning and teaching. *Education & Training, 57*(5), 588.

Seng Tan, O. (2004). Students' experiences in problem-based learning: Three blind mice episode or educational innovation? *Innovations in Education and Teaching International, 41*(2), 169-184.

Tanner, J. F., & Whalen, D. J. (2013). Teaching moments: Opening the pipeline to teaching innovations. *Marketing Education Review, 23*(3), 265-274.

Tennent, B., Windeknecht, K., & Kehoe, J. (2004). Teaching with technology: Value-added innovation or necessity? *Campus-Wide Information Systems, 21*(4), 144-150.

Thakur, D. A., & Shekhawat, M. (2014). Importance of teaching innovation & creativity in engineering and management. *International Journal of Engineering Trends and Technology, 14*(3), 153-157.

Trottier, M. N. (2008). A research approach to investigating curricular innovation: Negotiating the stakeholders and gatekeepers of Korean English language teaching..*International Journal of Pedagogies and Learning, 4*(2), 43-58.

Backpack to Briefcase:
An Integrated Four-Year Professional Development Program

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ABSTRACT

There is a need for business schools to focus not just on developing the academic skills of its students, but its soft, or professional, skills as well. This paper provides a detailed look at one school's integrated professional development program. Known as Backpack to Briefcase (B2B), the program provides students with professional development opportunities from freshmen to senior year. Details on the program are provided to assist other schools with implementing such a program.

Keywords: Soft skills, professional development, career development

INTRODUCTION

Business schools, in general, do an adequate job of preparing its students for the technical demands associated with a variety of professions. However, most schools do not focus as much on the professional development needs of its students. As such, there is a need to include professional development activities as part of the business school program.

Professional development activities are designed to help students successfully navigate from being a student to being a business professional, from carrying a backpack to carrying a briefcase. Such activities could include choosing the right major, exposure to a variety of business careers, professional writing and presenting, creating a resume, effective interviewing, professional etiquette, networking, and teamwork.

Many schools offer many of the activities noted above, but rarely in an integrated, required format. As a result, there is no guarantee that every business student has taken advantage of such resources to help them become a successful business professional. In addition, many of these programs are targeted at graduating seniors, which represent a lost opportunity to develop these critical skills early in their academic career.

This paper will provide details on an integrated, four-year professional development program at a BusinessWeek top 25 undergraduate business school. The purpose is to provide both an overview of the program, as well as the necessary details as to how other schools could implement such a program.

THE CURRENT STATE OF PROFESSIONAL DEVELOPMENT AT BUSINESS SCHOOLS

Academics and executives have recognized that just teaching students technical skills such as finance, accounting, or marketing no longer guarantees that the student will be successful in finding the right job or in their performance on the job. Much has been written over the past decade about the importance of "soft" skills, such as oral communication and teamwork, as well as the variety of responses to such a skills gap (Bisoux 2002), (Moore 2007), (Dvorak 2007), (Rubin 2009), (Korn 2011), (Wiseman 2013), (Murray 2014), (Hardy 2014), and (Mind Tools 2015).

Despite these scattered attempts to address the lack of soft skills among business school graduates, it is apparent that schools are still not up to speed in addressing the need to develop these skills. Since many of these reports focused on the soft skills gap among graduate students, the problem is likely magnified among undergraduate students.

There have been some notable exceptions to this lack of soft skills development.

The Leadership and Development Program at South Carolina State University The Business Program at South Carolina State introduced a unique program in 1997 called the Leadership and Professional Development Program (LAPD) (Jamison 2010). The structured program of LAPD consists of professional development courses that the students must take in their sophomore, junior, and senior years, participation in the Executive Speaker Series, and

the completion of an experiential learning experience. The LAPD model is based on multiple levels of leadership and accountability training, which encompass the total development (personal and professional) of the individual. The curriculum is designed to enhance and supplement the academic experience of students.

The program involves a series of modules and activities designed to develop core skill sets that are necessary for career success. These skill sets include (1) employability skills; (2) business protocol; (3) business communication and technological competency; and (4) leadership development.

Figure 1 indicates the competencies and activities associated with each of the courses. The authors indicate that the curriculum has evolved to become more integrative and self-reinforcing, and that new methods and models of teaching business soft skills are constantly being reviewed and implemented. The emphasis on developing student portfolios has provided students with significant resources with which to approach the job market. An advisory group of business executives committed to improving the employment opportunities for students at SCSU has noted that business students who have completed the LAPD program exemplified the professional demeanor and decorum sought by corporate recruiters.

Figure 1: The LAPD Model
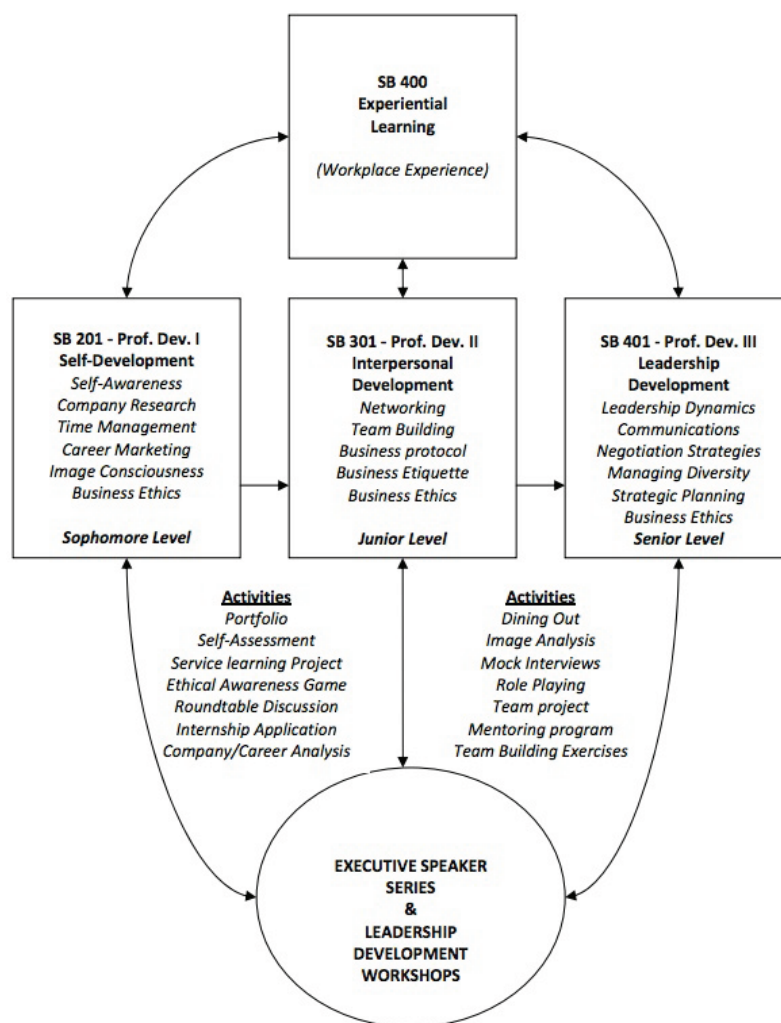
The ACHIEVE Program at Oakland University
Oakland University's School of Business Administration (SBA) implemented its ACHIEVE program (Majeske 2009) in the Fall of 2008. ACHIEVE (Accomplish Career Hopes Including Excellent Valued Employment) consists of four zero credit courses, taken one per year during a student's undergraduate education on a Pass/Fail basis. Each course consists of a collection of tasks such as attending a student organization meeting, networking with professionals, and participating in a job fair.

Below is an outline of the four-year program:

SBC 199 - ACHIEVE I. Introduction to functional areas in business, careers in business, Career Services, and the job search process. SBC 199 consists of five tasks: 1) Introduction to functional areas of business and careers in business. 2) Introduction to using the library for business research. 3) Introduction to Career Services. 4) Attend a student organization meeting. 5) Networking with business professionals.
SBC 299 - ACHIEVE II. Focus on preparing students for the job search process. Students will develop materials and skills to support one-on-one job interviews. SBC 299 consists of five tasks: 1) Introduction to careers within each major and perspective on future business trends. 2) Language of Wall Street 3) Resume / cover letter / thank you note writing 4) Attend a student organization meeting 5) Personality Style Assessment
SBC 399 - ACHIEVE III. Guide students through the job search process within their major. Each of the majors within the SBA will develop a major specific section of SBC 399 with their own set of tasks.
SBC 499 - ACHIEVE IV. This course is intended to assist students with their acclimation to the workplace environment. SBC 499 consists of five tasks: 1) From Student to Professional – A Transitional Workshop. 2) First Year Work Experiences – Biggest Surprises as a New Professional 3) Preparing for and Participating in Corporate Meetings 4) Knowing and Understanding Your Supervisor's Expectations 5) Career Development Inventory – Completing the ACHIEVE experience.

The ACHIEVE program was just finishing its first year at the time of the published article, and was in the midst of preparing the second year course. The authors stressed the importance of ongoing assessment, the need for support from a variety of stakeholders, and a careful review of the time and resources needed for such a program.

THE VILLANOVA SCHOOL OF BUSINESS BACKPACK TO BRIEFCASE PROGRAM

In response to the need to enhance the soft skills of its undergraduate students, and armed with the knowledge gained from the experiences of other schools such as South Carolina State and Oakland University which have attempted to integrate professional development into the business school curriculum, the Villanova School of Business (VSB) developed an integrated professional development program known as Backpack to Briefcase (B2B).

B2B is an innovative program, integrating professional development into the core business curriculum throughout a student's four-year academic program. B2B augments students' participation in traditional academic courses, providing holistic preparation for success and leadership as business professionals. Integrating career and professional development concepts into the VSB curriculum fosters a thoughtful approach to preparing for life after graduation. B2B is administered by the Clay Center at VSB, in collaboration with VSB faculty. The Clay Center staff plays a key support role within the business school, serving as advisers to students on a variety of issues such as course selection, internship opportunities, and other administrative matters.

Each year of the B2B program, students are presented with opportunities to learn and develop professionally. Table 1 provides a summary of what each year of the program entails.

Table 1: Outline of B2B Program

Freshman Year: **Assessing the Environment** *(required; embedded in Business Dynamics course (fall semester) and either Strategic Information Technology or Corporate Responsibility and Regulation (spring semester)*	**Professional Development Component** As part of a required core business course each semester, students participate in and reflect on three professional development activities related to major exploration/college planning, career exploration and professional skill building. Critical written communication techniques are developed and incorporated into these reflections. Additionally, each student works with the University Career Center to develop and submit a professionally critiqued resume.
Sophomore Year: **Defining and Implementing Your Strategy** *(required 1-credit, stand-alone course)*	**Professional Development Seminar** In the fall or spring semester, VSB sophomores participate in a one-credit seminar focusing on interviewing skills, the internship/job search process, business ethics, networking, business etiquette, etc. Throughout the semester, opportunities to interact with alumni/employers are presented.
Junior Year: Gaining a Competitive Edge *(required 1-credit, stand-alone course)*	**Case Competition** In the fall or spring semester, VSB juniors participate in an internal case competition. Written and verbal communication skills, business research methods, core business competencies, team dynamics, and leadership are integrated throughout the competition.
Senior Year: Capitalizing on Your Investment *(voluntary)*	**VU Seniors Program** VSB partners with the university-wide VU Seniors Program - a series of social, professional, and spiritual activities designed to unify the senior class while preparing them for life after graduation.

Freshmen Year The freshmen year component of the B2B program provides students with the opportunity to explore academic and career options, utilize campus career resources, and develop professional skills that will directly impact students' future success. Each semester, students participate in one activity from each of the following tracks and in the spring semester the students are also required to create a professional resume:

- Major Exploration/College Planning Track
- Career Exploration Track
- Professional Skill Building Track

After attending each of these events, students are required to prepare a written report providing their reaction to the event. A VSB Writing Associate assigned to each section will evaluate and provides feedback on each of the reports. The format for each of the reports is as follows:

Report #1: *Professional E-mail Format* - Imagine that your professor was unable to join you at the professional development event you attended. Write a professional e-mail to this professor and describe what the event was about; include the purpose of the event, information about the guest speaker(s), and other relevant details. What did you learn from the event, and why was it worthwhile to attend? Message should be brief, approximately 350 words; include a concise, descriptive subject line and a professional signature.

Report #2: *Professional Memo Format* - Imagine that your professor was unable to join you at the professional development event you attended, and now, you must write a memo to the professor describing the nature of the event. A memorandum generally is created for and sent to members of an internal group, office, or department, whereas a letter is created for and sent to external audiences. Include the purpose of the event, information about the

guest speaker(s), and other relevant details. What did you learn from the event, and why was it worthwhile to attend? Memo should be brief, approximately 450 words, and should follow all of the conventions of a professional memo, i.e., the "TO" field, the "FROM" field, the "DATE" field, and the "RE:" field. Memo length should be no more than 1-page.

Report #3: *Instructor choice of a long-form report* - Options include a LinkedIn or Wordpress blog post.

Requiring written reports also allows students to gain practice with their writing skills, another key professional skill. The VSB Writing Associates who grade the reports have a strong communications background and work as a team to develop grading rubrics for each assignment.

In addition to those three reports each semester of the freshmen year, students are also required to prepare a resume. Prior to submission, students must have their resume reviewed and approved by a University Career Center Career Counselor. It is at the discretion of the Career Counselors to determine when your resume is "approved" and designated as such by an appropriate stamp on your resume.

Sophomore Year VSB2000, the second phase of the VSB B2B program, provides students with the opportunity to develop life-long career-related skills, including career decision-making, job/internship searching, resume writing, interviewing, and developing a "personal brand" through social media and networking. Students will assess their interests, skills and values as they relate to career options and gain an understanding of campus career-related resources. Additionally, they will refine both oral and written communication skills. Members of VSB's Professional Development staff and the University's Career Center staff teach this course.

See Appendix A for the syllabus for VSB2000, which provides a weekly outline of the topics and assignments included in the class.

Tables 2 and 3 present a summary of student feedback from the nine sections of VSB2000 that were taught during the 2014 Fall semester, the first time the course was offered. (There were seven more sections offered in the Spring 2015 semester). There were a total of 166 student responses, representing a 90% response rate.

Table 2: To What Extent Have the Following Skills Been Enhanced as a Result of Participating in VSB2000?

	Not at all	Slightly	Moderately	Greatly
Career Decision Making	2%	18%	46%	34%
Job/Internship Search	2%	9%	28%	61%
Interviewing	1%	11%	40%	47%
Developing a Personal Brand through Social Media	1%	16%	39%	44%
Business Networking Strategies	1%	12%	36%	51%
Business Writing for the Job/Internship Search	1%	16%	43%	39%
Understanding Campus Career-related Resources	0%	6%	27%	68%

Table 3: List the Three Most Useful Sessions from VSB2000

Session	Number of times listed (% of students)
Internship/Job Search Process	111 (69%)
Business Conversations (Interviewing)	82 (51%)
VSB Senior & Alumnus Speakers	71 (44%)
Personal Branding & Social Media	56 (35%)
Writing for the Internship/Job Search	49 (30%)
Career /Industry Research	48 (30%)
Self-Assessment Discussion (Career Leader)	33 (21%)
Career Journey/Career Decision-making	22 (14%)
Ethical Considerations & Your Professional Success	7 (4%)

Junior Year

VSB 3000, the third phase of the VSB B2B program, requires all students to participate in a team-based case competition in either the fall or spring semester of their junior year. Students are assigned into teams and challenged to analyze and solve a case. There are three rounds of competition. Winners will advance from each round and ultimately to the final where a first place team will be selected. In addition, each individual student prepares and submits an executive summary that describes their team's solution. Each member of the winning team receives $500; second place teammates receive $250 each, and third place students receive $100 each.

Here are some details of the components of the course:

Preparation (10% of grade)

Students will prepare for the competition by attending four modules, taught by a team of VSB faculty and staff, either live or through a video recording of the presentation:
1. Crafting and Delivering a Team Presentation
2. Effectively Using PowerPoint
3. Professional Business Writing with an emphasis on Executive Summaries
4. Conducting a Case Analysis

The Competition (70% of grade)

The BriefCASE Challenge Kickoff is on a Thursday in November or April, and continues through the end of the day on Saturday. Students must be available during this entire time. The only exception is any class sessions students may have on Fridays.

Students will receive the case to be analyzed and their team assignments at the Kickoff. Teams will have until Saturday morning to analyze the case and develop a solution to the challenge. Teams will present their solutions to judging panels comprised of business executives and faculty members. There will be three heats of the competition with the championship round being held on Saturday evening.

Executive Summary (20% of grade)

The last part of this course is for students to write an executive summary of their team's solution to the challenge. This document represents individual students' work. It is not intended to be a collaborative project of a team. Students are required to submit their executive summary with 10 days of the end of the competition.

The focus of this experience is the team competition. It is expected that all team members contribute roughly equal effort and that all members will receive the same grade. At the end of the competition, each team member will evaluate the contributions of each member of the group.

In addition to the competition, another objective of this course is to provide another point of contact for students with potential employers. To help facilitate this, a dropbox is setup to collect student resumes, which are shared with the executives on the judging panels in the competition.

Senior Year
The VU Seniors Program is a series of social, professional, and spiritual activities designed to unify the Senior class while preparing them for life after graduation.

A sample of events for this year's seniors include a Senior Etiquette Dinner, Spring Career Fair, VU Seniors at Conshohocken Brewery, Financial Literacy for Seniors, Men's Basketball Senior Night, Moving to Manhattan, Dinner and White Wine Tasting, Senior Toast and Last Lecture.

While the senior year events are not mandatory, a significant number of students do participate in these events, and help lay the foundation for building a strong, loyal, and supportive alumni base.

CONCLUSIONS

There is a need for business schools to meet both the academic and professional needs of its students. While the majority of schools do an acceptable job developing the academic skills of its students, the same cannot be said for developing their professional skills. In response to this skills gap, a few schools have worked to integrate professional skill development into the curriculum.

This paper looked at one such program, the Backpack to Briefcase program at Villanova University's School of Business. The paper includes an overview of the program, as well as the details as to what is included in the various part of the program. It is hoped that faculty and administrators will find the information useful in developing professional development programs at their schools.

REFERENCES

Bisoux, T. (2002). "The Mind of a Leader." *BizEd*. September/October. Pp. 26-31.

Dvorak, P. (2007). "M.B.A. Programs Hone 'Soft Skills'." *Wall Street Journal*. February 12.

Hardy, J. (2014). "Should Schools Teach 'Soft Skills'? Many Say 'Yes'." *Desert News National*, January 21. http://national.deseretnews.com/article/875/should-schools-teach-8216soft-skills8217-many-say-8216yes8217.html Accessed January 31, 2015

Jamison, D. (2010). "Leadership and Professional Development: An Integral Part of the Business Curriculum." *Business Education Innovation Journal*. Vol 2, No 2, pp. 102-111.

Johnson, C.A. and Orr, C.L.(1996). "The Professional Development Course as a Natural Extension of the Postsecondary Freshman Seminar." *Journal of Education for Business*. Vol. 72, No. 2, pp. 120-123.

Korn, M. and Light J. (2011). "On the Lesson Plan: Feelings." *Wall Street Journal*, June 7.

Majeske, K.D. and Serocki, J.S. (2009). "ACHIEVE: A Career and Professional Development Program for Undergraduate Business Students." *Business Education Innovation Journal*. Vol 1, No 2, pp. 59-67.

Mind Tools. "Why Soft Skills Matter." http://www.mindtools.com/pages/article/newCDV_34.htm accessed January 31, 2015.

Moore, T.E. (2007). "Repositioning the MBA." *BizEd*.July/August, pp. 50-56.

Murray, S. (2014). "Soft Stuff: MBA Employers Place More Value In Soft Skills." *BusinessBecause*, August 20 http://www.businessbecause.com/news/mba-careers/2746/mba-employers-seek-soft-skills accessed January 24, 2015.

Rubin, R and Deirdorff, E. (2009). "How Relevant is the MBA? Assessing the Alignment of Required Curricula and Required Managerial Competencies." *Academy of Management Learning and Education*, Volume 8, Number.

Wilhelm, W. (2002) Research on Workplace Skills Employers Want. In W. Wilhelm, J. Logan, S. Smith and L. Szul, *Meeting the Demand:Teaching "Soft" Skills*. Delta Phi Epsilon.

Wiseman, P. (2013). "Firms Seek Grads Who Can Think Fast, Work in Teams." *Associated Press*. June 24. http://bigstory.ap.org/article/firms-seek-grads-who-can-think-fast-work-teams accessed January 31, 2015.

Appendix A: Syllabus for VSB2000

Class Number	Topics and Assignments
Class 1	Setting the Stage: Course Intro *Myth Buster: Choosing a career is simple.* ☐ Introduction to course & instructor ☐ Student goals for class ☐ Icebreaker: When I Grow Up ☐ Your Career IQ Pre-test ☐ Overview of Career Development Process ☐ CareerLeader Assignment ☐ Employer Information Session assignment ASSIGNMENTS: ☐ Take <u>Career Leader assessment</u>: Print results and bring to class #2 (read and be prepared to discuss) ☐ Attend <u>Employer Information Session &</u> submit reflection paper before or during class #8
Class 2	Self-Assessment Discussion *Myth Buster: I can't make a living from my hobby.* *Myth Buster: A career counselor can tell me what occupation to pick.* ☐ Process Career Leader assessments– Group Activity ☐ Elevator Pitch + small group breakouts ☐ Discuss Career Fair & assignment ASSIGNMENT: ☐ Attend one of the <u>2/3 or 2/4 Career Fairs</u>: Collect business cards from at least 2 professionals representing 2 different employers & bring to class #5; have <u>professional headshot</u> taken for LinkedIn profile
Class 3	Internship/Job Search Process *Myth Buster: All I have to do is pick an occupation… Things will fall into place after that.* *Myth Buster: The only way to get experience is through a formal internship.* ☐ Clay Center Guest Speakers: VSB Internship/CoOp programs and Assistant Director of Internships/CoOps ☐ Internship & job search overview ☐ Campus job & internship search resources ☐ Internship/Job offer process ☐ Internship assignment + Interviewing Guided PPT assignment ASSIGNMENTS: ☐ Identify & print descriptions of <u>2 internships of interest </u>from 2 different resources; bring to class #5 ☐ View <u>Interviewing Guided PPT </u>and be prepared to discuss during class #4 REMINDER ☐ Attend one of the 2/3 or 2/4 Career Fairs: Collect business cards from at least 2 professionals representing 2 different employers and bring to class #5; have professional headshot taken for LinkedIn profile

Class 4	Business Conversations
	Myth Buster: I'm not afraid to talk so I must be good at it.
	☐ Employer Guest Speaker: interviewing, intergenerational expectations, phone etiquette in recruiting process
	o Managing Director - Goldman Sachs Asset Management
	☐ Practice Interview resources | InterviewStream assignment
	☐ Cover Letter & Thank You Notes Guided PPT assignment
	ASSIGNMENTS:
	☐ Complete and submit InterviewStream practice interview prior to the start of class #5
	☐ View Cover Letters & Thank You Notes Guided PPT and be prepared to discuss in class #5
	REMINDER:
	☐ Bring laptop to class #5 + employer business cards collected at Career Fair
	☐ Identify/print 2 internships of interest (matched to Career Leader) from 2 different resources; bring to class #5
Class 5	Writing for the Internship/Job Search
	Myth Buster: A resume is a "One-Size-Fits-All Document."
	Myth Buster: Your cover letter summarizes your resume.
	☐ Debrief InterviewStream
	☐ Process Career Fair assignment + appropriate follow-up
	☐ Cover Letter discussion + exercise
	☐ Resume update
	☐ Informational Interviewing Process & Informational Interview assignment | NovaNetwork
	ASSIGNMENT:
	☐ Conduct Informational Interview & submit reaction paper before or during class #9
Class 6	Writing for the Internship/Job Search (cont'd.) / Career & Industry Research
	Myth Buster: There's very little I can do to learn about an occupation without working in it.
	☐ Business e-mails
	☐ Career information resources + worksheet
Class 7	Career Journey/Career Decision-Making
	Myth Buster: If my best friend (or sister, uncle, or neighbor) is happy in a particular field, I will be too.
	☐ Check in on internship/CoOp search
	☐ VSB Alumnus & VSB Senior Guest Speakers: career path, career decision-making, "words of wisdom"

Class 8	Personal Branding & Social Media *Myth Buster: Personal branding is something only celebrities need to do.* ☐ Professional attire ☐ Introduction to Networking + Networking Worksheet ☐ Developing your personal brand & job/internship searching through social media: Facebook/Twitter REMINDERS: ☐ Bring laptop, e-copy of resume/photo, & completed Networking Worksheet to class #9 for use with LinkedIn activities ☐ Informational Interview reflection paper due in class #9
Class 9	Personal Branding & Social Media (cont'd.) *Myth Buster: Once I choose a career I'll be stuck in it forever.* ☐ Process informational interviewing experiences ☐ Developing your personal brand & job/internship searching through social media: LinkedIn o Building a profile o Alumni graph tool o Networking through groups o Connecting with companies o Internship portal
Class 10	Course Wrap-up / Ethical Considerations & Your Professional Success *Myth Buster: Making a lot of money will make me happy.* ☐ Course Evaluation ☐ Re-visit Career Development Process ☐ Your Career IQ Post-test ☐ Ethical Considerations Overview & Case Studies

The Value of an On-Site Residency Experience for Online MBA Programs

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ABSTRACT

The number of institutions of higher education offering MBA programs entirely online has expanded dramatically. While such educational options offer advantages for students who cannot easily attend in-class courses, online programs do present a number of challenges for MBA programs including concerns related to assessment, institutional engagement and adequately addressing important business issues such as innovation. To address the challenges presented when delivering programs through distance education methods, many business programs require online students attend one or more on-site "residency" sessions. This paper focuses on one approach to conducting a residency.

Keywords: Online MBA, MBA Assessment, Residency Requirement, Student Engagement, Teaching Innovation

INTRODUCTION

It is often stated that a key challenge facing distance education programming, especially those delivered asynchronously online, is the ability to assess student outcomes (Shelton and Pedersen, 2015; Kearns, 2012; Palloff and Pratt, 2009). This is particularly an issue with business programs where important elements of assessment, such as assessing student's ability to interact and work within a team environment, evaluation of oral presentation development and delivery (Kenkel, 2011), and measuring critical thinking skills, are challenging to measure.

Also, accrediting bodies that have been most impacted by online education have responded with adjustments to their standards that address these changes. For instance, within the business discipline, a leading accrediting body, the Association to Advance Collegiate Schools of Business International (AACSB), has recently issued new standards with acknowledgement given to the evolution that is taking place in program delivery. One key requirement articulated in the revised standards is that programs ensure students' efforts in a program "are equivalent in terms of depth and rigor" across all delivery modes (AACSB, 2015 p. 34). This has led many programs to develop new methods for assessing online learners (Ewell et al., 2011).

In addition to issues related to student assessment, accrediting bodies have also shown concern regarding student engagement (AACSB, 2015 p. 2), which may be especially challenging for online programming. As non-traditional students, who may never visit the campus, online learners may exhibit traits similar to commuter students, who tend to be less engaged with an institution (Newbold et al., 2011). The lack of student engagement may have implications in terms of enhancing a program's reputation and establishing networking contacts. Additionally, the intended target of institutional contributions by alumni, who completed their studies online, may differ compared to traditional students especially in terms of directing their giving for on-campus spending (Hurst, 2008).

Finally, accrediting bodies have expressed the need for graduate business programs to focus on issues related to innovation (AACSB, 2013), which an IBM study found is the number-one "leadership competency" of the future (Dyer, Gregerson & Christensen, 2011). While online coursework can be delivered in a way that will address some level of innovation, evaluation of the methods and processes by which students demonstrate a productive response to the concepts is often limited to those presented through written reports. Additionally, effective measures of students' innovative knowledge may not be as broad as it would be if innovative behavior is evaluated within a group environment.

To address the challenges presented when delivering programs through distance education methods, many business programs presented online require students attend on-site sessions. Typically, these sessions are held at the home campus or designated meeting facility (e.g., hotel). While many "residency" requirements are often short in duration (e.g., one weekend), objectives set for these sessions may be effective in addressing the challenges presented with distance education.

RESIDENCY PROGRAM OPTIONS

As defined by the United States Department of Education, a distance education program is one in which "all required coursework for program completion is able to be completed via distance education courses" (Distance Education, n.d.). While this definition may suggest students must be able to complete all required program work online, a further definition of the concept of "distance education courses" indicates that programs may institute requirements that require students to attend on-campus or in-person sessions for "orientation, testing, or academic support services" (Distance Education Course, n.d.). Additionally, such definitions for categorizing distance education programs have been accepted by media outlets and ranking services that evaluate online MBA programs (Brooks & Morse, 2015).

In light of the definitions established by the U.S. Department of Education, many MBA programs, classified as delivering program entirely online, require students attend non-credit bearing on-campus or on-site programs. To determine the extent to which some form of residency experience is required, a study was undertaken to evaluate online MBA programs. The study examined all U.S. schools accredited by AACSB that offer 100% online MBA programs. The study involved analyzing information found on the websites of each school offering MBA programs.

During the period of this study, 133 of 458 schools evaluated (29.0%) offer 100% online MBA programs. Of the schools offering online MBA programs 30 (22.6%) required a residency experience. The contents of programs requiring on-site attendance vary widely, though most appear to address three key issues. First, the majority of schools require an on-site orientation, often held over several days, that focuses on providing program and school information. Second, several schools require participation in multiple day experiential programs that may feature student engagement exercises, testing or international travel. Third, a small number of schools require an end-of-program capstone experience.

While the results of this study indicate that a large percentage of online programs do not have residency requirements, instituting such requirements may offer a number of benefits. First, it allows for direct assessment activity to be undertaken. The key areas evaluated may include communication skills, team building, use of business tools and process, and problem solving. Second, a residency experience can foster engagement between fellow students, program alumni, faculty and staff. Third, depending on the goals of a residency, the experience can be tailored to meet one or more key learning goals. For instance, a residency can include certain approaches to learning focused on innovation and thinking creatively.

One useful approach that can be used in a short on-site visit to address issues of assessment, engagement and learning goals, are team-building exercises. As discussed here, one such exercise can be handled within a competitive platform in which students work in teams to achieve a successful goal. The exercise is carried out at mid-size suburban public university, whose business program is accredited by AACSB. All students, whether completing their coursework on-site or online, must attend the two-day residency program.

INNOVATIVE BEHAVIOR EXERCISE

The primary purpose of this exercise is to have students work in a team structure using innovative techniques to reach a goal within a compressed timeframe. Team assignment is intended to distribute students based on skills, work experience and other background. Additionally the mix found in student teams also seeks to balance team composition by considering demographic issues (e.g., gender, age, home country, etc.), current academic performance and previous academic experience. No information on the exercise is provided ahead of the course and team assignments are not announced until students arrive. Additionally, lead instruction for each exercise is alternated among several professors, who bring different skills and requirements to the exercise. In this way, key components of the exercise are adjusted from previous offerings so as to prevent students from preparing in advance.

As an example of one innovative exercise, teams must generate multiple product ideas, converge these ideas into a few alternatives, choose one product idea and present this to an audience consisting of MBA program alumni. Before attending the residency, students are sent reading materials and an assignment dealing with the process of innovation and innovative behaviors that they will use in the exercise. The behaviors are based on the five skills of

disruptive innovators (Dyer, Gregersen, & Christensen, 2011), questioning, networking, observing and experimenting, which improve the fifth skill of associational thinking (Anthony 2012). The residency starts with an evening session that includes a discussion of the innovation process. This instructor-led session presents students with the concepts and techniques that can be used to spur innovative behaviors. At the end of the session, teams are given instructions, their assignment and then assigned to individual workrooms where they are to begin their project.

The first step is for teams to generate as many ideas utilizing divergent thinking skills. Team members are asked to only generate questions and avoid trying to produce answers. In addition, team members are encouraged to network with other teams for the purpose of generating more ideas. Instructors consult frequently with the teams to provide support in this process. After about 90 minutes, teams are asked to reflect on the questions they have raised before breaking for the evening.

The next day the teams reconvene to continue their question raising. After one hour, instructors intervene with each team and direct them to begin converging their questions into a few solid product ideas. Teams are then joined by MBA program alumni, who serve in a consultative role as group advisors. Prior to meeting with their groups, the MBA alumni meet with the instructors to discuss their role in working with the teams. The alumni have two tasks: (1) to ask questions intended to get their team to think more about, and possible alter, their product ideas, and (2) to choose the best idea. Finally, after a few hours with the alumni advisors, teams are given time to prepare for their final presentation.

Teams present their product idea to evaluators consisting of MBA program alumni who did not serve as their business advisors. Teams are given up to 60 minutes to present their plan and to respond to evaluators' questions. The presentation includes presenting their product idea in a play-like manner that is many times humorous and addresses key issues, such as the market potential and possible problems facing the idea. They are also asked to explain the innovative process that led the team to the product idea. Each team member must present and presentation time is expected to be shared equally among all members. To aid course instructors, who must evaluate each group, each presentation is video recorded.

ASSESSMENT

The residency experience serves a useful role in the MBA program's assessment plan. Since a significant percentage of program assessment is embedded in this experience, more control over the assessment process is obtained. Additionally, the in-person aspect of this course helps address potential assessment challenges that may arise with students who are completing the program online (Prineas & Cini, 2011). Finally, the key assessment approach used relies on direct assessment measures, thus meeting a key requirement of AACSB accreditation (AACSB, 2015).

Assessment is spread over multiple measures and involves input from participating faculty, alumni and students. The first measurement occurs after the alumni's consulting session when they offer evaluations of their team as a whole and of individual team members. A second measurement occurs when alumni change roles and become evaluators of group presentations. A third measurement occurs post-residency when students are required to assess fellow team members and provide feedback on their experience. The fourth measurement occurs the week following the residency when instructors meet and assess individual students and the overall teams through a review of recorded presentations. The final evaluation is a post-residency written assignment in which students describe an innovation challenge (either at work or personal) they addressed over a three-week period following the residency.

RESULTS

Analysis of students' feedback shows the residency requirement and the innovation exercise to be an overwhelming positive experience. While students have indicated the innovation exercise is challenging in terms of time pressure, they point to the group interaction and alumni involvement as being highly rewarding. Alumni feedback has also been overwhelmingly positive and, in fact, they often suggest that they would prefer to spend even more time with the student groups.

In terms of assessment value, the innovation exercise has proven to be quite effective. The video capture of student presentations is particular valuable as these can be shared among multiple faculty including those who did not attend

the residency. Additionally, feedback from participating alumni have resulted in several adjustments to the innovation exercise including to the assessment instruments to better reflex important aspects of measuring innovative behavior and group interaction.

SUMMARY

The residency experience offers advantages in terms of student enjoyment, program assessment and alumni involvement. Given the benefits, MBA programs offered online may wish to consider requiring on-site participation. While there may be challenges, including assessing for a limited time-frame (e.g., one weekend) as well as coordinating student travel and overnight accommodations, adding an on-site requirement may not only excite students while attending the session, it may also have the potential to enhance students' involvement and support following their completion of the program.

REFERENCES

Anthony, S. D. (2011). *The little black book of innovation*. Cambridge, MA: Harvard Business School Press.

AACSB - Association to Advance Collegiate Schools of Business International (2015). Eligibility procedures and accreditation standards for business accreditation. Tampa, FL. Retrieved from http://www.aacsb.edu/~/media/AACSB/Docs/Accreditation/Standards/2013-bus-standards-update-jan2015.ashx

Brooks, E. & Morse, R. (2015, January 6). Methodology: Best online MBA programs rankings. *U.S. News & World Report,* (January 6). Retrieved from http://www.usnews.com/education/online-education/articles/mba-methodology.

Distance Education (n.d.). In *Glossary National Center for Education Statistics*. Retrieved from http://nces.ed.gov/ipeds/glossary/index.asp?id=713.

Distance Education Course (n.d.). In *Glossary National Center for Education Statistics*. Retrieved from http://nces.ed.gov/ipeds/glossary/index.asp?id=976.

Dyer, J., Gregerson, H. & Christensen, C. M. (2011). *The innovator's DNA: Mastering the five skills of disruptive innovators*. Cambridge, MA: Harvard Business School Press.

Ewell, P., Paulson, K., & Kinzie, J. (2011). Down and in: Assessment practices at the program level. *National Institute for Learning Outcomes Assessment*. Retrieved from http://www.learningoutcomesassessment.org/documents/NILOAsurveyreport2011.pdf.

Hurst, F. M. (2008). *Philanthropic giving preference differences: nontraditional and traditional alumni at Northern Arizona University*. (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses database. (UMI No. 3321618).

Kearns, L. R. (2012). Student assessment in online learning: challenges and effective practices. *MERLOT Journal of Online Learning and Teaching*, 8(3), 198-208. Retrieved from http://jolt.merlot.org/vol8no3/kearns_0912.htm.

Kenkel, C. S. (2011). Teaching presentation skills in online business communication courses. *MERLOT Journal of Online Learning and Teaching*, 7(3), 412-418. Retrieved from http://jolt.merlot.org/vol7no3/kenkel_0911.htm.

Newbold, J. J., Mehta, S. S., & Forbus, P. (2011). Commuter students: Involvement and identification with an institution of higher education. *Academy of Educational Leadership Journal*, 15(2), 141-153.

Palloff, R. M., & Pratt, K. (2008). *Assessing the Online Learner: Resources and Strategies For Faculty*. San Francisco, CA: Jossey-Bass.

Prineas, M. & Cini, M. (2011). Assessing learning in online education: the role of technology in improving student outcomes. *National Institute for Learning Outcomes Assessment*. Retrieved from http://learningoutcomesassessment.org/documents/OnlineEd.pdf

Shelton, K. & Pedersen, K. (2015). Benchmarking quality in online learning programs in higher education. In T. Bastiaens & G. Marks. (Eds.) *Proceedings of Global Learn 2015* (pp. 280-295). Association for the Advancement of Computing in Education (AACE).

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Evaluating Co-Curricular Success in a College of Business

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ABSTRACT

This article describes a project that was designed to assess the College of Business Passport Program at Northern Illinois University, a required co-curricular program for all business students, and its impact on self-reported student involvement. This was accomplished by a comparison of the program to other similar programs at other universities, a statistical analysis of the data that had already been collected, and the collection of new data. The completion of this project will allow for internal improvements to be made to the program and will be a tool to other universities that are considering establishing a similar program or making improvements of their own.

Keywords: business education, engaged learning, co-curricular program, career success

LITERATURE REVIEW

A survey of literature reveals that success in the business world requires more than just business coursework. Several teaching and learning practices "have been widely tested and have shown to be beneficial for college students from many backgrounds". Among these are diversity and global learning, undergraduate research, and service learning. These practices have been deemed high-impact because participation in these activities is suggested to "increase rates of student retention and student engagement" (Kuh, 2008, p.34). "Students who participate in these activities consistently persist at a higher rate than those who do not," (Brownell, Swaner, 2009, p. 26). Incorporating high-impact practices into the degree requirements can be challenging to colleges and universities since many happen outside of the traditional classroom. One solution is to incorporate high-impact practices in the co-curriculum (Bass, 2012, p. 26).

Surveying and assessing student engagement is important because of the link student engagement has with student retention, high-impact practices, and student career success (Fiorini, Liu, Shepard, & Ouimet, 2014, p. 462). The National Survey of Student Engagement (NSSE), a popular national survey, asks students a variety of questions about their level of activity on campus and their utilization of certain campus resources. This instrument "annually collects information at hundreds of four-year colleges and universities about first-year and senior students' participation in programs and activities that institutions provide for their learning and personal development". The participating institutions can use their data to identify certain components of the undergraduate experience that could be improved. Prospective students can also use the NSSE data to compare schools (About NSSE).

While meeting learning objectives in the classroom is very important, it is also "important to recognize out-of-class experiences as an important predictor of personal development" (Ward, 2012, p. 37). Employers want students that are well-rounded, with skills and experiences they can articulate in interviews. An article from BizEd, *What Employers Want, What We Teach* "states that "… employers have called for graduates with better leadership skills, stronger writing skills, and a deeper understanding of ethical issues…"(Ghannadian, 2013, para. 3). Employers place emphasis in several areas, especially communication skills (Hodges, Burchell, 2003, p. 18). According to a survey by Hart Research Associates (2013), employers say their potential employees' "capacity to think critically, communicate clearly, and solve complex problems is more important than their undergraduate major" (p. 1) In general, employers "strongly endorse practices that require students to demonstrate both acquisition of knowledge and its application" (p. 1). Students need to get engaged and make sure they develop a wide set of skills that they can communicate to employers (Ward, 2012, p. 39), but engaging students can be challenging.

As John Warner (2014) blatantly states, "without student engagement, we have nothing". Extracurricular activities have been widely regarded to "assist students in developing personally, socially, and intellectually" (Lawhorn, 2008, p. 16) and "it is important to recognize out-of-classroom experiences as an important predictor for personal development" (Ward, 2012, p. 37). There are strong indicators that engagement can have incredibly positive effects on a student, but engagement is important to higher education because it is strongly linked to student retention.

PROGRAM DESCRIPTION

The Northern Illinois University College of Business has several strong partnerships with companies in the Chicagoland area. Corporate partners told us that graduates need to be better-rounded. They needed to have a supplementary education and a greater emphasis on various aspects of their education that they cannot get in the classroom. There was a growing need for a program that would broaden the students' perspective and make the students more marketable. In response to this feedback, the college, in partnership with faculty and potential employers, created a co-curricular program required for all students graduating from the College of Business known as the "Passport Program". The primary goal of creating the Passport Program is to positively impact the career success of business students as they graduate with their respective majors and enter the workforce.

The secondary goals of the Passport Program are as follows:
1. Increase student involvement
2. Enhance student marketability
3. Helps students achieve their goals
4. Provide students with business related experiences to discuss, especially with potential employers.

In line with the "Passport" theme, the areas of focus of the program are referred to as "continents". The continents are leadership, business communications, service, global awareness, ethics, experiential learning, and career development. A student must attend one event in every category to complete their passport. For example, a student can earn "Business Communications" credit by attending an etiquette luncheon or attending a LinkedIn profile workshop. For "Career Development", a student could attend a career fair or an internship fair. Studying abroad or attending an event with a global speaker would earn a student their "Global Awareness" continent. Some examples of "Leadership" activities are holding a leadership position in a student organization or attending a "Leadership 101" workshop. Students can earn "Experiential Learning" credit by completing an internship or participating in a peer mentoring program as a mentor or mentee. Competing in the Ethics Case Competition or participating in the Ethics Discussion Series are some examples of how students can earn their "Ethics" continent. There are also many opportunities for students to earn "Service" credit, which can be anything from giving blood at the blood drive to going and volunteering at the local food pantry. Students have a lot of options for events and activities they can participate in for each continent.

Key components of the program are a full-time Director and the internally developed administrative software, Engage. Engage, built on a Microsoft Access platform, gives students the ability see the events in which they have already participated to check their progress towards completing the seven continents. From the administrative side, the software provides the Passport Director the ability to perform important functions, such as running queries, e-mailing targeted groups of students, and uploading attendance from events and activities.

Currently, students enter into the Passport Program during the sophomore or junior year by taking a Passport Introduction class, UBUS 200. In this one-time, zero credit hour course, students learn about the requirements of the program.

After a student has taken UBUS 200, they can begin "visiting" the seven continents. A student completes a continent once they attend an event or perform an action that is "Passport Approved". An online mechanism exists for faculty members to submit events for approval. The submitting faculty or staff member must choose which continent they feel is the best fit for the event and provide a brief justification for their choice. For example, every year the college hosts an ethics case competition, which can be submitted as an "ethics" event for approval. If the Career Services office is hosting an internship fair, the event can be submitted as "Career Development". The person submitting the event for approval must also indicate a person that will be responsible for taking attendance at the event, as this is how the students receive credit for their participation. With this event approval system, the Passport event database is populated with events that are being put on by campus offices and student organizations.

After students attend a "Passport Approved" event, attendance for that event is uploaded to the Engage database and students receive credit for the relevant continent. Once a student completes all 7 continents, they have completed their requirement for the program.

In their graduating semester, students must enroll into UBUS 201, the Passport Culmination course. It is at this time complete an exit survey. They also receive a Co-curricular Passport Transcript, a document with all of the events that the students have attended while in the program. This document is given to students for use in an interview setting. Students that have attended five or more events in one continent are considered "continent scholars" and are recognized for their accomplishment at a reception with the Dean of the College.

School Comparison
Programs such as the Passport Program are not unique to Northern Illinois University's College of Business. There are other schools nationwide that are adopting similar program models. Table 1 provides a snapshot of six business schools with similar core programmatic elements. Each of the programs is a degree completion requirement in the business school of that university.

It is interesting to note the variations in requirements which make the programs at each school integrated into the classroom or outside the classroom. Like Northern Illinois University, University of San Diego is completely outside of the classroom. Students in this program attend an orientation and fulfill several other requirements, such as a networking event. Their program is based on a point system.

Southern Illinois University Edwardsville (SIUE) has a completely in-classroom program. Business students at SIUE take 2 classes for academic credit. As part of the coursework, students engage in various activities that serve to enhance their academic experience and reflect on their experiences by turning in formal reflection papers.

DESIGN FOR STUDY

A survey was sent to graduating seniors asking for the strength of their agreement on a scale of one to five with these four statements:
1. *I was very involved in out-of-classroom experiences.*
2. *My out-of-classroom activities enhanced my marketability.*
3. *My out-of-classroom activities helped me achieve my goals.*
4. *I discussed out-of-classroom activities with others.*

As discussed earlier, these statements embody the original goals for the Passport program. Because of the timing of the implementation of the program, there was a unique opportunity to survey graduating students that had completed the Passport program, as well as graduating students that had not been required to participate. The expectation was there would be a meaningful difference (t-tests) in the responses from the two groups. College leadership and the Passport advisory board also wanted various descriptive statistics for the program in its current form.

DATA ANALYSIS

Quantitative Data

T-tests for the difference between the two sample groups on each question confirmed what can be found in Table 2. There is no significant difference in responses between the Passport completers and the non-Passport completers. The data is skewed to the "agree" end of the scale for each question for both groups. Outside of the possibility that the Passport Program did not have an effect on self-reported student involvement, there are several possible explanations for these results:
- The great majority of all business students are very involved even without participating in the required program.
- By not defining terms like "very involved" it is possible that students across the participation spectrum all believe they are "very involved."
- Involved students might have been more apt to respond to the survey.

Table 1: Comparison of Programs between Schools

School	Public or Private	Program Name	Program Requirements	Location	Approx-imate Number of Students	Program Launch Date
Northern Illinois University	Public	Passport Program	UBUS 200/201 (noncredit) and Complete 7 continents: Leadership, Business Communications, Service, Global Awareness, Ethics, Experiential Learning, and Career Development	completely outside the classroom	1600	2013
Southern Illinois University Edwardsville	Public	Business Transitions	Complete 2 classes: GBA 301 and GBA 401	completely in-classroom	1200	2013
University of San Diego	Private	Passport Program	Part One and part two. Part one has orientation, a networking event, and an exit survey. Part 2 is the flex points (9)	completely outside the classroom	1600-1800	launched in 2009. became graduation requirement in 2011
San Diego State	Public	Business Passport Program	Complete 5 areas of focus: Communications, Global Awareness, Career Development, Community Service, Leadership/Teamwork and take a 1 credit hour class their Junior year	mixture	450	launching Fall 2015
Xavier University	Private	Business Professionals Programs	Participate in a list of required activities such as resume workshops and career fairs with additional optional opportunities available	completely outside the classroom	700-900	2000
Coastal Carolina University	Public	Building Your Business Portfolio Program	Take professional development classes and participate in a set number of professional development activities	mixture	1900	2012

Table 2: Summary of Responses to Survey Questions

Question	N (Passport Completers)	Average Response Passport Completers	N (Non-Passport Completers)	Average Response Non-Passport Completers	P-Values (α=.05)
1	34	3.56	26	3.57	0.478
2	34	4.06	26	3.81	0.195
3	34	4.03	26	3.78	0.193
4	34	3.97	26	3.58	0.117

While the survey was unable to prove that the implementation of Passport changed the perspective of students with respect to these questions, the results are interesting. Respondents, by and large, believe that out of classroom

activities enhance their marketability and help them achieve their goals. Table 3 shows the percentages of students that "Agree" or "Strongly Agree" for each question out of the 60 students that took the survey. There are 1289 students currently enrolled in the Passport Program. As of the conclusion of the Spring 2015 semester, the program had graduated 352 students.

Table 3: Percentage of Respondents Per Question that Indicated "Agree" or "Strongly Agree"

1. I was very involved in out-of-classroom experiences.	58%
2. My out-of-classroom activities enhanced my marketability.	72%
3. My out-of-classroom activities helped me achieve my goals.	72%
4. I discussed out-of-classroom activities with others.	65%

From the time the program was launched through Fall 2014, there were 288 event offerings that students could participate in to complete their program requirements. The greatest number of event offerings was in the "Leadership" area. Table 4 shows the number of events offered in each continent since the inception of the program as of Fall 2014.

Table 4: Number of Events in Each Continent to Date as of Fall 2014

Leadership	101
Career Development	53
Service	37
Business Communications	28
Global	28
Experiential Learning	25
Ethics	16
TOTAL	**288**

When students take UBUS 201, the Passport Culmination course, they complete an exit survey that asks a variety of questions, some that are open-ended, and some that are "yes/no". Table 5 shows the percentage of students that felt that each continent helped or did not help them achieve their goals within each. Even in the continent with the most room for improvement, "Global Awareness", more than half of the students felt that the activities that they participated in helped them achieve their goals. Additionally, we performed a content analysis that involved looking for repeated concerns and suggestions. The information gathered from this survey gives program administrators an idea of how the students perceive the activities in the various continents. Based on the data collection process and the data itself, there are several improvements to the program that are suggested, including changes to assessment tools and administrative practices.

Table 5: UBUS 201 Exit Survey Response Data

Question: Did activities move you closer to achieving goals within each continent?		YES	NO
1.	Business Communications	88%	12%
2.	Experiential Learning	88%	12%
3.	Career Development	84%	16%
4.	Service	72%	28%
5.	Leadership	70%	30%
6.	Ethics	62%	38%
7.	Global Awareness	53%	47%

Qualitative Data

Based on interactions with various student and faculty groups, many suggestions have been made to improve the program. Suggestions that were heard across the board included 1) students want more events at more varying times. That is, students want events available at all hours of the day: mornings, afternoons, and evenings. 2) Students want events to be offered in all continents more regularly.

Specifically looking at open-ended questions from exit surveys and individual interactions from students, the amount and timing of events is a concern. Non-traditional students and commuters would like to see the program cater somewhat more to those populations, again by varying timing of events. Some students also suggested that there be an online component of the program that students could complete from home, at their leisure. Another suggestion from students dealt with communication. The students would like to see more communication that branches away from e-mail reminders. Students suggested text messaging and using the university learning management system, Blackboard, to send students updates.

A Passport Faculty Advisory Board, consisting of faculty and students from various business disciplines, meets twice per semester to discuss challenges and pose solutions to problems that the program faces. General suggestions from this advisory board deal more with logistics of the program. For example, the board suggested that students be on-boarded as freshmen, rather than in their sophomore or junior year. They have also suggested that the Passport Program be combined with another mandatory introduction class, *Career Compass*, a career planning course, to provide students with a comprehensive business introduction course that they would take for credit.

The University Student Association suggested switching the internally developed software that is currently being used for tracking progress and monitoring events to different, commercially available software that is being launched at university level. This new software would engage all student organizations and track more co-curricular and extra-curricular involvement on-campus. This new software has various capabilities that the current software does not have and is more visually appealing. The visual appeal, new capabilities, and the university-wide implementation make this software a potentially good candidate for adoption.

DISCUSSION OF RESULTS AND NEXT STEPS

Changes for next iteration of assessment

Assess satisfaction with individual events not overall continents
The exit survey in UBUS 201 asks students if they felt that activities within a certain continent helped them to achieve their goals, as shown in Table 5. Rather than asking broadly if activities helped a student achieve their goals, we would like students to indicate "yes/no" for each activity they participated in within each continent. This will help identify more specifically the events and activities that are both most and least appreciated by students, rather than just overall continents.

Survey faculty and employers

Surveying faculty and employers would give the program evaluation another important perspective. For the program to be successful there needs to be constant feedback. The faculty, which helps support the program, should have an opportunity to formally voice their praise and concerns. The employers hire the students, so a survey would help the Passport administrative team to assess the effectiveness of the program.

Proposed changes to the program for '15-'16

Tap student support group more
Since the program was launched, a Student Advisory Board for the Passport Program was created. These students will be taking on a more formal role in the Passport Program and will help to implement some of the changes that have been suggested. Specifically, these students will tackle Passport marketing and will help to coordinate some events. They will also continue their role as liaisons to the program by hosting information tables that students can utilize.

Offer regular events in all continents
With the action of the Student Advisory Board and other administrative efforts, there should be an increase in the number of events being offered on a regular basis. Because of the feedback received from students, the Director will diversify the event offering so that there are more events being offered in all the continents at varying times throughout the semester.

Tap alumni base more
Alumni have valuable talents. These people cannot always give their treasure, but they can give their time and expertise. The Passport Program, in partnership with other campus offices, hopes to take a greater advantage of those that wish to participate. There is a valuable mentoring and professional opportunity to be harnessed that will allow business students to form stronger alumni relationships.

Explore changes in software
Based on the software that is being launched university-wide, the Passport Program administrative team will conduct a semester-long trial with a small group of students. The goal is to test the features of the new software and determine what impact a change in software will have on the students and administrative practices.

Increase electronic assessment and document storage
The Passport Program, with the large number of assessments that take place, is very "paper heavy". For program sustainability, easing administrative processes, and environmental reasons, there is a need to make assessments and document storage available electronically. Establishing a reliable system to store documents electronically in an organized way could serve to greatly reduce the workload and dramatically increase efficiency from the administrative side of the program.

CONCLUSION

Employers are looking for business students that have acquired skills both in and out of the classroom. The implementation of a fee-based, required co-curricular program for business students is attainable. With the use of the inexpensive, internally-based software, the Northern Illinois University College of Business was able to create a co-curricular business program requirement that broadens students' perspectives and enhances their marketability. This study's focus was on self-reported student involvement. Future studies hope to specifically evaluate enhancing marketability of students by surveying employers.

REFERENCES

About NSSE. (n.d.). Retrieved June 10, 2015, from http://nsse.indiana.edu/html/about.cfm

Bass, R. (2012). The Problem of Learning in Higher Education. *EDUCAUSE Review*. 47(2), 23-33.

Blake, R., & Mangiameli, P. (2012). Analyzing Retention from Participation in Co-curricular Activities. *2012 Northeast Decision Sciences Institute Conference Proceedings.*

Brownell, J., & Swaner, L. (2009, April 16). High-Impact Practices: Applying the Learning Outcomes Literature to the Development of Successful Campus Programs. *Peer Review.* 11(2), 26.

Hart Research Associates on behalf of The Association of American Colleges and Universities. (2013). *It takes more than a major: Employer priorities for college learning and student success.*

Hodges, Dave, & Burchell, Noel. (2003). Business Graduate Competencies: Employers' Views on Importance and Performance. *Asia Pacific Journal of Cooperative Education.* 4(2), 16-22.

Fiorini, S., Liu, T., Shepard, L., & Ouimet, J. (2014). Using NSSE to Understand Student Success: A Multi-Year Analysis. Proceedings of the 10th Annual National Symposium, University of Oklahoma, C-IDEA, 460-473.

Ghannadian, F.F. (2013). What Employers want, what we teach. *BizEd.*

Kuh, George D. (2008). "High-Impact Educational Practices: What They Are, Who Has Access to Them, and Why They Matter." AAC&U, Washington, D.C. 34 pp.

Kuh, George D. (2003). What We're Learning About Student Engagement From NSSE: Benchmarks for Effective Educational Practices. Change: The Magazine of Higher Learning, 35(2), 24-32.

Lawhorn, B. (2008-2009). Extracurricular Activities. *Occupational Outlook Quarterly*, 16-21.

Marx, T. (2013). Teaching Leadership and Strategy. *Business Education Innovation Journal*, 5(2), 12-19.

NSSE 2014 Snapshot. (n.d.).

Pike, G. (2006). The Dependability of NSSE Scalelets for College- and Department-level Assessment. *Research in Higher Education*, 177-195.

Sculley, J. (1988). AT LARGE: A Perspective on the Future: What Business Needs from Higher Education. *Change: The Magazine of Higher Learning*, 41-59.

Ward, C. (2012). Assisting Students in Gaining Employable Skills: Valuing and Encouraging Extracurricular Activites. *Business Education Innovation Journal*, 4(1), 37-40.

Ward, C. (2013). Extracurricular Activites: The Impact on Business Students' Personal Growth and Employability. *Business Education Innovation Journal*, 5(1), 6-10.

Warner, J. (2014). Without Student Engagement, Nothing Else Matters. *Inside Higher Ed.*

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Community Based Learning Projects and Electronic Platforms in Business Statistics Courses

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ABSTRACT

This paper describes how business faculty can adapt to curriculum changes while simultaneously improving student learning in the business statistics course. The particular curriculum change discussed here is a reduction in the number of required business statistics courses for majors to one course from a sequence of two. Of course, this move to one course from two has created challenges in finding time to cover the material. In addition, when teaching the two-semester sequence, the authors organized group projects for students that address issues for local non-profit organizations as well as some for-profit businesses.

The good news is that this reduction took place at a time when the authors were considering the adoption of publishers' software to introduce students to the content of the course on a weekly basis and to provide students a platform to complete and check their homework problems, as well as access online tutorials when needed. One author used Aplia from Cengage and the other used the Connect platform from McGraw-Hill. We have collected evidence of effectiveness and student attitudes over two semesters that is provided later in this paper.

The bottom line is that the adoption of Aplia and Connect has allowed students to engage the content at their own pace outside of class with the benefit of having instructors reallocate class time in order to preserve the group projects. Our intention is to provide readers with 1) encouragement to consider adopting an electronic platform and/or group projects, 2) the associated potential benefits, and 3) guidance on how to effectively do so.

Keywords: Curriculum change, community based learning, business statistics, group projects, blended learning, electronic textbooks

INTRODUCTION

The evolution of using Community Based Learning (CBL) group projects in the required Statistics for Business and Economics course in the Robins School of Business at the University of Richmond (UR) has taken place over more than a decade. The discussion below includes the motivations for assigning these projects, a description of their structure and logistics, various types of support available from UR, evidence of the effectiveness of this approach, and lessons learned over time including recommendations that other instructors can adopt in their own classes. The innovation presented is one of context, progress, and refined execution rather than a completely new idea implemented for the first time.

One of our Robins School colleagues, Doug Bosse, who worked at a large consulting firm before pursuing an academic career, stated the following. *I used to run an annual study about innovation in key account management. The most powerful innovations were always the result of someone who was just trying to solve a problem. First they realized they were facing a problem, and then they looked around to see how other people/firms had solved similar problems. Failing to find any relevant solutions in that search, they created their own solution. Their solutions did not magically appear; they had to be built, tinkered with, and rebuilt several times. After their problem was solved, others looked at the solution they had developed and said, "Now that is innovative!"*

MOTIVATION AND RELATED LITERATURE

The first author was trying to solve the obvious problem that my traditional approach to the course was not working well for the students or me. Umble, Umble and Artz (2008) wrote the following in the Decision Journal of Innovative Education. "In the traditional college classroom, the course instructor is responsible for conveying course content to the students. The instructor delivers lectures, crafts assignments to reinforce concepts discussed in lectures, and designs tests to measure the students' mastery of course content. Students work individually on

assignments, and teamwork is often discouraged, or even forbidden. But the existing literature suggests that shifting some of the responsibility for education to students through the use of active learning tools and techniques yields significant benefits."

That the delivery of statistics in business schools is fertile ground for improvement is stated concisely in Decision Line by Ord (2010) where he asks the question, Statistics in B- Schools: Millstone or Cornerstone? Some of the criticisms that he addresses with respect to rejuvenating teaching are that the statistics course is irrelevant, all about techniques, and the classes are boring. DSI has previously recognized the type of innovation reported in this paper by selecting as one of the 2009 DSI Instructional Innovation Competition Award Finalists the work of Ravi Behara (2010), "Community Engagement through Operations." Part of what makes the work reported here and that of Behara innovative is that it is unusual to find CBL group projects in a statistics course (or operations in Behara's case) in a business school. Much can be learned from what has been written by Hydorn (2011) about the CBL component. She provides different models for such work in statistics (though not in business schools) as well as principles of good service-learning practice. When one begins to investigate pedagogy in the area of service learning, there is a statement from Honnet and Poulsen (1989) that is frequently given providing credibility and motivation to the work, "service, combined with learning, adds value to each and transforms both." Faculty who intend to implement a service learning component would be well served to see Carrelas-Juncal et al. (2009) in which the authors offer a way to organize thinking about scholarly teaching and service-learning.

There are other articles that have been published that are related to the group work and/or projects. Koppenhaver and Shrader (2003), Jassawalla et al. (2008), Jassawalla et al. (2010), Hasan and Ali (2007), Kaldis et al. (2007), Kinser (2007) and Aller et al. (2008) all speak to the issues of group work in the classroom. Kenworthy-U'Ren (2003) and Minch and Tabor (2007) speak to the issues of active learning or service learning projects.

Very recent work has appeared in the Business Education Innovation Journal by Deeter-Schmelz (2014) where she reports the challenges and opportunities associated with a voice-over video solution that moves some class content online in order to free up class time in much the same way as we are doing with Connect and Aplia. Pragman (2014) also reports in BEIJ that the use of instructional videos in a flipped classroom environment yielded students that were unprepared since they did not take responsibility to view the videos despite the convenience to do so on their own schedules. And, in the most recent issue of BEIJ, Fish (2015) reports statistically significant differences in improvement of student performance in-class testing on quantitative problems when using computer-managed homework to learn the associated concepts.

EVOLUTION FROM NECESSITY TO RECOGNIZED INNOVATION

The first set of projects was assigned in the fall of 2006 with little thought given to the structure, execution, or responsibilities of the assignment for the instructor or the student groups. By the spring semester of 2011, the students were working in six groups, each with a different community partner, bringing the total number of participating community partners to more than sixty, almost all of which are non- profits. The current process of identifying appropriate community partners, determining their objectives, communicating to community partners what they can reasonably expect from the student groups, providing structure to student groups regarding their academic responsibilities associated with the project, assigning students to particular groups and initiating their organization, arranging for Speech Fellows to be assigned to each group, scheduling sequences of two developmental video recordings of each group presentation, and defining requirements and scheduling of the formal presentation at the end of the semester is a product of the five years of refinement informed by formal and informal interactions with my UR colleagues.

Faculty members at UR are fortunate to be a part of an academic community where teaching is valued and supported. Presentations and seminars on teaching are commonplace, occurring in different venues on campus at a frequency of more than one per week. It was at one such seminar where one colleague in the Accounting Department, Joe Hoyle, offered the following observation. "You do not get better at teaching by doing it, but you get better at teaching by working harder at it." Please see http://facultystaff.richmond.edu/~jhoyle/ for a collection of teaching tips that Professor Hoyle shares publicly.

Inspired to work harder, I learned of an effort funded by the National Science Foundation called ARTIST (Assessment Resource Tools for Improving Statistical Thinking). The ARTIST materials stated one of the most

important recommendations to successfully teach the introductory course, "Use real data."

The Center for Civic Engagement (CCE) at UR promotes, among other things, CBL for faculty and students. The CCE also hosts weekly luncheons where faculty, staff, and students gather to explore civic engagement issues and topics. It was at one such luncheon in the spring of 2006, where the topic was environmental justice as related to military weapons landfill sites, that I mentioned to Amy Howard of the CCE, that I was revising my course to "use real data." Her response was, "I can help with that." That was the start of a transformation for this faculty member and his students who are, along with the community partners, the beneficiaries of this innovative approach. A really important question to ask in reflection at this point in time is, "Why include CBL Group Projects in BUAD 201?" A list of about twenty good reasons has been organized into the following six clusters.

1. **Have the students collect and analyze data for an organizational client considering the goals and objectives of that client along with the associated constraints.** Root and Thorme (2001) suggest that this form of active learning can enhance student understanding and use of descriptive and inferential statistics [which is closely connected to #6]

2. **Diversify the pedagogy of the class.** Including the CBL projects has introduced multiple modes of learning and multiple modes of evaluation to the class, which here is CBL + Aplia + additional time for class discussion.

3. **Have the students experience and learn about the lessons of group work.** These projects provide an opportunity for leadership and an understanding of shared responsibility. Many groups experience the "free rider" problem. This directly translates into preparation for professional expectations in industry.

4. **Have the students engage in the community.** UR is located in an affluent suburb of Richmond and provides an immediate environment that students know as "The Bubble" in the sense that it is isolated from many of the difficult issues that many of the city's residents face.

5. **Prepare the students for formal presentations with significant support from the campus Speech Center.** Also improve their communication skills in general, from having to take a technical topic and talk/write about it in such a way that clients and peers understand.

6. **Have the students experience and learn lessons specific to project work.** This is the concept of obtaining some type of domain knowledge that proves to an employer that they are capable of taking ownership of a subject/topic. Of course, this also enables the students to provide context for course tools, so they can further internalize the meaning of course tools, make them describe how the statistical tools can be described in simple language, explain how the results of the statistical tools can be interpreted for a real problem, discuss the benefits of using the statistical tool, and most importantly, recognize the limitations of the tool. This is a real world lesson in understanding data integrity and how statistics can be used when they're in industry, working in a data-centric environment. This also brings up the liberal arts concept that may be useful to mention. Often students are encouraged to learn a topic for the sake of the topic (stat = core course, in isolation of others) without recognizing that course topics can fully integrate with subjects across campus.

EVIDENCE OF EFFECTIVENESS

We have not systematically collected data over all of the academic years that we have assigned the CBL group projects but we are firmly convinced by evidence that this innovation has been effective. One student whose community partner was ElderHomes, an organization dedicated to making physical access (such as handrails and wheelchair ramps) to homes for elderly citizens without the resources to provide such access, went on to become the President of the UR student chapter of Habitat for Humanity. He attributed his continued interest in affordable housing issues to that CBL project in the business statistics class. Another student continued his interest in CBL by spending the summer following his project participation working for an organization called CARES that provides shelter for homeless women and their young children. He completely redesigned their data collection system at the time of client intake from an archaic hard copy system to a consistent and easily implemented electronic system. Once the data collection system was in place, he was able to analyze the data so that CARES could use the data to justify the past use of funds and to demonstrate that certain localities in the region were using the resources of CARES without making funding commitments consistent with the other localities served by CARES. Another student who worked with the Better Business Bureau was invited by the UR Board of Trustees to make a formal presentation on the value of CBL at UR from a student perspective. This student also continued her interest in CBL

by working over the summer with the Digital Scholarship Lab at UR to investigate redlining in the mortgage and insurance markets in her hometown of Philadelphia.

Every student group makes a formal presentation at the end of the semester. After two years of the projects (and many poor presentations), a requirement for students to use the Speech Center was instituted. Now the worst presentations that we see are uniformly better than the best ones that I saw prior to this Speech Center intervention. Another student made a presentation on behalf of her student group to Leadership Metro Richmond, an organization that supports emerging leaders in the city of Richmond. The chair that year was Tom Silvestri, the publisher of the main newspaper in town, the Richmond Times Dispatch. Mr. Silvestri wrote a letter singing the praises of the work produced by the student group and the group's representative's presentation. We have also made professional recommendations of students for employment emphasizing their CBL project accomplishments including their leadership in their group, the quality of their analysis, and performance during the presentation.

THE APLIA EXPERIENCE FOR THE INSTRUCTOR AND STUDENTS

The implementation of CBL projects provided the opportunity to redefine course goals and learning goals. The inclusion of a CBL course design format required a minimum of a 10-15 hour within-class time commitment for discussing projects, discussing progress, and presenting results. There was also opportunity to allocate 5-8 hours of class time for working in a computer lab, allowing students to learn how to use software tools and perform statistical applications that were traditionally performed in a paper environment.

As a result of the increased time commitment for CBL projects and work in the computer lab, there was a need to transition some class tasks outside of the classroom. Recent advances in online tools provided a virtual classroom environment for students to practice course concepts. For example, the online homework tool Aplia allowed for the integration of textbook content and online assignments.

The Aplia tool was used from Fall 2013 through Spring 2015. We experimented with using the tool for homework problem sets, multimedia demonstrations, testing, and as an online supplement to paper homework assignments. After some experimentation, we adjusted the use of Aplia to accommodate broader pedagogical goals. The adjustments included using Aplia only for practice problems, encouraging students to work in groups, and using "practice" mode to allow students to retry problems without grading penalty.

A survey was conducted in Fall 2014 and Spring 2015 to evaluate the student perceptions of Aplia. Figure 1 shows the percentage of positive responses to key survey questions. During the end of the Fall 2014 term, 67% of students considered Aplia to be effective in learning and 88% of students considered the tool to be easy to use. During the beginning of the Spring 2015 term, 93% of students considered Aplia to be effective in learning and 93% of students considered the tool to be easy to use. There are several reasons why the survey results show relatively lower effectiveness and ease-of-use during the end of Fall 2014. External factors such as exams, CBL projects, and other academic projects may contribute to the perceived time commitment for completing the assignments. In addition, redundancy in using Aplia every week may have weakened the effectiveness of the tool.

Figure 2 shows the student-perceived benefits of using Aplia. The majority of students appreciated the ability to receive instant performance feedback and explanations for practice problems. Because of the instant feedback, students were able to quickly readjust their problem-solving approach. If the students had used a traditional paper homework method, they may not have had the opportunity to readjust their approach until the assignment was graded and returned.

Figure 1: Student survey results on learning and ease of use
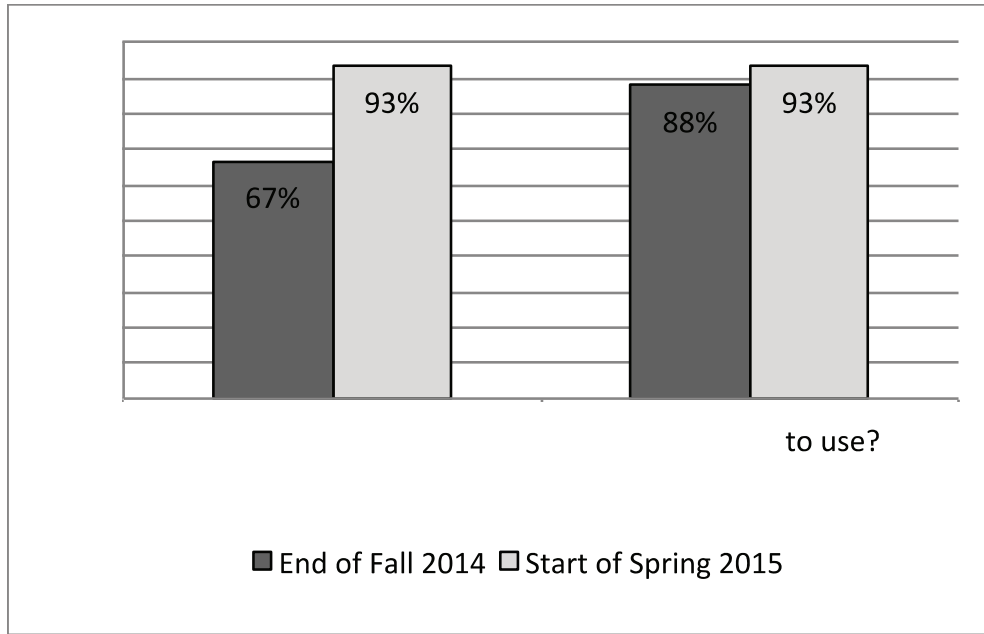
Percentage of positive student responses for questions assessing the effectiveness of online homework tool (Aplia).

Figure 2: Student survey results on Aplia features
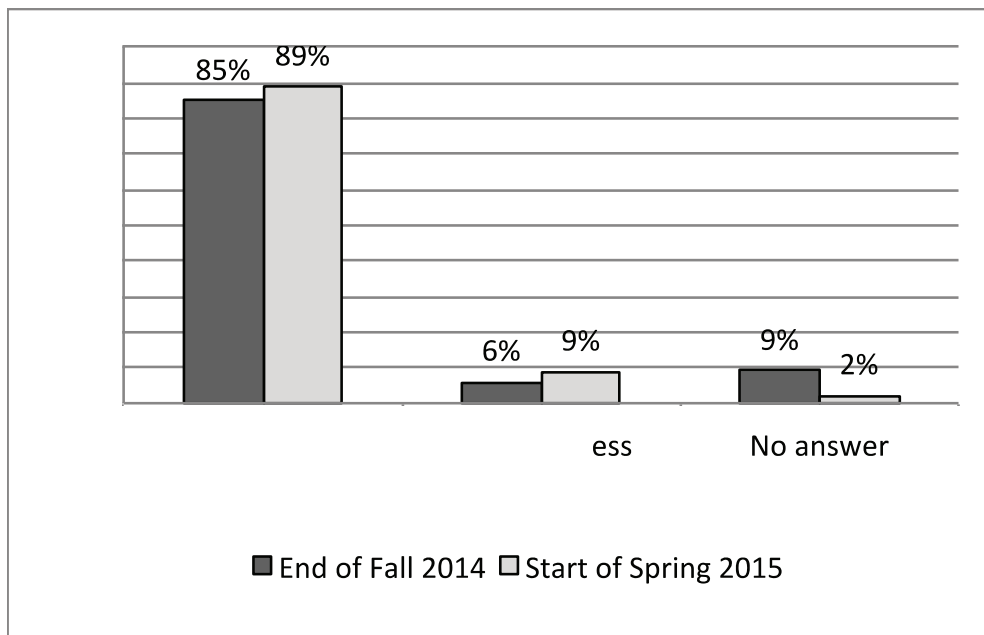
Percentage of student feedback in response for survey question "What do you like best about Aplia?"

There were also some issues with the use of Aplia. The tool was sensitive to rounding for intermediate steps within the problem solving process. Of course, these issues were addressed after some practice. There were also concerns with the use of a "practice" mode for grading assignments, thereby possibly de-incentivizing students to focus on identifying the correct answer on the first try. Some students also commented on the cost of Aplia and technical problems. In Fall 2014, 33% of students reported having at least one occurrence of technical difficulties with Aplia.

Students also commented on the disparity between problem organization, methods discussed in lecture, practice problems given in class, and the format of problems on tests. As a result, there was need to further communicate how the course design components integrated with each other. Course quizzes and exams were adjusted to provide continuity with the Aplia format. There was also opportunity to create class assignments and tests that integrated the CBL projects, Aplia topics, and course concepts. For example, we created group quizzes to ask students to create sample problems and solutions relating the CBL topic to the course concept of statistical hypothesis testing.

Students also provided some unexpected observations. The font sizes, colors, and wording of the questions were a concern for some students. In Fall 2014, 18% of students commented on challenges in using a computer to submit answers for arithmetic operations that are performed on paper within the classroom. There are two concerns with this finding. First, it is understandable that students may prefer to track progress and work for assignments within the same medium as their class notes, class exercises, and graded tests. Second, this finding emphasized a potential disconnect between traditional classroom environments supporting paper-based work and the common expectations within industry for performing analyses using software tools. To address this concern, there were increased efforts to encourage students to use software tools for their homework and CBL projects.

Based on the experiences with using Aplia, there are plans to further incorporate blended learning concepts within business statistics courses. There are plans to transfer traditional classroom lecture to an online environment, thereby using additional class time for questions and discussion. Of course, technologies such as iPad applications and online video resources facilitate the blended learning efforts.

CONCLUSION

At the time of this writing, our Community Based Learning projects continue to be important components to student learning and our community partners. The students enrolled in the authors' spring 2015 offerings of the business statistics course worked with the local office of the Better Business Bureau to analyze customer complaints and subsequent resolutions for five large US banks. This collaboration was unusual in the sense that the complaint data in text form was available for student analysis was a departure from the quantitative data in our other projects. An indication of the success of these projects is that the Better Business Bureau has agreed to continue its relationship with the Robins School by providing more data for a set of MBA capstone projects.

We remain fully convinced of the value added by the Community Based Learning projects and that the use of the electronic texts and homework systems are an effective way to reallocate class time to engage students and improve their learning of the theory and application of the course concepts.

REFERENCES

Aller, B.M., Lyth, D. M., & Mallak, L.A. (2008). Teaching brief. Capstone project team formation: Mingling increases performance and motivation. *Decision Sciences Journal of Innovative Education*, V. 6, pp 503-507.
Behara, R. S. (2010). Community engagement through operations. *Decision Line*, October Issue, pp 6-9.
Carracelas-Juncal, C., Bossaller, J., & Yaoyuneyong, G. (2009). Integrating service-learning pedagogy: A faculty reflective process. *Insight: A Journal of Scholarly Teaching*, V. 4, pp 28-44.
Deeter-Schmelz, D. (2014). Shark Attack! Using an Online Tool to Enhance Student Learning. *Business Education Innovation Journal*, V. 6(2), pp 6-10.
Fish, L. A. (2015). Undergraduate Students Computer-managed Homework versus In-Class Performance for Different Testing Formats. *Business Education Innovation Journal,* V. 7(1).
Hasan, B., & Ali, J. (2007). An empirical examination of factors affecting group effectiveness in information systems projects. *Decision Sciences Journal of Innovative Education*, V. 5, pp 229-243.

Honnet, E. P. & Poulsen, S. J. (1989). Principles of Good Practice for Combining Service and Learning. Wingspread Special Report. Racine, WI: The Johnson Foundation, Inc.

Hydorn, D. L. (2007). Community service-learning in statistics: Course design and assessment. *Journal of Statistics Education*, V. 15. Retrieved from http://www.amstat.org/publications/jse/v15n2/hydorn.html

Jassawalla, A. R., Malshe, A., & Sashittal, H. (2008). Empirical research. Student perceptions of social loafing in undergraduate business classroom teams. *Decision Sciences Journal of Innovative Education*, V. 6, pp 403-426.

Jassawalla, A. R., Sashittal, H.C., & Malshe, A. (2010). Empirical research. Effects of transparency and at-stakeness on students' perceptions of their ability to work collaboratively in effective classroom teams: A partial test of the Jassawalla and Sashittal model. *Decision Sciences Journal of Innovative Education*, V. 8, pp 35-54.

Kaldis, E., Koukoravas, K., & Tjortjis, C. (2007). Reengineering academic teams toward a network organizational structure. *Decision Sciences Journal of Innovative Education*, V. 5, pp 245-266.

Kenworthy-U'Ren, A. (2003). Teaching brief. MBA students and corporate citizenship: Incorporating industry-specific service-learning projects into the curriculum. *Decision Sciences Journal of Innovative Education*, V. 1, pp 119-125.

Kinser, A. S. (2007). Teaching brief. Using contracts to determine individual grades in team projects. *Decision Sciences Journal of Innovative Education*, V. 5, pp 207-221.

Koppenhaver, G. D., & Shrader, C. B. (2003). Structuring the classroom for performance: Cooperative learning with instructor-assigned teams. *Decision Sciences Journal of Innovative Education*, V. 1, pp 1-21.

Minch, R.P., & Tabor, S. W. (2007). Teaching brief. Achieving active learning with a student-run internet service provider business: The case of BSU.net. *Decision Sciences Journal of Innovative Education*, V. 5, pp 179-182.

Ord, J. K. (2010). Statistics in b-schools: Millstone or cornerstone? *Decision Line*, July Issue, pp 4-13.

Root, R., & Thorme, T. (2001). Teacher's corner. Community-based projects in applied statistics: Using service-learning to enhance student understanding. *The American Statistician*, V. 55, pp 326-331.

Pragman, C. H. (2014). Using Student Feedback to Revise a Flipped Operations Management Class. *Business Education Innovation Journal*, V. *6*(2), pp 11-19.

Umble, E. J., Umble, M., & Artz, K. (2008). Enhancing undergraduates' capabilities through team-based competitions: The Edward Jones challenge. *Decision Sciences Journal of Innovative Education*, V. 6, pp 1-27.

Introducing Global Cultural Diversity Awareness Through Service Learning in Human Resource Management Education

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ABSTRACT

An understanding of global cultural diversity is an essential component of business school education, especially human resource management. However traditional course delivery does not adequately address this need. Service learning provides a form of experiential learning that has a positive effect on the understanding of social issues through personal insight and cognitive development. We develop and conduct an in-class proximal service learning project in an undergraduate international human resource management course. Based on participation by one hundred and twenty three students over three years, we find evidence of student awareness of global cultural diversity issues, at a personal level, after the service learning experience. We discuss how this assignment can be applied in future classroom environment.

Key Words: Global Cultural Diversity, Service Learning, Business Education

INTRODUCTION

Extensive globalization of business gives rise to the need for greater focus on global cultural diversity. Students with intercultural understanding are valuable for businesses with global partners, customers, suppliers and employees. Many universities have added a 'diversity' course requirement in their undergraduate education and initiatives such as study abroad are aimed at developing global cultural awareness (MacNab, Brislin, and Worthley, 2012; Sachau, Brasher, and Fee, 2010). Nevertheless, more effort is needed to increase global cultural diversity education in business schools, as not many undergraduate courses focus on developing this aspect of learning (McCrea and Yin, 2012). Especially, it is essential that human resource management (HRM) courses focus on diversity issues because most HRM functions need an understanding of diversity (MacNab et al., 2012; Madsen, 2004).

Over the past decade, service learning has emerged as a widely used tool for enhancing student engagement (Kenworthy-U'Ren, 2008). Service learning is defined as a learning experience where students actively participate in a service activity that meets a real community need. The service enhances what is taught in the classroom. It also provides structured time for students to think, talk or write about what they did and saw during the actual service activity (McLaughlin, 2010). Service learning helps the students understand their own context in relation to the community served. The students experience or 'taste internally' (Kenworthy-U'Ren, 2008) the connection between the course content and reality. Reflection over one's experience forms a cornerstone of service learning; this often involves evaluation of one's experience, and may subsequently be followed by action.

We used a service learning assignment to enhance global cultural diversity awareness in an introductory undergraduate international human resource management (IHRM) course. IHRM teaches future managers how to effectively recruit, train, motivate, and reward employees from different parts of the world. This requires some appreciation of issues associated with differences in global cultures, so that they can successfully work with diverse people. It is expected that the students understand how people from different cultures think and behave. Quite understandably it is difficult to comprehend the issues unless the students get a 'real world' feel for the issues. Service learning can provide them with this valuable experience and enhance the desired learning outcomes of the course.

In the service learning assignment, the students provided service to a local community of recent immigrants. Liaison with such a community requires less resource commitment on the part of the student and the instructor; as compared to more extensive methods such as study abroad or international service learning. During the service time, the students were able to talk to and interview members of the group. The goal of the assignment was to develop a greater understanding of the issues and sensitivities of a culture different than one's own. Analysis of reflections from one hundred and twenty three students, over three years, showed enhanced awareness of global cultural

diversity issues. Overall we found this in-class proximal service learning experience to be beneficial to students' learning of global cultural diversity. We discuss how this assignment can be replicated by instructors.

GLOBAL CULTURAL DIVERSITY AND SERVICE LEARNING IN BUSINESS EDUCATION

The rapidly growing global activities of multinational, transnational, and small entrepreneurial enterprises suggests the business education curriculum should be contributing to the international competence of its students. In its current standards, adopted in 2013, the Association to Advance Collegiate Schools of Business–International (AACSB-I; 2013) provides one eligibility standard as: "*The school fosters sensitivity toward and greater understanding of cultural differences and global perspectives. Graduates should be prepared to pursue business or management careers in a global context. Students should be exposed to cultural practices different than their own.*"

Many institutions of higher learning have integrated global cultural diversity issues into foundational courses, thereby broadening their students' exposure to diverse political, social, economic, and cultural environments. In addition to infusing the "core" body of business knowledge with international perspectives, institutions of higher learning have also developed and offered courses dedicated to various global business issues, such as global marketing, international finance, global human resource management and global leadership issues. However more effort is needed in exposing students to global cultures through real-world experiences (MacNab et al., 2012; Madsen, 2004). Immersion experiences, such as study abroad, demand high level of resource and time commitment, both on the part of the instructor and the students (Anderson and Lawton, 2011; Henthorne, Miller and Hudson, 2001). So it is imperative that less resource intensive in-class methods be used to provide real-world experience to students.

Culture is described as the shared cognitive values and attitudes of a particular group of people, usually from similar social and ethnical backgrounds. Norms of social interaction vary from culture to culture. So it is unlikely that business knowledge acquired in a classroom would translate automatically into effective cross-cultural adjustment and interaction. Therefore, global cultural diversity education is the *process* of developing the competencies and capabilities, required for effective cultural interaction. Global cultural diversity education involves efforts designed to increase one's capacity to interact with different cultural settings, and requires cultural knowledge, self-awareness, and behavioral aspects (MacNab et al., 2012). While global cultural diversity education is highly desirable for business students (McCrea and Yin, 2012), there are few developed techniques for making students understand and develop the capabilities within the framework of an introductory course (MacNab et al., 2012).

Service learning is "a form of experiential education in which students engage in activities that address human and community needs together with structured opportunities intentionally designed to promote student learning and development; service learning combines service objectives with learning objectives" (Jacoby, 1996:5). Service learning experiences immerse students more intensively in the subject matter, enhance the classroom experience as a whole, and increase both academic performance and critical thinking skills (Godfrey, Illes, and Berry, 2005). Service learning experiences have been found to have positive outcomes. Kenworthy-U'Ren (2008) notes that engagement in service-learning projects increase students' commitment to service, preparedness for careers, personal growth, self-esteem and personal efficacy, communication skills, social issue awareness, citizenship, and commitment to social justice and social change. Seider, Gillmore and Rabinowicz (2011) find that community service experience impact the worldview held by the students.

Service learning approaches to cultural diversity education are considered to be effective (MacNab et al., 2012; Ng, Van Dyne, and Ang, 2009). Service to a culturally distant community provides cultural awareness which contributes to the cognitive aspect of global cultural diversity education; and helps the individual to make appropriate changes to behavior for adjustments (MacNab et al., 2012). In a recent meta-analysis Yorio and Ye (2012) outline the process elements of service learning as *reality, reflection and reciprocity*. Reality enhances academic content in real world settings. The real-world interaction develops students' teamwork and communication skills, and the ability to readily adapt and respond to changing conditions. Reflection forces students to intensively think and understand "How am I different after this experience?" Reciprocity addresses deficiencies in traditional transactional-based business education by encouraging students to engage in a mutually beneficial interaction with an external community partner. Students are able to see the origins and consequences of social issues with greater clarity. Yorio and Ye (2012) found that service learning has a positive effect on learning outcomes with regard to the understanding of social issues, personal insight, and application of skills. Godfrey and colleagues (2005) add a

fourth element of service learning in business education, *responsibility*. In this process student reflection leads from "How am I different after this experience" to "How can that different me contribute to a better community?" In this paper we use this framework of four '*R*'s to analyze student reflections after the service learning experience.

Our goal for the service learning assignment was to introduce experiential learning through community service in an IHRM course. This course was taught a few times using textbook and case studies. However we felt that an experiential involvement with a different culture would enhance the global cultural diversity awareness of the students. Madsen (2004) found that academic service learning enhances student motivation to learn in HRM courses. Cultural adjustment is a critical but amorphous component of IHRM. We wanted to enhance student understanding of global cultural diversity issues through this experiential project so that students are better able to adjust with culturally diverse people.

The Assignment
The course content of IHRM focuses on how to recruit, train, reward, motivate and empower global employees of multinational firms. There are several well-developed textbooks that explain these managerial processes quite well. What is missing from the textbooks is global cultural diversity awareness i.e. how students can understand their own social identity vis-a-vis another culture so that they can deliver these managerial functions more effectively. In the absence of a deeper understanding of global cultural diversity, the learning from this course may remain at a theoretical level. We felt that inclusion of a service learning assignment, where service is provided to a community from a different culture, would help the students develop awareness of global cultural diversity issues. It was difficult to spare a large amount of class time to address global cultural diversity awareness. So, although our expectations were tempered by the amount of time we could give to the assignment beyond the usual course content, we felt that the service learning assignment would be a valuable addition to the course.

The service learning assignment required the student groups to provide service to a non-profit organization whose members are Indian professionals who have recently migrated to the United States. This community consists of highly skilled and educated professionals such as information technology professionals, computer engineers, scientists, doctors and professors. They value the education that has made it possible for them to immigrate. The members organize academic contests for their children to raise funds and award scholarships to the poor students in India. As part of the service learning assignment, the students helped them run these contests. The academic goals of the course were well suited to the service learning goals. Research shows that Indian immigrants strongly retain their culture even when they are in a culturally diverse society (Pearson and Child, 2007; Shenoy, 2008). Therefore the students could interact closely with a culturally different community. The assignment was mutually beneficial as the students provided administrative help and performed other critical tasks for the contests. The organization needed contest moderators who were Indian accent-free. The American college students fulfilled this need. In the process the students could interview and survey parents and their children.

This first-hand experience brought the students closer to a culturally diverse community. Each student wrote a post-assignment reflection on his/her experience. This is the most critical step for experiential learning, and is the source of data for analysis in this paper. Some students were familiar with people of Indian origin before. However, as evident from their reflections, none had the interaction exposure needed to develop awareness of global cultural diversity issues. This assignment fits into the category of a service-Learning experience with little "s" (service) and big "L" (Learning) which Godfrey et al. (2005) describes. It is valuable for the introductory IHRM class where available time outside class is limited. As noted by Godfrey and colleagues (2005), this type of experience attenuates breadth of *reality* exposure, tailored *reflection* helps develop broader thinking, *reciprocity* experiences can allow meaningful interactions, and *responsibility* can develop as students may make strong connections to the community.

Over a three-year period, one hundred and twenty three undergraduate business school students participated in the service learning assignment. Less than 5% of them were culturally or ethnically diverse. About 60% of participants were female, and about 40% of the students were non-management and non-international business majors i.e. majors of other academic areas in the business school. This implied that they had less exposure to management and cultural course content. About 30% of the students were not familiar with HRM concepts and for about 80% of the students it was the first cultural course.

Student Learning Outcome

We collected post-experience student reflection statements to perform word cloud analysis. We used Wordle, an online software that offers a visual representation of the relative frequency of different words or categories (www.wordle.com). Wordle takes copy and pasted text and creates a frequency distribution of the words used (omitting such words as articles). It then constructs a picture arraying frequently used words in a somewhat random pattern but with the font size of the words correlated with their frequency. Thus, the software creates a "word cloud" that visually represents a frequency distribution (Viegas, Wattenberg, and Feinberg, 2009).

We created two categories of word clouds. First we categorized the reflection statements into the four process components of service learning - *reality, reflection, reciprocity* and *responsibility* and created a word cloud for each category. The guidelines were: Reality – did the student get real world experience? Reflection – did the student engage in intensive thinking? Reciprocity – did the student feel that the experience was adding to their learning and that they were also contributing to the organization? Responsibility - did the student feel a greater sense of global citizenship? 106 statements were categorized as reality, 89 as reflection, 22 as reciprocity, and 14 as responsibility. Some examples of these statements are:

Reality

"Without interacting with the Indian parents, it would not have been possible to learn as much about Indian culture. Reading books and articles about Indian culture is a good way to learn about it in theory, but experiencing it in person allows the interviewer to freely ask questions and discuss anything beyond the scope of what an article or reading. "

"We discovered that hands on experience teach us so much more than just reading about it."

Reflection

"We went into this service learning project with certain expectations and biases because we were inexperienced and uneducated with many of the Indian ideas on culture and education. I learned a lot not only about the immigration Indian population, but also a lot about my own 'American' culture too."

"Witnessing how valuable education is to their culture makes me question my own life-style and culture. As a result of attending the service day, I now place education on my list of values at a higher level and I realize how important education and family life is to many people, and that not everyone places the same values I have at the same level of importance."

Reciprocity

"The reason why this civic help was so important is that they really needed our help. The organization could have run the workshop by themselves but it would not have been as beneficial for the children than if we ran it for them. The purpose of us running the workshop is so the children get used to the American style of education. The simplest example of this would be our American accents. Because they have accents, the Indian members of the organization would like us Americans to pronounce the words to the children the correct way so they can learn not only the spelling, but also how the word is supposed to be pronounced."

"They really needed our help. Parents would like us to pronounce (spelling) words to the children because of our American accent which the children understand better than their parents' Indian accent."

Responsibility

"I felt very embarrassed by the fact that I was having trouble with their names and was continuously asking them to repeat themselves and to spell them out."

"The business world has become increasingly more global. We must be able to deal with and accept different people and the different ways they approach everything (from religion to finance). This experience has helped me do so."

Figure 1 shows four word clouds from student statements with service learning process components. The words *parents, children*, *culture, experience, different* are high frequency words in reality and reflection word clouds. This implies that student learning was directed towards understanding of parent/children through a different experience. The reality word cloud has *learn*, *see*, *discovered*, *interaction* as medium frequency words. These indicate that students discovered/learned through interaction. The medium frequency words in the reflection word cloud are: *values*, *family, service, important, interesting*. Interestingly some of the other words that show up are *American*, *biases*, *world*, *life style, community*. This word cloud unveils how students are engaged in reflective thinking and comparing the two cultures. The reciprocity word cloud seems to imply that the students felt their service was useful to the organization. Medium frequency words such as *accents, pronounce, providing, help, services,* and *needed* show up in this word cloud. *American* and *Indian* show up as high frequency words in this this word cloud. This shows that students are associating cultural origin in discussing reciprocity i.e. they feel that American students and Indian parents/children had a reciprocal relationship through the service learning.

The Responsibility word cloud, on the other hand, is less indicative. Although words such as *approach, accept, global, world, deal, able, found* are present in high frequency, the global citizenship component is not adequately clear. A possible reason may be the short duration of the assignment. Responsibility grows over time. It is a moral imperative for the students to better the communities where they live and work. These are fundamental changes in one's attitude, values and beliefs. We believe that, in order to develop this aspect, the experience/interaction aspect of the exercise need to take place over a longer period of time. Alternatively, a follow up assignment or study abroad experience with a focus on responsibility would help develop this aspect more.

Figure 1: Word Clouds for Service Learning Process Components from Student Reflections

Reality

Reflection

Reciprocity

Responsibility
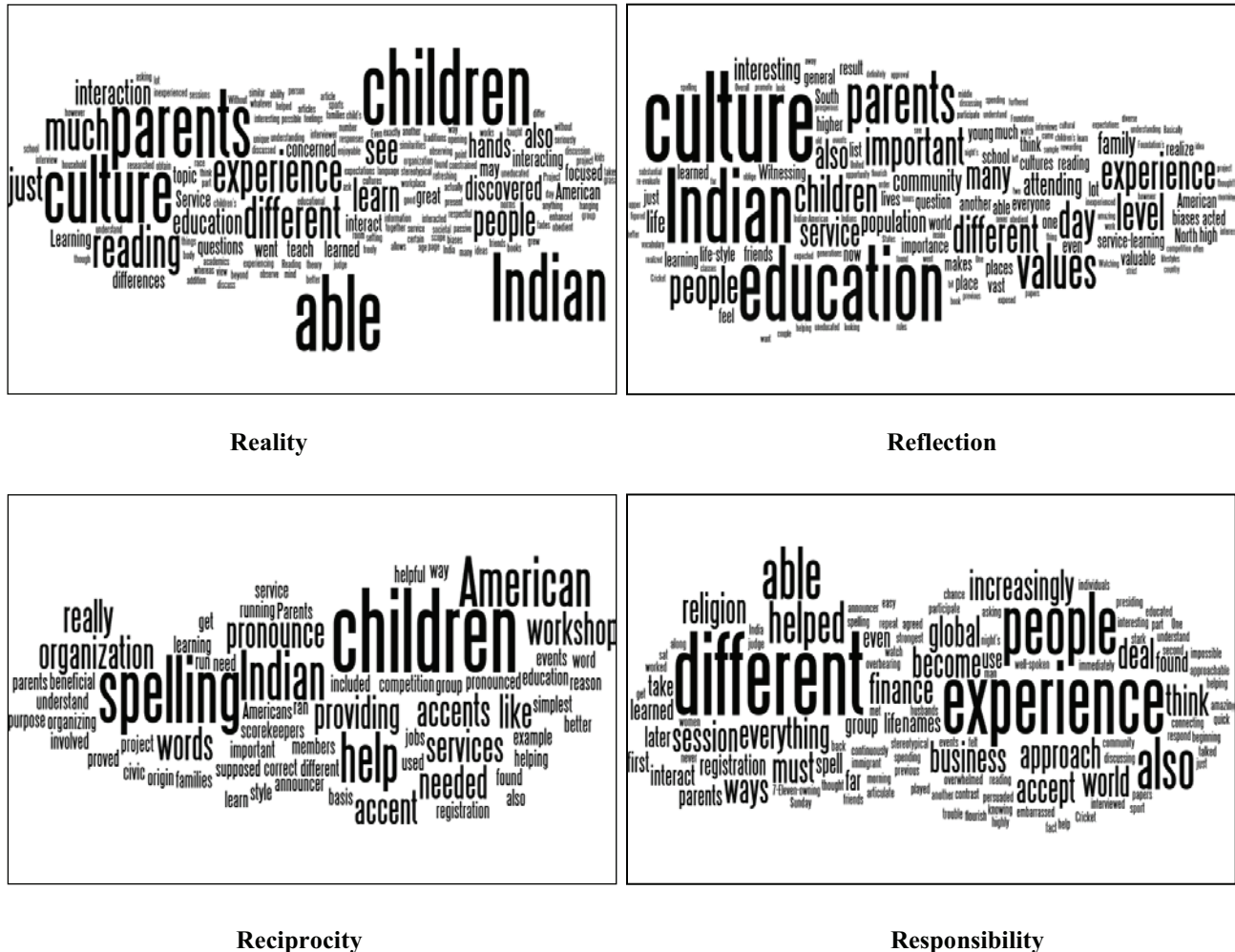
Next we analyzed the reflection statements to identify different aspects of global cultural diversity awareness. We categorized student statements into those showing cultural comparison and those identifying social issues. Altogether we found 239 such statements. A few social issues understanding themes emerged from the student statements. One common theme was that of the emphasis placed by immigrant Indians on their children's education beyond traditional school curriculum. A second theme was that of the tightly knit immigrant Indian community and its social support system. A third theme was the preference for group work in the community. Additionally many of them identified the strong bond this community shares with India and noted some features of the society in India. For example one student noted "I also found out that not all of India is the same, concerning how different cities/regions speak different dialects and have different traditions."

In terms of cultural comparison, one student noted "One of the main questions that we asked the parents was their idea of the differences between education in India and in the United States. In the United States, we are driven more

by money and are very concerned with job advancement and how far we can climb the corporate ladder. It was also discovered that our schools teach more on independent thought than in India. In India, there is more emphasis on memorization in schools and sports are not even considered because education is given the highest priority over everything. This is a huge difference to the United States where sports are basically given more priority in schools and many children are evaluated on how well they can play different sports." Another student said "The largest difference between American and Indian culture was the support system. In India the support system was much closer – including close family and friends." The issue of respect also came up as "The reason that people from India respect their elders and are more obedient is because it has been taught to them by their elders. Historically Indian kids respect their elders because it is all that they have seen. Indian culture and our parents tell us in no certain terms to respect elders and never talk back to them. And to respect family, cultural and religious honor and dignity! Those are probably the most common reasons for which respect is demanded. But it is often hard for a lot of Indian kids to absorb them especially in the West. They live in homes that have a culture where often respect is implied and never defined while the American culture/way of thinking outside the home can be quite confusing. Historically, kids in America do respect their elders, but not nearly as much as kids from India do."

Figure 2 shows the two word clouds derived from student statements. In the cultural comparison word cloud high frequency words such as *Indian, American, similar, different*, *culture, family, children, elders, priority, emphasis, respect, school system, sports, views, differences* show that the students were comparing culture, society and education between India and USA. *Indian, American, children, education* showed up as high frequency words in the social issues word cloud also. This is expected because they are related to the specific service learning activity. However many interesting peripheral words such as *arranged marriages*, *foreign life, hard, pressure, succeed, united group, community* show up in the social issues word cloud. These indicate students' perception about some of the social issues in the recently immigrated Indian community.

Figure 2: Word Clouds for Global Cultural Diversity Awareness Components

Cultural Comparison

Social Issues

DISCUSSION AND CONCLUSION

Over the last decade, service learning has helped students develop skills for adaptation, communication, and an enhanced understanding of social issues (Kenworthy-U'Ren, 2008). In collaboration with a local culturally diverse non-profit organization, we developed an in-class proximal service learning assignment in an introductory IHRM course. Members of this community have recently immigrated to USA from India. Analysis of post-experience student reflection statements show evidence of global cultural diversity awareness components as well as service learning process components. The themes of global cultural diversity awareness that emerged from student reflections were quite insightful. These were not part of the textbook. Students discovered them through the service learning assignment experience and real-world interaction with the Indian immigrant community. In doing so they were able to have a personal understanding of the differences and similarities between the American and the Indian cultures and many of them noted that their perceptions were changed.

Kenworthy-U'Ren (2008) recommends that effective partnership is needed for the success of service learning assignments. However she also noted that many times the benefits are one-sided, with the student and faculty member benefitting more than the partner organization. So it is critical that the benefit of reciprocity exists with the community partner. In this case the assignment became viable because the community organization was invited to hold the academic contests on university premises on Sundays at no charge. This created favorable ties with this community partner and generated trust and engagement on the part of the members attending with their children. It also led to participation by all students in all sections of the course. The immersion experience on the part of all group members providing service on Sundays from 9:00 a.m. to 5 p.m. was possible because of the convenience of the events being on campus.

This service learning assignment can be easily reproduced with the following steps: 1) contact a local culturally diverse community (through their ethnic associations or their religious organization); 2) build social ties with the community partner by visiting their premises/meeting places and finding out their needs; 3) offer services that fulfill their needs. The academic goal of the assignment is to learn from a culturally different community group, it does not have pre-set questions for survey and interview. The students come up with their own questions based on their research of the culture. This provides flexibility to adapt the survey/interview to the community partner.

We would like to provide a few directions for future assignments. First, instructors should be careful about providing too explicit directions with regard to student reflection. It is quite easy to over-direct students with specific pointers on how to write the reflection. We strongly advise against doing so because students may write their reflection based on expectations of the instructor. For this assignment the only direction given to students was to "write your own experience and feelings in providing the service." We were surprised at the richness of the student reflections. Second, interaction with community members should be a part of the process, not the central focus. In our case the central activity was the service i.e. organizing the contests; not the survey or interview. In fact, the students were asked not to mention the words 'survey' or 'interview' because of the potential for creating communication barriers by making respondents self-conscious. Students were asked to keep interviews conversational in order to make the respondents relax.

We feel that the design of the assignment can be improved in a few ways. First there should be more service days over a greater length of time. This particular community organization needed three days of service from the students. We would have liked to have at least two more days of service and more opportunity for interaction. From data analysis point of view, it would be useful to compare how reflections from students with study abroad experience differed from those without that experience. Unfortunately we did not have this information. In future, some more student background data on study abroad experience and other cultural diversity experience should be added to the research plan.

Overall we found encouraging evidence that many aspects of global cultural diversity awareness were achieved through this service learning assignment. We encourage educators to think about incorporating similar service learning assignments in their course(s) where global cultural diversity awareness is warranted. Without an experiential experience component, global business education perhaps remains incomplete.

REFERENCES

AACSB-International, Standards, Adopted: April 8, 2013, p. 8. Retrieved from
    http://www.aacsb.edu/~/media/AACSB/Docs/Accreditation/Standards/2013-business-standards.ashx

Anderson, P., and Lawton, L. (2011). Intercultural development: study abroad vs. on-campus study. *Frontiers: The Interdisciplinary Journal of Study Abroad, 21*, 86-108.

Brymer, R. A., Hitt, M. A., and Scjhijven, M. (2011). Cognition and human capital. In Alan Burton-Jones and J. C. Spender (Eds.) *The Oxford Handbook of Human Capital*. New York: Oxford University Press.

Godfrey, P. C., Illes, L. M. and Berry, G. R. (2005). Creating Breadth in Business Education through Service-Learning. *Academy of Management Learning and Education*. 4(3):309-323.

Henthorne, T. L., Miller, M. M., and Hudson, T. W. (2001). Building and positioning successful study-abroad programs: A 'hands-on' approach. *Journal of Teaching in International Business, 12*(4), 49-62.

Jacoby, B. (1996). Service-learning in today's higher education. In B. Jacoby (Ed.) *Service-learning in Higher Education*. 3:25, San Francisco: Jossey-Bass.

Kenworthy-U'Ren, A. L. (2008). A decade of service-learning: A review of the field ten years after JOBE's seminal special issue. *Journal of Business Ethics, 81*(4), 811-822.

Kolb, D. A. (1984). *Experiential Learning: Experience as the Source of Learning and Development*. Prentice Hall, Englewood Cliffs NJ.

MacNab, B., Brislin, R., and Worthley, R. (2012). Experiential cultural intelligence development: Context and individual attributes. *The International Journal of Human Resource Management, 23*(7), 1320.

Madsen, S. R. (2004). Academic service learning in human resource management education. *Journal of Education for Business, 79*(6), 328-332.

McCrea, E. A., and Yin, J. Z. (2012). Developing cultural intelligence: An undergraduate course assessment framework. *Organization Management Journal, 9*(2), 104.

McLaughlin, E. (2010). The "real-world" experience: Students' perspectives on service-learning projects. *American Journal of Business Education, 3*(7), 109-117.

Ng, K., Van Dyne, L., and Ang, S. (2009). From experience to experiential learning: Cultural intelligence as a learning capability for global leader development. *Academy of Management Learning and Education, 8*(4), 511.

Pearson, J. C., Child, J.T. (2007). A cross-cultural comparison of parental and peer attachment styles among children from the United States, Puerto Rico, and India. *Journal of Intercultural Communication Research, 36*(1), 15-32.

Sachau, D., Brasher, N., and Fee, S. (2010). Three models for short-term study abroad. *Journal of Management Education, 34*(5), 645.

Seider, S. C., Gillmor, S. C., and Rabinowicz, S. A. (2011). The impact of community service learning upon the worldviews of business majors versus non-business majors at an American university. *Journal of Business Ethics, 98*(3): 485-503.

Shenoy, R. (2008, January 6). Indians in America: Generations, culture at odds. *Chicago Tribune*.

Viegas, F.B., Wattenberg, M. and Feinberg, J. (2009) "Participatory visualization with Wordle", IEEE Transactions on Visualization and Computer Graphics, Vol 15, No. 6 pp.1137-1144.

Yorio, P. L. and Ye, F (2012). A Meta-Analysis on the Effects of Service-Learning on the Social, Personal, and Cognitive Outcomes of Learning. *The Academy of Management Learning and Education*, 11(1), 9-27.

Using Monte Carlo Simulation with Oracle© Crystal Ball to Teach Business Students Sampling Distribution Concepts

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ABSTRACT

This article explains a basic Monte Carlo simulation workshop applied to teaching fundamental sampling distribution concepts. The workshop can be conducted in a classroom or lab where students have access to the Monte Carlo simulation tool Oracle© Crystal Ball. To our knowledge this is the first time a workshop has been documented utilizing Oracle© Crystal Ball, a modern commercial Monte Carlo simulation tool, to teach students basic ideas regarding sampling distributions and ideas around the central limit theorem. The results of a post-workshop survey showed that students found the workshop to be effective and useful.

Keywords: Teaching Sampling Distributions, Monte Carlo Simulation, Business Statistics, Central Limit Theorem

INTRODUCTION

The sampling distribution of the mean (SDM) is a fundamental and foundational topic in most introductory business statistics courses and textbooks (see Anderson et. al. 2014; Keller 2014, for example). It is easy to understand why this is the case, since the SDM is the theoretical fundamental building block to the more applied concepts that follow such as confidence intervals and hypothesis testing. Hopkins, Hopkins, & Glass (1996) argue that the concept of sampling distributions may be the single most important concept in inferential statistics. The SDM topic can be quite challenging for educators to teach and for students to learn (Ozgur & Strasser, 2004). Textbook coverage is often not sensitive to the topic's conceptual difficulty and further; student questions are often answered inadequately (Aguinis & Branstetter, 2007). We have found the use of Monte Carlo simulation with Oracle Crystal Ball to be an enjoyable way to reinforce "theory" and to be effective for students. Monte Carlo simulation is an extremely powerful tool that many students continue to utilize in subsequent course projects, internships, and full-time positions according to comments from our students. The idea of introducing Monte Carlo Simulation with Oracle Crystal Ball in Business Statistics which is typically at an early phase in a student's education (often sophomore year) thus fulfills a number of productive purposes. Additionally, our students find this knowledge of particular benefit when describing an aspect of their skill set in employment interviews.

Monte Carlo simulation is an iterative mathematical technique that is used to approximate the likelihood of outcomes by running many thousands of "trial" scenarios. The technique numerically quantifies and graphically depicts potential results (along with their associated likelihoods) based on provided uncertain inputs. Kersten (1983) states that by performing simulations in introductory statistics courses, non-mathematically oriented students can have an inductive learning experience in a time-efficient manner. Kennedy (1998) stresses the importance of sampling distributions and calls for instructors to spend a considerable amount of time on this topic with Monte Carlo simulation. Today tools are available for instructors to answer these calls more easily as Monte Carlo applications have evolved greatly over the past several years. Currently, the technique is widely used in numerous business applications (see "Who Uses Monte Carlo Simulation" at www.microsoft.com; "When to Use Monte Carlo Simulation" at www.ibm.com, or Winston, 2004; Kwak, & Ingall, 2007; Engle, Granger, & Hallman, 1989). Valle & Norvell (2013) use Oracle Crystal Ball in the area of forecasting demonstrations and cite numerous instances of businesses using Monte Carlo simulation analysis. In the present research, the technique is used in a hands-on environment to demonstrate to students, ideas around sampling distributions and the central limit theorem; concepts critical in understanding more applied subsequent Business Statistics topics (i.e. confidence intervals, hypothesis testing).

THE WORKSHOP

In the scenario employed in our workshop, students download an Excel file that contains two worksheets. The first worksheet shows the population distribution of student heights (Figure 1) at a hypothetical large university of 20,000 students.

Figure 1: The Population Distribution
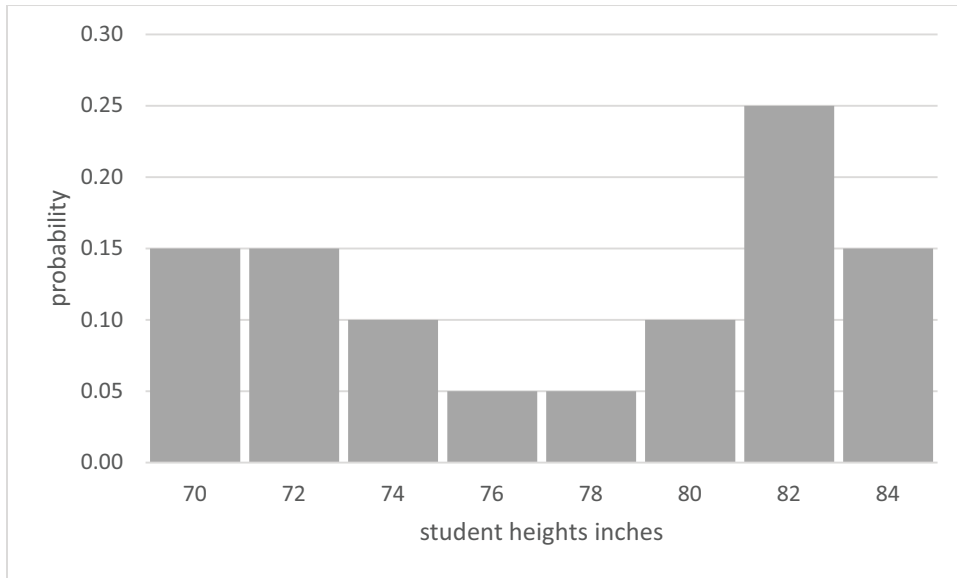
The mean and standard deviation of heights for all students are 77.50 and 5.13 inches, respectively. In this population, most student heights are either below or above the mean and the distribution is clearly not normally distributed.

Next, students are asked if they wanted to be efficient with their time how might they come up with a good estimate of the true mean student height without have to measure all 20,000 students at the university. Of course students recommend taking a sample from the population. In this application, we use Oracle © Crystal Ball to take the sample. The second worksheet is set up to randomly sample 30 student heights from this population each time the "step" or "trial" key is pressed. Figure 2 shows three examples of sample heights from the university population.

Figure 2: Three Different Monte Carlo Samples

Student	Height		Student	Height		Student	Height
1	82		1	80		1	84
2	76		2	70		2	82
3	72		3	74		3	72
4	82		4	82		4	72
5	82		5	84		5	74
6	82		6	82		6	72
7	72		7	80		7	72
8	82		8	84		8	74
9	84		9	82		9	72
10	74		10	82		10	84
11	70		11	78		11	72
12	82		12	70		12	70
13	84		13	84		13	82
14	82		14	82		14	74
15	70		15	82		15	70
16	82		16	70		16	82
17	82		17	84		17	76
18	82		18	82		18	70
19	82		19	84		19	84
20	72		20	84		20	82
21	70		21	70		21	70
22	74		22	70		22	70
23	84		23	72		23	84
24	74		24	72		24	84
25	82		25	82		25	80
26	78		26	74		26	76
27	70		27	82		27	84
28	78		28	72		28	82
29	72		29	74		29	70
30	78		30	82		30	70
Sample Mean	77.87		Sample Mean	78.33		Sample Mean	76.33
Sample SD	5.09		Sample SD	5.44		Sample SD	5.68

Students are advised that for each trial, a different random sample of 30 students is chosen from the population, so that the sample means will vary each time the "step" icon is clicked on. Students are then asked if there is much variability in the sample means obtained (usually there is not). For a few minutes students obtain and observe sample mean heights for different random samples, each of size 30. Next students are shown how to run the simulator to display the results for 100,000 group means and are told that this distribution of sample means is called a sampling distribution. Statistical theory, i.e. the central limit theorem, states that the sampling distribution is normally distributed with mean equal to the population mean, and standard deviation (called standard error) equal to the population standard deviation divided by the square root of the sample size. Mathematically this is written as,

$$\mu_{\bar{x}} = \mu \quad and \quad \sigma_{\bar{x}} = \frac{\sigma}{\sqrt{n}}$$

Using the Monte Carlo simulation tool students set up the simulator to run 100,000 groups or trails and will obtain results similar to those show in Figure 3 below.

Figure 3: The Sampling Distribution
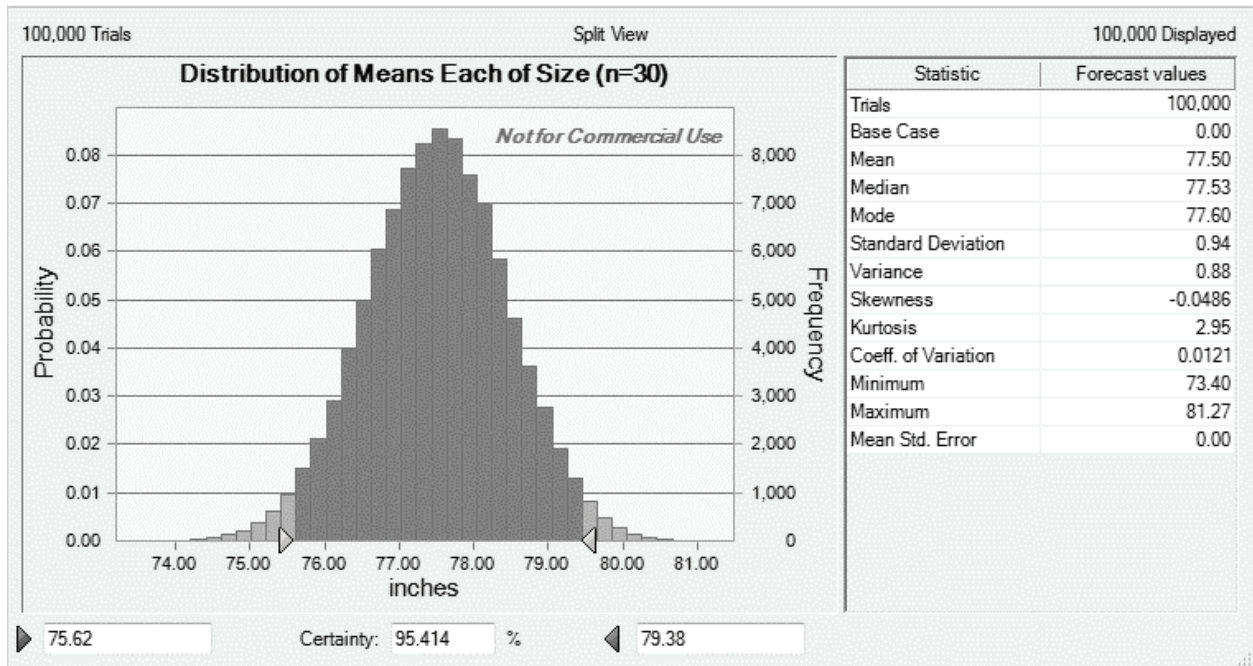
Notice that the sampling distribution is normal is shape even though the population distribution is far from normal. If one overlays the two distributions, the sampling distribution is much less dispersed as the statistical theory states. Most of the sampling distribution density is between 76 and 79 inches, whereas the population distribution is spread between 70 and 84 inches (Figure 1). From the central limit theorem, with a sampling distribution,

$$\mu_{\bar{x}} = \mu = 77.5$$

$$\sigma_{\bar{x}} = \frac{\sigma}{\sqrt{n}} = \frac{5.13}{\sqrt{30}} = 0.94$$

We have used Monte Carlo simulation to show that the statistical theory is accurate. Since we now have a normal distribution of sample means, we are able to state that there is a 95.5% likelihood that any single group mean will be between minus and plus two standard deviations of the center (i.e. the empirical rule) or,

$$\mu_{\bar{x}} \pm 2\sigma_{\bar{x}}$$

$$77.5 \pm 2(.94)$$

$$[75.62, 79.38]$$

All three of our sample means (Figure 2) are in this range and as Figure 3 shows, approximately 95.5% (95.414%) of all sample means are in this range. There is a 95.5% likelihood that any single group mean will be in this interval.

As students may now speculate, it is not feasible to go out and randomly measure 30 student heights obtain the group mean and perform this task 100,000 times! But it is certainly realistic to perform this task for a single group of 30 students. As previously described there is a 95.5% probability a sample mean will be in the range below,

$$\mu - 2\sigma_{\bar{x}} \leq \bar{x} \text{ or } \bar{x} \leq \mu + 2\sigma_{\bar{x}}, \text{ so}$$
$$\bar{x} - 2\sigma_{\bar{x}} \leq \mu \text{ or } \mu \leq \bar{x} + 2\sigma_{\bar{x}}, \text{ or}$$
$$\bar{x} \pm 2\sigma_{\bar{x}}$$

Thus, we can say from a single sample, we can easily come up with a good estimate for the true population mean, μ. From Figure 2, using our second sample for instance we would obtain,

$$\bar{x} \pm 2\sigma_{\bar{x}}$$
$$78.33 \pm 2(0.94)$$
$$[76.45, 80.21]$$

as a 95.5% interval estimate for the true mean student height. From using a single sample, the true mean population height (77.5 inches) is in the obtained interval, as we would expect with 95% confidence!

SUMMARY

Monte Carlo simulation can easily be used to obtain sampling distributions that match statistical theory. The sampling distribution is normal in shape and since it is so, we may use the empirical rule and standard normal distribution tables to make inferences regarding a population mean. In our post workshop survey (65 Business Statistics student participants), 85% of the students said that had now have a basic understanding of Monte Carlo simulation analysis, and just over 70% of the students agreed that this kind of workshop was an effective way to learn concepts around the sampling distribution of the mean. Going forward, students feel confident that by using a single random sample they can obtain a useful interval estimate for any population parameter of interest.

REFERENCES

Anderson, D., Sweeney, D., Williams, T., Camm, J., & Cocharn, J. (2014). *Essentials of Statistics for Business and Economics*. Stamford, CT: Cengage Learning.

Aguinis, H., & Branstetter, S. A. (2007). Teaching the concept of the sampling distribution of the mean. *Journal of Management Education*, 31 (4), 467-483.

Engle, R. F., Granger, C. W., & Hallman, J. (1989). Merging short-and long-run forecasts: An application of seasonal cointegration to monthly electricity sales forecasting. Journal of Econometrics, 40, 45-62.

Hopkins, K.D., Hopkins, B.R., & Glass, G.V. (1996). Basic statistics for the behavioral sciences. Boston, MA: Allyn & Bacon.

Keller, G. (2014). BSTAT 2. Stamford, CT: Cengage Learning.

Kennedy, P. E. (1998). Teaching undergraduate econometrics: A suggestion for fundamental change. American Economic Review, 487-492.

Kersten, T. (1983), "Computer Simulations to Clarify Key Ideas of Statistics," Two-Year College Mathematics Journal, 14, 416-421.

Kwak, Y. H., & Ingall, L. (2007). Exploring Monte Carlo Simulation Applications for Project Management, Risk Management, 9, 44-57.

Ozgur, C., & Strasser, S. E. (2004). A Study of the Statistical Inference Criteria: Can We Agree on When to use Z Versus t? Decision Sciences Journal of Innovative Education, 2(2), 177-192.

Valle, M., & Norvell, T. (2013). Using Monte Carlo Simulation to Teach Students about Forecast Uncertainty. Business Education Innovation Journal, 5(2), 35-41.

Winston, W. L. (2004). *Microsoft Excel Data Analysis and Business Modeling*. Redmond, WA: Microsoft Press.

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Teaching Data Mining to Business Undergraduate Students Using R

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ABSTRACT

In addressing the shortage of papers that help educators in developing data mining courses for business undergraduate students, this article fills the gap by describing the practice of teaching data mining to business undergraduate students using the open source software R. This article also offers a course design that balances the technical details of using a programming language and of covering enough in-depth algorithms, with hands-on data mining applications in business. This article delineates the design, delivery, and assessment of such a data mining course. We evaluate student learning outcomes by an end-of-course survey. We find student learning experience and outcome are mostly positive. It is our hope that the practice described in this paper will benefit other educators in developing or improving course design in teaching data mining course to business undergraduate students. Course materials are also available for other educators upon request.

Keywords: Business analytics, case studies, peer learning, open source software, technical communication

INTRODUCTION

"Employees hired for their expertise with numbers or trained to recognize their importance, are armed with the best evidence and the best quantitative tools. As a result, they make the best decisions: big and small, every day, over and over and over."

-Thomas H. Davenport, "Competing on Analytics"

Analytics have emerged as a competing arena for companies, and business schools are accelerating to establish Business Analytics programs to prepare students with strong backgrounds in quantitative analysis skills. McClure and Sircar (2008) discuss the importance of quantitative literacy for undergraduate business students in the 21st century. They point out that the traditional sequence of calculus and statistics may no longer meet the needs of information-based business climate. Business Analytics has become one of the hottest degree programs in which quantitative skills and business literacy are brought together from various technical disciplines such as statistics, computer science, information systems, operations research and business disciplines including marketing, finance, accounting and operations management. Considering such great industrial needs and publicity, it seems particularly appropriate for the statistics community to take the opportunity and greater responsibility to better educate business undergraduate students with quantitative skills. In fact, the opportunity has never been bigger considering business majors are the most popular of all undergraduate majors (source: U.S. Department of Education, National Center for Education Statistics, (2013). *Digest of Education Statistics*).

Data mining is a core course for students who are interested in the Business Analytics degree program. Traditionally taught in computer science or statistics programs, a data mining course aimed at general business students is difficult to design for instructors. To design a data mining course for the Business Analytics program, typically an elective for junior or senior business students of all majors, we have to be sensitive to the difficulty of the subject. Data mining is interdisciplinary in nature and can be structured at various levels of mathematical and computational difficulties. Even for different audiences, the term data mining may have different perceptions. Grover and Mehra (2008) discuss the similarities and differences of the perception of data mining in computer scientists and statisticians. Because of such technical difficulties and many possible ways of structuring the data mining course, the courses offered in engineering schools or statistics departments are often not suitable for business students. Even in engineering schools, there are concerns about technical or theoretical difficulties. To reduce the theoretical focus of data mining content, Li (2011) describes a practice-oriented approach to teaching undergraduate data mining courses for engineering students, where hands-on components are integrated into the core data mining topics. Our article introduces a course design and assessment of a fairly technical version of data mining for undergraduate business students that uses the open source software R as tools.

There are a number of other articles that illustrate how to teach one specific topic in data mining. For example, Ragsdale and Zobel (2010) introduce a simple approach to implementing and training Neural Networks in Excel; Rienzo and Athappilly (2012) introduce Artificial Neural Networks through a Spreadsheet model; Ataman, Kulick, and Sim (2011) discuss the experiences in teaching decision tree classification using Microsoft Excel; Bordley (2002) presents a visual representation and solution of decision trees. However, aside from a few exceptions (e.g., Stanton 2006; Jafar 2010), there is little research on the course designs of data mining for business students. Stanton (2006) describes a course development for an undergraduate course in data mining with a focus in marketing. Jafar (2010) introduces an Excel and SQL Server based approach to teaching data mining methods. Our approach differs from the previous practices in that it requires the command of technical skills such as an open source programming software R; it implements case-based peer learning; it emphasizes a practical hands-on approach in student learning; and it stresses the importance of communication of quantitative findings.

When designing this course, we had several distinct principles in mind. First, it is designed to have a case-based group learning environment. All cases are completed by a group of three to four students, although in special situations individual work is allowed. Second, the course strongly emphasizes hands-on learning, rather than heavy lecturing. A theoretical lecture is followed by a computer laboratory learning session, which ensures students have practical experience with data mining techniques. Third, the course encourages students to "talk the talk" after "walking the walk" so to speak, since part of the course requires written and oral communication of findings as well as technical details. Communication through presentations and reports are essential skills for the success of any student, and extremely important in the business world. It is even more important for Business Analytics students because of the potential students' bias on "number crunching" and "no communication skill needed". Last and most importantly, the data mining course creates a high-tech learning environment by using the latest classroom technology, an open source software, and online collaborative group learning tools. The data mining materials are based on an open source language R, which is particularly popular in statistics and computer science. The learning and assessment process is fully electronic. All assessment tools such as quizzes, cases studies and projects are distributed, submitted and graded through the online system. No single piece of paper is necessary in the whole course.

COURSE FORMAT

Based on the length of the term, topics (or modules) of data mining are covered selectively. In a typical semester the following modules (Table 1) are covered, while in a typical quarter the instructor may opt to focus on only four modules to cover the material more in-depth.

For each module, the following describes the format of delivering the materials and intended learning objectives.

Lecture: Lectures are kept to a minimum. The lectures are intended to give students a broad exposure to data mining topics, such as what the methodologies are, how the algorithms work conceptually, how to interpret the results, and when to use them. If time and availability allow, one guest lecture by an industry expert can be arranged to help students understand how data mining is practiced in real life.

Laboratory Session: One laboratory session typically follows the lecture to ensure students have practical experience on the techniques they have learned in the lectures. Examples using real data are illustrated and followed by students in class. Emphasis is placed on how students can implement the data mining techniques with the open source programming language R. We wrote a set of lab notes using *knitr* (Xie, 2013), in which R sample code, detailed instructions, explanations and outputs are given for each data mining topic. Students also learn how to interpret and communicate the results in simple languages.

Table 1: Typical Modules. The table describes the typical topics or modules of the semester course, time allocation, delivery formats, and assessment. The tenth week is the spring break week. Some modules can be combined, for example, the last two modules are usually combined to form a single module unsupervised learning. If time permits, other topics can be also covered in the last module.

Module	Order and Time	Delivery	Comment
Course Introduction and Exploratory Data Analysis	Week 1-2	Lecture, Lab, Case study, Quiz	Course introduction also include introducing the software *R* and its GUI *Rstudio*.
Regression	Week 3-6	Lecture, Lab, Case study, Quiz	This module serves as an easy and smooth transition from basic Business Statistics to Data Mining, topics include Simple and Multiple Linear Regression, Logistic Regression
Model Performance Evaluation	Week 6-7	Lecture, Lab, Case study, Quiz	This module builds on the familiar topic of regression and introduces the model evaluation tools such as training versus testing and cross validation.
Trees	Week 8-9	Lecture, Lab, Case study, Quiz	This module provides a parallel treatment (such as regression) of supervised learning method via the regression trees, classification trees and model evaluation tools
Clustering	Week 11-12	Lecture, Lab, Case study, Quiz	This module can include nearest neighbor methods, k-means and hierarchical clustering methods.
Association Analysis	Week 12-13	Lecture, Lab, Case study, Quiz	This module introduces the market basket analysis. If time allows, this module can include topics such as fraud detections.
Final Project	Week 14		This module includes student in-class presentation.

Online Videos and Learning Materials: Lecture videos and learning materials are posted on the Blackboard Learning system. This online system also serves as a medium for students to download quizzes and case problems, and to submit their solutions for instructors to grade online. Instructors have also made online videos on how students can install and learn the basics of the *R* software (www.r-project.org) and its free Graphical User Interface or GUI *RStudio* (www.rstudio.com).

Group Case Studies: The assignments are mainly in a group case study format. Students are asked to form groups of three to four, and maintain that group throughout the term, although individual work is allowed for special occasions. The group case study structure is maintained in two schools where the authors teach. There are a total of 44 students involved, 31 students at one school and 13 students at the other one. After voluntary group matching, 11

groups and 3 groups are formed respectively in the two classes for case studies. Cases help the students retain and apply the theoretical concepts previously discussed during the lecture segment, requiring their problem-solving and self-guided learning. A group structure is particularly necessary for data mining courses because of the heterogeneity of the students. Since this is a senior elective course and open to all majors, students may have quite diverse educational backgrounds. In a typical class, there are students from marketing, finance, accounting, operations management, engineering, and (maybe) computer science. Some may be particular strong in programming, while some are quite comfortable in writing and oral communication, and to a much smaller extent, some are good at both. Because of the interdisciplinary nature of the typical future work on data mining that students are facing after graduation, group work can serve as a simulation environment for them to practice team-based skills. All group dynamics that they may experience in work place are possibly present in their class group. They may face the problems of how to coordinate among group members, how to lead and follow, how to communicate with and convince others, how to deal with free-riders, and so on. We manage the last point by requiring the students to submit an intragroup evaluation form that describes the relative contributions by each member of the group. The students' grade will be partially affected by the intragroup evaluation, which mitigates the problem of free-riding. We will further discuss this in the assessment.

Technical Communication: Students are required to communicate their technical findings in both written form and oral presentations. To finish a group case assignment, students will need to submit their complete report, including a one-page executive summary followed by technical details. On the due date of the group case assignment, one group will be chosen to orally present their case in front of the class and answer questions from the class. The communication component is extremely important for a students' success in the course, since employers consistently rank communication skills among the most important for undergraduate business students (Bacon and Anderson 2004). Despite its importance, quantitative-analysis-focused courses typically do not emphasize communication skill building. Anecdotal evidence suggests that it is the communication skill to convey the findings and recommendations in a way that they are understandable to those without technical expertise that separates the good from the great analysts. Being able to translate the results to recommended business actions is a crucial skill for their future careers.

Individual Quizzes: Quizzes are designed to assess student learning outcomes on an individual basis. We consider quizzes necessary since much of a students' grade is determined by group-based work. Each quiz will cover the most important concepts from lectures and group case studies. Quizzes are to be given immediately after student presentations and discussions. Students will have a review session with the instructor over important concepts, interpretations of findings, implementation pitfalls, and so on. Students will typically have 40-50 minutes to finish quizzes. These are not meant to be as difficult as an exam, but a replication of the case studies with a minor twist to ensure each student's learning outcome is fairly assessed.

Final Project: The final project is an important component for students to apply the techniques they have learned throughout the course to a real problem of their choice. The project requires students to find their own problem with appropriate data, conduct data mining research on the dataset, and write a technical report on the findings. There is also an oral presentation component to the project, which usually happens during the last class of the term. To ensure project progression, each group is required to submit a project proposal which must be approved by the instructor about one month before the due date of the final project.

ASSESSMENT

Every module will have multiple components to assess student learning in multiple dimensions.

Writing Component: The writing component consists of written assignments with group case studies and the final project. The writing component demonstrates students' understanding of materials, communication skills through writing with clarity, and successful coordination of a group effort. Grading is based on criteria such as correctness in analysis, clarity and conciseness of writing, creativity of problem choice and framing in the final project, and so on.
Oral Component: The oral component consists of student presentations of group case studies and final projects.

Technical Quizzes: The students' command of technical knowledge is assessed through quizzes. Given a dataset and objectives, students are asked to choose and implement the data mining procedures in R software, interpret

findings, and give solutions for certain modeling issues. A small portion of questions are based on core concepts necessary to understand the technical findings.

Application: The final project requires an application of learned techniques to real-world situations. Since some students have co-op or working experience, this final project creates a good opportunity for them to apply the data mining techniques they acquired in school, to the problems they have in the work place. Instructors and authors of this article from the two institutions have noticed through a number of observations that this project experience is highly marketable for students in the job market.

Issues on Assessment: To mitigate free-riding in group assignments, there is an intragroup evaluation form for students to fill out. The intragroup evaluation asks students to assess the relative contributions of their peers. These contributions are defined in many ways and on the course syllabus are clarified, "*Such as intellectual contribution, attendance at group meetings, mentoring and sharing knowledge, writing up the results, presentation, and running relevant computer programs. The peer score will reflect, in some sense, an average over all the assigned work as well as an average of the above criteria. Thus, a student in a work group who may have contributed much on one assignment, may not have contributed the majority of the work on another, yet still such work may be considered by other members to be meritorious on the average*".

STUDENT FEEDBACK

The Data Mining for Business course was taught at two undergraduate business schools, School A and School B, in the academic year of 2013-2014. To get students' points of view, we conducted two surveys, one at the beginning of the course, and one at the end. In the first course survey at the beginning of the term, students were asked about their quantitative background, feelings of preparedness for the course, and motivation. Almost all of the students are junior and senior students who had taken calculus and two semesters/quarters of statistics. At School A, the great majority of students took the course as their first analytics elective, and most students had no programming experience at all. At School B, students had better quantitative backgrounds, and about two thirds of the students had been exposed to at least one programming language. Table 2 describes student background in terms of their fields of specialization. Students are all in junior or senior years because of the elective nature of the course and some prerequisites are required. The more quantitative majors are over-represented in the class, while majors such as accounting, international business, and management are rare.

The students' reasons for taking the class included:
- The class was required as a business analytics major/minor
- The methods taught are applicable
- The class sounded interesting
- The class was viewed as helpful for current co-op positions

In the end-of-course survey (Appendix A), we asked students to rate their learning outcomes for each topic in terms of understanding and comprehension, application, and real-world model building. We also asked them to provide feedback on the group case study experience and presentation experience. Table 3 shows the results from the scaled questions in the end-of-course survey.

Table 2: Student's Majors

Major	Percentage
Operations Management	23%
Finance	18%
Marketing	16%
Industrial Management	16%
Information Systems	11%
Mathematics	9%
Others	7%

Table 3: Results of end-of-course survey

		School A (n = 31)		School B (n = 13)	
		Mean	S.D.	Mean	S.D.
Understanding and Comprehension	Exploratory Data Analysis	4.39	0.67	4.77	0.44
	Linear Regression	4.19	0.83	4.77	0.44
	Decision Trees	3.55	1.03	4.46	0.78
	Cross Validation and Model Comparison	3.26	1.03	3.92	0.95
	Association Analysis	3.29	1.01	4.31	0.63
	Cluster Analysis	3.55	0.93	4.46	0.66
Confidence in Applying	Exploratory Data Analysis	4.16	1.07	4.62	0.51
	Linear Regression	4.00	1.13	4.54	0.52
	Decision Trees	3.45	1.12	4.38	0.65
	Cross Validation and Model Comparison	3.06	1.12	3.92	0.86
	Association Analysis	2.97	1.02	4.23	0.60
	Cluster Analysis	3.10	0.98	4.38	0.65
Real World Model Building	Exploratory Data Analysis	4.00	0.93	4.38	0.77
	Linear Regression	3.61	1.02	4.38	0.77
	Decision Trees	3.10	0.98	4.00	0.82
	Cross Validation and Model Comparison	2.87	0.96	3.77	0.93
	Association Analysis	2.87	0.88	3.85	0.90
	Cluster Analysis	3.03	0.84	4.00	1.00
Valuable for learning Data Mining		3.90	1.27	4.77	0.60
Valuable for learning R		3.10	1.19	4.31	0.75
Reach expected learning goal		3.84	0.90	4.62	0.65

The modules with the highest learning outcome for students are Exploratory Data Analysis and Linear Regression, as evidenced by the scores in both schools. This may be 1) these two modules are relatively easier when compared to other modules and 2) students have studied these two modules in elementary statistics courses before going into the data mining course. At both schools we noticed that two modules, Cross Validation and Model Comparison, and Association Analysis, had relatively lower scores across all measures.

Since School A's students were less prepared before taking the course, especially in programming experience, assessment scores were generally lower than those of School B's. This indicates that perhaps the data mining course should have some programming prerequisite. Alternatively, an additional lab session of programming in R could be helpful for under-prepared students. The students' written comments for the group cases, oral presentations, and written reports were predominantly positive at both schools. Students indicated that not only did these experiences help them understand the material better, they also gained valuable skills in negotiation, team-based problem solving, and technical writing. Students' suggestions for course improvements included more structured projects, clearer expectations or templates for case reports, and more technical details in teaching materials. Of course, a small proportion of students were not fond of writing reports or group work, citing reasons such as "no value added", or "hard to find time to meet because of other commitments".

Lastly, we pooled students from two schools and compared their Understanding/Comprehension ratings with Real-world Model Building ratings for each of the topics. Figure 1 demonstrates the gaps between the two types of outcome ratings, whose statistical significances are confirmed by paired t-tests ($p < 0.05$ for all six topics). The evidence suggests that achieving high score on understanding does not necessarily guarantee the ability to apply the knowledge in real-world model building. We also noted that the topics with the largest outcome gaps are Linear Regression and Cluster Analysis.

Figure 1. Discrepancy between understanding and applying models
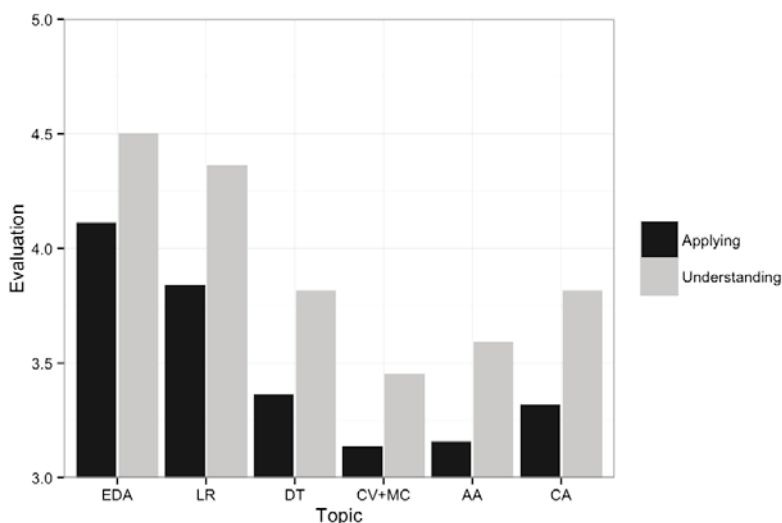
DISCUSSIONS AND LIMITATIONS

Both the student feedback and instructors' observations from the pilot classes suggested that a data mining course can be a positive learning experience for undergraduate business students for several reasons: First, when it is designed as an upper-level course that draws knowledge from diverse fields such as statistics, computer science, and business, taking the course will foster their analytical thinking ability. Second, combined with group case studies, a format that most business students are familiar with, students learn how to reflect advanced analytical knowledge to real-world situations. Third, the requirements for students to translate their findings to a general audience via oral presentation is something that a traditional face-to-face course can offer, but one that a distance learning course or MOOC may fall short on.

After weighing the pros and cons, a decision was made to choose command-line driven R language over other data mining packages with graphical user interfaces. Although writing R code can have a steeper learning curve, especially for students with no programming experience, we believe that exposure to R is beneficial for students in the long run. Writing code means they need to logically present the flow of analytical processes and generate reproducible analytic results. We consider that a transferable skill, applicable in many situations.

As for the learning outcomes of the specific data mining topics, we noticed two areas that warrant future improvement:

1. The relative low outcome scores in Cross Validation, Model Comparison, and Association Analysis. There could be several explanations for this. First of all, cross validation is the first concept that they cannot relate to what they had already learned in other statistics courses, which only include topics such as exploratory data analysis and regression. Second, we noticed a similar confusion on training-test data split when grading students' quiz questions. Some of the students were baffled by the idea of training-test splits and either did not compare results from test sets, or used test sets to build models. In hindsight, it is believed that after the regression topic, a more explicit emphasis on training-test splits, cross-validation, and model comparison is necessary. As for Association Analysis, one reason student scores were lower could be that the module requires a different input data type than that students were already accustomed to (i.e. transaction dataset instead of a regular multivariate dataset). In addition, the Apriori algorithm (Agrawal, 1994) used for association rule mining was not explained in detail, and therefore might have given students an impression of a "blackbox" when conducting analysis.

2. We also noticed a universal gap between understanding concepts and confidence in applying the models in real-word settings, especially for Linear Regression and Cluster Analysis. Incidentally, these two topics are respectively the most widely applied methods in supervised and unsupervised learning. Therefore, we recommend educators supply students with more hands-on exercises and case studies for these modules.

Last but not least, one challenge present in designing the Data Mining for Business course was choosing appropriate textbooks. Although there is a great selection of data mining textbooks, very few are accessible to undergraduate business students, who may have little or no knowledge of advanced calculus or matrix algebra. Several sources are listed in Appendix B, being found to be particularly helpful in developing this course's lectures and laboratory notes. Course materials were synthesized in part from a variety of available resources as well as developed in part by the authors of this paper, who would be glad to provide course notes if contacted by readers.

SUMMARY

As the demand for quantitative literacy continues to increase, the responsibility for the analytics community to better educate the students has been never bigger. Since business majors are the most popular undergraduate majors, it is a priority for analytics community to focus on the business undergraduate students as important audiences to receive trainings in core areas such as data mining. This article describes the design and outcomes of a business undergraduate elective data mining course that uses the most popular statistical software R. We hope our experience will benefit other educators.

ACKNOWLEDGMENTS

REFERENCES

Agrawal, R., and Srikant, R. (1994). Fast algorithms for mining association rules. In *Proc. 20th int. conf. very large data bases, VLDB* (Vol. 1215, pp. 487-499).

Ataman, K., Kulick, G., & Sim, T. (2011). Teaching decision tree classification using Microsoft Excel. *INFORMS Transactions on Education*, *11*(3), 123-131.

Bacon, D. R., & Anderson, E. S. (2004). Assessing and enhancing the basic writing skills of marketing students. *Business Communication Quarterly*, *67*(4), 443-454.

Bordley, R. F. (2002). Decision rings: making decision trees visual and non-mathematical. *INFORMS Transactions on Education*, *2*(3), 64-74.

Davenport, T. H. (2006). Competing on analytics. *Harvard Business Review*, *84*(1), 98.

Grover, L. K., Mehra, R. (2008). The Lure of Statistics in Data Mining. *Journal of Statistics Education*, 16(1). www.amstat.org/publications/jse/v16n1/grover.html/

Jones, T. W., Price, B. A., & Randall, C. H. (2011). A comparative study of student math skills: perceptions, validation, and recommendations. *Decision Sciences Journal of Innovative Education*, *9*(3), 379-394.

Henderson, C., Beach, A., & Finkelstein, N. (2011). Facilitating change in undergraduate STEM instructional practices: an analytic review of the literature. *Journal of Research in Science Teaching*, *48*(8), 952-984.

Jafar, M. J. (2010). A Tools-based approach to teaching data mining methods. *Journal of Information Technology Education*, *9*.

Li, D. (2011). A practice-oriented approach to teaching undergraduate data mining course. *American Society for Engineering Education*. American Society for Engineering Education.

McClure, R., & Sircar, S. (2008). Quantitative literacy for undergraduate business students in the 21st century. *Journal of Education for Business*,*83*(6), 369-374.

Ragsdale, C. T., & Zobel, C. W. (2010). A simple approach to implementing and training Neural Networks in Excel. *Decision Sciences Journal of Innovative Education*, *8*(1), 143-149.

Rienzo, T. F., & Athappilly, K. K. (2012). Introducing Artificial Neural Networks through a spreadsheet model. *Decision Sciences Journal of Innovative Education*, *10*(4), 515-520.

Sandman, T. E. (2014). A preliminary investigation into the adaptive learning styles of business students. *Decision Sciences Journal of Innovative Education*, *12*(1), 33-54.

Stanton, A. D. A. (2006). Bridging the academic/practitioner divide in marketing: an undergraduate course in data mining. *Marketing Intelligence & Planning*,*24*(3), 233-244.

Xie, Y. (2013). Dynamic Documents with R and knitr. CRC Press.

APPENDIX A: QUESTIONNAIRE

The purpose of the survey is to help us determine the effectiveness of teaching. Your answer will help us improve the course in the future. Your grade will not depend on anything you write on this survey. Please answer the following questions on the survey by placing a check mark in the box.

1. Please rate your degree of understanding and comprehension of the following topics. (5 = thorough understanding, 1 = no understanding)

	1	2	3	4	5
Exploratory Data Analysis					
Linear Regression					
Decision Trees					
Cross Validation and Model Comparison					
Association Analysis					
Cluster Analysis					

2. Please rate your level of confidence in applying the following models. (5 = very high confidence, 1 = no confidence)

	1	2	3	4	5
Exploratory Data Analysis					
Linear Regression					
Decision Trees					
Cross Validation and Model Comparison					
Association Analysis					
Cluster Analysis					

3. If you are to handle a real world data mining case without supervision, how confident are you in building the following models as a result of the learning experience?

	1	2	3	4	5
Exploratory Data Analysis					
Linear Regression					
Decision Trees					
Cross Validation and Model Comparison					
Association Analysis					
Cluster Analysis					

4. For your career and personal development, how valuable do you think learning Data Mining is? (5 = very valuable, 1 = no value at all)

1	2	3	4	5

5. For your career and personal development, how valuable do you think learning R programming is? (5 = very valuable, 1 = no value at all)

1	2	3	4	5

6. How well have you reached your expected learning goal for this course?

1	2	3	4	5

7. Please comment on the group case-study experience. For example, do you think it will help you to solve problems in a team environment?
8. Please comment on the oral presentation and report written part of this course. For example, what have you learned, and what can we change to make the learning experience better?

APPENDIX B: SOURCES OF COURSE MATERIALS
- R package: http://cran.r-project.org/
- Rstudio: https://www.rstudio.com/
- James, G., Witten, D., Hastie, T., & Tibshirani, R. (2013). *An Introduction to Statistical Learning*. Springer. Electronic version of the book is available for free. http://www-bcf.usc.edu/~gareth/ISL/
- Zhao, Yanchang (2012), *R and Data Mining: Examples and Case Studies,* Electronic version of the book is available for free. http://www.rdatamining.com/
- Tan, P., M. Steinbach, V. Kumar, (2004), *Introduction to Data Mining* (Computer Science course) http://www-users.cs.umn.edu/~kumar/dmbook/index.php

The Impact of Reading Ability as a Predictor of Success in Online Verses Instructor Led Database Courses

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ABSTRACT

Using data collected from summer semester 2002 through spring semester 2015, this paper analyzes some of the predictors that lead to success in online and instructor led versions of a beginning university level database management course. Independent variables include student GPA upon entering the class, declared major, gender, term the course was taken, and year taken. In particular, this paper isolates, measures and analyses the impact of reading scores measured by a reading proficiency (Cloze) quiz given early in the semester on the ability to be successful in the course. The impact of the independent variables is regressed separately against four dependent variables for both online and instructor led versions. The dependent variables are the students' final course average, the average on examinations, the average on weekly student assignments, and the average on larger projects. The paper finds that a student's GPA is the most important determinant while declared major, the semester the course was taken, and year the course was taken have some degree of significance on the dependent variables. Gender was generally found to not be a significant determinant. The reading score was a highly significant predictor of success for online students but not for instructor led students.

Keywords: online education, cloze test

INTRODUCTION

Metropolitan State University of Denver is a modified open enrollment university located in downtown Denver. Its mission is to provide a quality education to all of those who enroll. In order to effectively fulfill this mission, the University offers an extensive classroom environment with instructor led classes as well as an extensive online program. Although some courses are offered only as online or only as instructor led, many courses are offer in both the online and instructor led versions. Online delivery provides opportunities for students who have work and/or family obligations to complete at least some of their education from home reducing their time commitment. Also, online courses allow the University to reach students throughout the State who are geographically removed from the Denver metropolitan area.

Success in a course is measured by student performance on four different assessment methods. The course analyzed in this study is CIS3060, Database Management Systems. CIS3060 is a junior level, core course within the Computer Information Systems Department and is required of all students majoring in CIS. The course centers on the design, development, and implementation of relational databases. Three examinations are given during the semester resulting in a final examination average. Students are required to complete three larger projects during the semester resulting in a final project average. The projects are completed outside of class and students are allowed to use resources such as the textbooks and the internet. Weekly short answer quizzes are given resulting in a final assignment average. The quizzes are objective, open-book, timed, computer based instruments taken outside of class. A final weighted average is computed from the examination average, the project average, and the assignment average.

LITERATURE REVIEW

Alstete and Beutell (2004) sampled ten online business courses and provided a statistical analysis of the grade performance. The findings indicate that grades, age, work experience, and discussion board grades are significantly related to overall course performance. However, the standardized test scores and organization position levels are not related to the performance in the online courses. Dutton (2002) analyzed the factors that lead to higher grade performance in online computer programming classes. Dutton found a positive significant effect for homework assignment completion and prior computer experience. There was a significant negative relationship between hours worked and grades. Wojciechowski and Palmer (2005) studied the predictors of student grades in an online business course at a community college. They found that the two variables that became the best predictors were attendance at a class orientation session and the student's grade point average.

MEASURING READING ABILTY

Learning in the traditional classroom environment is often passive and largely emphasizes listening skills. Students in the traditional environment listen to lectures, actively participate in class discussions, and generally interact verbally with the instructor and fellow students. The online environment is drastically different. The ability to read becomes paramount. The online course is designed on a web site which communicates all of the requirements of the course. The textbooks become the primary vehicle for disseminating the academic content of the course. The instructor communicates with the students through emails and course announcements. Students interact with one another through a discussion board. The online environment requires more active learning than the classroom environment and success relies more heavily on reading skills. Student success in the online environment would be closely tied to the ability to read with high level of understanding.

A Cloze Test (or Deletion Test) is an instrument that is frequently used to measure reading ability. The Cloze test provides a passage of text in which some words are replaced with blanks. A person is asked to read this passage and to discern the missing words. There are different methods available to structure the Cloze Test. The test can be designed so they important key words are missing or designed in such a way that every n^{th} word has been replaced by a blank. The validity of the Cloze Test is widely accepted as a measure of a person's ability to comprehend language. As stated in [Aitkens, 59] "that the Cloze procedure is a valid and reliable measure of both specific and general reading comprehension."

The Cloze Test chosen for this paper is designed around a brief passage from an older database textbook. The textbook has been out of print for some period of time and thus not available to the students. The passage contains a description of some of the reasoning behind database theory and would be appropriate reading for a junior level database course. After a few sentences containing the complete text, every fifth word in the passage is omitted. In all, thirty-three words have been omitted and replaced by blanks. The score is simply the percentage of the missing words the student answered correctly.

COURSE ASSESSMENT

Metropolitan State University of Denver conducts regular, sixteen week semesters during the fall and spring. In the summer, courses are taught on an eight week schedule. Both online and instructor led versions of CIS 3060 have been offered during the fall and spring semester for almost all regular semesters included in this study. Usually, only the online version is offered during the eight week summer session.   The instructor led and online versions of CIS3060 are required to cover the same material and meet the identical list of learning objectives. The assessment measures between online and instructor led are very similar with each course assessed by three proctored examinations, several projects, and open-book, open-note quizzes. While the examinations are slightly different (the online sections have more objective type questions) they cover the same material and contain the same level of difficulty. Student performance on the examinations should provide a valid indicator of achieving the objectives that is comparable between the two versions of the course.

CIS3060 covers both the theoretical foundations of database theory and the basic elements of the SQL programming language. Students are supported by a required textbook, an SQL guide that provides a self-guided approach to database programming, an extensive set of online tutorial slides, and access to an instructor. Students have access to an Oracle 11g database housed on the College's mainframe with permissions to create a variety of Oracle objects under their own schemas. They can access this database from any on-campus computer lab or from any off-campus computer that has internet access.

A student's final average for the course is calculated from three distinct assessment averages.   The final course average (FinalAvg) is a weighted average of the examination average (ExamAvg), the project average (ProgAvg), and the assignment average (AssignAvg). When computing the FinalAvg, the ExamAvg is weighted 75%, the ProjAvg is weighted 8.33%, and the AssignAvg is weighted 16.67%. The grades were applied consistently with the weighting scheme throughout all courses in the study. Grades were assigned based upon a scale where above ninety percent was awarded a grade of A, eighty percent to ninety percent received a B, seventy percent to eighty percent received a C, and sixty percent to seventy percent received a D. Any FinalAvg that fell below sixty percent resulted

in an F in the course. Although exams were changed and projects and assignments were updated, consistency was maintained throughout the study.

METHODOLOGY

Data have been collected from students enrolled in Metropolitan State University of Denver's CIS 3060 Database Management Systems online course sections from the summer semester of 2002 through the spring semester of 2015. The students who formally withdrew from the course were eliminated from the study. Also, students who did not complete the three examinations were deemed to have withdrawn and were also eliminated from the study. The few students with undergraduate degrees who enrolled in the course were also eliminated.

The course requirements mandate that all students be of at least a junior standing. Also, the prerequisite that all students successfully complete an introductory principles of information systems course is strictly enforce. All of the students in the study were undergraduates. The course is a core course required for all CIS majors although students throughout the university are welcome to enroll if they meet the prerequisites. Students are allowed to repeat a course at any time and a last grade stands policy converts previous course completion grades to W for withdrawn. Sixty-four percent of the students were declared majors in CIS. Sixty-eight percent of the students in the sample were male and twenty-four percent of the students enrolled in the course during the accelerated summer session.

Six independent variables are defined in the final model. The first variable is the cumulative grade point average (GPA) of each student upon entering the course. The GPA only includes courses taken at Metropolitan State University of Denver. In the rare event of a student who does not have a MSU Denver GPA, such as a new transfer student or a nondegree student, the student was eliminated from the study.   The GPA was retrieved from each student's transcript. The score achieved on the Cloze test is measured as the percent of the thirty-three missing words that were answered correctly. All students, both the instructor led and online as well as for all years, took the identical Cloze test. Neither the answers to the Cloze test nor the individual student's score were ever disseminated to students. The results of the Cloze test are identified in the model as the ReadScore variable. The variable Year is the calendar year in which the student completed the course. To maintain an accurate chronology, a 1, 2, or 3 was appended to the calendar year to represent spring semester, summer semester, and fall semester, respectively.

Binary variable are used to measure the students' major (MajorBinary) and gender (GenderBinary). Since there ae three semesters available each year, there are two semester binaries, SpringBinary and FallBinary. Clearly, the summer term is identified when SpringBinary and FallBinary are both 0.   Table 1 shows the number and percent of observations for both online and instructor led broken out by the binary variables

Table 1: Breakout of Students Comprising the Binary Variables

Number and Percent of CIS Majors, Gender, and Semester by Online and Instructor Led Students			
	Online Students	Instructor Led Students	Total Students
CIS Major (= 1)	376 (69.9%)	86 (81.9%)	462 (71.9%)
NonMajor (= 0)	162 (30.1%)	19 (18.1%)	181 (28.1%)
Male (= 1)	367 (68.2%)	81 (77.1%)	488 (71.4%)
Female (= 0)	171 (31.8%)	24 (22.9%)	195 (28.6%)
Spring	223 (41.4%)	63 (60.0%)	286 (44.5%)
Fall	171 (31.8%)	42 (40.0%)	213 (33.1%)
Summer	144 (26.8%)	0 (0.0%)	144 (22.4%)
Totals	**538 (83.7%)**	**105 (16.3%)**	**643 (100%)**

The study is structured into four pairs of regression equations. Each pair regresses the data for a single dependent variable against the data for online and for instructor led independent variables. The first pair of equations regresses the FinalAvg achieved by online students against the data for the independent variables for online students paired with the FinalAvg achieved by instructor led students against the data for the independent variables for instructor led students. The four pairs of equations are represented below.

(1) $\text{FinalAvg} = \beta_{0,OL} + \beta_{1,OL}\,\text{GPA} + \beta_{2,OL}\,\text{ReadScore} + \beta_{3,OL}\,\text{MajorBinary} + \beta_{4,OL}\,\text{GenderBinary} + \beta_{5,OL}\,\text{Year} + \beta_{6,OL}\,\text{SpingBinary} + \beta_{7,OL}\,\text{FallBinary}$

(1a) $\text{FinalAvg} = \beta_{0,IL} + \beta_{1,IL}\,\text{GPA} + \beta_{2,IL}\,\text{ReadScore} + \beta_{3,IL}\,\text{MajorBinary} + \beta_{4,IL}\,\text{GenderBinary} + \beta_{5,IL}\,\text{Year} + \beta_{6,IL}\,\text{SpingBinary}$

(2) $\text{ExamAvg} = \beta_{0,OL} + \beta_{1,OL}\,\text{GPA} + \beta_{2,OL}\,\text{ReadScore} + \beta_{3,OL}\,\text{MajorBinary} + \beta_{4,OL}\,\text{GenderBinary} + \beta_{5,OL}\,\text{Year} + \beta_{6,OL}\,\text{SpingBinary} + \beta_{7,OL}\,\text{FallBinary}$

(2a) $\text{ExamAvg} = \beta_{0,IL} + \beta_{1,IL}\,\text{GPA} + \beta_{2,IL}\,\text{ReadScore} + \beta_{3,IL}\,\text{MajorBinary} + \beta_{4,IL}\,\text{GenderBinary} + \beta_{5,IL}\,\text{Year} + \beta_{6,IL}\,\text{SpingBinary}$

(3) $\text{ProjectAvg} = \beta_{0,OL} + \beta_{1,OL}\,\text{GPA} + \beta_{2,OL}\,\text{ReadScore} + \beta_{3,OL}\,\text{MajorBinary} + \beta_{4,OL}\,\text{GenderBinary} + \beta_{5,OL}\,\text{Year} + \beta_{6,OL}\,\text{SpingBinary} + \beta_{7,OL}\,\text{FallBinary}$

(3a) $\text{ProjectAvg} = \beta_{0,IL} + \beta_{1,IL}\,\text{GPA} + \beta_{2,IL}\,\text{ReadScore} + \beta_{3,IL}\,\text{MajorBinary} + \beta_{4,IL}\,\text{GenderBinary} + \beta_{5,IL}\,\text{Year} + \beta_{6,IL}\,\text{SpingBinary}$

(4) $\text{AssignAvg} = \beta_{0,OL} + \beta_{1,OL}\,\text{GPA} + \beta_{2,OL}\,\text{ReadScore} + \beta_{3,OL}\,\text{MajorBinary} + \beta_{4,OL}\,\text{GenderBinary} + \beta_{5,OL}\,\text{Year} + \beta_{6,OL}\,\text{SpingBinary} + \beta_{7,OL}\,\text{FallBinary}$

(4a) $\text{AssignAvg} = \beta_{0,IL} + \beta_{1,IL}\,\text{GPA} + \beta_{2,IL}\,\text{ReadScore} + \beta_{3,IL}\,\text{MajorBinary} + \beta_{4,IL}\,\text{GenderBinary} + \beta_{5,IL}\,\text{Year} + \beta_{6,IL}\,\text{SpingBinary}$

RESULTS

An ordinary least squares regression was performed on each of the equations to provide an analysis of the variable inflation factors. The variable inflation factors ranged from 1 to 1.8 in all of the models which is well below the value of 5 threshold for suspected multicollinearity. Therefore, all of the defined independent variables used in the models are included as independent variables. Table 2 summarizes the results of the regression equations for the first pair of regression equations.

Table 2 represents the results for the final average earned by students in online and instructor led courses. The GPA variable is highly significant for both pairs of equations. For every additional point in the GPA, an online student can expect to score an additional 9 points in the final average for online and 7.5 points in the final average for instructor led students. A declared major and the student's gender are not significant predictions. The year (trend) variable is small and negative (-0.012) but is significant at the .10 level for online students indicating some evidence that the final averages of online students has declined slightly over the years. Interestingly, the spring and fall binaries are significant and negative for online students indicating that online students are performing better in the shorter summer sections. Since the instructor led version wasn't taught in the summer, there's no corresponding statistical evidence to analyze summer performance for instructor led students.

By far the most interesting variable is the reading score. As expected, online students with higher reading abilities perform better than those with lower reading scores. The results suggest that for every percentage point increase in the reading score, the student will earn a higher final average of almost 1.5 points. The t-score of 6.95 indicates that the reading score is highly significant for online students. Conversely, the reading score coefficient is lower (about fifty percent lower) for the instructor led students and is not significant at the .05 level. The more passive leaning required of students in the instructor led sections favors those with lower reading abilities.

Table 2: Regression Results for the Final Class Average Dependent Variable (FinalAvg)

Predictor	Online Students (Eq. 1)				Instructor Led Students (Eq. 1a)			
	Coef	SE	T	P	Coef	SE	T	P
Constant	295.100	135.500	2.180	0.030	949.000	1030.000	-0.920	0.359
GPA	9.060	0.500	18.130	0.000	7.537	0.994	7.580	0.000
ReadScore	**0.147**	**0.021**	**6.950**	**0.000**	**0.017**	**0.045**	**0.380**	**0.703**
MajorBinary	0.723	0.599	1.210	0.228	0.974	1.379	0.710	0.482
GenderBinary	0.434	0.580	0.750	0.455	1.545	1.259	1.230	0.223
Year	-0.012	0.007	-1.830	0.068	0.050	0.051	0.980	0.330
SpringBinary	-1.834	0.669	-2.740	0.006	-1.204	1.085	-1.110	0.270
FallBinary	-1.811	0.704	-2.570	0.010				
Standard Error	6.1409				5.3998			
R-Squared	0.5010				0.4010			
F-Statistic	76.1700				10.9200			
Durbin-Watson	2.0743				2.3016			
N	538				104			

Table 3 displays the results of the independent variables on the examination scores of online and instructor led students. As with the overall average, the most important predictor of success on examinations is the GPA the student brings into the course. The impact of the GPA on examination scores is approximately the same for both online and instructor led courses. The major variable is again insignificant although there seems to be evidence that males score slightly high on examinations than females in online courses. The year (trend) variable coefficient is very small and negative but significant for online sections indicating a slight decline in examination scores over the time period of this study. The spring and fall binaries are positive and significant for online sections indicating examination scores are higher during the sixteen week semesters than in the eight week summer session. The spring binary is negative and significant for the instructor led sections. Students in instructor led sections score about 2.5 points better on examinations in the fall than they do in the spring.

Table 3: Regression Results for the Examination Average Dependent Variable (ExamAvg)

Predictor	Online Students (Eq. 2)				Instructor Led Students (Eq. 2a)			
	Coef	SE	T	P	Coef	SE	T	P
Constant	935.300	162.100	5.770	0.000	121.000	1156.000	-0.100	0.917
GPA	8.668	0.598	14.500	0.000	8.392	1.115	7.530	0.000
ReadScore	**0.149**	**0.025**	**5.900**	**0.000**	**0.048**	**0.051**	**0.950**	**0.343**
MajorBinary	1.013	0.716	1.410	0.158	1.198	1.547	0.770	0.441
GenderBinary	1.397	0.694	2.010	0.045	2.131	1.413	1.510	0.135
Year	-0.044	0.008	-5.500	0.000	0.009	0.057	0.150	0.880
SpringBinary	2.354	0.801	2.940	0.003	-2.536	1.217	-2.080	0.040
FallBinary	2.865	0.842	3.400	0.001				
Standard Error	7.3441				6.0577			
R-Squared	0.4270				0.4140			
F-Statistic	56.3700				11.5300			
Durbin-Watson	1.9906				2.3260			
N	538				104			

The reading score coefficient is highly significant for online sections and not significant for instructor led sections. Again, students in instructor led section learn more by listening than by reading. Passive learners will thrive in a classroom setting but will not perform well in an online environment.

Table 4 shows the regression results of the independent variables on the project scores. Each of the projects involves some sort of activity that is completed outside of class. The skill set required to succeed on the projects is much different (and more difficult to measure) than the skill set required to perform on examinations. The work is not timed and completed at the students' convenience. Dedication and the time commitment to complete the projects are highly important. People of varying abilities can produce a project of high value. The R^2 value of 0.123 indicates that the set of independent variables does not adequately explain the project scores. In fact, there may not exist a set of independent variables that predict how much effort a person will put into a project. The scores are largely random.

Although the GPA coefficient is positive and significant for the online sections, it is not significant at the .05 level for instructor led sections. The major binary is significant and positive for the instructor led students only.

Table 4: Regression Results for the Project Average Dependent Variable (ProjectAvg)

Predictor	Online Students (Eq. 3)				Instructor Led Students (Eq. 3a)			
	Coef	SE	T	P	Coef	SE	T	P
Constant	-92.700	643.500	-0.140	0.885	1142.000	2288.000	-0.500	0.619
GPA	18.613	2.373	7.840	0.000	3.820	2.208	1.730	0.087
ReadScore	**-0.001**	**0.100**	**-0.010**	**0.994**	**-0.095**	**0.101**	**-0.940**	**0.348**
MajorBinary	-2.178	2.843	-0.770	0.444	6.361	3.063	2.080	0.040
GenderBinary	-1.542	2.753	-0.560	0.576	-3.103	2.798	-1.110	0.270
Year	0.006	0.032	0.180	0.858	0.061	0.114	0.530	0.595
SpringBinary	1.526	3.178	0.480	0.631	-0.311	2.410	-0.130	0.898
FallBinary	-2.612	3.344	-0.780	0.435				
Standard Error	29.1543				11.9956			
R-Squared	0.1230				0.0860			
F-Statistic	10.6000				1.5300			
Durbin-Watson	1.8896				1.8203			
N	538				104			

Table 5 presents the results of the independent variables regressed against the assignment average. The assignments are short objective quizzes (multiple choice and/or true/false questions) or brief short answer questions. They are timed (usually fifteen minutes) taken by both online and instructor led students outside of the classroom setting. They are taken on the Blackboard site without a proctor at the convenience of the student and remain open for about three days. The assignments are open book and open note. Students are strongly urged to read the assigned material in the textbook before beginning the assignment. As with examinations, reading scores are a very significant predictor of success for online students. Students who read the material with understanding prior to starting the assignment will generally perform well on the assignment. Passive learners in the instructor led sections will not do well on the assignments. In fact, the coefficient for the reading score for instructor led sections is negative although insignificant at the .05 level. The gender binary is for online sections is -3 and significant providing evidence that women in the online sections score about three points higher than the men. The spring and fall binaries are also negative and significant for the online students indicating that online students in the summer session do better on the assignments than they do during the full semesters.

Similar to the results of the project regression, the predictors of the assignment score are somewhat random. Success on the assignments depends largely on a person's dedication and commitment. Those who put forth the effort generally perform well regardless of the independent variables used in this study.

Table 5: Regression Results for the Assignment Average Dependent Variable (AssignAvg)

Predictor	Online Students (Eq. 4)				Instructor Led Students (Eq. 4a)			
	Coef	SE	T	P	Coef	SE	T	P
Constant	287.600	251.700	1.140	0.254	-1335	2909	-0.46	0.647
GPA	7.736	0.928	8.340	0.000	4.949	2.807	1.76	0.081
ReadScore	**0.104**	**0.039**	**2.640**	**0.008**	**-0.1453**	**0.1279**	**-1.14**	**0.259**
MajorBinary	0.097	1.112	0.090	0.931	-3.466	3.893	-0.89	0.375
GenderBinary	-3.031	1.077	-2.810	0.005	-1.007	3.556	-0.28	0.778
Year	-0.011	0.013	-0.900	0.371	0.0701	0.1445	0.49	0.628
SpringBinary	-4.593	1.243	-3.700	0.000	5.923	3.063	1.93	0.056
FallBinary	-4.214	1.308	-3.220	0.001				
Standard Error	11.4014				15.2475			
R-Squared	0.2030				0.0900			
F-Statistic	19.2400				1.6100			
Durbin-Watson	1.7888				1.9400			
N	538				104			

READING SCORE IMPACT

For each pair of equations in this study, the coefficient of the reading score for online sections has always exceeded the coefficient of the reading score for the instructor led sections. There appears to be substantial evidence that the ability to read and comprehend language is a much greater predictor of success in the online environment than in the traditional classroom. The final test in this study is to examine the difference between the online and instructor led coefficients for each of the four dependent variables. A method of testing the difference between two regression coefficients from different regressions is provided in Paternoster et al. (1998). The formula below allows for the computation of a z-statistic that will be evaluated to statistically test the difference between the two coefficients.

$$z = \frac{\beta_{i,OL} - \beta_{i,IL}}{\sqrt{\left((SE\, \beta_{i,OL})^2 + (SE\, \beta_{i,IL})^2 \right)}}$$

The statistical test is structured as a two-tailed test with the following hypotheses:

Ho: $\beta_{i,OL} - \beta_{i,IL} = 0$
Ha: $\beta_{i,OL} - \beta_{i,IL} \neq 0$

Table 6: Z-Test on the ReadScore Variable Between Online and Instructor Led Students

	FinalAvg	ExamAvg	ProjectAvg	AssignAvg
Coefficient for Online	0.147	0.149	-0.001	0.104
SE for Online Coefficient	0.021	0.025	0.100	0.039
Coefficient for Instructor Led	0.017	0.048	-0.095	-0.1453
SE for Instructor Led Coefficient	0.045	0.051	0.101	0.1279
Difference Between OL and IL Coefficient	**0.129**	**0.100**	**0.096**	**0.249**
Z-Value	**2.588***	**1.768***	**0.674**	**1.861***
* Significant at the α = .05 level				

Table 6 presents the results of the Z-Test on the four dependent variables. The coefficient of the reading score is significantly greater for the online sections compared to the instructor led sections for all dependent variables except for project scores. People who possess the ability to read and comprehend language will perform far better in the online environment while people who are more passive learners will benefit greatly from classroom instruction.

CONCLUSIONS

The results of this study are mostly consistent with many of the previous studies that examine the predictors of student grades earned in online courses. By far the most significant predictor is the grade point average that the student brings into the class. The impact of grade point average on the final grade is enormous – the better students do well. Somewhat surprisingly, CIS majors don't perform at a higher level than not-CIS majors. Perhaps students who enroll in a database management course from other disciplines are very interested in the material and are highly motivated to learn. At least some CIS majors enroll in the course only to satisfy a core requirement. Consistent with many other studies, gender is seldom a factor in achieving success in a course. In a few cases, students who enroll in the summer seem to perform better than students who enroll in the longer semesters. This may be at least partially explained by the motivation of those who enroll in the summer. During the longer semesters, students typically enroll in several courses while during the summer they enroll in only one course. Students can dedicate all of their time and energy to the single course during the summer. The year variable provides a trend. There is slight evidence in this study that students are performing at a slightly lower level over time.

The focus of this study was to isolate and test the impact of reading ability on the success of students in online verses instructor led environments. The impact of the ability to read and understand written language on online students is substantial. In almost all areas, students who score highly on the Cloze test perform well in the online courses. In class learning becomes passive and rewards those with the ability to listen and absorb material.

REFERENCES

Aitken, Kenneth G., (1977) Using Cloze Procedure as an Overall language Proficiency Test, *TESOL Quarterly*, V. 11, No. 1, pp. 59-67.

Alstete, J. and Beutell, N., (2004) Performance indicators in online distance learning courses: a study of management education, *Quality Assurance in Education*, V. 12, No. 1, pp.6 – 14.

Cheung, L and Kan, A. (2002) Evaluation of Factors Related to Student Performance in a Distance-Learning Business Communication Course. *Journal of Education for Business*, V. 77, No. 5, pp. 257-263.

Didia, D. and Hasnat, B. (1998) The Determinants of Performance in the University Introductory Finance Course, *Financial Practice and Education*, V. 8, No. 1, pp. 102-107.

Dutton, John, Dutton, Marilyn, and Perry, Jo, (2002) How Do Online Students Differ From Lecture Student?, *Journal of Asynchronous Learning Networks*, V. 6, No. 1, pp. 1-20.

George Garman (2007), Evaluating Reading Skills as a Predictor of Success in Online Courses, *The International Business and Economics Research Conference Proceedings*, October 2007, Las Vegas, NV. (distributed on CD ROM)

George Garman (2010) A Logistic Approach to Predicting Student Success in Online Database Courses, *American Journal of Business Education.* V. 3, No. 12, pp. 1-5.

James, David and Chilviers, Clair (2001), Academic and Non-Academic Predictors of Success on the Nottingham Undergraduate Medical Course: 1970-1995, V. 35, No. 11, pp. 1056-1064.

Krieg, R.G. and Uyar, B. (1997), Correlates of Student Performance in Business and Economic Statistics?, *Journal of Economics and Finance*, V. 21, No. 3, pp. 65-74.

Krieg, R.G. and Uyar, B. (2001) Student Performance in Business and Economics Statistics: Does Exam Structure Matter?, *Journal of Economics and Finance*, V. 25, No. 2, pp. 229-241.

Kobayashi, Miyoko, (2002) Cloze Tests Revisited: Exploring Item Characteristics with Special Attention to Scoring Methods. *The Modern Language Journal*, 86(iv).

Minaei-Bidogoli, Behrouz (et. Al.) (2003) "Predicting Student Performance: An Application of Data Mining Methods with an Educational Web-Based System," *Frontiers in Education*, V. 1, pp. 5-8.

Monroe, S, Moreno, A., and Segall, M. (2011) Student Performance Determinants in a Business Statistics Course at a Large Urban Institution, *The Academic and Business Research Institute Conference Proceedings*, October, Las Vegas, NV. (distributed on CD ROM)

Parker, Angie, (1999) A Study of Variables that Predict Dropout from Distance Education, International Journal of Education Technology, [online] V.1 No.2.

Paternoster, Raymond, Brame, Robert, Mazerolle, Paul, & Piquero, Alex, (1998) Using the Correct Statistical Test for the Equality of Regression Coefficients. *Criminology*, V. 36, No. 4, pp. 859-866.

Sweet, R., (1986) "Student Dropout in Distance Education: An Appreciation of Tinto "s Model," *Distance Education* V. 2, pp. 201-213.

Wojciechowski, A. and Palmer, L. D., (2005) Individual Student Characteristics: Can Any Be Predictors of Success in Online Classes?, *Online Journal of Distance Learning Administration*, V. 8, No. 2, pp. 1-21.

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Business Student Perceptions of Online versus Face-to-Face Education: Student Characteristics

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ABSTRACT

As institutions of higher education continue to integrate online education into their curricula, the research on student perceptions of the value of online versus face-to-face courses has produced mixed results. This study specifically evaluated business students' characteristics – graduate vs. undergraduate, gender, and previous experience, relative to their perceptions of the online versus face-to-face environment with respect to motivation, discipline, independence, time and cost investment, preference, happiness and appropriateness of the learning environment. In general, the students favored the FTF environment on all student perceptual characteristics, regardless of whether they had taken online courses or not. Student perception may influence whether they take another online course. Most online students did not take a preparatory course and had little online experience, their perceptions of online education improved as they took more online courses. These results have implications for both administrators and instructors, particularly the recommendation for a mandatory online orientation course to set student expectations and improve student perceptions.

Keywords: Student Perceptions, Online, Face-to-face

LITERATURE REVIEW

Recent research on higher education highlights the increase in online education (Allen & Seamen, 2013). Higher education continues to integrate online education in various forms from online courses (100% online), hybrid courses (substantial portion online and substantial portion face-to-face), and blended courses (campus-based courses that use online components). As technology continues to change and methods to teach and learn in the online environment evolve, research on student perceptions in the online learning environment continues (e.g. Allen & Seaman, 2013; Perreault, Waldman, Alexander & Zhao, 2008; Tanner, Noser, and Langford, 2003; Tanner, Noser, Fuselier & Totaro, 2004a; 2004b; Tanner, Noser, Totaro & Birch, 2006; Tanner et al., 2009). With respect to current research on this theme, two streams of literature emerged: studies that concentrate on student characteristics, such as academic maturity, gender or familiarity with online courses, and studies that examine program characteristics, such as the amount of rigor or the easy of cheating. As part of a much large study that directly compared the online versus the FTF environment (Fish & Snodgrass, 2014), we specifically focused on student characteristics in this paper.

Student attitudes and perceptions are important antecedents of the student's inclination toward e-learning (Chawla & Joshi, 2012). These attitudes and perceptions include motivation, belief, confidence, computer anxiety, fear, boredom, apprehension, enthusiasm, excitement, pride and embarrassment (Konradt & Sulz, 2001). Student (demographic) characteristics – major/level, gender, previous experience with online education, may impact upon a student's attitudes and perceptions (also known as 'perceptual characteristics' in this paper) of online education, including the student's motivation, discipline, self-directed nature, independence, feelings regarding time and cost investment, preference, happiness, and appropriateness. In a traditional FTF classroom, instructors recognize and react to emotional states (facial expressions, gestures, eye contact and speech) along with individual student differences (maturity and experience) and modify their lessons to help students toward positive learning experiences (Reilly, Gallager-Lepak & Killion, 2012). However, an online course does not allow instructors to modify the course in 'real' time and those factors may impact upon students' perceptions in the online versus the FTF environment. We continue with an overview of some research on student demographic characteristic and student perceptual characteristics available regarding online versus FTF education.

Student Demographic Characteristics
Major/Level: Several studies explored perceptual differences by major and educational level. Some studies note differences between student perceptions for business versus non-business students (Tanner et al., 2004a; 20004-2) and graduate versus undergraduate nursing student (Billings, Skiba & Connors, 2005). In the nursing study,

findings indicated that graduate students spent more time on their courses, needed more instructor attention and found faculty availability to be an issue compared to undergraduates. In criminal justice studies, students who have never taken an online course have different perceptions of online learning than those who have (Dobbs et al., 2009). In this study, we continue to explore the perceptual differences between different educational levels for business students and between students with and without online experience. Therefore, Research Question #1: *Do undergraduate and graduate business students perceive the online and FTF learning environments equally?*

Gender: With respect to gender differences, some studies indicate that gender does not play a factor in student perceptions for undergraduate students (Tanner et al., 2003; Chawla & Joshi, 2012), while others indicate a difference (Tanner et al., 2004a; 2004b; Chaturvedi, & Dhar; 2009). In one study, women displayed a more positive attitude than men towards web-based learning (Chen & Tsai , 2007). In a more recent study, Internet competencies tend to be significant and favor males (Tekinarslan, 2011**).** Since many of the initial studies cited were over a decade ago, perhaps the results have changed over time. Therefore, Research Question #2: *Do men and women business students view the online and FTF learning environments equally?*

Previous Experience: Learning theory implies that the more someone is exposed and uses a particular method or technology, the better and more adept they become. Students with prior online experience perceived online courses more favorably than those without prior experience (Tanner et al., 2003). As the number of online courses increases, the students' acceptance of online courses increases as well; however, at least 5 online courses are necessary for student to perceive that they learn more in the online environment than FTF (Dobbs, Waid & del Carmen, 2009). A student's belief in his or her own abilities to perform a given task in the online environment, also known as self- efficacy, increases as a student's Internet usage frequency increases and is highly related to their prior computer and Internet experiences (Tekinarslan, 2011).

Studies evaluating student's perceptions of the continued proliferation of online courses demonstrate an increasing acceptance of online as being equal to or better than FTF (Perreault et al., 2008; Mortagy & Boghikian-Whitby, 2010) particularly as a student takes more online courses (Dobbs et al., 2009; Mortagy & Boghikian-Whitby, 2010; Perreault et al., 2008). A student's perceived usefulness of e-learning reinforces the value associated with this medium and enhances individuals' confidence in technology (Igbaria et al., 1997). Therefore, our intent is to continue to explore student perceptions as they acquire online experience. Research Question #3: *Do students' perceptions change as they take additional online courses?*

Student Perceptual Characteristics

Student Motivation, Discipline, Self-directed Learning and Independence: With regard to student motivation, results are mixed as some studies indicate that the online environment increases student motivation and self-esteem (Kearlsey, 1996) or critical thinking and work motivation (Larson & Sung, 2009). Other studies indicate that the online environment offers low motivation for students to learn (Maltby & Whittle, 2000) with retention issues (Carr, 2000; Abouchedid & Eid, 2004) and low student satisfaction (Kenny, 2003; Muilenburg & Berge, 2005). A more recent study indicates that students view e-learning as a commitment (Chawla & Joshi, 2012). Online students should be motivated and disciplined (Schott et al., 2003), and students that are not self-motivated and committed will not enjoy the online learning environment (Rivera & Rice, 2002). Online learning requires self-directed learning and autonomy, but self-discipline and motivation are required to complete the course (Gifford, 1998; Kearsley, 2002). Another study indicated that good time management skills and self-discipline are student attributes that are required in online learning (Cheung & Kan, 2002). Regardless of the environment, some students regard collaborative learning negatively and always prefer to work alone (Hiltz & Turoff, 2005). While the research indicated here is not comprehensive, it demonstrates a variety of student perceptions, which leads to the general research question: Research Question #4: *Do business students perceive motivation, self-directed learning, discipline and independence equally in the online and FTF learning environments?*

Time and Cost Investment: On one hand, while students perceive the time flexibility to take the course (Chawla & Joshi, 2012; Grandon et al., 2005), they perceive online learning to be more time consuming particularly with respect to class activities and homework assignments (Gifford, 1998; Perreault et al, 2008: Dobbs et al., 2009). In one study, student beliefs include the overall experience, exposure and derived value (Chawla & Joshi, 2012). This belief can include the educational benefit and monetary cost associated with a course. Students who had never taken an online course indicated that they felt the value from an online course would be less than FTF (Chawla & Joshi,

2012). Research Question #5: *Do business students perceive the time and cost investments to online learning and FTF learning equally?*

Preference, Happiness and Appropriateness for Learning Environment: While not intended to be a comprehensive review of literature in this area, clearly ambiguity currently exists in the debate between online and FTF education. Student satisfaction research with online versus FTF formats results are mixed as some studies indicate that the courses are equally effective across formats (Fowler, 2005; Topper, 2007; Horspool & Lange, 2012), while others show a preference to FTF over online environments (Mullen & Tallent-Runnels 2006), and others show a higher satisfaction for online learning (Connolly, MacArthur, Stansfield & McLelan, 2007). One study found that 10-20% of students always prefer FTF (Hiltz & Turoff, 2005). In general, when students perceive e-learning as useful, they are more likely to accept and learn online (Tung & Chang, 2008). Research Questions #6: *Do students prefer the opposite learning environment than their point of reference? Are students happy in their learning environment? Do students feel that online learning is appropriate at the University?*

Online Orientation: Online education requires students to believe in their own computer abilities, or self-efficacy. A student's self-efficacy is related to their prior computer and Internet experiences (Tekinarslan, 2011), and self-efficacy and ease of use may be significant predictors for online learning (Grandon et al., 2005). Orientation courses for students new to the online environment should be offered (Perreault et al., 2002) as even students with technical expertise report benefits from an orientation program prior to their online experience (Clerkin, 2005). Since the student perceptions online are being sought in this study, student's previous background regarding orientations may be an important factor in their perspectives. Research Question #7: *Do students take online orientation courses prior to taking an online course?*

Salient Conclusions for Our Study
These studies differ in the size (small, medium, large universities), audience (e.g. scientific versus social sciences, business versus non-business, and graduate versus undergraduate), and method of research (e.g. interview, survey). Several online perception studies were completed at large universities or in a public forums (Tanner et al., 2003; Tanner et al., 2004a; 2004b; Tanner et al, 2006; Tanner et al., 2009) or in non-business fields (e.g. Dobbs, Waid, & delCarmen, 2009; Lanier, 2006; Leasure, Davis & Theivon, 2000; Reilly et al., 2012; Tekinarslan, 2011; Wang & Morgan, 2008). Therefore, the context of the study may be an important factor to consider in interpretation of the survey results.

As technology progresses, online education will change too and student perceptions may change as well (Mortagy & Boghikian-Whitby, 2010; Perreault, Waldman, Alexander, & Zhao, 2008). While previous research on business student perceptions exist at both the undergraduate and graduate levels (Perreault et al., 2008; Tanner et al., 2003; Tanner et al., 2004a, 2004b), much of this research was published over 5 years ago and technology and perceptions may have changed. Other researchers explored non-business areas (e.g. criminal justice education (Lanier, 2006) and nursing (Leasure et al., 2000)), in a public forum (Tanner et al., 2009) or a small environment (e.g. Armstrong, 2011).

We conducted our study at a mid-sized, Jesuit, Catholic, business school with a focus on teaching. The research focus lies in uncovering student perceptions where FTF class sizes average 17 students with a capacity of 35 students. Online education is a growing educational method; however, not all students have experienced this medium (Allen & Seaman, 2013). Based upon the literature, the intent of this research is to explore students' perceptions of online education for those who have experienced it and those who have never experienced online as well as graduate versus undergraduate business student online perceptions at a teaching university. Specific perceptions researched here include motivation, discipline, self-directed learning, independence, and time and cost investment, as well as preference, happiness and appropriateness of the environment. Additionally, information regarding online preparatory courses was gathered. Theoretically, students should perceive the environments equally and not favor either traditional FTF or online education.

METHOD

At an AACSB accredited, Jesuit, Catholic University in the northeast, 3 undergraduate classes and 3 graduate business classes completed the survey. The surveys were administered during the last week of classes. The three undergraduate classes, which included a management science course, an operations management course, and an

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information systems elective, were all FTF courses. The graduate classes included a FTF global supply chain management course (part-time MBA), a FTF introduction to information systems course (full-time MBA), and an online masters in international business course. 64 undergraduates and 47 graduates voluntarily participated in the survey.

Based upon the above research and insight into the online versus FTF learning environments, the instructors designed a survey to test student perceptions based upon academic level, online experience and gender. Specific to this discussion, student questions pertained to perceptions regarding motivation, discipline, self-directed learning, independence, and time and cost investment. (See Appendix A). Students who experienced at least 1 online course completed Section A ("Online"), while students who had never taken an online course completed Section B ("Traditional FTF"). Sections A and B had corresponding questions, but Section A statements were specific to "I found" versus Section B statements were "I perceive". The last questions in each section asked the student if they would prefer the opposite environment, their emotional happiness with the learning environment, and whether online courses were appropriate for the institution. For students with online experience, the last question inquired as to why they chose to take an online course. For students without online experience, the survey included an open-ended question inquiring 'why not'. Information from the surveys was codified as indicated in Appendix A, and the data was entered in EXCEL for analysis.

ANALYSIS

Overall Comparison Online vs. Traditional Student Perceptions
This study is part of a larger study that specifically compared student perceptual differences *between* online and FTF (Fish & Snodgrass, 2014). We continue by presenting some details here that were not presented with the larger study. As shown in Table 1, 66 males and 40 females completed the survey. Undergraduate males (36) and graduate males (30) outnumbered undergraduate females (25) and graduate females (15), respectively.

Table 1. Number of Males and Females

	Undergraduates		Graduates		Overall	
	Males	Females	Males	Females	Males	Females
Online	14	6	10	10	24	16
Traditional FTF	22	18	20	5	42	23
Total	36	25	30	15	66	40

For the student perceptual characteristics (as shown in Table 2), the study found that with respect to motivation (p=.02), and self-directed (p=.00), online and FTF students preferred the FTF environment over the online environment. While online and FTF significantly differ in their perspectives for discipline (p=.03), and independence (p=.00), online students find the discipline and independence of online to be more than FTF classes, while FTF students – who have never had an online course, are indifferent. Time and cost investment differences between the two groups are insignificant as both groups tend to feel both time and cost investment in online versus FTF are basically the same. Both online and FTF students prefer to be in a FTF environment; while FTF students are definite in their response to preference and very happy with the FTF environment, online students are more indifferent and basically 'accept' the online environment. Both groups perceive online courses to be appropriate at the University.

Table 2. Comparison All Students OL vs. Traditional FTF Perceptions

Question Topic	Online		Traditional FTF		t-test significance
	Average	Std Dev.	Average	Std Dev.	
Motivation	2.34	0.89	4.04	0.82	0.02*
Discipline	3.09	1.16	3.39	1.10	0.03*
Self-directed	2.89	1.06	3.97	0.70	0.00*
Independence	3.52	1.11	3.39	0.78	0.00*
Time investment	2.89	0.89	3.38	0.80	0.12
Cost investment	2.70	0.63	3.48	0.86	0.19
Preference	1.64	0.69	2.47	0.66	0.00*
Happiness	3.36	1.04	4.21	0.73	0.00*
Appropriateness OL	1.59	0.79	1.76	0.74	0.26

(*p≤.05)

As outlined with the Research Questions presented earlier, the intent is to study student perceptual characteristics relative to online and FTF education. We continue by presenting results from the student demographic and perceptual characteristics.

Student Demographic Characteristics

*Major/Level - Undergraduates vs. Graduate*s: With respect to Research Question #1: '*Do undergraduate and graduate business students perceive the online and FTF learning environments equally?*', as shown in Table 3, undergraduates and graduates are not significantly different on any perception in either the online or FTF surveys. Regardless of the learning environment, undergraduates and graduates perspectives are similar with respect to motivation, discipline, independence, time and cost investment, and preference, happiness and appropriateness of the learning environment. With respect to the self-directed nature of the learning environment, the undergraduates tend to prefer the online environment slightly more than the graduates (p=.06). While both groups favor the appropriateness of online courses, online graduates are slightly more undecided than undergraduates (p=.06).

Table 3. Undergraduate versus Graduates Perceptions

Question Topic	Undergraduates		Graduates		t-test Significance
	Average	Std. Dev.	Average	Std. Dev	
SECTION A: Online					
Motivation	2.50	0.91	2.18	0.85	0.24
Discipline	2.95	1.13	3.23	1.19	0.44
Self-directed	3.18	1.10	2.59	0.96	0.06 **
Independence	3.55	1.06	3.50	1.19	0.89
Time investment	2.95	0.84	2.82	0.96	0.62
Cost investment	2.73	0.55	2.68	0.72	0.81
Preference FTF	1.68	0.65	1.59	0.73	0.67
Happiness OL	3.59	0.96	3.14	1.08	0.15
Appropriateness OL	1.36	0.58	1.82	0.91	0.06 **
SECTION B: FTF					
Motivation	4.17	0.82	3.84	0.80	0.12
Discipline	3.48	1.13	3.24	1.05	0.39
Self-directed	3.95	0.73	4.00	0.65	0.78
Independence	3.40	0.80	3.36	0.76	0.82
Time investment	3.34	0.79	3.44	0.82	0.63
Cost investment	3.45	0.89	3.52	0.85	0.68
Preference OL	2.52	0.67	2.38	0.65	0.38
Happiness FTF	4.24	0.73	4.16	0.75	0.68
Appropriateness OL	1.76	0.73	1.76	0.78	0.99

** p ≤.10

Gender: As shown in Table 4, to evaluate Research Question #2: '*Do men and women business students view the online and FTF learning environments equally*', men (66) and women (40) do not differ with respect to their perceptions of online and traditional FTF learning environments. With regard to undergraduates, there are no gender differences in either group with the exception of traditional FTF students where females feel online courses are acceptable to undecided, while males are undecided (p=.05). With regard to graduates, there are no gender differences in either group with the exception of the online group where males are significantly happier than females (p=.04), and males' feel online is appropriate and females are undecided (p=.05).

Table 4. Comparison of Males and Females Perceptions

Question Topic	Undergraduates					Graduates				
	Males		Females		t-test	Males		Females		t-test
	Mean	S.Dev	Mean	SDev		Mean	SDev	Mean	SDev	
SECTION A: Online										
Motivation	2.36	1.08	2.71	0.49	0.31	2.50	0.71	1.90	0.88	0.11
Discipline	2.71	1.14	3.43	1.13	0.20	3.20	1.23	3.40	1.26	0.72
Self-directed	3.21	0.89	3.14	1.57	0.91	2.80	0.92	2.30	0.95	0.25
Independence	3.57	0.85	3.57	1.51	1.00	3.90	0.88	2.90	1.29	0.06
Time investment	3.00	0.88	3.00	0.82	1.00	2.60	0.97	3.10	0.99	0.27
Cost investment	2.71	0.61	2.86	0.38	0.52	2.90	0.57	2.60	0.70	0.31
Preference FTF	1.71	0.61	1.71	0.76	1.00	1.80	0.79	1.30	0.48	0.11
Happiness OL	3.57	0.76	3.43	1.27	0.79	3.60	0.97	2.60	1.07	0.04*
Appropriateness OL	1.43	0.65	1.29	0.49	0.58	1.50	0.71	2.30	0.95	0.05*
SECTION B: FTF										
Motivation	4.32	0.72	4.00	0.91	0.23	3.95	0.69	3.40	1.14	0.35
Discipline	3.45	1.18	3.61	1.09	0.67	3.25	1.02	3.20	1.30	0.94
Self-directed	3.91	0.87	4.06	0.54	0.52	4.00	0.65	4.00	0.71	1.00
Independence	3.41	0.80	3.44	0.78	0.89	3.30	0.80	3.60	0.55	0.35
Time investment	3.57	0.60	3.22	0.88	0.16	3.45	0.89	3.40	0.55	0.88
Cost investment	3.45	1.01	3.44	0.62	0.97	3.60	0.82	3.25	0.96	0.53
Preference OL	2.55	0.67	2.61	0.61	0.75	2.42	0.61	2.20	0.84	0.60
Happiness FTF	4.14	0.71	4.39	0.70	0.27	4.25	0.72	3.80	0.84	0.31
Appropriateness FTF	2.00	0.69	1.56	0.70	0.05*	1.70	0.73	2.00	1.00	0.56

Table 4 continued. Comparison of Males and Females Perceptions

Question	Overall				
	Males		**Females**		**t-test**
	Mean	**SD**	**Mean**	**SDev**	
SECTION A: Online					
Motivation	2.42	0.93	2.24	0.83	0.52
Discipline	2.92	1.18	3.41	1.18	0.19
Self-directed	3.04	0.91	2.65	1.27	0.28
Independence	3.71	0.86	3.18	1.38	0.17
Time investment	2.83	0.92	3.06	0.90	0.44
Cost investment	2.79	0.59	2.71	0.59	0.65
Preference FTF	1.75	0.68	1.47	0.62	0.18
Happiness OL	3.58	0.83	2.94	1.20	0.07
Appropriateness OL	1.46	0.66	1.88	0.93	0.12
SECTION B: FTF					
Motivation	4.14	0.72	3.87	0.97	0.24
Discipline	3.36	1.10	3.52	1.12	0.57
Self-directed	3.95	0.76	4.04	0.56	0.59
Independence	3.36	0.79	3.48	0.73	0.54
Time investment	3.51	0.75	3.26	0.81	0.23
Cost investment	3.52	0.92	3.41	0.67	0.57
Preference OL	2.49	0.64	2.52	0.67	0.84
Happiness FTF	4.19	0.71	4.26	0.75	0.71
Appropriateness FTF	1.86	0.72	1.65	0.78	0.30

*p≤.05

Previous Experience: While very few students took two online courses (10), student perceptions for online students taking one class versus two online courses (Table 5) indicate that just one factor – happiness (p=.03) is significantly different as students taking a second course are significantly happier than a student that only takes one. Other factors are mildly significant between the two groups – motivation (p=.08), discipline (p=.07), and self-directed (p=.06). For all of these factors, as students experience the second course their perception towards online improves. Analysis that includes the 3 additional students with more than two classes clearly shows that students perceptions towards online are significantly more positive. Motivation (p=.02), discipline (p=.04), and happiness online (p=.01) are significantly more positive toward the online experience as students take additional courses. Students' perception of the online cost investment becomes more indifferent between online and FTF as they take additional courses (p=.02).

Table 5. Online differences in perception by Number of Online Courses, Section A

# of Online Courses	1		2		**Ttest**	**Ttest**
# of Students	23		10		**1 vs. 2**	**1 vs 2+**
Question	**Mean**	**Std Dev**	**Mean**	**Std Dev**	**Courses**	**Courses**
Motivation	2.26	0.86	3.10	1.29	0.08 **	0.02*
Discipline	2.65	1.03	3.30	0.82	0.07**	0.04*
Self-directed	4.13	0.92	4.70	0.67	0.06**	0.17
Independence	2.70	0.97	3.20	0.79	0.13	0.20
Time investment	2.39	1.03	2.40	0.84	0.98	0.98
Cost investment	2.09	1.00	2.60	0.52	0.06 **	0.02*
Preference FTF	1.52	0.67	2.00	0.67	0.08**	0.09**
Happiness OL	3.13	0.87	3.90	0.88	0.03*	0.01*
Appropriateness OL	1.61	0.72	1.70	0.95	0.79	0.98

*   p ≤ .05   ** p ≤ .10

Student Perceptual Characteristics

Student Motivation, Discipline, Self-directed Learning and Independence: With regard to Research Question #4: '*Do business students perceive motivation, self-directed learning, discipline and independence equally in the online and FTF learning environments?'* online and FTF students both significantly favor the FTF environment (Table 1). Student perceptions on these factors are not significantly different between graduates and undergraduates (Table 2), and men and women (Table 4). However, in the online environment, student's perceptions regarding motivation and discipline improve as students take more courses (Table 5).

Time and Cost Investment: In response to Research Question #5: '*Do business students perceive the time and cost investments to online learning and FTF learning equally?'* students are indifferent to the time and cost investment between online and FTF learning environments – regardless of whether they are undergraduates or graduates (Table 2), and men or women (Table 4). While students who take more online courses do not change their perspective on the time investment required of online courses, their perspective on cost investment changes and students who take additional courses are more indifferent to the cost savings.

Preference, Happiness and Appropriateness for Learning Environment: With respect to Research Questions #6: *Do students prefer the opposite learning environment than their point of reference?'* both online and FTF students prefer to be in a FTF environment (Table 1). As to whether *'students are happy in their learning environment?'* a significant difference exists as online students are indifferent, but FTF students overwhelmingly prefer the classroom. As to whether *'students feel that online learning is appropriate at the University?'* both online and FTF students tend to be accepting of online education – even if they've never taken an online course. Graduates and undergraduates view preference and happiness the same; however, for appropriateness, online graduates are less accepting than undergraduates (Table 2). Men and women have similar views of their learning environment, their level of happiness in their environment and in general, feel online education is appropriate (Table 4). As mentioned previously, as students take additional online courses, they are significantly happier in the online environment and more indifferent regarding FTF.

Online Orientation: With respect to prior training and Research Question #7: '*Do students take online orientation courses prior to taking an online course?'*, over 90% of students in the study did not take an online course (as shown in Table 6). Only 4 students took a preparatory course – 2 from the University, 1 from the book, and one from another source.

Table 6. Number of Online Courses Taken, Preparation Course Take & Offered Through

Section A Online Courses							
Number of Online Courses	Mean	Std. Dev.	1	2	3	4	5
	1.56	1.00	23	10	1	0	2
Preparation Course	Mean	Std. Dev.	Yes	No			
	1.95	0.21	4 (9.3%)	39 (90.7%)			
Prep offered through	University	Book	Other				
	2	1	1				

DISCUSSION

Student Demographic Characteristics

Major/Level: With respect to Research Question #1: '*Do undergraduate and graduate business students perceive the online and FTF learning environments equally,'* with respect to motivation, discipline, independence, time and cost investment, and preference, happiness and appropriateness of the learning environment, undergraduates and graduates perceive online and FTF environments similarly. This is in contrast to previous studies of business students (Tanner et al., 2004a, 2004b), nursing students (Billings et al., 2005), or criminal justice students (Dobbs et al., 2009). The only tendency was for graduates to dislike the self-directed online environment slightly more than their undergraduate counterparts, and graduates to be slightly more hesitant to accept online as a viable alternative to FTF. Perhaps as other studies indicated (Billings et al., 2005) graduates prefer more 'hand-holding' in an online course. Also, since graduates tend to have less financial aid, they expect more from the experience. It is important to note that the studies of business or nursing students are over a decade old, and perhaps, student perceptions have

changed over the past decade. Or perhaps these results can only be applied to this population at this particular school.

Gender: Do men and women business students view the learning environment the same? While research shows both different perceptions (Tanner et al., 2004a, 2004b; Chaturvedi, & Dhar; 2009) and indifference (Tanner et al., 2003; Chawla & Joshi, 2012) between men and women's perspectives on online and FTF education, the results here do not show any significant differences between men and women's perceptions on these student characteristics. In this study, only two minor differences exist. Traditional, undergraduate female FTF students felt online courses were acceptable and men were undecided, which was in keeping with another study where women were more positive than men to web-based learning (Chen & Tsai, 2007). For the older population, online graduate males were significantly happier and felt online was more appropriate than their female counterparts, which would be counter to one previous study (Chen & Tsai, 2007) but in keeping with men's perceived Internet competency (Tekinarslan, 2011). Perhaps since many of the research to compare gender differences were done earlier in this century, over time, men and women grew to perceive the online and FTF environments similarly.

Previous Experience: With respect to Research Question #3: '*Do students' perceptions change as they take additional online courses?'* these results favor the idea that as students take more online courses, their perceptions are more positive towards the online environment. This result is similar to previous research that demonstrated that students with prior online experience are more favorable to online courses than those without (Tanner et al., 2003), and that as the number of online courses increases, students' acceptance increases (Dobbs et al., 2009; Mortagy & Boghikian-Whitby, 2010; Perreault et al., 2008). Since most students in this study only took a few courses, significant differences do not appear for all factors. However, as students take more courses, significant differences in many factors appeared, and they appear to be more favorable to online courses. Students appeared to be more motivated and disciplined, as well as perceived the cost investment and overall experience more positively, which fits with prior research that indicated that student's perceived usefulness of e-learning reinforced the value associated with this medium and enhanced the individual's confidence in technology (IGbaria et al., 1997). Since most students only took a few online courses, while their acceptance appeared to be improving, the online students still preferred the FTF environment, in contrast to other studies (Perreault et al., 2008; Mortagy & Boghikian-Whitby, 2010).

Student Perceptual Characteristics
Student Motivation, Discipline, Self-directed Learning and Independence: With regard to Research Question #4: '*Do business students perceive motivation, self-directed learning, discipline and independence equally in the online and FTF learning environments?"* online and FTF students are both more motivated in the FTF classroom. In general, this preference exists whether undergraduate or graduate, or man or woman. In contrast to studies that found an increase in motivation (Kearlsey, 1996; Larson & Sung, 2009), these results favor other studies that indicated the online environment offers low motivation for students (Maltby & Whittle, 2000) with low student satisfaction (Kenny, 2003; Muilenburg & Berge, 2005). Since online students should be motivated and disciplined (Schott et al., 2003), requires self-directed learning and autonomy (Gifford, 1998; Kearsley, 2002), and students that are not self-motivated and committed will not enjoy the online learning environment (Rivera & Rice, 2002), coupled with the preference of these students FTF, speaks volumes to these students preferred educational method. However, the majority of online students only took one course. In the online environment as students take more courses, student's perceptions of motivation and discipline improve as students take more courses. These results obviously address students initial perceptions of the online environment. Since many students view online negatively, they may never choose to take a second online course, which may have positively changed their perceptions.

Time and Cost Investment: With respect to Research Question #5: '*Do business students perceive the time and cost investments to online learning and FTF learning equally?',* students are indifferent to the time investment, which contrasts previous studies (Chawla & Joshi, 2012; Dobbs et al., 2009; Gifford, 1998; Grandon et al., 2005; Perreault et al., 2008). Online and FTF students did not differ in their perception regarding costs investment, where both groups favored online courses as costing less than FTF, similar to another study where students who did not take online courses viewed the value as being significantly less with online courses (Chawla & Joshi, 2012). However, as students experience more online courses, they view the cost investment more 'indifferently' than prior. Perhaps, students who take more courses realize there are other intangible costs associated with online education.

Preference , Happiness and Appropriateness for Learning Environment: Given Research Questions #6: *'Do students prefer the opposite learning environment than their point of reference?' and 'Are students happy in their learning environment?' ,* in general, students preferred to be in the FTF environment – rather than online; however, online students' perceptions changed as they took additional courses as they became more accepting of the online environment. These results correspond to just one study that showed a preference for FTF (Mullen & Tallent-Runnels, 2006), and do not correspond to previous studies that indicate a preference for online learning (Connolly, MacArthur, Stansfield & McLelan, 2007) or even indifference (Fowler, 2005; Topper, 2007; Horspool & Lange, 2012). With that said, students who participated in this survey took very few courses, and as noted, as they took additional courses, they became more positive toward online learning. Perhaps as students take more courses, their expectations shift and they grow to appreciate the online environment more. With respect to online graduates being less accepting than online undergraduates, other factors, such as financial aid (undergraduates) versus paying for the course oneself (graduates), may impact upon their perspectives. Interestingly, both online and FTF students responded positively to *'Do students feel that online learning is appropriate at the University?'* regardless of their own perceptions, students were accepting of online education as a viable educational mechanism – but not necessarily for them.

Online Orientation: With respect to Research Question #7: *'Do students take online orientation courses prior to taking an online course?'* the majority of online students did not take an online orientation course. While an University orientation course is available to students to check their 'readiness' and prepare them for the online environment, students do not have to take the course prior to registering or taking the course. So while the University offers an orientation course, in keeping with 'best practices' (Perreault et al., 2002; Clerkin, 2005) – as does the book publisher once the student is enrolled, the students chose not to take the course, and instead, assume their own abilities would carry them through the course. The fact that many students did not take orientation the course – and therefore, have a more realistic understanding of the online requirements – fits with online students' general dislike of the learning environment, particularly those who had only taken one course. By not taking the course, student perceptions may not have been realistic.

CONCLUSIONS

Two streams of literature with respect to online versus FTF education exists: student versus program characteristics. By focusing on specific student-centered perceptions, this study focused on individual student traits that may impact upon a student taking an online course or not. Student demographic characteristics relative to student perceptions of the online versus FTF environment with respect to student perceptual characteristics were tested. At an AACSB Jesuit, Catholic, university in the northeast with a strong focus on teaching, business student perceptions regarding online versus FTF courses indicate that for this population, students prefer FTF classes. In general, undergraduates and graduates, and men and women perceive online and FTF similarly with respect to student characteristics and favor learning in the FTF environment. Students feel that they are more motivated, disciplined, self-directed and independent in the FTF classroom – and are not or would not be as much in the online environment. Potential reasons for this preference include: self-selection where students know their own strengths and weaknesses and select FTF based upon their own strengths, they may be apprehensive of learning online, a lack of time to learn how to 'learn' in the online environment, or students, most who are biased to FTF education based upon their past, do not perceive an advantage to learning online.

Online students with minimal experience perceived the online learning environment negatively, which may influence whether they choose to take another online course. Fortunately, students who chose to take an additional course viewed the online experience more positively. The majority of online students did not take an orientation course and viewed the online experience negatively, which is an important finding for administrators and instructors. An online orientation course may assist in setting realistic perceptions regarding the online environment and positively influence student perceptions.

LIMITATIONS

There are two limitations with respect to this study. First, most students completed the survey as part of a FTF class – and not as part of an online class. The fact that most students were physically sitting in a class while completing the survey – instead of completing it through an online instrument, may have influenced the output. Second, the

sample sizes while acceptable tend to be small, particular for the group who were specifically enrolled in an online course. Only 13 students who took more than one class completed the survey.

FUTURE RESEARCH

These results support and contrast previously sighted research for student characteristics. This study addresses initial student perceptions in the online environment and it will be interesting to note if this changes over time, as other researchers have found. Future research to uncover the specific underlying factors why individual students choose take or not take online courses is needed, but researchers are cautioned to consider specific programmatic and University contextual factors, which may influence students. Potential avenues within student characteristics include exploring student learning styles and cultural background. A student's ability to perform well in a classroom – whether online or FTF is related to his or her individual perceptions. As education continues to transition to online educational delivery, a deeper understanding of student perceptions is needed to foster learning. Hence, much work remains.

REFERENCES

Abouchedid, K., & Eid, G. M. (2004). E-learning challenges in the Arab World: Revelations from a case study profile. *Quality Assurance in Education*, 12(1), 15-27. doi:10.1108/09684880410517405

Allen, I., & Seaman, J. (2013). Changing Course: Ten Years of Tracking Online Education in the United States. *The Sloan Consortium (Sloan-C)*, Retrieved on January 11, 2013 from http://sloanconsortium.org/publications/survey/making_the_grade_2006

Armstrong, D.A. (2011). Students' Perceptions of Online Learning and Instructional Tools: A Qualitative Study of Undergraduate Students Use of Online Tools. *The Turkish Online Journal of Educational Technology* – July 2011, 10(3), 222-226.

Billings, D.M., Skiba, D.J. & Connors, H.R. (2005). Best Practices in Web-based Courses: Generational Differences Across Undergraduate and Graduate Nursing Students. *Journal of Professional Nursing*, 21(2), 126-133.

Carr, S. (2000). As distance education comes of age, the challenge is keeping the students. *Chronicle of Higher Education, 46*(23), A39.

Chaturvedi, S., & Dhar, S. (2009). Demographics and e-learning: A perceptual study. *Abhigyan*, 27(1), 20-27.

Chawla, D. and Joshi, H. (2012). E-learning perception and its relationship with demographic variables: a factor analysis approach. *International Journal of Information and Communication Technology Education*, 8(4), 105-118.

Chen, R., & Tsai, C. (2007). Gender differences in Taiwan University students' attitudes towards web-based learning. *Cyberpsychology & Behavior*, 10(5), 645-654.

Cheung, L. L., & Kan, A. C. (2002). Evaluation of factors related to student performance in a distance-learning business communication course. *Journal of Education for Business*, 77(5), 257-263.

Clerkin, T. A. (2005). *An exploratory study of the antecedents and consequences of relationships with executive search firms: Implications for a model of career attainment.*. Indiana University, ProQuest, UMI Dissertations Publishing, 2005. 3183914.

Connolly, T.M., MacArthur, E., Stansfield, M. & McLellan, E. (2007). A quasi-experimental study of three online learning courses in computing. *Computers & Education, 49*, 345–59.

Dobbs, R., Waid, C.A., & del Carmen, A. (2009). Students' Perceptions of Online Courses: The Effect of Online Course Experience. *Quarterly Review of Distance Education*, Spring 2009, 10(1), 9-26.

Fish, L.A. & Snodgrass, C.R. (2014). A Preliminary Study of Business Student Perceptions of Online versus Face-to-Face Education. *BRC Journal of Advances in Education*, pp. 1-21. DOI: http://dx.doi.org/10.15239/j.brcacadje.2014.04.01.ja01

Fowler, D. (2005). Are on-site courses as effective as online? *Online Cl@ssroom: Ideas for Effective Online Instruction*, March, 1–2.

Gifford, L. (1998). Graduate Students' Perceptions of Time Spent in Taking a Course by Internet versus Take a Course in a Regular Classroom. *Annual Mid-South Educational Research Association Conference*, New Orleans, LA, Nov. 4-6, 1998, 1-10.

Grandon, E. E., Alshare, K., & Kwun, O. (2005). Factors influencing student intention to adopt online classes: A cross cultural study. *Proceedings of the Consortium for Commuting Sciences in Colleges*, 46-56.

Hiltz, S. R., & Turoff, M. (2005). Education goes digital: The evolution of online learning and the revolution in higher education. *Communications of the ACM*, 48(10), 59-64. doi:10.1145/1089107.1089139

Hornik, S., & Tupchiy, A. (2006). Culture's impact on technology mediated learning: The role of horizontal and vertical individualism and collectivism. *Journal of Global Information Management*. 14(4), 31-56.

Horspool, A. & Lange, C. (2012) Applying the scholarship of teaching and learning: student perceptions, behaviors and success online and face-to-face, *Assessment & Evaluation in Higher Education*, February 2012, 37(1), 73-88, Accessed on January 8, 2013 from http://dx.doi.org/10.1080/02602938.2010.496532.

Igbaria, M., Zinatlli, N., Cragg, P., & Cavaye, A. (1997). Personal computing acceptance factors in small firms: A structural equation model. *Management Information Systems Quarterly*, 21(3), 279-305. doi:10.2307/249498

Kearsley, G. (2002). Learning and teaching in cyberspace. Belmont, CA: Wadsworth.

Kenny, J. (2003). Student perceptions of the use of online learning technology in their courses. *ultiBASE Articles*. Accessed on January 9, 2013 from http://ultibase.rmit.edu.au/Articles/march03/kenny2.pdf

Konradt, U., & Sulz, K. (2001). The experience of flow in interacting with a hypermedia learning environment. *Journal of Educational Multimedia and Hypermedia*, 10(1), 69-84.

Lanier, M. (2006). Academic Integrity and Distance Learning. *Journal of Criminal Justice Education*, Sep 2006, 17(2), 244-21.

Larson, K., & Sung, C, (2009). Comparing Student Performance: Online Versus Blended Versus Face-ToFace, *Journal of Asynchronous Learning Networks*, 13(1), 31-42.

Leasure, A. R., Davis, L., & Thievon, S. L. (2000). Comparison of student outcomes and preferences in a traditional vs. World Wide Web-based baccalaureate nursing research course. *Journal of Nursing Education, 39*(4), 149-154.

Maltby, J. R., & Whittle, J. (2000). Learning programming online: Student perceptions and performance. *Proceedings of the ASCILITE 2000 Conference*. Accessed on January 9, 2013 from http://www.ascilite.org.au/conferences/coffs00/papers/john_maltby.pdf

Mortagy, Y. & Boghikian-Whitby, S. (2010). A Longitudinal Comparative Study of Student Perceptions in Online Education. *Interdisciplinary Journal of E-Learning and Learning Objects*, 6, 23-46.

Mullen, G.E., & Tallent-Runnels, M.K. (2006). Student outcomes and perceptions of instructors' demands and support in online and traditional classrooms. *Internet and Higher Education,* 9, 257–66.

Olesova, L., Yang, D. & Richardson, J.C. (2011). Cross-cultural differences in Undergraduate Students' Perceptions of Online Barriers. *Journal of Asynchronous Learning Networks,* 15(3), 68-80.

Perreault, H., Waldman, L., Alexander, M. & Zhao, J. (2008). Graduate Business Students' Perceptions of Online Learning: A Five Year Comparison. *The Delta Pi Epsilon Journal,* Fall 2008, L(3), 164-179.

Perreault, H. Waldman, L., Alexander, M. & Zhao, J. (2002). Overcoming barriers to successful delivery of distance-learning courses. *Journal of Education for Business*, 77(6), 313-318.

Reilly, J.R., Gallager-Lepak, S. & Killion, C. (2012). Me and My Computer: Emotional Factors in Online Learning, *Nursing Education Perspectives*, March/April, 33(2), 100 - 105.

Rivera, J. C., & Rice, M. L. (2002). A comparison of student outcomes and satisfaction between traditional and web based course offerings. *Online Journal of Distance Learning Administration*, 5(3).

Schott, M., Chernish, W., Dooley, K. E., & Linder, J. R. (2003). Innovations in distance learning program development and delivery. *Online Journal of Distance Learning Administration*, 6(2).

Tanner, J.R., Noser, T.C., & Totaro, M.W. (2009). Business Faculty and Undergraduate Students' Perceptions of Online Learning: A Comparative Study. *Journal of Information Systems Education*, Spring 2009, 20(1), 29-40.

Tanner, J., Noser, T., Totaro, M., & Birch, R. (2006). Student Perceptions of The Online 'Classroom': An Update. *International Business & Economics Research Journal*, 5(10), 31-38.

Tanner, J., Noser, T., Fuselier, J., & Totaro, M. (2004a). 'The Online 'Classroom': Differences in Perception between Business Students and Non-Business Students. *Journal of College Teaching and Learning*, 1(3), 37-44.

Tanner, J., Noser, T., Fuselier, J., & Totaro, M. (2004b), 'The Online 'Classroom': What Do Students Think*? Journal of Informatics Education Research*, 6 (1), 43-54.

Tanner, J., Noser, T., & Langford, H. (2003). Perceptions of Undergraduate Business Students Toward Online Courses In Higher Education Expanded and Revisited: Do Gender, Age, and/or Past Experiences Make a Difference? *Journal of Business and Economics Research*, 1(2), 13-20.

Tekinarslan, E. (2011). Faculty of Education Students' Self-efficacy Perceptions toward Online Technologies. *Electronic Journal of Social Sciences*, Summer 2011, 10(37), 120-134.

Topper, A. (2007). Are they the same? Comparing the instructional quality of online and face-to-face graduate education courses. *Assessment & Evaluation in Higher Education,* 32 (6), 681–691.

Tung, F. C., & Chang, S. C. (2008). An empirical investigation of students' behavioral intentions to use the online learning course websites. *British Journal of Educational Technology*, 39(1), 71-83.

Wang, L.C. & Morgan, W.R. (2008). Student Perceptions of Using Instant Messaging Software to Facilitate Synchronous Online Class Interaction in a Graduate Teacher Education Course. *Journal of Computing in Teacher Education*, Fall 2008, 25(1), 15-21.

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APPENDIX A: STUDENT PERCEPTION SURVEY

With the rise in online education, we are interested in gathering information as to student perceptions of educational methods. We would greatly appreciate you completing this anonymous form. Thank you!

Background Information:

What is your class level? Freshman (1) Sophomore (2) Junior (3) Senior (4) Graduate (5)	
Are you:	Male (1) Female (2)
Have you taken an online course at the University?	Yes (If yes, please complete ONLY SECTION A) (1) No (If no, please complete ONLY SECTION B) (2)

COMPLETE SECTION A ONLY IF YOU HAVE TAKEN AT LEAST ONE ONLINE COURSE AT THIS UNIVERSITY.

SECTION A: With respect to the online courses that you have taken at this University compared to face-to-face (traditional classrooms), please rate the following responses: (Please circle your response.)

How many online courses have you taken:	0 1 2 3 4 5 6 7 8 9 10+
Prior to taking an online course, did you take a course to prepare you for the online environment? (1) Yes (2) No If 'yes', was the course offered by this University or the book publisher? (1) University (2) Book Publisher (3) Other	
I perceive online courses to be_____in difficulty than face-to-face courses. (1) Significantly Easier (2) Easier (3) The Same Difficulty (4) Harder (5) Significantly Harder	
I am _____ motivated in online courses than face-to-face courses. (1) Significantly Less (2) Less (3) Equally (4) More (5) Significantly More	
I _____the interaction with other students in the online environment compared to the face-to-face course environment. (1) Significantly Dislike (2) Dislike (3) Equate (4) Like (5) Significantly Like	
I _____the interaction with the instructor in the online environment compared to the face-to-face course environment. (1) Significantly Dislike (2) Dislike (3) Equate (4) Like (5) Significantly Like	
I find the discipline required in taking online courses to be ____ than in face-to-face courses. (1) Significantly Less (2) Less (3) The Same (4) More (5) Significantly More	
I find its' ____to cheat in the online environment than in face-to-face courses. (1) Significantly Easier (2) Easier (3) The Same (4) Harder (5) Significantly Harder	
I enjoy the self-directed online learning environment__than the interaction in face-to-face courses. (1) Significantly Less (2) Less (3) Equally (4) More (5) Significantly More	
I enjoy the independence associated with the online learning environment____than the interaction in face-to-face courses. (1) Significantly Less (2) Less (3) Equally (4) More (5) Significantly More	
I enjoy the schedule flexibility associated with the online learning environment____than the interaction in face-to-face courses. (1) Significantly Less (2) Less (3) Equally (4) More (5) Significantly More	
I find online courses require____time investment in the course than face-to-face courses (1) Significantly Less (2) Less (3) Equally (4) More (5) Significantly More	
I find online courses total costs are ____than face-to-face courses. (1) Significantly Less (2) Less (3) Equally (4) More (5) Significantly More	
In the online environment, I feel these activities <u>increase</u> my understanding of the course material. (Circle all that apply) (1) Discussion boards (2) In-class sessions (3) Reading (4) Homework (5) Videos (6) Instructor lectures (7) Instructor chat (8) Other students (9) Problem Scaffolding & Hints	
In the online environment, I feel these activities <u>decrease</u> my understanding of the course material. (Circle all that apply) (1) Discussion boards (2) In-class sessions (3) Reading (4) Homework (5) Videos (6) Instructor lectures (7) Instructor chat (8) Other students (9) Problem Scaffolding & Hints	
Would you prefer to take the class in a traditional face-to-face environment? (1) Yes (2) Undecided (3) No	
I am ____with the online course environment for learning. (1) Not very happy (2) Not happy (3) Okay (4) Happy (5) Very happy	
Given this institution, do you think online courses are appropriate? (1) Yes (2) Undecided (3) No	
Why did you choose to take the course online?	

Thank you for your time! It is greatly appreciated.

COMPLETE SECTION B ONLY IF YOU HAVE NEVER TAKEN AN ONLINE COURSE AT THIS UNIVERSITY.

SECTION B: With respect to the face-to-face (traditional) courses that you have taken at this University compared to your perception of online courses, please rate the following responses: (Please circle your response.)

I perceive face-to-face courses to be_____in difficulty than online courses.   (1) Significantly Easier (2) Easier (3) The Same Difficulty (4) Harder (5) Significantly Harder
I would be _____ motivated in face-to-face courses than online courses.   (1) Significantly Less (2) Less (3) Equally (4) More (5) Significantly More
I perceive the interaction with other students in the face-to-face environment to be _____ compared to the online course environment.   (1) Significantly Worse (2) Worse (3) Equal (4) Better (5) Significantly Better
I perceive the interaction with the instructor in the face-to-face environment to be _____ compared to the online course environment. (1) Significantly Worse (2) Worse (3) Equal (4) Better (5) Significantly Better
I perceive the discipline required in taking face-to-face courses to be____than in online courses.   (1) Significantly Less (2) Less (3) The Same (4) More (5) Significantly More
I perceive that it would be ____to cheat in the face-to-face environment than in online courses.   (1) Significantly Easier (2) Easier (3) The Same (4) Harder (5) Significantly Harder
I believe that I would enjoy the self-directed face-to-face learning environment____than the interaction in online courses. (1) Significantly Less (2) Less (3) The Same (4) More (5) Significantly More
I believe that I would enjoy the independence associated with the face-to-face learning environment____than the interaction in online courses. (1) Significantly Less (2) Less (3) The Same (4) More (5) Significantly More
I believe that I would enjoy the schedule flexibility associated with the face-to-face learning environment____than in online courses. (1) Significantly Less (2) Less (3) The Same (4) More (5) Significantly More
I believe that face-to-face courses require____time investment in the course than online courses.   (1) Significantly Less (2) Less (3) The Same (4) More (5) Significantly More
I believe face-to-face courses total costs are ____than online courses.   (1) Significantly Less (2) Less (3) The Same (4) More (5) Significantly More
In the face-to-face environment, I feel these activities INCREASE my understanding of the course material. (Circle all that apply) (1) Discussion boards (2) In-class sessions (3) Reading (4) Homework (5) Videos (6) Instructor lectures   (7) Instructor chat (8) Other students (9) Problem Scaffolding & Hints
In the online environment, I feel these activities DECREASE my understanding of the course material. (Circle all that apply) (1) Discussion boards (2) In-class sessions (3) Reading (4) Homework (5) Videos (6) Instructor lectures   (7) Instructor chat (8) Other students (9) Problem Scaffolding & Hints
Would you prefer to take the class in an online environment?   (1) Yes   (2) Undecided   (3) No If 'no', why not?
I am ____with the face-to-face environment for learning.   (1) Not very happy (2) Not happy (3) Okay (4) Happy (5) Very happy
Given this institution, do you think online courses are appropriate?   (1) Yes   (2) Undecided (3) No

Thank you for your time! It is greatly appreciated.

Student Sales Presentations: The Online Challenge

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ABSTRACT

The Personal Selling class is a standard offering within the marketing curriculum and typically requires students to make some type of sales presentation. In a traditional classroom setting, sales presentations are usually made to the class as a group, or alternatively, made to another student in a role-play format where one student sells and the other acts as the prospective buyer. With the growth in online education the traditional methods of handling presentations are often no longer applicable. This paper proposes several alternatives for handling student sales presentations in an online setting, and then demonstrates how one of those methods had been used successfully in an adult online program. Results and conclusions are offered in regard to logistics, student attitudes, and course completion/retention.

Keywords: personal selling, student sales presentations, scripted presentations, student role play, telephone presentations, online courses, sales process, experiential learning

INTRODUCTION

Sales training has long been an important part of the marketing curriculum, due in part to the career opportunities offered in the selling profession (Calcich and Weibaker, 1992; Totten, 2010). Personal Selling textbooks as well as the course are usually organized around the selling process, which begins with prospecting and concludes with the close and after the sale follow-up. The heart of this process is the sales presentation where the product is explained and demonstrated, a sales proposition set forth, and a close attempted. As Richard Cox stated in the Journal of Marketing some sixty five years ago, "the most urgently needed sales training objective today is to do something that will enable the salesman, in the presence of the buyer, to give an effective, persuasive sales presentation (Cox, 1949).

Given the importance of the sales presentation, some form of student presentation is usually incorporated in a college level personal selling class. The purpose of the sales presentation is to give students an experiential learning experience where they apply and demonstrate the core concepts and principles of selling (Tyler, 2007, Serviere-Munoz, 2010). There are a variety of methods for conducting student sales presentations in a traditional class format. The method with the widest and longest use has been for each student to give a presentation to the class, or perhaps in the case of large classes, to a group from within the overall class. In some cases team selling may be allowed whereby more than one student will be involved in a particular presentation. Another option is to have students make a one-on-one presentation with the instructor. Needless to say, this method is not practical in large classes. In recent years two other methods have gained increased use. One of these is roll play, where students basically act out a presentation with one student having the roll of buyer and the other acting as the salesperson. Another option is to have students make a video recording of their presentation. This could be in a straight presentation or roll play format.

THE ONLINE CHALLENGE

Today's educational environment is undergoing a period of rapid change that is driven by changes in both culture and technology. Students want and even demand course delivery methods that are relevant, affordable, and convenient. In response, higher education is increasingly providing instruction through the use of nontraditional methods, in particular through the use of hybrid and complete online courses (Cummins et al., 2013; Alvarez, Taylor, and Rauseo, 2015). This is particularly true for business education where a significant adult market exists that demands flexibility in course delivery methods. The offering of online business courses is now a given and most schools have or are developing online programs.

Converting any class from a traditional to online format presents challenges, and the primary challenge for the Personal Selling class is what to do about the sales presentation. Given that students will not be physically present for the class, how can a sales presentation be conducted? Several options are apparent.

Scripting

Instead of conducting a presentation students write a script for how the presentation would be conducted. The script specifies words and actions for both the buyer and seller. This method allows considerable flexibility in the type of product and selling situation, forces the student to think about both the buyer and seller, and provides an easy to access and accurate record of the presentation. The disadvantage is that the student does not actually perform the presentation.

Live Online Presentation

An online presentation can be conducted using computers and cameras. This could be either to the instructor or to the class. The primary advantage of this method is that the student is making an actual live presentation. The primary disadvantage is the artificial nature of talking to a person on a computer rather than someone who is physically present. Another issue is the equipment and personnel required for making an online presentation, especially in cases where the presentation involves demonstration or action.

Video Recording

The presentation could be recorded and made available to the instructor and other class members. The student is still making an actual presentation, however a recorded presentation is not the same experience as a live presentation. In particular, there is no feedback from the prospect. As in the case of live online presentations, equipment and personnel can be problematical.

Telephone

The presentation is made to the instructor by telephone. This is a very common method of selling today and can be used along with other forms of communication such as email and fax. Sales people spend considerably less time today making in person calls and more time communicating by other means, including telephone. A live telephone presentation allows for two way communication so that the prospect can easily ask questions and make comments during the presentation. The main disadvantage of the phone presentation is that there is the lack of live visual content. However, the lack of visual content is also an advantage in that it provides for maximum flexibility in setting up selling scenarios fin regard to the product being sold and the buying situation. In addition, visual content can be included by other means such as email or fax. The telephone presentation is the method chosen by the authors for the Personal Selling class being currently offered online. Details about the implementation of the presentation follow.

TELPEPHONE PRESENTATION FOR ONLINE SECTION OF PERSONAL SELLING

In the fall of 2014 an online section of Personal Selling was launched with twenty two students. The course was restricted to students enrolled in the accelerated business degree program for working adults. Students were required to conduct a telephone sales presentation during the final week of the eight week course. The sales call also required preapproach and approach activities prior to the actual presentation. Details for the presentation requirements and instructions are described below .

Sales Presentation Scenario for Online Class

An organizational (B2B) scenario was employed per the following.

Your instructor has decided to retire next year and open a new type of sporting goods store. The new store will be called Service Pro Sporting Goods and will be very similar to national sporting goods chain stores, but with a critical difference – local ownership, personal attention and expert service. The store will be divided into several departments and will be full service with at least one expert sales associate on hand in every department at all times. These experts will be experienced in the associated sport and will also be experienced in personal selling.

With the store scheduled to open in the next few months, your instructor is currently lining up products and brands to carry in the store, and beginning to purchase the necessary equipment and supplies for opening the store. Your job as a sales person is to convince him to buy a particular product/product line/brand from you.

Product Choice

Students were allowed to choose their product to sell by posting to a class forum in accordance with the following instructions.

Choose a product/product line/brand to sell. If the item is a product/brand to be carried by the store for resale to others, you should base your choice on something that is carried by Dick's Sporting Goods. Examples would include a brand/product line of running shoes, golf clubs, baseball bats, or kayaks. If you go this route remember that you are selling to the store for resale and that you will need to provide information about the terms of sale (delivery, shipment, credit, markup, etc.) as well as information about the product. If you choose a brand/product that would be used in operating the store your choice should be based on something that is carried by Office Depot. Examples would include cash registers, computers, desks, chairs, fax machines, file cabinets and copiers.

You should carry this out by first checking on the Sales Presentation Product Forum to be sure that the product/brand you are wanting to use for your presentation has not already been chosen. As soon as you have a product/brand that has not been chosen, do a forum post of a brief description of what you will be selling along with reasons for your choice. You should then complete the Product Choice Form. Additional instructions are provided on the Moodle site.

Sales Call: Pre-approach, Approach, and Presentation: One of the advantages of using a one-on-one sales presentation scenario is that the pre-approach and approach can be incorporated with the actual presentation as part of the overall selling process. Instructions for these three steps follow.

Conduct pre-approach information gathering and planning. This will be done by gathering information about the store owner and the store. Sources would include the instructions for the project in this syllabus, the instructor's faculty web page, and the Moodle site for the course. In addition, and in accordance with Assignment 3, you should contact Mr. John Doe, who is a personal acquaintance of your prospective customer. Mr. Doe has agreed to assist you by providing information on the buying situation at the new store, as well as personal information about the decision maker. You can contact Mr. Doe by emailing him with up to ten questions you need answered for help in planning your approach and sales call. Please note that Mr. Doe is not an employee of the store and will not be able to give you specific details about the store but can provide general information about the store and detailed information about the buyer. You will then use this information for planning your approach and presentation. Additional instructions are provided on the Moodle site.

Conduct your approach by contacting your prospective customer to request permission for a sales call and presentation. This will be done in a twostep process similar to the one used for the choice of a product to present. Students will first go to the Sale Presentation Appointment Forum on Moodle and review the time slots that have been set aside and that are still available. After deciding on the desired time slot, your choice should be posted. You should then email the prospect with your formal request for an appointment (including specific day, date and time). Additional instructions are given on the Moodle site. Remember that your prospective customer is very busy and you will need to convince him that he needs to talk to you. You should be incorporating what you learned in number 2 and the principles covered in the course in making your approach.

Conduct your presentation by calling the buyer at the time and date you arranged in number 3. Your presentation/call should last ten to fifteen minutes and should incorporate the information you gained in the previous steps and the principles covered in this course.

IIMPLEMENTATION AND RESULTS

The online section of Personal Selling was successfully launched in Fall 2014. During the final week of the class each student conducted a telephone presentation with the instructor acting as a prospective buyer. From a logistical standpoint the class went much smoother than expected. Both the product choice process and the presentations were free of any significant problems. There were no complaints about any aspect of the assignment or course. All of the twenty two students who began the class completed the class, which is quite remarkable in an online offering. Two minor problems did surface and changes were made to deal with these. The first problem involved the pre-approach questions that were emailed to the instructor. Allowing ten questions by each student placed a considerable burden

on the instructor in terms of having to respond to the questions. Also many of the questions were trivial. Beginning in Fall 2015 students are only allowed to submit five questions in the pre-approach phase. Another problem, and one that had to be corrected during the course, was the scheduling of the appointments. The scheduling of presentations was originally set up for all presentations to be made during the instructor's regular office hours. As working adults, many of the students had work related conflicts and the presentation schedule was expanded to include evening and weekend slots.

Since this was the first time the class had been offered online, a brief survey was given to students at the end of the course. Key findings were that upon completion of the course students preferred the online format, felt that the sales presentation was beneficial, preferred the telephone format for making the presentation, and believed the amount of work required to be "about right." Respondent answer category percentages for all questions are listed below.

1. The overall organization of the course was:
Excellent: 46%   Good: 41%   Fair 13% Poor 0%   Very Poor 0%

2. Clarity of instructions:
Excellent : 41%   Good: 46%   Fair: 9%   Poor: 4%   Very Poor: 0%

3. Amount of work required:
Excessive: 5%   Too Much: 9%   About Right: 81%   Not Enough: 5%

4. This ADP section of this course should be offered as a:
Traditional Course: 11%   Hybrid Course: 39% Online Class: 50%

Not included above, 4 of 22 students checked all three formats

5. The sales presentation for this course should be:
None required: 14%   Scripted in writing but not actually presented: 14%
Over the phone: 63%   In person: 9%

6. Overall, how do you feel about the learning benefit of making the sales presentation?
Excellent: 32%   Good : 50%   Fair: 18%   Poor: 0%   Very Poor: 0%

7. Overall, how would rate this class?
Excellent: 37%   Good: 41%   Fair: 18%   Poor: 4%   Very Poor: 0%

CONCLUSIONS

Student sales presentations are an important component of the Personal Selling course and should be included in both online and traditional class formats. The use of an over the phone presentation methodology was demonstrated to be both effective and workable. All students who began the course successfully completed the course. Students expressed satisfaction with the course as a whole and the sales presentation requirement and format. Most importantly, incorporating the pre-approach and approach into overall sale call and presentation provided a more realistic frame work than what is usually the case with in class presentations or student roll play scenarios. The authors plan on continuing the telephone presentation for online sections of Personal Selling.

REFERENCES

Alvarez, C., Taylor, K., and Rauseo, N. (2015). Creating Thoughtful Salespeople: Experiential Learning to Improve Critical Thinking Skills in Traditional and Online Sales Education. *Society for Marketing Education Review*, Vol. 25, No. 3, pp. 233-242.

Calcich, S., and Weilbaker, C. (1992).Selecting the Optimum Number of Sales Presentations. *Marketing Education Review*, Vol. 2, Spring, pp. 31-33.

Cox, Richard (1949).Comments on a University Course In Salesmanship. *Journal of Marketing*, Vol. 13, Issue 3, pp. 366-368.

Cummins, S., Peltier, J. W., Erffmeyer, R. , and Whalen, J. (2013). A Critical Review of the Literature for Sales Educators. *Journal of Marketing Education*, Vol. 35, No 1, pp. 68-78.

Seriere-Munoz, Laura (2010). Programmatic Sales Scenarios and Evaluations: Incorporating the Experiential Learning Approach to Research, Development, and Grading of Sales Presentations. *Journal for Advancement of Marketing Education*, Vol. 17, Winter, pp. 112-117.

Totten, Jeff W. (2010). Using Real People as "Buyers" in Student Role Play Sales Presentations. *Society for Marketing Advances Proceedings,* January 1, pp. 150-152.

Tyler, Phillip R. (2007). Teaching Professional Selling: A Relationship Building Process. *Journal for Advancement of Marketing Education,* Vol. 11, Winter, pp. 31-34.

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Techniques for Closing the Loop in Accounting Pedagogy

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ABSTRACT

This research discusses "loop-closing" activities implemented by accounting programs in an assurance of learning context. Closing the loop refers to the process of using assessment data to implement actions that improve student learning. There is not yet any handbook or resource presenting a one-size-fits-all technique on closing the loop. Consequently, how to close the loop has become a priority for assessment committees, faculty and administrators, particularly for institutions subject to the requirement to meet accreditation standards. Here, data from self-assessment reports from 32 institutions of higher education is gathered and analyzed to identify the most significant loop-closing efforts undertaken and to facilitate analysis and discussion regarding the approaches used to close the loop in accounting education.

Keywords: Assessment, AACSB, closing the loop, accounting programs

INTRODUCTION

This paper documents and analyzes actions taken by various tertiary educational institutions to "close the loop" in their accounting programs. Closing the loop refers to the process of using assessment data to implement actions that improve student learning. The concept of closing the loop has become ubiquitous in academia, and is of particular interest to institutions seeking accreditation from the Association for the Advancement of Collegiate Schools of Business (AACSB). As the assessment plans of many accounting and business programs have reached a mature stage, there has been a shift in emphasis from program implementation and data-gathering to closing the loop. However, closing the loop is not an easy task. In fact, while many programs have collected sizeable amounts of assessment data, only a few have been able to document how this data has been used as a catalyst for change (Hatfield, 2009, p. 7). The emphasis on closing the loop is justified given the pressure from site teams conducting assessments for accreditation, which require programs to produce evidence of having closed the loop (Hatfield, 2009, p. 7).

RESEARCH DESIGN

The data on which this paper is based comes from self-assessment documents generated as part of the AACSB accreditation process. Specifically, self-assessment reports for business schools and accounting programs at 32 U.S. universities (26 public, 6 private) were analyzed. The reports' submission dates ranged between 2002 and 2013. The self-assessment reports were subjected to manifest content analysis, a research method in which verbal artifacts are analyzed for frequency of occurrence and context of their component parts (e.g., sentences, phrases, and words). This analysis is performed in order to infer the intention, meaning, and significance of the text (Berelson, 1971). Specifically, the self-assessment reports were searched for the words "loop," "close," "closing," and "assessment," and the explanatory text surrounding those terms was analyzed to reveal what initiatives were being described as loop-closing endeavors by the school or program in question.

DISCUSSION: HOW TO CLOSE THE LOOP IN ACCOUNTING EDUCATION?

The content analysis performed on the 32 self-assessment reports included in this study reveal that accounting programs have committed significant resources and efforts to closing the loop in four particular areas: (1) *professional responsibility*, (2) *accounting research*, (3) *technology skills*, and (4) *communication skills*.

Professional Responsibility
Business programs often require students to demonstrate understanding of ethics and professional responsibility as an achieved learning outcome. The focus on ethics is even more palpable in accounting education, where the wave of accounting and auditing scandals that occurred in the late 1990s and early 2000s forced programs to recognize the

need to emphasize professional ethics (Tennessee Technological University, 2006, p. 4.19). Consequently, accounting courses have become a fertile ground for increased activity toward closing the loop with respect to ethics and professional responsibility in particular.

Course-embedded assessments have become a useful tool to improve student learning of ethics and professional responsibility. For instance, the business program at the University of Texas–Tyler has embedded a learning simulation known as the "Ethics Game" into its Managerial Accounting course (Appendix L, p. 13). In the game, students are assigned a role in a company and given information concerning an ethical dilemma within the company. At each of three decision points in the simulation, they are asked to identify the best decision applying traditional ethical theories. Student scores in the ethics game may be compared among schools for benchmarking purposes.

In addition, business programs have developed new accounting courses that emphasize ethics and professional responsibility. For instance, Texas A&M University–Corpus Christi has developed a new graduate level course called Ethics for Accountants and Business Executives. The course covers ethical theory, ethical reasoning, integrity, objectivity, independence, regulatory issues, and corporate governance (2008, p. 91).

Beyond accounting courses, undergraduate and graduate business programs have closed the loop with respect to business ethics by fostering ethical conduct and integrity across the curriculum. In this regard, some business programs require students to abide by a code of ethics or code of conduct (Tennessee Technological University, 2006, p. 4.19). Further, Texas A&M University–Corpus Christi requires business students to complete a WebCT course entitled ''Student Code of Ethics & Plagiarism'' as a prerequisite to all upper-level core business courses (2008, p. 81).

Business ethics will likely remain a critical area for loop-closing in accounting due to the accountant's professional responsibilities and the regulatory requirements of the profession.

Accounting, Tax and Auditing Research
Research is an essential skill for accountants, as recognized by the American Institute of CPAs (AICPA). The AICPA *Financial Reporting Framework* (AICPA, 2005) states that students preparing to enter the accounting profession need to have strong research skills in order to access, understand, and apply relevant information. Similarly, the AICPA *Model Tax Curriculum* asserts that students preparing to enter the accounting profession should be able to draw supportable conclusions using research skills to gather facts, identify tax issues, analyze primary and secondary tax authorities, and recognize potential tax planning opportunities (2007, p. 2).

Closing the loop to improve students' research skills requires investing in research databases. For instance, the accounting program at Texas A&M University–Corpus Christi has allocated funding to provide accounting students access to the following databases: Wharton Research Data Systems (WRDS), Compustat for WRDS, CCH Accounting Research Manager, AICPA Professional Standards Online, and Westlaw (2008, p. 37). To improve students' research skills, accounting faculty require students to conduct research assignments using these databases throughout the curriculum.

Supplemental textbook resources can also be used to develop research skills. At the University of Rhode Island, students in Advanced Accounting are required to investigate financial reporting standards using the Financial Accounting Research System CD that accompanies the textbook *Mastery of the Financial Accounting Research System (FARS) Through Cases* (2008, p. 82). The CD simulates the research process that students need to employ when taking the CPA exam.

Curricular changes are also needed to improve students' research skills. For instance, assessment data at Florida Atlantic University revealed that Master of Taxation students were having problems conducting research to support decision-making (2013, p. 45). In response to this finding, the curriculum was modified to require a course in Tax Research early in the program by making it a pre- or corequisite for most graduate accounting courses. Faculty feedback suggests that this change had an immediate positive result, as students improved their ability to research case law, understand the Internal Revenue Code and Treasury Regulations, and apply their research skills.

In summary, the key role of research skills in the accounting profession requires accounting programs to continuously evaluate the benefits provided by existing and new research databases, maximize the use of

supplemental textbook resources, and provide incentives to professors, who require students to conduct research assignments in their courses.

Technology Skills
Given the impact of technology in the accounting profession, the AICPA Framework requires accounting programs to equip students with the skills necessary to use technology effectively and efficiently (AICPA, 2005). Accounting programs have responded by integrating various technological tools, especially related to information and communication technology (ICT), across the curriculum.

For instance, the University of Rhode Island has adopted the Simulated Case for Audit Decisions (SCAD), in its Auditing courses. SCAD is a simulation that provides hands-on exposure to the techniques and decisions that students will need to use and make in their auditing practice. The simulation uses eighteen months of transactions for a hypothetical client as an evidentiary source on the basis of which to perform audit procedures and document conclusions. Students are required to prepare memorandums discussing client risk and materiality and to perform tests of controls and substantive tests of account balances (University of Rhode Island, 2008, p. 81). Auditing courses at the University of Rhode Island also integrate Accounting Control Language (ACL), an audit and financial software package that provides experiential learning in data extraction, data analysis, fraud detection, and continuous control monitoring (2008, p. 81).

As employers increasingly demand students who have expertise in Microsoft Excel, business programs have implemented changes throughout the curriculum in response. For instance, the University of Wisconsin–Parkside has modified several courses: the core Management Information Systems course now includes more problems that require students to use Excel and Microsoft Project; students in Managerial Finance download and manipulate market data using Excel; and subsequently, students complete more complex Excel assignments in Advanced Statistics (University of Wisconsin–Parkside, 2010, p. 48).

Importantly, faculty must embrace technology if it is to enhance student learning to its full potential. By engaging accounting faculty, Texas A&M University–Corpus Christi has been successful in integrating technology across the curriculum. Accounting faculty now use ACL and Peachtree in Accounting Information Systems courses; IDEA in Forensic Accounting; Compustat and Audit Analytics in Advanced Auditing; and PowerPoint and Excel in Financial Accounting, Managerial Accounting, Governmental Accounting and Intermediate Accounting (2008, p. 38).

Closing the loop with respect to technological adaptability requires financial resources and faculty commitment to continuous technological learning. As technology advances, accounting and business programs must find ways to develop students' skills and determine how existing and new technologies should be integrated across the curriculum.

Communication Skills
The development of effective oral and written communication skills is commonly set as a target learning outcome among business programs. The AICPA Framework highlights the importance of communication skills, stating that students entering the accounting profession should have the skills necessary to give and exchange information within a meaningful context and with appropriate delivery (AICPA, 2005). Accounting programs play a key role developing students' communication skills through assignments that require listening, delivering presentations, and engaging in business writing.

The accounting curriculum at the University of Rhode Island emphasizes written and oral communication skills in three courses: Current Accounting Theory, Advanced Accounting, and Intermediate Accounting II (2008, p. 79). Students enrolled in Current Accounting Theory are required to prepare a research paper and present their conclusions in an oral final exam session. To develop the skills necessary for the final paper and presentation, students undertake short writing assignments throughout the semester. Most of these short assignments come from the *Wall Street Journal Accounting Educators' Review*. In Intermediate Accounting II, students work in groups on three written case assignments related to the concepts covered in the course, including: revenue recognition, pensions, leases and a final comprehensive case. Finally, in Advanced Accounting, students are required to prepare a written report on a case study dealing with goodwill impairment.

The University of Texas–Tyler (2012, p. 45) has implemented a pilot study in Managerial Accounting using a

learning tool called Write Experience available on a subscription basis for textbooks published by Cengage Learning. Write Experience gives students real-time feedback on draft versions of writing assignments and evaluates their final work using the same software used to score the analytical writing assessment section of the Graduate Management Admission Test (GMAT).

In addition, many accounting and business programs have developed their own resources to improve students' written and oral communication skills. For instance, the College of Business at Western Kentucky University (2012, p. 39) has developed a writing style guide for all business courses. The writing guide is available online in the College of Business website.

Closing the loop with respect to oral and written communications will likely remain a priority for accounting programs as employers seek to recruit students who can communicate effectively. To meet this challenge, accounting faculty have primary responsibility to find innovative ways to develop students' oral and written communication skills.

CONCLUSIONS

This research has identified and documented efforts undertaken by US accounting programs to close the loop in four learning areas, on the basis of the results of manifest content analysis. These efforts illustrate that continuous refinement is occurring of both curricular programs and assessment processes in accounting pedagogy. This study provides a reference point for accounting programs to benchmark their closing the loop activities.

However, this study is subject to some limitations. First is the issue of self-report: while the self-study reports indicate what administrators and faculty believe to be effective actions for closing the loop, there is still the risk that the practices described may be of only limited efficacy. These limitations might not be obvious to the self-reporting institutions because of an inherent bias to overestimate the value of their own efforts. Thus, future research might avail itself of an alternative data set, such as recommendation reports provided by visiting accreditation teams that, besides stating their recommendation regarding accreditation (itself valuable data) also highlight schools' strengths and weaknesses in terms of assessment and closing the loop. Additionally, the present data cover only 32 tertiary education institutions in the U.S., skewed towards public institutions. Ideally, future research will address this by using a larger data set.

Finally, this research has significant policy implications. A report by The Pathways Commission entitled *Charting a National Strategy for the Next Generation of Accountants* recently observed that accounting programs need to promote curricular flexibility to capture a new generation that is more technologically savvy and less patient with traditional teaching methods. (2012, p. 12). The report also concluded that there is a need for schools to engage AACSB and other accreditation bodies to pursue curricular and pedagogical innovation for the education of future accounting professionals. Evaluating the techniques discussed in this paper should assist accounting programs develop and implement their own loop closing activities.

REFERENCES

American Institute of Certified Public Accountants. (2005). Core Competency Framework & Educational Competency Assessment.
    Retrieved from http://www.aicpa.org/interestareas/accountingeducation/resources/pages/corecompetency.aspx
American Institute of Certified Public Accountants. (2007). Model Tax Curriculum.
    Retrieved from http://www.aicpa.org/InterestAreas/Tax/Resources/Pages/Model%20Tax%20Curriculum.aspx
Berelson, B. (1971). *Content Analysis in Communication Research*. New York: Hafner Publishing Company.
Florida Atlantic University. (2013). Accreditation Maintenance Report for AACSB International.
    Retrieved from http://business.fau.edu/our-college/accreditation/documentation/download.aspx?id=2692
Hatfield, S. (2009). Assessing Your Program-Level Assessment Plan. (IDEA Paper #45).
    Retrieved from The IDEA Center website: http://ideaedu.org/sites/default/files/IDEA_Paper_45.pdf
Tennessee Technological University. (2006). Fifth-Year Maintenance Report.
    Retrieved from http://www.tntech.edu/files/cob/strategicplanning/aacsb/final_college_report.pdf
Texas A&M University-Corpus Christi. (2008). Self Evaluation Report Standard by Standard Analysis.
    Retrieved from: https://tamucc.xitracs.net/sacs/submission/documents/9457.pdf
The Pathways Commission. (2012). Charting a National Strategy for the Next Generation of Accountants.
    Retrieved from http://commons.aaahq.org/posts/a3470e7ffa
University of Texas at Tyler. (2012). Fifth Year Maintenance Report.
    Retrieved from http://www.uttyler.edu/cbt/includes/Final%20AACSB%20Report-%20all.pdf
University of Rhode Island. (2008). Accreditation Report Accounting.
    Retrieved from http://www.cba.uri.edu/about/accreditation/reports/2008/URICBAMaintenanceReviewAccounting.pdf
University of Wisconsin-Parkside. (2010). Fifth Year AACSB International Accreditation Maintenance Report. Copy in possession of author.
Western Kentucky University. (2012). 5th Year Business Maintenance Report.
    Retrieved from: http://www.wku.edu/business/accreditation/documents/aacsb-5th-year-business-maintenance-report.pdf

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The Effect of Cooperative Learning on Students' Attitude in First-Year Principles of Accounting Course

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ABSTRACT

Prior studies on the effectiveness of cooperative learning techniques on accounting education have been mixed (Hite (1996), Caldwell, Weishar, & Glezen (1996), Lancaster & Strand (2001), Gabbin & Wood (2008), and Opdecam & Everaert (2012)). This study illustrates a way to implement cooperative learning to improve students' interest in learning accounting for a first year Principles of Accounting course. The implementation of cooperative learning is based on two lines of literatures: (1) the Cooperative Base Group (BG) discussed in Johnson, Johnson, & Smith (2006), and (2) student attention on learning discussed in MacManaway (1970), Bligh (2000), and Middendorf & Kalish (1996). In particular, the Cooperative BG is semester-length cooperative learning group with stable membership. At the beginning of the semester, Cooperative BGs are formed with team members selecting different roles within each team. *During the semester,* following student attention on learning literature, i.e., student attention on listening to lectures decreases overtime and about 80 percent of students find 20-30 minutes to be the maximum length of lecturing to which they can attend (Bligh (2000)), the instructor monitors BG-based in-class exercises after 20-30 minutes of lectures and/or illustrations for each class. The survey results show that even though students are neutral in "like" accounting, they agree that cooperative learning in BG helps them maintain interests and attention in accounting, which implies that attention-focused cooperative learning has a positive impact on students' interest in learning accounting.

KEYWORDS: Cooperative/collaborative learning, Instructional strategies, Student attitude, Higher education, Accounting

INTRODUCTION

This paper addresses the implementation of cooperative learning to improve students' attitude in learning accounting for a first year Principles of Accounting course. Cooperative learning has been shown to be an effective active-learning approach in college teaching. As Dewey (1938) suggested, individuals construct their knowledge through personal experience and interactions with the environment. The students discover knowledge and construct meanings through their interactions with instructor and classmates. Therefore, cooperative learning strategy tends to result in higher achievement, greater retention, high curiosity and interest in learning, positive attitudes, peer support, and liking of school (Miller & Hamblin (1963), Slavin (1980), Johnson & Johnson (1989), Michaelsen & Black (1994), Johnson et al. (2006), Johnson & Johnson (2009)).

In addition to that cooperative learning as an effective learning approach, both accounting practitioner and academia consider team work and interpersonal skills are important to be successful in accounting profession. For example, the Accounting Education Change Commission (AECC) (1990) recommended that "accounting graduates must possess communication skills, intellectual skills, and interpersonal skills" and "communication skills include both receiving and transmitting information and concepts, including effective reading, listening, writing, and speaking…Interpersonal skills include the ability to work effectively in groups and to provide leadership when appropriate." (AECC, p. 307)

The report by Albrecht & Sack (2000), sponsored by *American Accounting Association, American Institute of Certified Public Accountants, Institute of Management Accountants, and the Big 5 professional service firms (Arthur Andersen, Deloitte & Touche, Ernst & Young, KPMG, and PricewaterhouseCoopers)* raised the issue that accounting education did not expose students to the ambiguity in the business world that they face after graduation. "There is too much emphasis on memorization…We are reluctant to develop creative types of learning, such as team work, assignments with real companies, case analysis, oral presentations, role playing, team teaching, technology assignments, videos, writing assignments, involving business professionals in the class, and studying current events…" (Albrecht & Sack (2000), p. 53).

The American Institute of Certified Public Accountants (AICPA) developed a core competency framework for students that will be working in the accounting profession (American Institute of Certified Public Accountants (AICPA) (1999)[1]. The personal core competencies includes Interaction, Leadership, and Communication.

> *"Interaction: Accounting professionals must be able to work with others to accomplish objectives. This requires them to act as valuable business partners within organizations and markets and work in teams to provide business solutions. Thus, individuals entering the accounting profession should demonstrate an ability to work productively with individuals in a diversity of roles and with varying interests in the outcome."*

> *"Leadership: Individuals entering the accounting profession should be able to effectively lead in appropriate circumstances. This involves acquiring the skills needs to influence, inspire, and motivate individuals and groups to achieve results."*

> *"Communication: Accounting professionals are called upon to communicate financial and non-financial information so that it is understood by individuals with diverse capabilities and interests. Individuals entering the accounting profession should have the skills necessary to give and exchange information within a meaningful context and with appropriate delivery. They should have the ability to listen, deliver powerful presentations and produce examples of effective business writing."*

The core competencies identified in the AICPA's "CPA Horizons Report 2025: A Road Map for the Future"[2] included Communications and Leadership skills, that CPAs "are able to effectively exchange reliable and meaningful information, using appropriate context and interpersonal skills", "are adept at influencing, inspiring and motivating others to facilitate change and achieve excellence". (AICPA, 2011) In July 2012, the Pathways Commission, a joint project of the American Accounting Association and the American Institute of Certified Public Accountants, announced the release of its final report, which stated that:

> *"Accountants typically hold vital positions of trust with professional responsibilities to both internal and external users. Fulfilling those responsibilities requires technical competency and professional integrity. Competence entails more than technical knowledge. To be competent, an accountant must possess both technical knowledge and professional skills, such as the ability to apply knowledge in making reasoned judgments and to communicate effectively." (Pathways Commission (2012), p. 131-132)[3]*

Although both practitioner and academia consider team work, communication, and interpersonal skills to be essential for accounting graduates, incorporating team work in accounting curriculum is somewhat problem and leads to mixed results (e.g., Ravenscroft, Buckless, McCombs, & Zuckerman (1995); Hite (1996); Caldwell et al. (1996); Ciccotello, D'Amico, & Grant (1997); Ravenscroft & Buckless (1997); Lancaster & Strand (2001); Strand Norman, Rose, & Lehmann (2004); Clinton & Kohlmeyer III (2005); Hwang, Lui, & Tong (2005); Gabbin & Wood (2008); Opdecam & Everaert (2012)). For example, Caldwell et al. (1996) and Opdecam & Everaert (2012) found that students showed higher levels of satisfaction and more positive course experiences in cooperative sections than lecture-based sections in first-year undergraduate accounting course, while Lancaster & Strand (2001) and Gabbin & Wood (2008) did not find any significant performance or attitude differences between the lecture-based and cooperative learning based sections in managerial accounting course. In addition, prior cooperative learning literature in accounting education implemented the cooperative learning in different ways. For example, Hite (1996) *implemented* cooperative learning by asking students to retake the same three midterm exams in groups in the next class period following the individual exams on individual income tax course. Caldwell et al. (1996) *implemented* team learning by structuring learning activities to solve problems or produce a partial financial statement every other class period. Opdecam & Everaert (2012) *implemented* team learning during tutorials.

This study contributes to the literature by incorporating student attentions and brain research in implementation of cooperative learning in class. The implementation of cooperative learning is based on two lines of literatures: (1)

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[1] The full text of AICPA Core Competency Framework & Educational Competency Assessment can be found at: http://www.aicpa.org/interestareas/accountingeducation/resources/pages/corecompetency.aspx.
[2] The full text of the AICPA CPA Horizons Report 2025: A Road Map for the Future can be found at: http://www.aicpa.org/Research/CPAHorizons2025/DownloadableDocuments/cpa-horizons-report-web.pdf.
[3] The final report of the Pathways Commission can be found at http://commons.aaahq.org/files/0b14318188/Pathways_Commission_Final_Report_Complete.pdf.

the Cooperative Base Group (BG) discussed in Johnson et al. (2006), and (2) student's attention on learning. *First*, as argued by Johnson et al. (2006), a BG was a long-term cooperative learning group with stable membership. "The longer a cooperative group exists, the more caring their relationship will tend to be, the greater the social support they will provide for each other, the more committed they will be to each other's success, and the more influence members will have over each other (Johnson et al., 2006, p4:2). *Second*, studies on student attentions and brain research suggested that student attention in listening to lectures decrease overtime and about 80 percent of students find 20-30 minutes to be the maximum length of lecturing to which they could attend (MacManaway (1970), Bligh (2000), and Middendorf & Kalish (1996)). Based on the two lines of literatures, cooperative learning is implemented as follows. First, the students form cooperative base groups at the beginning of the semester. The instructor creates the cooperative base group file folders for each group, and asks the students to put their team members' names, team name, and slogan on the file folder cover. The group members are assigned different roles such as distributor, collector, checker, and note taker. During the semester, the instructor monitors team-based in-class exercises after 20-30 minutes of lectures and illustrations in each class session.

The Principles of Accounting I is the first accounting course in the college of business. This course is a business core course that is required for all business majors. It can also be used as a general education course for students in other colleges. The students that take the course ranges from freshman to senior, and mostly are not accounting major. Because of the technique nature of the course, many students tend to feel the class is boring (Mladenovic, 2000). To improve students' learning interests and positive perceptions of accounting, the cooperative BG is used in the in-class exercises for the entire semester. The end-of-semester survey results show that cooperative BG has a positive effect on student interests in learning accounting.

PRIOR LITERATURE

Cooperative learning has been considered one of the most successful stories that applies social and educational psychology to education practice (Johnson & Johnson (2009)). According to Slavin (1987), cooperative learning is "a set of instructional methods in which students work in small, mixed-ability learning groups" (p. 8). The theoretical foundation of cooperative learning is Social Interdependence Theory. The Social Interdependence Theory is operationalized in education discipline with various cooperative learning practices, such as Jigsaw, Think-Pair-Share, Pairs Check, Color-Coded Co-op Cards, and Numbered Heads Together (Kagan (1989), p.14), Team Assisted Individualization, Student-Teams Achievement-Divisions (Slavin (1978)), etc. Prior studies also show that there are certain essential conditions under which cooperative learning can be expected to improve student learning (Slavin (1987), Johnson, Johnson, Holubec, & Roy (1984), Johnson & Johnson (1999), Johnson, Johnson, & Holubec (2008)). Those conditions are: (1) Must have a *common goal* that is important to the group, (2) Must have a clear and complete set of directions or instructions. Instructor should provide clear direction and instruction on what students should do and in what order, (3) Clearly perceived *positive interdependence, i.e.,* students are connected to group members in such a way that they cannot succeed unless their group members do and they must coordinate their efforts with the efforts of their group members to complete a task, (4) Considerable *face-to-face promotive interaction; (5)* Clearly perceived *individual accountability* and *personal responsibility* to achieve the group's goals; (6) Frequent use of the relevant *interpersonal and small-group skills*. Students need to learn the importance of social skills such as trust-building, communication, support, and conflict management, and practice the social skills. (7) Frequent and regular *group processing* of current functioning to improve the group's future effectiveness. Group members should discuss how well they are achieving their goals and maintaining effective relationships, what member actions are helpful and unhelpful, and what behaviors to continue or change in the future.

Accounting literature of the effects of cooperative learning on student performance and perceptions have been mixed. In addition, the cooperative learning model has been implemented using different ways. For example, Hite (1996) *implemented* cooperative learning to ask students in the experimental sections retook the same three midterm exams in groups of three, one high, one low and one medium ability student, in the next class period following the individual exams on individual income tax course. The students were assigned to a different group for each of the three midterms. The three individual midterm exams were accounted for 150 possible points and the three group midterm exams accounted for another 150 possible points. The student peer evaluations of group members accounted for 30 points. In the control group, each midterm was 100 points for the individual performance. They found that students that took the group midterm exams did significantly better on the comprehensive final exam. In addition, student course evaluations were much higher for the group exam students than the individual exam

students. On the other hand, Gabbin & Wood (2008) replicated the work of Hite (1996), and found that neither the comprehensive final nor the cumulative individual exam scores were significantly different between the groups that took the group exams immediately after individual exams and the groups that left the testing site after the individual exams.

Caldwell et al. (1996) investigated the effect of cooperative learning on introductory accounting students' perceptions of accounting using pretest – posttest survey at the beginning and end of the semester. They *implemented* team learning by structuring learning activities to solve problems or produce a partial financial statement to include the five cooperative learning elements (Positive interdependence, Individual accountability, Promotive interaction, Interpersonal and small group skills, and Group processing) every other class period. The composition of the teams was changed twice during the semester. Survey results showed that students in cooperative learning sections maintained their interests in learning accounting, while students in traditional sections significantly reduced their interests in learning accounting. In addition, students in cooperative learning sections performed slightly better than on final exam than those in traditional sections.

Opdecam & Everaert (2012) compared the team learning and traditional lecture learning in a first-year undergraduate introductory financial accounting course. They *implemented* team learning during tutorials. Their post-experimental student questionnaires showed that students had significantly higher levels of satisfaction in the team-learning condition and a more positive course experience compared to those in the lecture-based condition. The team learning also led to higher grades on the final exam. Table 1 presents a summary of previous accounting studies on implementation of cooperative learning and the impacts on students' learning.

Table 1 Studies on Collaborative Learning

Study	Course	Collaborative Learning Implementation	Impacts on Attitude and Performance
Parry (1990)	Introductory financial accounting, MBA Level	Group study compared to individual study *outside* of class time. Students were required to submit time sheets on a weekly basis reporting their study efforts for the week.	Individual-study students spent *more* time studying alone and *more* total time studying, and performed *better* on the first exam than group-study students. There was no difference on the second exam.
Cottell Jr & Millis (1992)	Intermediate financial accounting	(1) Student groups reviewed homework problems and cases *in class*. (2) "Quality control circle", consisting of two student-elected representatives, met with the instructor frequently during the semester. (3) "Cooperative learning review" that students' questions would be answered by team members. Students that came to class either asked a question or wrote an exam question.	The mean and median of the comprehensive final exam were about 4 points *higher* for the cooperative learning students. However, no test was examined.
Ravenscroft et al. (1995)	Accounting principles	Students were assigned to study groups and *graded* based on both individual score (70%) and group average (30%).	The students' cumulative exam scores, unannounced quizzes, and final exam grades were significantly *higher* than those students graded based on individual performance only.

Table 1 continued on next page

Table 1 continued: Studies on Collaborative Learning

Caldwell et al. (1996)	Accounting principles I & II	Structuring learning activities to solve problems or produce a partial financial statement *every other class period*.	(1) Survey showed that students began with positive perceptions of accounting. At the end of semester, students in cooperative learning sections maintained the positive perceptions while students in traditional lecture sections significantly reduced their interests in accounting. (2) The mean final exam score for cooperative learning students was marginally higher than control section for Accounting principles I, but not for Accounting principles II.
Hite (1996)	Individual income tax	Students retook the same three midterm exams in groups in the next class period following the individual exams on individual income tax course	Students participated in group exams scored *higher* on final exam, and gave *better* teaching evaluations, e.g., courses was mentally challenging, teacher was fair and impartial, and teacher was an outstanding teacher.
Ciccotello et al. (1997)	Managerial accounting	For the first and third six-weeks of the semester, all students participated in group problem-solving workshops. For the second six weeks, the treatment group participated in individual problem-solving workshops, while the control group continued in group problem-solving workshops.	There were no significant differences between the treatment group and control group on the first and third exams. However, the students in group problem-solving workshops received significantly *higher* exam scores than the individual-study students on the second exam.
Lancaster & Strand (2001)	Managerial accounting	Student groups presented assigned chapter at the beginning of class about 15 minutes. This was followed by instructor discussions. Students then worked on assigned homework in groups.	*No* significant difference in final exam scores and student perceptions, such as "instructor is a good educator", "objectives of this course is clear", "my interest in subject matter has been stimulated", etc.
Clinton & Kohlmeyer III (2005)	Cost accounting	Ten quizzes were given to the students immediately following the lecture. Students completed the quizzes individually and then as a group. The quizzes were *graded* based on the average of the individual and group quiz scores.	*No* significant difference in final exam scores, but the students that took group quizzes provided higher teaching evaluations.
Gabbin & Wood (2008)	Intermediate accounting II	Students retook group exams immediately after individual exams.	*No* significant difference in comprehensive final exam scores.
Opdecam & Everaert (2012)	Introductory financial accounting II, Belgium	Team-based tutorial sessions.	Survey results showed that team-based tutorials resulted in *higher* level of satisfaction, *more* positive course experience. Team-based tutorials also led to *higher* exam grade in financial accounting II.

The present study contributes to the literature by incorporating studies on student attentions and brain research, which suggests that student attention in listening to lectures decrease overtime and about 80 percent of students find 20-30 minutes to be the maximum length of lecturing to which they can attend (Bligh, 2000). By implementing

cooperative BG in-class exercises after 20-30 minutes of lectures and illustrations in each class session, this study attempts to examine the effect of the cooperative learning on students' attitude in learning accounting.

METHOD

The principles of accounting I – Financial Accounting (ACT 211) is a business core course and required by all business students. The Principles of Accounting I provides students a basic understanding of accounting and how to use accounting information to make business decisions. Topics covered in the course include basic accounting concepts and procedures through the analysis, classification, recording, and summarizing of business transactions; preparation and analysis of the major financial statements; and recording and reporting the major components of the statements, such as cash, receivables, inventories, long-lived assets, payables, notes, bonds, equity, and investments. Because of the technical nature of the course, many students tend to feel the course is boring and have negative attitudes towards accounting (Mladenovic, 2000).
In prior semesters, this course was taught in blended learning format. The course assessment methods included (1) before-class online quizzes, (2) in-class exercises, (3) after-class online homework assignments and online quizzes, (4) two midterm exams and one final exam, and (5) an individual writing project. Among the assessments, the in-class exercises were done individually. In fall 2014, the cooperative learning model was used for in-class exercises.

The cooperative learning model was developed in the hope that it might improve the students' interests in learning accounting. Cooperative learning is different from small group learning. Johnson et al. (2006) suggested that there should be five essential elements in order for cooperative learning to work well. These include (1) positive interdependence, i.e., group members perceive that they are linked with each other in a way that one cannot succeed unless everyone succeeds. (2) Individual accountability, i.e., each member must be accountable for contributing his or her share of the work. (3) Promotive interaction, i.e., members share resources and help, support, encourage, and praise each other's efforts to learn. (4) Interpersonal and small group skills, i.e., group members must know how to provide effective leadership, decision-making, trust building, communication, and conflict-management skills. (5) Group processing, i.e., members discuss how well they are achieving their goals and maintaining effective working relationships.

The cooperative BG is formed at the beginning of the semester. The instructor creates standard BG file folder for each group.   The BG file folders include team Members, Majors, Roles, Emergency Phone Numbers, and Assignment Checklist, as shown in Appendix A. As discussed in Johnson et al. (2006), the team roles ensure the positive interdependence among the team members. The roles in the BG used in principles of accounting I class are Distributor, Collector, Checker, and Note Taker. Their responsibilities are as follows.

Team roles	Responsibilities
Distributor	Gets BG folder and other materials each class session and distributes them to the members.
Collector	Collects assignments from BG members that are due and places them in the folder.
Checker	Checks off assignments for each member using the checklist provided in the folder.
Note taker	Makes sure everyone get the necessary notes, assignments, hand-outs, etc. in case they are absent.

A typical class is structured in the following way. At the beginning of the class session, the **distributor** goes to the instructor's desk, picks up the group folder, and hands out the graded in-class exercises from last class in the folder to the appropriate members. During class, the instructor introduces the new topic, discuss the relation between the new topic and prior topics, how the new topic fits into the whole course structure, and the details of the new topic. The instructor then provides students with examples to apply the concepts in the topic. As students become more familiar with the new topic, they will be asked to work on similar exercises in the previously formed cooperative BG. The instructor walks around the classroom and actively monitors the team work process and provide help if needed.   Students are encouraged to teach group members their answers to promote faced-to-face promotive interaction. After they reach agreement, each student needs to write and turn in his own work to ensure individual accountability.   After the in-class exercise, the **checker** checks off assignments for each member using the Assignment Checklist provided in the folder. The **collector** collects the in-class exercises from each member, places them in the folder, and returns the folder to the instructor's desk. The **note taker** makes sure that team members gets the necessary notes, assignments, hand-outs, etc. in case they are absent. At the end of semester, each member

will receive 1 extra credit if all members of the group complete 80 percent of the in-class exercises. In addition, each member receives 1 extra credit for any of the three exams if the exam grades for all team members are above 80%. The extra credit policy strengthens the positive interdependence of team work. Overall, the BG provides direct communication between students and the instructor.

MEASURES

This study uses student survey to examine the effect of the cooperative learning on students' interest in learning accounting. At the end of the semester, the instructor surveyed students to determine their perceptions of the cooperative learning class. The survey uses a 5-point Likert-type scale, with students selecting a number between 1 (*strongly disagree*) and 5 (*strongly agree*) to express their perceptions of their experiences. The survey questionnaire contains ten questions excluding demographic questions as shown in the attached Appendix B, including questions such as I like accounting; I enjoy group work in accounting class; group work helps me to maintain my interest and attention in accounting class; group work makes the learning experience easier; group work in accounting class is very effective, etc.

RESULTS

Figure 1 shows that the means of survey statements are greater than 4.00 except items 1 and 3. This results suggest that even though students are neutral in "like" accounting (the mean of question 1 is 3.81), they agree that cooperative learning in BG helps them maintain interests and attention in accounting. The only exception is question 3, I would like to work in groups when doing accounting homework outside of class time, which averages 3.68. The neutral result may due to the fact that students were not asked to work in groups outside of class time.

Figure 1. Mean of Survey Statements
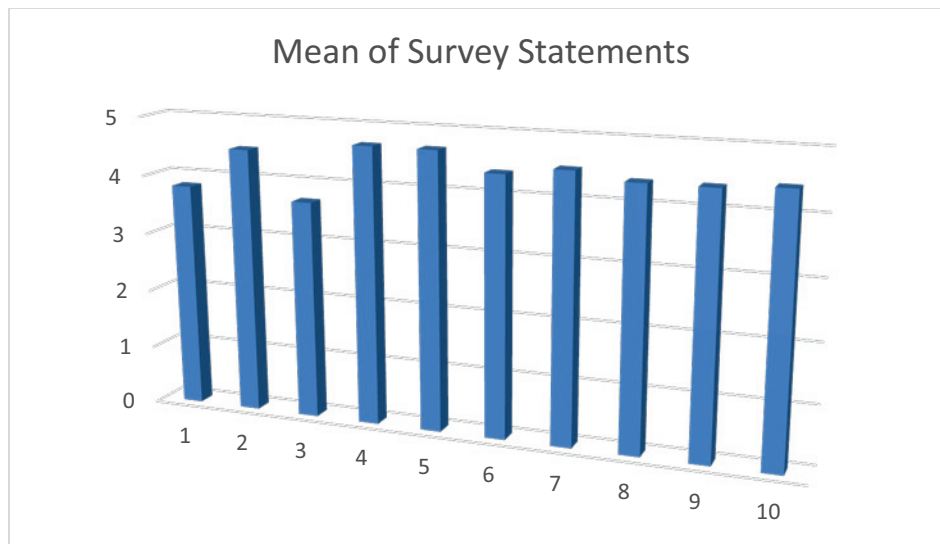
Note: survey statements 1 – 10 are as follows:
1. I like accounting.
2. I enjoy group work in accounting class.
3. I would like work in groups when doing accounting homework outside of class time.
4. I do my fair share of work during a group project.
5. I am able to provide constructive feedback to others in group.
6. Group work in accounting class encourages me to participate more in class.
7. Group work helps me to maintain my interest and attention in accounting class.
8. I learn less when working in groups in accounting.
9. Group work makes the learning experience easier.
10. Groups work in accounting class is very effective.

CONCLUSION

This paper illustrates a simple way to implement cooperative learning in the first year principles of accounting course and examines whether it improves students' interests in learning accounting. The implementation of cooperative learning is based on two lines of research, (1) cooperative BG is a long-term cooperative learning group with stable relationship that provide greater social support and more caring of their relationship; and (2) student attentions in listening to lectures decrease overtime and the maximum lecturing time that students could focus attention is 20-30 minutes. The survey results show that cooperative BG has a positive effect on student interests in learning accounting even though they are neutral in whether they like accounting.

Appendix A

Cooperative Base Group

Names	Major	Role	Emergency Phone Number
		Distributor	
		Collector	
		Checker	
		Note Taker	

Distributor: Gets BG folder and other materials each class session and distributes them to the members.
Collector: Collects assignments from BG members that are due and places them in the folder.
Checker: Checks off assignments for each member using the checklist provided in the folder.
Note Taker: Makes sure everyone gets the necessary notes, assignments, hand-outs, etc. in case they are absent.

ASSIGNMENT CHECKLIST

Checker: Place a √ next to each assignment when it is submitted.

Assignments	Base Group Members			
In-Class Exercise 1				
In-Class Exercise 2				
In-Class Exercise 3				
In-Class Exercise 4				
In-Class Exercise 5				
In-Class Exercise 6				
In-Class Exercise 7				
In-Class Exercise 8				
In-Class Exercise 9				
In-Class Exercise 10				
In-Class Exercise 11				
In-Class Exercise 12				
Team Extra Credit based on In-Class Exercise*				
Team Extra Credit based on exam 1**				
Team Extra Credit based on exam 2**				
Team Extra Credit based on exam 3 (final exam)**				

* All team members completed 80% of In-Class Exercise.
** The exam grades for all team members are above 80%.

Appendix B

Cooperative Learning Survey

**Directions: After reading each statement, please place a check on the line
which best reflects your level of agreement or disagreement.**

SECTION I:
1. Age:
☐ Under 20 ☐20 – 25 ☐ 26 – 30 ☐ Over 30

2. Gender:
☐Male
☐Female

3. What is your area of study?
☐Accounting
☐Business major except accounting
☐Other majors

4. To which year group do you belong?
☐1 ☐2 ☐ 3 ☐ 4

	disagree	somewhat disagree	neutral	somewhat agree	agree
1. I like accounting.	_____	_____	_____	_____	_____
2. I enjoy group work in accounting class.	_____	_____	_____	_____	_____
3. I would like work in groups when doing accounting homework outside of class time.	_____	_____	_____	_____	_____
4. I do my fair share of work during a group project.	_____	_____	_____	_____	_____
5. I am able to provide constructive feedback to others in group.	_____	_____	_____	_____	_____
6. Group work in accounting class encourages me to participate more in class.	_____	_____	_____	_____	_____
7. Group work helps me to maintain my interest and attention in accounting class.	_____	_____	_____	_____	_____
8. I learn less when working in groups in accounting.	_____	_____	_____	_____	_____
9. Group work makes the learning experience easier.	_____	_____	_____	_____	_____
10. Groups work in accounting class is very effective.	____	_____	_____	_____	_____

REFERENCES:

Accounting Education Change Commission (AECC). (1990). Objectives of Education for Accountants: Position Statement Number One. *Issues in Accounting Education, 5*(Fall), 307-312.

Albrecht, W. S., & Sack, R. (2000). *Accounting Education: charting the course through a perilous future* (Vol. 16). Sarasota, FL: AAA.

American Institute of Certified Public Accountants (AICPA). (1999). AICPA Core Competency Framework for Entry into the Accounting Profession. New York, NY: AICPA.

American Institute of Certified Public Accountants (AICPA). (2011). CPA Horizons Report 2025: A Road Map for the Future. Sarasota, FL: AICPA.

Bligh, D. A. (2000). *What's the use of lectures*. San Francisco: Jossey-Bass.

Caldwell, M. B., Weishar, J., & Glezen, G. W. (1996). The effect of cooperative learning on student perceptions of accounting in the principles courses. *Journal of Accounting Education, 14*(1), 17-36. doi: http://dx.doi.org/10.1016/0748-5751(95)00032-1

Ciccotello, C. S., D'Amico, R. J., & Grant, C. T. (1997). An empirical examination of cooperative learning and student performance in managerial accounting. *Accounting Education, 2*(1), 1-8.

Clinton, B. D., & Kohlmeyer III, J. M. (2005). The effects of group quizzes on performance and motivation to learn: Two experiments in cooperative learning. *Journal of Accounting Education, 23*(2), 96-116. doi: http://dx.doi.org/10.1016/j.jaccedu.2005.06.001

Cottell Jr, P. G., & Millis, B. J. (1992). Cooperative learning in accounting. *Journal of Accounting Education, 10*(1), 95-111.

Dewey, J. (1938). *Experience and education*. New York: Collier Macmillan.

Gabbin, A. L., & Wood, L. I. (2008). An Experimental Study of Accounting Majors' Academic Achievement Using Cooperative Learning Groups. *Issues in Accounting Education, 23*(3), 391-404. doi: 10.2308/iace.2008.23.3.391

Hite, P. A. (1996). An experimental study of the effectiveness of group exams in an individual income tax class. *Issues in Accounting Education, 11*(1), 61.

Hwang, N.-C. R., Lui, G., & Tong, M. Y. J. W. (2005). An Empirical Test of Cooperative Learning in a Passive Learning Environment. *Issues in Accounting Education, 20*(2), 151-165. doi: doi:10.2308/iace.2005.20.2.151

Johnson, D. W., & Johnson, R. T. (1989). *Cooperation and competition: Theory and research*. Edina, MN, US: Interaction Book Company.

Johnson, D. W., & Johnson, R. T. (1999). Making Cooperative Learning Work. *Theory into Practice, 38*(2), 67-73. doi: 10.2307/1477225

Johnson, D. W., & Johnson, R. T. (2009). An Educational Psychology Success Story: Social Interdependence Theory and Cooperative Learning. *Educational Researcher, 38*(5), 365-379.

Johnson, D. W., Johnson, R. T., & Holubec, E. J. (2008). *Cooperation in the classroom* (8th ed.). Edina, MN: Interaction Book Company.

Johnson, D. W., Johnson, R. T., Holubec, E. J., & Roy, P. (1984). *Circles of Learning Cooperation in the Classroom*: Association for Supervision and Curriculum Development.

Johnson, D. W., Johnson, R. T., & Smith, K. A. (2006). *Active Learning: Cooperation in the College Classroom* (third ed.). Edina, MN: Interaction Book Company.

Kagan, S. (1989). The Structural Approach to Cooperative Learning. *Educational Leadership, 47*(4), 12.

Lancaster, K. A. S., & Strand, C. A. (2001). Using the Team-Learning Model in a Managerial Accounting Class: An Experiment in Cooperative Learning. *Issues in Accounting Education, 16*(4), 549-567.

MacManaway, L. A. (1970). Teaching methods in higher education–innovation and research. *Higher Education Quarterly, 24*(3), 321-329. doi: 10.1111/j.1468-2273.1970.tb00346.x

Michaelsen, L. K., & Black, R. H. (1994). Building learning teams: The key to harnessing the power of small groups In higher education. In S. Kadel & J. Keehner (Eds.), *Collaborative Learning: A Sourcebook for Higher Education* (Vol. 2). State College, PA: National Center for Teaching, Learning and Assessment.

Middendorf, J., & Kalish, A. (1996). The "Change-Up" in Lectures. *National Teaching and Learning Forum, 5*(2).

Miller, L. K., & Hamblin, R. L. (1963). Interdependence, Differential Rewarding, and Productivity. *American Sociological Review, 28*(5), 768-778

Mladenovic, R. (2000). An investigation into ways of challenging introductory accounting student's negative perceptions of accounting. *Accounting Education, 9*(2), 135-155.

Opdecam, E., & Everaert, P. (2012). Improving Student Satisfaction in a First-Year Undergraduate Accounting Course by Team Learning. *Issues in Accounting Education, 27*(1), 53-82.

Parry, R. W., Jr. (1990). The Impact of Assigned Study Groups on Study Effort and Examination Performance. *Issues in Accounting Education, 5*(2), 222-239.

Pathways Commission. (2012). The Pathways Commission - Charting a National Strategy for the Next Generation of Accountants. Sarasota, FL: AAA/AICPA.

Ravenscroft, S. P., & Buckless, F. A. (1997). Student team learning--replication and extension. *Accounting Education (10854622), 2*(2), 151-173.

Ravenscroft, S. P., Buckless, F. A., McCombs, G. B., & Zuckerman, G. J. (1995). Incentives in student team learning: An experiment in cooperative group learning. *Issues in Accounting Education, 10*(1), 97.

Slavin, R. E. (1978). Student teams and comparison among equals: Effects on academic performance and student attitudes. *Journal of Educational Psychology, 70*(4), 532-538. doi: 10.1037/0022-0663.70.4.532

Slavin, R. E. (1980). Cooperative Learning. *Review of Educational Research, 50*(2), 315-342

Slavin, R. E. (1987). Cooperative Learning and the Cooperative School. *Educational Leadership, 45*(3), 7.

Strand Norman, C., Rose, A. M., & Lehmann, C. M. (2004). Cooperative learning: resources from the business disciplines. *Journal of Accounting Education, 22*(1), 1-28. doi: http://dx.doi.org/10.1016/j.jaccedu.2004.01.001

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Total Enterprise Simulations as a Pedagogical Tool to Improve System Dynamics Thinking

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ABSTRACT

In this paper, we argue that the type of business management simulation known as total enterprise simulations can and should be used as an experiential tool to teach systems dynamics theory. These types of games simulate the dynamic complexity of cross-functional decision-making within a competitive industry. Although the most popular management simulations do not explicitly incorporate system dynamics theory, we propose that the implicit characteristics of system dynamics in these simulations have powerful learning potential. We also claim that the key characteristics of system dynamics are non-intuitive, and therefore are more easily learned in experiential exercises such as simulations.

Keywords: Systems dynamics; Total Enterprise Simulations; Management Education.

Approximately 98% of U.S. business schools accredited by the Association to Advance Collegiate Schools of Business (AACSB) use business simulations to teach management skills (Faria & Nulsen, 1998.) These business management simulations have been found to effectively introduce business concepts, inculcate a cross-functional understanding of business, build team skills, enable better translation of data into information, and improve overall decision-making skills (Kulkarni & Sivaraman, 2013). Other advantages of using business simulations in management education are the ability to have students practice leadership, decision-making, and effective communication (Salas et al., 2009). Wolfe (1997) examined empirical studies and concluded simulations often lead to superior learning outcomes compared to other training methodologies. However, as Salas et al. (2009) noted, most of the literature on simulations in management education is descriptive not prescriptive and does not provide guidance on how to best develop skills in management students.

We will argue in this paper that the type of business management simulation known as total enterprise simulations (TES) or top management simulation games can and should be used as an experiential tool to teach system dynamics theory. These types of games simulate the dynamic complexity of cross-functional decision-making within a competitive industry. We focus here on computer based simulation-based training, conceptualized by Salas et al. (2009, p. 560) as "any synthetic practice environment that is created in order to impart these competencies (i.e., attitudes, concepts, knowledge, rules, or skills) that will improve a trainee's performance. Simulation-based training is just one training approach that particularly focuses on providing trainees with the opportunities to develop and practice the required competencies and receive feedback."

Although the most popular management simulations do not explicitly incorporate system dynamics theory, we propose that the implicit characteristics of system dynamics in these simulations have powerful learning potential. We also claim that the key characteristics of system dynamics- multiple feedback cycles, time delays, the differences between stocks and flow make, and nonlinearities- are non-intuitive and therefore are more easily learned in experiential exercises such as simulations. Indeed, Sterman (2000) asserts that the alternative to simulations is rote learning, which stunts the skills needed to learn about systems complexity. This paper has three components. First, we present system dynamics theory and its application to simulations. Second, we analyze the characteristics of the most popular TES simulations and their primary characteristics that exhibit systems dynamics. And finally, we discuss the implications for enhancing student decision-making.

SYSTEM DYNAMICS THEORY

In complex systems such as organizations, one solution to finding high leverage policies is systems thinking (Sterman, 2001). A system is defined as a collection of elements that continually interact over time to form a unified whole, while system dynamics is a methodology used to understand how systems change over time (Martin, 1997). It emphasizes the relationships among the components, for example, understanding how many smaller

systems, subsystems, present in the larger context, rather than the independent constituents themselves (Gregory & Miller, 2011).

Both business organizations and the economy in which they operate exhibit features of complex systems. One of the tasks of business education then should be educating students in the management of complex systems. Business schools, however, face a number of challenges to incorporating a systems thinking perspective in post-secondary business education. These include the compartmentalization of the business curriculum and the a-contextual nature of business education (Washington et al. 2014).

System dynamics simulations have a long history in management education. Originally developed at MIT, the Beer Game has been widely used since the 1960s. Other simulations explicitly developed to incorporate system dynamics have been created by John Sterman at MIT and colleagues as well. However, these simulations are not Total Enterprise Simulations: they do not provide a rich functional setting for the practice of managerial decision-making. Business organizations and the environment in which they compete is rich in complexity, comprised of interconnected organizational elements with nonlinear feedback loops, and needs a systems approach to be effectively modeled (Gold 2003).

Characteristics specific to business organizations would include (Qudrat-Ullah 2010):

1. Explicit representation of feedback processes and interaction between the system variables in and across various functional entities such as human resources, research and development, finance, accounting, marketing, and operations.
2. Explicit modeling of the delays arising from inventory, cash and other state variables.
3. Explicit representation of non-linear relationships between the firm's strategic decisions and market reactions.

Indeed, assessing the degree to which systemic thinking is developed through total enterprise simulations is necessary to measure the effectiveness of these simulations in the business curriculum (Washington et al. 2014). Washington et al. (2014) studied the level of systemic thinking that undergraduate students in a first-year business course developed during the use of a business simulation, and found that students who start with a low level of systemic thinking show an increased level of systemic thinking as the simulation progressed. However, these students were provided intervention intended to help their systemic thinking, so it's not clear whether the simulation itself caused the effect. They also found a positive relationship between systemic thinking and organizational performance both in the short and long run.

Humans make poor decisions even in a fairly simple dynamic system (Kpainsky & Saldarriago, 2012). In complex systems, however, the decisions are even poorer, as we tend to make decisions using mental models that are far too static, narrow, and reductionist (Sterman, 2001). In particular, the most problematic elements of human decision-making in dynamic system are feedback, time delays, stocks and flows (accumulations), and nonlinearity (Sterman, 2001).

The difficulties of decision-making in dynamic business organizations under conditions of ambiguous and non-transparent feedback include the inability to conduct the typical experimental scientific approach where one varies one input (independent variable) at a time to observe effects in outputs (dependent variable) to make inferences about causality (Bakken, 2008). Bakken (2008) notes research in System Dynamics coursework has mixed effects on the efficacy of dynamic decision-making, "ranging from modestly positive to modestly negative" (p. 497). We follow other researchers (Forrester, 2007) in proposing massive use of simulation analysis as the primary remedy.

SYSTEM DYNAMICS CHARACTERISTICS OF TES

We now turn to identifying the specific characteristics of TES that relate to System Dynamics. For the elements of SD we list below Sterman's (2001, p. 12, Table 2) systems factors leading to dynamic complexity. For each factor, we describe how TES applies.

• **Constantly Changing:** Most total enterprise simulations begin with each company facing the same internal and external factors, i.e., they begin from the same starting position. This is done to establish a sense of fairness within the competitive context. However, after the first set of decisions, the industry typically undergoes tremendous change (the simulated companies occupy very different positions within the industry.) This change continues

throughout the simulation in largely unpredictable ways, due to the large number of decisions made and their non-transparency among competitors.

• **Tightly Coupled:** Part of the coupling occurs due to the interactions among competitors within the industry. There are actions and reactions to those actions by each individual company within the industry. In addition, within each company there are cross-functional interactions that provide complexity. For example, if R&D engineers a new specification for an existing product, marketing must determine the effect on customers and the likely sales forecasts and promotional and distribution budgets that arise from these effects. Production needs to adjust its production schedule together with planning for capacity changes in the future to meet demand. Finance must adjust its capital structure to account for the level and volatility that these demand changes require.

• **Governed by Feedback:** Because of tight couplings among actors, our actions feedback on each other, triggering other actors to react and sometimes radically reorder the competitive dynamics (Sterman, 2001). A common example in business simulations are the swings that frequently occur between seller and buyer's markets. If an industry as a whole has too little production to meet demand, a seller's market occurs. Depending on the price elasticity, the profitability of the industry as a whole can be either detrimental or beneficial to company profits. However, a seller's market incentivizes each individual company to produce more the next period, due to feedback effects. This effect then leads to a buyer's market (greater supply than demand,) which hinders industry profits due to high inventory carrying costs. These feedbacks can cause great volatility and unpredictability in the industry and leads to complex dynamical system failure.

• **Nonlinear:** Causation is rarely directly related to effects because what happens locally in a system (e.g. in one business function) often does not apply to other functions (Sterman, 2001). Simulations have many underlying algorithms that exhibit nonlinearities. These can be written explicitly into the programs themselves, for example, increasing plant automation will increase efficiency up to a point where R&D reengineering will become so difficult that additional units of automation lead to decreases in firm efficiency. Firm bankruptcy is another example: many investments are worthwhile when cash levels are high, but become increasingly unattractive as cash levels move lower and lower to the zero bound (and payoffs shift again with various negative cash balances.)

• **History-Dependent:** Another feature of complex systems is the effects of initial actions are often highly consequential and unpredictable. Path dependence and irreversibility are two such effects. One characteristic of business simulations is the wide variety of industry evolutions despite identical starting conditions. For example, a single bold firm's discontinuation of product lines can lead to above average profits over the course of the simulation, while the opposite initial move, i.e., boldly entering new product lines, may lead to negative profitability many rounds of play later.

• **Self-Organizing:** The internal structure of an organization directly influences the dynamics of systems. The so called butterfly effect, where small random perturbations are amplified and unpredictably molded by the feedback structure generates new patterns of complexity (Sterman, 2001). The previous example of varying industry structures based on initial actions is an example of these self-organization phenomena.

• **Adaptive:** The dynamic change of complex systems over time hinders adaptation of business organizations. Therefore, learning which may have been adaptive previously, can later lead to failure. Despite varying industry evolutionary paths, the adaptation of competitors mean that a company's learning may no longer be appropriate, i.e. maladaptive. Simulations can model these situations much more readily than simply rote student learning of business lessons.

• **Characterized by Trade-Offs:** An overreliance on short term-ism can lead to short term gains at the expense of long term improvement. Within simulations, many companies over-experiment. Changing many variables in a single period, combined with the time delays in feedback channels, translates into opaque cause/effect relationships and ineffective learning about the factors leading to long term success. These lessons then can be a powerful benefit of using simulations.

• **Counterintuitive:** Because of complexity and the difficulty in isolating a cause, decision-making tends to be non-obvious. Individual's attributions are typically flawed even in relatively simple cause/effect situations, but added

complexity overwhelms individual's flawed baseline capability. The feedback generated in simulations can be modeled to highlight this problem.

• **Policy Resistant:** Finally, unless mental models are complexified with the aid of simulations, companies can wind up trapped in vicious cycles: bankruptcy begets more bankruptcy, inventory swings from too much inventory to too little inventory, etc.

TEACHING SYSTEM DYNAMMICS CHARACTERISTICS OF TES

We have seen how system dynamics are part of TES; however, the question remains how to teach system dynamics concepts to students using TES. Our first inquiry should be whether learning largely takes place through performing well in the simulation or as a result of other interventions outside of the simulation decision-making on the students themselves.

More specifically, there are two main issues when it comes to assessing the effectiveness of educational simulations: performance and understanding (Kpainsky & Saldarriago 2012). Performance, or the results from decision-making, can be made operational by using the success measures embedded in the simulation, e.g. sales, profits etc. Understanding, on the other hand, refers to the rules that lead to decisions. Other secondary sources such as surveys, questionnaires can be used to measure improvements in understanding.

Both measures of effectiveness have their advantages: performance is more based on learners' explicit decisions and interactions with the simulation, while understanding is a better indicator of the mental models underlying dynamic decision making (Kpainsky & Saldarriago 2012). Understanding, however, can be a more challenging measure to unpack. Mental models are not always known to learners themselves, and the relationship between understanding and performance is not direct (Kpainsky & Saldarriago 2012).

While TES have been found to positively influence learning (Keys & Wolfe, 1990), much of the learning may be inadequately measured by performance. Gopinath & Sawyer (2014) argue that random decision making together with a weak level of competitors could result in superior financial performance without a corresponding increase in learning. Gopinath & Sawyer (2014) do acknowledge, however, that learning does take place in simulations. They test the learning process in a TES and found that the "learning benefits derived from use of simulation makes it a valuable tool to be considered for inclusion in and close integration with the objectives of the course (p. 3)."

While additional research could examine the types of learning best suited to simulations, the role of the instructor also should be evaluated for its effects on student learning. In particular, debrief sessions can add significant value to the participant's learning experience. Debriefing is defined as using the information generated during the experimental activity to facilitate learning for those who have been through the process. (Lederman, 1992). As Crookall (1992) notes "debriefing is perhaps the most important part of a simulation /game, and yet it tends to be the most neglected, if not in practice, at least in the literature."

A theoretical model with great potential to employ in designing TES debriefs is Kolb's Experiential Learning Model (Kolb, 1984). Kolb's Experiental Learning Model has four primary areas from which to learn from experience: Concrete, Reflection, Abstract Conceptualization, and Active Experimentation. This model could be especially relevant as an advantage of using simulations is their experiential component. Using this model, the learner begins with the concrete experience of the simulation participant but cycles through the stages in the model in such a way as to enrich the experience of the simulation. It maps nicely because the decision makers are tasked with a cyclical process of decision-making (i.e., several rounds of decisions), while Kolb's model describes the learning process as a cyclical process involving several iterations. Thus, proper debriefing requires a relevant model such as Kolb's, which includes all relevant components of experiential learning. In particular, simulation debriefs could be done in such a way to smoothly connect the various elements in Kolb's model.

In summary, this paper has laid out how Total Enterprise Simulations implicitly incorporate System Dynamics. Managing dynamic complex organizations requires employing systems thinking. We have argued that properly taught, TES offer an opportunity to develop an additional skill in managing complex organizations.

REFERENCES

Bakken, B. E. (2008). On improving dynamic decision-making: implications from multiple-process cognitive theory. *Systems Research and Behavioral Science*. 25: 493–501.

Crookall, D. (1992). Debriefing. *Simulation & Gaming*, 23(2), 141-142.

Faria, A.J., and Nulsen, R. (1998). *Business simulation games, current usage levels a ten year update.* Madison: Omnipress, Madison.

Forrester, J.W. (2007). System dynamics – a personal view of the first fifty years. *System Dynamics*, 23(2-3): 345-358.

Gold, S. (2003). The Design of Business Simulations Using a System-Dynamics Based Approach. *Developments in Business Simulations & Experiential Exercises.*

Gopinath, C., and Sawyer, J.E. (1999). Exploring the learning from an enterprise simulation. *Journal of Management Development*, Vol. 18 Iss: 5, pp.477 - 489

Gregory, A. and Miller, S. (2011). Waving or drowning? Reevaluating the place of systems thinking in business and management learning and curricula. Presented at the Organisational Learning, Knowledge and Capabilities Conference, Hull, UK.

Keys, B. and Wolfe, J. (1990). The role of management games and simulations in education and research. *Journal of Management*, Vol. 16, pp. 307-36.

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development* (Vol. 1). Englewood Cliffs, NJ: Prentice-Hall.

Kopainsky, B., and Saldarriago, M. (2012). Assessing Understanding and Learning About Dynamic Systems, *30th International Conference of the System Dynamics Society.*

Kulkarni B., and Sivaraman, V. (2013). Using Business Simulations to Introduce Business Concepts. *The Association for Business Simulation and Experiential Learning, Conference Proceedings*, Oklahoma City, USA, March.

Lederman, L.C. (1992). Debriefing: toward a systematic assessment of theory and practice. *Simulation & Gaming*, 23(2), 145-160.

Martin, L. (1997). The First Step. MIT System Dynamics in Education Project.

Qudrat-Ullah, H. (2010). Perceptions of the effectiveness of system dynamics-based interactive learning environments: An empirical study. *Computers & Education*, 55: 1277–1286.

Salas, E., Wildman, J. and Piccolo, R. (2009). Using Simulation-Based Training to Enhance Management Education. *Academy of Management Learning & Education*, Vol. 8, No. 4, 559–573.

Sterman, J. D. (2000). *Business dynamics: systems thinking and modeling for a complex world.* Boston. Irwin/McGraw-Hill.

Sterman, J. D. (2001). System dynamics modeling. *California management review*, *43*(4), 8-25.

Wolfe, J. (1997). The effectiveness of business games in strategic management course work. *Simulation & Gaming: An Interdisciplinary Journal*, 28(4): 360–376.

Washington, M., Kurthakoti, R., Halpin, A., and Byrd, S. (2014). Assessing Systemic Thinking in Undergraduates: an Exploratory Study Using a Total Enterprise Business Simulation. Developments *in Business Simulation and Experiential Learning*, Vol. 41

Leadership and Undergraduate Students: A Study Across Disciplines And A Plan For The Future

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ABSTRACT

Many articles have been written on the impact of leadership programs for undergraduate students. Leadership is among the most commonly cited attributes desired in graduates by employers. The challenge for many institutions is to deliver content knowledge as well as provide opportunities for undergraduate students to apply leadership theories in order to be prepared for entry level positions. While group projects, to some extent, provide opportunities to learn these leadership skills, it is not until the student has the responsibility, for example, as an officer of a club, that leadership skills are assimilated. Recently, we compared the ETS MFT (Educational Testing Service Major Field Test) scores of business, biology, and criminal justice students who held leadership positions to those who did not hold a leadership position. At the 10% significance level, the ETS MFT scores for the combined students who held a leadership role were higher than those students who had not held a leadership role on campus. As indicated by the higher ETS scores, these leadership roles appear to have a positive impact on the students' content knowledge. Based on first-hand observation, some undergraduate students will hold multiple leadership roles while other students get no leadership experience. This raises two questions. How can we expand these opportunities for more students and would students benefit from a leadership minor? This paper explores the various best practices and approaches of other institutions and provides valuable information in the field of leadership education for undergraduate students.

Keywords: Undergraduate leadership, experiential learning, leadership models and scales

INTRODUCTION

Higher education has approached undergraduate leadership education in multiple ways. Some institutions offer certificates and others have a leadership major or minor. These approaches may or may not include a practical component. As we embark on developing this minor in leadership, various models, such as social change, leadership identity development and responsible citizenship emerge as a potential point of focus but assessing the program and the students in terms of measureable and meaningful positive change also remains a challenge. The Leadership Identity Development (LID) model and the Social Change Model (SCM) appear to be the most relevant models for this purpose and demographic. While most research suggested a reflective component as part of the assessment process, there were a variety of scales which could be deployed including the Socially Responsible Leadership Scale (SRLS), Leadership Attitudes and Beliefs Scale (LABS), Student Development Task and Lifestyle Inventory (SDTLI), Leadership Behavior Scale (LBS), Self-Efficacy for Leadership (SEL), Motivation to Lead (MTL), Leadership Practices Inventory (LPI) and the Student Leadership Practices Inventory (SLPI). The various approaches to leadership education, an overview of the above assessment models and scales, as well as several joint studies are briefly described next.

When researching leadership programs, Brungardt, Greenleaf, Brungardt, and Arensdorf (2006) found noticeable differences in the "…school sizes, host departments, and credit hour requirements" (p.4) as well as inconsistencies in "…the focus of the program, the major scholars evident within the curricula, and the disparity between theory versus skill development" (pp. 4-5). For example, the host department varied from Psychology and Sociology to Education to Business and credit hours varied from 30 to 71. The mission and purpose as well as the curriculum were different as well. While most programs did include a focus on theory and application, some included a civic or service learning component, and others focus on collective versus individual behavior. Brundardt, et al (2006) was able to divide curriculum into six categories: theories/history, skills/behaviors, context, issues, practicum, and support courses. An interdisciplinary approach was also very popular with courses in areas such as business, statistics, public speaking, technology, and public management being part of the curriculum. A course sequence pattern also emerged from their review with most programs starting with foundational courses which were followed by skill, context, and issues then concluded with the hands-on experience. This overview was key as it provided an

overall view of the diverse approaches currently being undertaken at universities to enhance leadership skills in students.

Two dominant models found in the literature were the Leadership Identity Development model (LID) and the Social Change Model (SCM). Ho and Odom (2015) explained, "The Leadership Identity Model includes a sequence of six stages an individual experiences as they develop their leadership identity: awareness, exploration/engagement, leader identified, leadership differentiated, generativity, and integration/synthesis" (p. 94). The awareness stage can occur as early as childhood with the various other stages developing as the individual gains self-confidence, gains or accepts responsibility, and understands the importance and value of group outcomes and interdependent relationships. The Social Change Model (SCM) includes Individual Values, Group Values, and Community/Society Values (HERI, 1996). Seven core values were identified and were referred to as the "7 Cs" of leadership development for social change. These "Cs" are then organized within the values. The "Cs" in the Individual Values include consciousness of self, congruence, and commitment. Group Values "Cs" are collaboration, common purpose, and controversy with civility. Citizenship was the "C" in the Community/Society Value (HERI, 1996). HERI (1996) did note that Change was "… the value hub which gives meaning and purpose to the 7Cs" (p.21).

RESULTS

In previous research, we compared the ETS MFT scores for business students to leadership roles. The results in Table 1 below "show a significant positive relationship between students who have held a position of leadership on campus and higher ETS MFT scores" (Ward, Yates & Song, 2014, p. 4). This data was collected over several semesters and based on a sample size of 137 students.

Table 1: OLS Regression between leadership experience and the ETS MFT

Held a leadership position on campus	2.837***

*, **, *** indicates significance at the 10%, 5% and 1%, respectively

In spring 2014, we expanded this research to include biology and criminal justice students. Due to the number of students in each major taking the MFT (Business – 27, Criminal Justice – 15, and Biology – 40), we only used the data from the spring 2014 semester. Of this data, 43% of the students were male while 57% were female. When combining the three majors, we observed that the mean MFT score of the students who have held a leadership position on campus is higher than that of the students who did not have leadership experience on campus at the 10% significance level.

The data is much more interesting when unbundled. As Table 2 shows, when looking at leadership, business students are the only group showing a significant difference in MFT scores. Eight students (29.6%) of the business students held leadership positions, four (26.7%) of criminal justice students, and 21 (52.5%) of biology students. Typical leadership positions held by business students included academic club officer, Enactus (formerly SIFE), athletic team co-captain, fraternity or sorority officer, class representative, and honor society officer. Biology and criminal justice students held similar academic club, honor society, fraternity or sorority officer, athletic captain, or class representative positions but also were resident assistants. Since the positions held are similar, it would be interesting to know the differences between the activities performed by the various clubs to understand why the business students MFT scores are higher. Perhaps some of the functions of a leadership position, such as budgeting or marketing tie more closely to their major. The overall GPA of the business students (3.48) was also slightly higher than either criminal justice (3.12) or biology (3.39).

Table 2: MFT scores and Leadership Positions – independent samples t-test

	Majors			
	Overall	Business	Animal Science/Biology	Criminal Justice
MFT score	+, (10% sig.)	+, (5%, sig.)	Not sig.	Not sig.
GPA score	+, (5%, sig.)	Not sig.	Not sig.	Not sig.

Additional data needs to be collected in order to have more conclusive results. This data, as well as our previous research, does indicate that we need to place more emphasis on leadership education as well as experiential leadership roles for undergraduate students. The next section of the paper will describe the various approaches and potential outcomes found in the literature which will help guide us towards the most beneficial way to develop the curriculum as well as potentially increase the number of students who hold leadership roles.

APPROACHES TO LEADERSHIP EDUCATION

In recent years, several reports have been published that provide useful information gathered from employers on the competencies they are looking for in entry level employees. Crawford, Lang, Fink, Dalton, & Fielitz (2011) reported the following seven soft skill clusters (in rank order from employers): Communication Skills, Decision Making/Problem Solving Skills, Self-Management Skills, Teamwork Skills, Professionalism Skills, Experiences, and Leadership Skills. They did note that "It is important to emphasize that all of the skills are important – the rankings reflect a priority when trade-offs need to be considered in decision making" (p. 9). All stakeholder groups did agree "that the most important leadership skills for new employees are the ability to see the "big picture", think strategically, and recognize when to lead and when to follow" (p. 18). Other skills, such as motivating others and leading change, they found, become more valuable as the employee matures and established a positive reputation in the organization. When asked, one employer stated that students did not know "How to take an ambiguous problem and break it down into executable plan. See the big picture of a project" (p. 21). Salaman & Moore (2012) research found that "Employers expect bachelor's degree-level applicants to possess a wide range of professional skills, specifically communication, organizational, and leadership skills" (p. 11). HERI (1996) stated "Colleges and universities provide rich opportunities for recruiting and developing leaders through the curriculum and co-curriculum" (p. 16). There is some debate, however, on the best type of program and experience.

As reported by Brungardt, et al (2006), undergraduate leadership programs vary in terms of their focus, credit hours, etc. but there is also a " …disparity between theory versus skill development" (p. 5). In addition, there are multiple methods to achieve the skill development through the co-curriculum such as extracurricular activity (Rubin, Bommer, & Baldwin, 2002), involvement or leading student clubs or organizations (Foubert & Grainger, 2006; Patterson, 2012), service learning or civic engagement (Arensdorf & Andenoro, 2009; Colby, Ehrlich, Beaumont, & Stephens, 2003; Huber, 2002; Polk, 2014), and experiential learning (Odom, Ho, & Moore, 2014). Data from one institution on these important leadership skills and competencies included Leader as an individual, Leader in relation to followers, Leader in an organization, and Leader in a global environment. This type of information is useful as we research and develop curriculum and outcomes.

There is abundant information regarding the various goals, outcomes, assessment, and implications for leadership education. Keating, Rosch, & Burgoon (2014) described a "ready, willing, and able" model with "ready" being the possession of leadership self-efficacy, "willing" is having the motivation to lead, and "able" is having the leadership skill. This self-efficacy and the motivation to lead others is aligned with the skills for transformational and transactional leaders. They found "…students entering a leadership course with low confidence or missing a perception of themselves as a leader seem to gain little skill through the course experience, yet leave with more confidence and a stronger self-identity as someone with leadership potential" (p.12). The implications from this research was two-fold. "First, student who choose to enroll in elective leadership courses may not all be similar on incoming measures of confidence and motivation to lead" (p. 12) and "second, practitioners should focus on the developmental sequencing of their programs and how they administer the "pipeline" of students who progress through them" (p. 12). This could mean assessing the students in these areas and place them accordingly.

As stated earlier, programs often take different approaches to leadership education. Ho & Odom (2015) found their institution's coursework was linked to systemic and hierarchical thinking. Courses at the various 200-400 level learned about the following leadership concepts: Relational Leadership Model, Leadership Education vs. Leadership Development, Social Change Model, Leadership Identity Development, Evolution of Theories, and Individual, Group, and Organizational Change. Their findings implied "… the more formal leadership coursework a student completes, the more their mindset of leadership may evolve from a positional perspective to a comprehensive view" (p. 102).
Fischer, Wielkiewicz, Stelzner, Overland, & Meuwissen (2015) discussed the seven leadership certificates offered by their institution. The four themed certificates were Intercultural Competency, Gender and Leadership, Civic Leadership, and a special certificate, Professional Development, intended for students in student employment

positions. The sequential certificates (Life Skills, Practicing Leadership, and Personal Leadership Model) were "… designed to promote: 1) self-awareness as a leader, 2) an understanding of self as a leader in relation to others, and 3) an understanding of self as a leader within the context of a larger community" (p. 18).

Leadership, Huber (2002) noted, is applied learning. A common practice to develop leadership skills is experiential learning which can be expressed in a variety of ways such as service learning, internships, and clubs or organizations. Some institutions fully embrace service-learning. Arensdorf & Andenoro (2009) believe that "…Service-learning is a pedagogy that involves active learning which forges a clear link between course objectives and service activities" (p. 21). By including four components of service learning (preparation, action, reflection, and assessment), "…service-learning is set apart from volunteerism and community service" (p. 21). Students learn that things may not always go as planned and how to overcome obstacles as well as learn from successes. Foreman & Retallick (2012) found involvement in clubs and organizations "… has a strong relationship with leadership development, and institutions should include the role of extracurricular activities as they develop action plans for reaching leadership development outcomes" (p. 119). Students who held officer positions had higher scores on the Socially Responsible Leadership Scale. Patterson (2012) indicated "… collegiate clubs and organizations are influential in terms of developing leadership and should be supported" (p. 7). While these experiences can be associated with the student's major, Patterson (2009) continued "…some of the most effective leadership development opportunities seem to be with interdisciplinary organizations" (p. 7). In the study by Rubin, Bommer, & Baldwin (2002), "… officer status was significantly related to communication, decision-making, and teamwork skills but not to initiative" (p. 448). Foubert & Grainger (2006) added "It is evident that students who are involved in clubs and organizations during their college experience are also those who demonstrate higher levels of development in many areas" (p.180) but they did also wonder if "…the highly developed student who is also more likely to seek out involvement, or does involvement provide the experience necessary for development to occur" (p. 179)? This needs to be taken into consideration.

The challenge of leadership studies "…is to handle the interaction between theory and practice" (Seger & Bergsten, 2013, p. 258). "The curriculum" said Polk (2014) "sets a strong foundation for lifelong learning in preparing students" (p. 148). Ho and Odom (2015) added that their degrees "… require students to progress through a systematic design of leadership coursework building on leadership from the individual perspective to leadership through a global lens" (p. 94). Formative and summative assignments, that are problem-based or project centric, "…may be seen as a vehicle through which students can optimally acquire, engage, and refine the knowledge and skills necessary for workplace success" (Saurbier, 2014, p. 15). Her assignment was interesting as it combined theory and research but also included creative and writing skills. This blend of theory and practice is vital, especially when it includes a reflective component. Common reflective methods are journals (Odom, Ho, & Moore, 2014; White, 2012; Olsen & Burk, 2014), papers (Moore & Lewis 2012; Arensdorf & Andenoro, 2009), and classroom activities (Huber, 2002; Arensdorf & Andenoro, 2009). White's (2012) conclusions were thought-provoking as she found "…the need to balance structured reflection with less structured, more conversational reflection" (p. 152) and while her students were able to make clear connections between the course information and their experience (internship, research, or service learning, etc.) she did question "… whether reflection is a transferrable skill that could be learned" (p. 153). These reflective practices prove valuable when the data is analyzed and we complete the learning loop. Olsen and Burk (2014) discovered three important themes regarding leadership development from their reflective data. Students learned, for example, that leadership was situational, how to better manage conflict, the role attitude plays in situations, when to be a leader and when to be a follower, and the importance of adaptability. In addition, it provided the connection between theory and practice.

CONCLUSION

It is both daunting and exciting to begin this journey to develop leadership skills and competencies for our students. It is clear that students will develop leadership skills at different rates as they enter college with varying degrees of motivation, experiences, maturity levels, and capabilities. This is not new information but it is a good reminder of the challenges we may face in developing leadership skills for all of our students as well as measuring changes in their leadership development. As indicated by the literature, a leadership program should include both theory and practice.

Since our university has six colleges (business, education, health professions, liberal arts, pharmacy, and sciences), the proposal becomes even more challenging as we have to navigate the various accreditation bodies,

interdisciplinary focuses, as well as potential time or credit hour constraints in specific majors. Our next steps include forming an interdisciplinary task force to design the program, identifying outcomes, reviewing current courses for fit, and determining the sequence of the curriculum. As we move through this process, it raises an important question – Should every undergraduate student have some level of leadership coursework or experience in their undergraduate curriculum? As Arensdorf & Andenoro (2009) reflected, the incentive for faculty to integrate these practices into courses is not promotion, tenure, or a raise, but that " … leadership programs can contribute toward meeting our society's goal of developing people who not only understand but also practice leadership in all walks of life" (p. 23). That is our inspiration as we develop and implement our undergraduate leadership program.

REFERENCES

Higher Education Research Institute. (1996). *A Social Change Model of Leadership Development: Guidebook version III.* College Park, MD: National Clearinghouse for Leaderhip Programs.

Arensdorf, J., & Andenoro, A. (2009). Engaging Millennial Students in Leadership Education. *Educational Considerations, 37*(1), 19-24.

Astin. (1999). Student Involvement: A Developmental Theory for Higher Education. *Journal of College Student Development, 40*(5), 518-529.

Avolio, B. J., & Hannah, S. T. (2008). Developmental Readiness: Accelerating Leadership Development. *Counseling Psychology Journal: Practice and Research, 60*(4), 331-347.

Billsberry, J. (2009). The Social Construction of Leadership Education. *Journal of Leadership Education, 08*(2), 1-9.

Brungardt, C., Greenleaf, J., Brungardt, C., & Arensdorf, J. (2006). Majoring in Leadership: A Review of Undergraduate Leadership Degree Programs. *Journal of Leadership Education, 5*, 4-25.

Buschlen, E., & Dvorak, R. (2011). The Social Change Model as Pedagogy: Examining Undergraduate Leadership Growth. *Journal of Leadership Education, 10*(2), 38-56.

Colby, A., Ehrlich, T., Beaumont, E., & Stephens, J. (2003). Educating Undergraduate for Responsible Citizenship. *Change*, 41-48.

Crawford, P., Lang, S., Fink, W., Dalton, R., & Fielitz. (2011). *Imparative Analysis of Soft Skills: What is Important for New Graduates?* Washington, DC: Association of Public and Land Grant Universities.

Fischer, D. V., Wielkiewicz, R. M., Stelzner, S. P., Overland, M., & Meuwissen, A. S. (2015). Changes in Leadership Attitudes and Beliefs Associated with the College Experiences: A Longitudinal Study. *Journal of Leadership Education, 14*(I1), 14-32.

Foreman, E. A., & Retallick, M. (2012). Undergraduate Involvement in Extracurricular Activities and Leadership Development in College of Agricultural and Life Sciences Students. *Journal of Agricultural Education, 53*(3), 111-123.

Foubert, J. D., & Grainger, L. U. (2006). Effects of Involvement in Clubs and Organizations on the Psychosocial Development of First-Year and Senior College Students. *NASPA Journal, 43*(1), 166-182.

Guthrie, K. L., & Thompson, S. (2010). Creating Meaningful Environments for Leadership Education. *Journal of Leadership Education, 9*(2), 50-57.

Ho, S. P., & Odom, S. F. (2015). Mindsets of Leadership Education Undergraduates: An Approach to Program Assessment. *Journal of Leadership Education, 14*(I1), 92-106.

Huber, N. S. (2002). Approaching Leadership Education in the New Millennium. *Journal of Leadership Education, 1*(1), 25-34.

Keating, K., Rosch, D., & Burgoon, L. (2014). Developmental Readiness for Leadership: The Differential Effects of Leadership Courses on Creating "Ready, Willing, and Able" Leaders. *Journal of Leadership Education, 13*(I3), 1-16.

Komives, S., Owen, J., Longerbeam, S., Mainella, F., & Osteen, L. (2005). Developing a Leadership Identity: A grounded theory. *Journal of College Student Development, 46*(6), 593-611.

Moore, L., & Lewis, L. J. (2012). Using Aha! Moments to Understand Leadership Theory. *Journal of Leadership Education, 11*(2), 226-236.

Odom, S. F., Ho, S., & Moore, L. (2014). The Undergraduate Leadership Teaching Assistant (ULTA): A High-Impact Practice for Undergraduates Studying Leadership. *Journal of Leadership Education, 13*(I2), 152-161.

Olsen, H., & Burk, B. (2014). Using Reflection to Assess Students' Ability to Learn and Develop Leadership Skills. *Schole: A Journal of Leisure and Recreation Education, 1*, 75-90.

Patterson, B. (2012). Influences of Student Organizational Leadership Experiences in College Students Leadership Behavior. *e-Journal of Organizational Learning and Leadership, 10*(1), 1-12.

Polk, D. (2014). Forces of Positive Change: Preparing Leaders for the 21st Century in an Undergraduate Honors Program. *Journal of Leadership Education, 13*(I2), 140-151.

Raffo, D. M., & Pender, A. (2011). Leadership Practices of Students Enrolled in a Leadership Theories Course. *Leadership & Organizational Management Journal, 3*, 78-87.

Rubin, R., Bommer, W., & Baldwin, T. (2002). Using Extracurricular Activity as an Indicator of Interpersonal Skill: Prudent Evaluation or Recruiting Malpractice. *Human Resource Management, 41*(4), 441-454.

Salaman, M., & Moore, S. (2012). *Employer Expectations of Students with Bachelor's in Organizational Leadership.* Washington, DC: Education Advisory Board.

Saurbier, A. (2014). Using Infographics as an Interactive Higher-Order Skill Development Assignment in Undergraduate Leadership Instruction. *Business Education Innovation Journal, 6*(1), 13-23.

Seger, J., & Bergsten, U. (2013). Teaching about Leadership or Teaching through Leadership? *Journal of Leadership Education, 12*(1), 252-262.

Soira, K., Nobbe, J., & A., F. (2013). Examining the Intersections between Undergraduates' Engagement in Community Service and Development of Socially Responsible Leadership. *Journal of Leadership Education, 12*(1), 117-139.

Ward, C., Yates, D., & Song, J. Y. (2014). The Impact of Leadership Roles and Internships on Undergraduate Business Major Field Test (MFT) Scores. *Contemporary Issues in Education Research, 7*(4), 1-6.

White, J. V. (2012). Students' Perception of the Role of Reflection in Leadership Learning. *Journal of Leadership Education, 11*(2), 140-156.

iPads in the Business Classroom

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ABSTRACT

iPads have become increasingly utilized in college classrooms across a variety of disciplines and levels of education. The goal of this project was to investigate the effectiveness of incorporating iPads into the undergraduate business classroom environment. The iPad Initiative was launched Fall 2012 in the Sidhu School of Business & Leadership at Wilkes University, a small liberal arts school in Northeastern Pennsylvania. iPads were distributed to first year students enrolled in an Integrated Management Experience course. Initial findings suggest that iPads can enhance the learning environment by increasing student attention and participation rates. The students who actively participate sought to use the iPads to their advantage, rather than letting it distract them from their classes and classwork. The less responsible students are more prone to engage in distracting behaviors, such as non-relevant web-browsing, social networking and gaming. A distraction from the utilizing iPads in the classroom can be the instructor's ability to integrate and demonstrate iPad technology. The increased levels of student participation, engagement and performance outweigh the negative perceptions against iPad devices, thus justifying the student and institutional investment costs. The results of this study will be used to inform current classroom practices to minimize such distractions.

Keywords*:* iPads, Classroom Technology, Undergraduate Business Education, Higher Education

INTRODUCTION

Trends in undergraduate education highlight a shift in focus to learner-centered education, the behavior and interests of the new learner and learning with technology (Merrill, 2002; Pearlman, 2010, Pryor, et. al., 2006). The new learner, sometimes referred to as a digital native*,* arrives on campus with varying and often misunderstood expectations.

To maximize student interest in learning, students must be shown how to apply their new content knowledge everyday (Merrill, 2008). When students are more interested in learning, they are more willing to participate in class (Merrill, 2002). This can carefully be extended to student interest in technology, and the need to use the new technology frequently. Millennial Students may favor technology enhancements, in general (Pearlman, 2010), but Jones & Shao (2011) report that these students prefer moderate use of the various technologies in their courses.

Over the past few years, iPads have become increasingly utilized in college classrooms across a variety of disciplines and levels of education. iPad deployments in education are seen in K-12, undergraduate and graduate classrooms. The majority of these efforts have been at the K-12 level (Lai, 2012). Business Schools seem to be a common place for iPad trials in higher education; especially Masters level programs (Burnsed, 2010). The focus of this research is on trials at the undergraduate level. The following discussion is arranged as follows: motivation for undergraduate iPad trials, the potential for detracting from these iPad trials and the range of deployment specifics.

Motivation for Undergraduate iPad Trials. The motivation for classroom interest in the iPad varies institution by institution, but common themes in undergraduate deployments stem from technological, pedagogical, social and economic origins. From a technology perspective, the iPad device is desirable and innovative. It is sleek, shiny and relatively compact (Marmarelli & Ringle, 2011). The resolution and long battery life make it an attractive alternative to a traditional textbook or notebook.

Use of iPads in education has been shown to lead to increased creativity and innovation. Innovation increases can be discussed from two perspectives: innovative curriculum and innovative pedagogy. Innovations in curriculum development can include experiential and participatory dimensions. The shift is toward critical thinking and the 'smart' use of information. Schools like Framingham State (Davis, 2012), Indiana University-Purdue University Indianapolis (Rossing, 2012) and Seton Hill (Young, 2010) incorporate innovative pedagogy, which captures the shift from the 'sage on the stage' method, or more traditional teaching styles, to the 'guide on the side' method

(Pearlman, 2010). When technology and pedagogy form a successful union, increases in student learning and student interest in learning can be maximized (Moore, 1997). Infusing technology into the marriage between pedagogy and content can be one of the most challenging aspects of iPad programs of this sort. If successful, students are more engaged in the collaborative dynamic in the classroom (Merrill, 2008; Pearlman, 2010). A successful union between technology and pedagogy is enough use of the technology to keep the students from being distracted, but not too much that they are overwhelmed. Students should be constantly reminded that the technology is both relevant and critical to the course content. The instructor should be mindful to incorporate how the technology enhances student productivity.

Interactions and opportunities for collaboration can be critical in teaching, learning and collegiality. Specifically, iPads can address Peer-to-Peer, Student-to-Faculty and Student-to-Content types of interactions. Access to a variety of cloud-based platforms enables students to co-create and co-edit many different types of documents. While teaching, faculty can transmit changes to lecture notes or other materials in real time. iPads also offer in-class and real-time access to learning management systems, the Internet, news outlets and University Library resources (Merrill, 2009; Angst & Malinowski, 2010). Students are also more willing to go beyond lecture content by finding and sharing their own examples (Pearlman, 2010).

iPads address the benefits of incorporating more advanced technology and cost savings. As more and more faculty across a variety of disciplines transition to paperless teaching and learning via eBooks and other digital content access, students can, on average, decrease semester expenditures on textbooks and other supplies (Marmarelli & Ringle, 2011; Rossing, 2012). The iPad provides an all-in-one device that can accomplish the objectives of laptops, tablet computers, e-readers, clickers, and more. As Departments adopt the use of iPads across faculty, Universities can begin to contemplate cost savings through paperless meetings and other collaborative environments.

Distractions when Incorporating iPads. Some distractions pertain to frustrations with iPad hardware and software. Typing on the iPad screen keyboard can be a bit awkward and the glossy surface can sometimes be too reflective (Marmarelli & Ringle, 2011). Both of these examples can be resolved by simple add-ons (external keyboard, stylus, screen protector, etc.). Hardware and software concerns are also present at the university level. Some universities have cited insufficient infrastructure to support the widespread use of mobile devices, insufficient resources to offer training and support to all users, and the lack of widespread support for instructors themselves (Ruch & Edmonds, 2012).

Most of the distractions relate to learning. Distractions *to* learning include those impediments that keep faculty from achieving their goals in teaching. Common goals in teaching are related to effective transmission of content and meaningful assessment. Unfortunately, many faculty fall into the category of 'reluctant adopters' and are unwilling to incorporate technological advances into the processes of disseminating content and/or assessment (Poset et al., 2010; McKenzie, 1999; Davis, 2012). Distractions *from* learning include those impediments that keep students from achieving their goals in learning. These distractions can be technological, social, and can also stem from the instructor.

Wilkes iPad Initiative. The purpose of the Wilkes iPad initiative was to enhance undergraduate student learning and classroom experiences. The goal of this project is to investigate the effectiveness of incorporating iPads into the undergraduate business classroom environment. This research project aims to investigate the question: Do iPads enhance the undergraduate business classroom environment? iPads can enhance learning environments by increasing student attention and participation rates. iPads can disrupt learning environments by increasing the amount of time students spend participating in non-course-related activities during class time.

All first year students in the Sidhu School are enrolled in a common course, the Integrated Management Experience or IME. IME is a two-semester introductory business course in which students learn how to plan and operate a business through the study of functional areas such as marketing, management, human resources, accounting and finance, and operations. Students also learn and experience how the pieces fit together through integrating the functional areas tracking information and performance using financial accounting principles. iPads were distributed to these 50 first year students. They received iPads on a lease program, dependent on full time status in one of the Sidhu School majors.

DATA COLLECTION

The students participated in this pilot study as volunteer research participants, spending no more time than normal engaged in class activities. The conditions related to this study were what one would ordinarily expect in a university classroom facilitated by university professors. The only difference was the integration of iPads loaded with predetermined applications and a version of the assigned textbook optimized for viewing on the iPad. The researchers understood that for maximum student learning and participation in learning, there must be a connection between content, pedagogy and technology (Merrill, 2008; Pearlman, 2010). The instructors would spend a few minutes each class, during the first few weeks of class, teaching a new app (see Table 1; apps include Dropbox, Calendar and QuickOfficePro, iOffice and other related apps). The instructors also developed flashcards, provided outlines for each topic and encouraged note taking in Notability. Students were allowed and encouraged to use the iPads for Internet research, note taking and textbook referencing during class time. Students were encouraged to complete individual and collaborative homework assignments using the iPad and the apps contained therein. Students and faculty were able to use AppleTV to successfully share ideas with the larger classroom during classtime. iPads were used for weekly quizzes and semester exams electronically in the University learning management system. iPads were used for giving presentations using Keynote, Prezi, or PowerPoint.

Each student enrolled in the class was asked to participate in a 14-question survey regarding their opinions and preferences on the use of iPad technology in the classroom during November in the fall semester. The majority of the survey questions addressed students' use of the iPads, whereas other questions probed use of technology and/or specific applications. In addition to basic demographic information, the questionnaire addressed three key areas: Identity, Preferences and Behavior.

Identity. The incoming freshmen class was 76% male and 24% female. Participants were allowed to self-identify whether they felt distracted by the presence of iPads within the classroom. Most of the participants felt that they were not distracted by the presence of iPads (78%). Students were also allowed to self-report whether or not use of the iPad improved their study habits; most (76%) reported an improvement. Lastly, the participants were asked to rank the importance of the instructor's ability to use and incorporate the iPad into the classroom environment – 74% of students indicated that the instructor's technological proficiency on the iPad is important or somewhat important. No students reported that the instructor's ability in incorporating the iPad was unimportant.

Preferences. The survey also collected the preferences of the participants with regard to iPad use in class. Many (64%) preferred using the iPad for note-taking purposes instead of traditional note taking with pen and paper. A similar percentage of the participants preferred the option of an electronic textbook, rather than the hard copy. Lastly, after testing a variety of different iPad apps for the purpose of classroom productivity, the participants identified their app preferences in note taking.

Table 1. App Preference for Note Taking in Class

|	App Popularity
FlashCards+	4.3
Notability	3.9
iBooks	3.8
Safari	3.0
Quick Office Pro	2.0
iMovie	1.9

The top three apps included Flashcards+, Notability and iBooks. Keep in mind that the instructors developed flashcards and encouraged note taking in Notability; this may have influenced the results. The results were averaged across all students for each app, where a score of 5 indicated "I always use this app" and a score of 1 indicated "I never use this app". The average responses for each application are shown in Table 1, where the value is represented as app popularity, which is the average score for each app.

Behavior. The third key area addressed by the survey included the behavioral tendencies of the participants during class. Positive behaviors would include actively participating in class and taking notes – these students, which

exhibit positive behaviors for the majority of class, were classified as engaged students. Eighty percent of the students can be classified this way.

Negative behaviors include activities that distract oneself and others from class and class activities, including but not limited to gaming, social media and Internet usage not related to class activities –students, who do not engage in negative behaviors for the majority of class, were classified as responsible students. For this set of students, spending the majority of class participating in negative behaviors is not common. Eighty-two percent of the students can be classified as responsible.

Figure 1. Distribution of time spent on positive and negative activities in class.
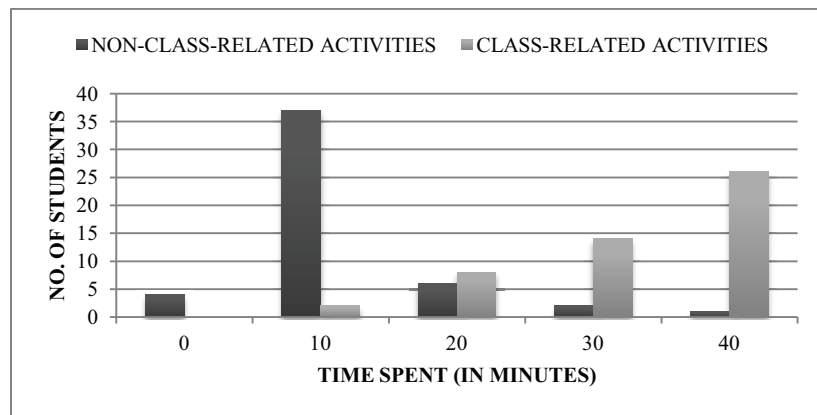
All times are reported in minutes; all times reported relative to a 50-min class period. Only 14% of the students participated in non-class activities, or engaged in negative behaviors during class time, for more than 10 minutes of class time. Consistently, 80% of the students report that they actively participate and take notes during class time for at least 30 minutes. No students admitted to spending no time on class related activities. The data collection also identified that 66% percent of the participants used the Internet for class related research.

This research project aims to investigate the question: do iPads enhance the undergraduate business classroom environment? The following hypotheses have been set up to evaluate this research question.

- *Hypothesis 1: Engaged and responsible students are not distracted from class activities with the incorporation of iPad technology.* The engaged students are defined as those who sought to use the iPads to their advantage, i.e. reported to using class time for class activities for at least 30 min of a 50-min class period. Responsible students are defined as those who are less prone to engage in distracting behaviors, such as non-relevant web-browsing, social networking and gaming; these students spend no more than 10 min of a 50-min class period participating in distracting behaviors.

- *Hypothesis 2: The importance of the instructor's ability to integrate and demonstrate iPad technology is correlated with student engagement with and with student distraction from class activities.* As stated earlier, students should be reminded that the iPad is relevant and critical to their success in the course. In this iPad pilot, the textbook information was only available on the iPad and numerous class assignments were assigned using a variety of iPad apps. The instructors were encouraged to stress to students how the technology enhances through productivity, through note taking, in and out of class participation and research. Since the students were specifically asked how important the instructor's technical skill in teaching and encouraging learning with the iPad, the students' responses were analyzed under a variety of conditions.

ANALYSIS

Engaged and responsible students are less distracted from class activities with the incorporation of iPad technology.
Students who self-identified themselves as active participants in class were compared to those who self-identified themselves as those who participate in the stated negative behaviors. All students were also allowed to self-report whether they were distracted in class as a result of iPad use. As shown in Table 2, the overall number of minutes spent on positive behaviors is more than the number of minutes spent on negative behaviors. It is also seen that for those who are not distracted, much more time is spent participating in class-related activities. For those who are distracted, a much smaller difference in time spent on positive and negative behaviors is observed. On average, around 30 minutes of class time is spent participating in class activities.

Table 2. Distraction vs. Time spent on Positive and Negative Behaviors in Class

	Time spent on… (in minutes)	
	Negative Behaviors	**Positive Behaviors**
NOT DISTRACTED	10.3	32.6
DISTRACTED	17.3	33.6
Overall Average	**11.8**	**32.8**

The intention of this analysis was to evaluate if time spent on positive and negative behaviors had an impact on whether or not the student perceived the iPad as a distraction during class time. As seen in Table 2, the results indicate that time spent participating in *positive* behaviors has a minimal impact on the iPad as a distraction; the results of a simple linear regression analysis are not significant ($R^2 = 0.002$, $p = 0.72$). However, the results indicate that time spent participating in *negative* behaviors has a positive impact on the iPad as a distraction – more time is spent on negative behaviors for students who are distracted; the results are significant ($R^2 = 0.17$, $p = 0.003$).

The data represented in Figure 2 suggests that the students who actively participate, represented on the y-axis, sought to use the iPads to their advantage, rather than letting it distract them from their classes and classwork.

Figure 2. Time Spent Participating in Positive (y) and Negative (x) Behaviors During Class Time.
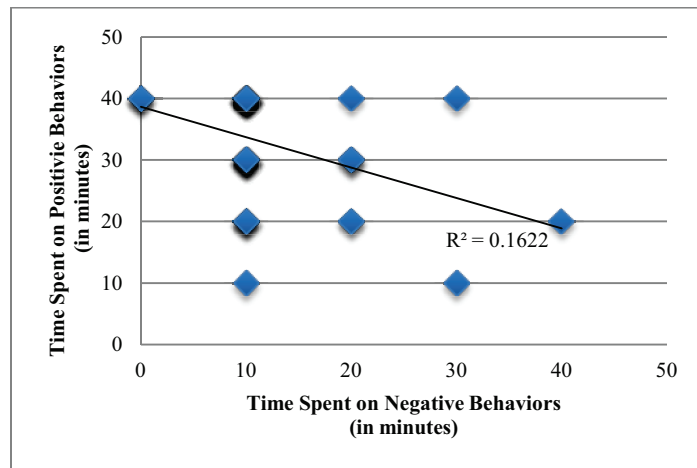
Simple linear regression was used to investigate the observed negative relationship between time spent participating in positive and negative behaviors during class time; the results are significant ($R^2 = 0.16$, $p = 0.003$). This means that *engaged* students are most often also *responsible* students.

As shown in Table 3, for both males and females, much more time is spent participating in class-related activities. For females, however, less time is reported spent on positive behaviors than their male classmates.

**Table 3. Gender vs. Time spent on Positive and Negative Behaviors in Class**

| | Time spent on… | |
| | *(in minutes)* | |
	Negative Behaviors	**Positive Behaviors**
MALE	10.0	39.2
FEMALE	12.4	30.8

The results indicate that gender seems to have a slight negative impact on time spent participating in positive behaviors – males spend more time on positive behaviors; the results of a simple linear regression analysis are significant (R^2 = 0.17, p = 0.003). However, the results indicate that gender does not seem to impact time spent participating in negative behaviors; the results are not significant (R^2 = 0.02, p = 0.32).

The importance of the instructor's ability to integrate and demonstrate iPad technology is correlated with student distraction from class activities. Distracted students rely more heavily on the instructor.
Almost three-quarters of the freshmen class recognized the importance of the instructor's ability to familiarize the students with the technological benefits of utilizing the iPad in class, as shown in Table 1. The data suggests that students tend to rely more on the teacher's technological guidance if they self-report that they are distracted in class – close to 85% of distracted students indicate that their instructor's technological proficiency on the iPad was important or somewhat important. Figure 3 illustrates the differences in the responses regarding the importance of the instructor from the two groups of students (distracted and not distracted).

Figure 3. Distraction vs. student rating of importance of instructor's technological proficiency on iPad.
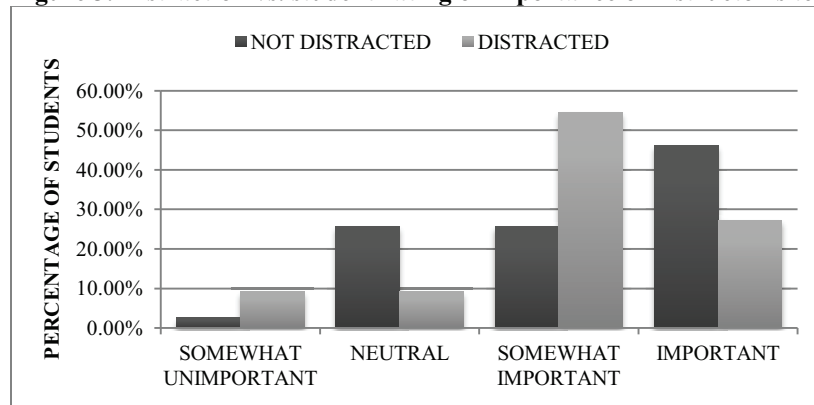
The distribution of distracted student responses indicates a bit more of a left skew over the students that are not distracted. This may mean that the students who feel that the iPad is a distraction rely more heavily on the professor's knowledge and ability in teaching them exactly how to use the device for in-class productivity, i.e. there is a slight increase in importance as distraction increases. Simple linear regression was used to evaluate the observed slight positive impact, however, the results were not significant (R^2 = 0.02, p = 0.26).

Table 4 shows the differences in the responses regarding the importance of the instructor from the various groups of students (distracted and not distracted, engaged and not engaged, responsible and not responsible). As a reminder, engaged students were those who reported using class time for class-related activities for at least 30 min of a 50-min class period. Responsible students are those who reported using no more than 10 minutes of class time for activities that are not related to class.

Table 4. Importance of Instructor's Technological Proficiency on iPad.

	Importance Rating		Importance Rating		Importance Rating
Distracted	4.27	Responsible	4.15	Engaged	4.18
Not Distracted	3.95	Not Responsible	3.44	Not Engaged	3.40
Overall	**4.02**				

As discussed, there is a slight, yet insignificant, positive impact of distraction on the importance of the instructor's proficiency. A larger difference in importance ratings of non/responsible and non/engaged students is observed. This may mean that the students who were more responsible and more actively engaged in class and class activities were more interested in the professor incorporating the iPad into the classroom environment, as there is a slight increase in importance as engagement increases. The students that were not engaged or responsible seem to exhibit indifference. Regression was used to evaluate the observed slight positive impact of engagement on the instructor's proficiency; the results were significant ($R^2 = 0.10$, $p = 0.02$). This comparison was also performed for responsible and non-responsible students. Regression was used to evaluate the observed slight positive impact; the results were significant ($R^2 = 0.17$, $p = 0.015$).

CONCLUSION

The bias against the use of mobile technology within a classroom setting is the assumed increased potential for negative behaviors that result from student use in class. As previously defined, negative behaviors relate to those non-class related activities that contribute to higher distraction levels (gaming, social media, internet, etc.). Educators believe that these negative behaviors lead students, and potentially their fellow classmates, to become increasingly distracted during class time. The results of the iPad initiative at Wilkes University show that the concerns regarding lack of student engagement and participation are not justified. The students self-reported their behaviors, according to time spent performing a variety of activities, and 80% of the Wilkes freshmen can be classified as *engaged* and 82% can be classified as *responsible*. This means that the majority of students were interested in their own success in the classroom. While this study is unable to report an *increase* in student engagement as a result of incorporating iPads into the classroom, the results show the presence of student engagement.

Using the aforementioned logic, if iPads are implemented within a classroom setting then negative behaviors and high distraction levels would result. The purpose of this study was to prove otherwise.

Hypothesis 1: Engaged and responsible students are not distracted from class activities with the incorporation of iPad technology. The intention of the analysis was to evaluate if time spent on positive behaviors had an impact on whether or not the student perceived the iPad as distracting during class time. First and foremost, the results show that the students were engaged and responsible, and few are distracted – only 22% of student report that they are distracted in the presence of an iPad in the classroom. The results show that for these engaged and responsible students, iPads were not a distraction in class. The results also show that for the students who actively engage or participate in class, significantly less time was spent on distracting behaviors, i.e. *engaged* students are most often also *responsible* students. This indicates that, as instructors, we must create a classroom environment that engages students.

Other findings indicate that gender has an impact on whether a student will be engaged – males report that they spend significantly more time participating in class-related activities in class than females. In addition, gender does not impact whether a student will be responsible – males and females reported that they spend similar amounts of time participating in non-class-related activities during class time.

Hypothesis 2: The instructor's ability to integrate and demonstrate iPad technology is correlated with distraction from class activities. Although the overall results were not significant at the 5% level, the data suggests that the students who perceive the iPads as distracting rely more on the instructors' knowledge of iPad technology. Significant differences were observed between non/responsible and non/engaged students. This may mean that the students who were more responsible and more actively engaged in class and class activities were more interested in

the professor incorporating the iPad into the classroom environment, as there is a slight increase in importance as engagement and responsibility increases.

For this study, the instructors spent a few minutes at the beginning of each class, during the first few weeks of class, teaching the basics of a variety of iPad apps. The instructors also incorporated the usage of these apps into the class design and assignments. Consistent with prior findings, the researchers agree that these steps are critical to the success of incorporating any technology into a classroom environment.

Limitations. One of the limitations of the analysis is that the students self-reported their level of participation and engagement in the class, in addition to their distraction from the class. Another limitation is the small sample size – data was actively collected for only one semester, in one program from one institution. This can limit the generalizability of the results. Another complication is that the IME course is team-taught, there are two to four instructors that cover the content, and this difference was not incorporated into the study. Very little demographic information was collected from the students.

Future Research for this project at Wilkes includes a more widespread look at student performance, behavior and pedagogy. Future projects could also include collection of measures of student engagement and responsibility in ways that are not self-reporting. As the iPads become integrated across the remainder of the curriculum, the research team will be able to evaluate the impact on students and their performance and in more courses and at various class standings.

REFERENCES

Angst, C. & Malinowski, E. (2010). Findings from eReader project, phase 1: use of iPads in MGT40700, Project Management, University of Notre Dame Working Paper Series, Mendoza College of Business, University of Notre Dame, 2010, pp. 1–17.

Burnsed, B. (2010). M.B.A. Programs Are biting Apple's iPad. Retrieved from http://www.usnews.com/education/articles/2010/11/24/mbaprograms-are-biting-apples-ipad on January 8, 2013.

Davis, A, Robinson, R. & Waterbury, C. (2012) Technology enhancement tools in an undergraduate biology course. *EDUCAUSE Review* (2012). Retrieved from http://er.educause.edu/articles/2012/12/technology-enhancement-tools-in-an-undergraduate-biology-course on October 1, 2015.

Jones, C. & Shao, B. (2011). The net generation and digital natives: implications for higher education. Higher Education Academy, York.

Lai, E. (2012). Chart: Top 100 iPad rollouts by enterprises & schools (Updated Oct. 16, 2012). Retrieved from http://www.zdnet.com/blog/sap/chart-top-100-ipad-rollouts-by-enterprises-and-schools-updated-oct-16-2012/1274.

Marmarelli, T. & Ringle, M. (2011). The Reed College iPad Study. Retrieved from http://web.reed.edu/cis/about/ipad_pilot/Reed_ipad_report.pdf on January 7, 2013.

Merrill, M. D. (2002). First principles of instruction. *Educational Technology Research and Development*, 50(3), 43–59.

Merrill, M. D. (2008). What makes e³ (effective, efficient, engaging) instruction? Keynote address at the AECT Research Symposium, Bloomington, IN.

Merrill, M. D. (2009). Finding e3 (effective, efficient and engaging) Instruction. *Educational Technology*, 49(3), 15-26.

Pearlman, B. (2010). Designing New Learning Environments to Support 21st Century. Retrieved from http://www.bobpearlman.org/Learning21/index.htm on February 24, 2011.

Pryor. J., Hurtado, S., Saenz, V, & Santos, J. (2006). The American freshman: forty year trends, 1966-2006. Higher Education Research Institute. Retrieved from http://gseis.ucla.edu/heri/40yrtrends.php on June 21, 2010.

Rossing, J., Miller, W., Cecil, A., & Stamper, S. (2012). iLearning: The future of higher education? Student perceptions on learning with mobile tablets. *Journal of The Scholarship Of Teaching & Learning*, *12*(2), 1-26.

Ruch, M. & Edmonds, J. (2013). iPads in the business classroom: an analysis of the Jay S. Sidhu School of Business & Leadership's iPad initiative. Presented at the *International Academy of Business and Economics* in Orlando, Florida; Winter Conference, March 2013.

Young, J. (2010). A test for the iPad: will it bring the Internet to the beanbag chair? *Chronicle of Higher Education*, April 7, 2010.

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An Education Grounded in Ethics

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ABSTRACT

Ethics is complicated! Employers want employees who operate with strong ethical foundations, honesty and integrity. Accrediting bodies expect institutions of higher learning to include ethical training in their curriculums in order to shape the future of business and society by educating students on how to appropriately handle ethical dilemmas. One of the core values and guiding principles for the leading international accrediting institution for business schools, The Association to Advance Collegiate Schools of Business (AACSB), is each school must encourage and support ethical behavior in both professional and personal actions of their students, faculty, administrators, and professional staff through appropriate systems, policies, and procedures. In this paper, we discuss how two universities have incorporated this standard into their business degree curriculum. If effective, we proactively prevent ethical challenges rather than respond to them.

Keywords: Business ethics, education, ethical behavior, ethical decision making, ethics, moral development

INTRODUCTION

Ethics and her cousins, honesty, deception, and disclosure, are difficult concepts to apply with precision in the business environment, yet each represent pervasive concerns in the marketplace. Consumers doubt claims made by advertisers, government officials investigate claims made by corporate officials, citizens question claims made by government officials, employees question assertions made by management, and management is concerned about their employees work habits (Hill, 2008). Some believe the concept of ethics begins in the home; and, many believe school is the best place to gain a proper understanding and knowledge of ethics.

Accepting the challenge that *Ethics* is complicated, let's begin with the question: "What is ethics and what does it mean to say someone has acted unethically?" One professor stated ethical standards are not the standards of the law but are in fact a higher standard. They are the generally accepted rules of conduct, standards, and expectations for behavior which have been developed for nearly every aspect of our lives (Jennings, 2015). Another professor and business leader described ethics as follows: "Ethics is the study of 'shoulds' and of doing the 'right thing' and attempts to provide a value-laden framework through which real-life decisions can be made (Hill, 2008)." Philosophers, academicians, politicians, and students have debated ethics for thousands of years; and, many theories exist around what ethics is. Some have even expressed the sentiment, "we don't all have the same ethics", and most of us would agree.

Ethics is vital in business and government, both of which have more than a financial impact on society; they must focus on both fiscal and social responsibilities and the community around them. Society cares not only about gains/losses in business but also customer care, consistency, trust, accountability and work environment. Teaching an ethical framework for students who are preparing to enter the business world upon graduation allows a university to broaden students' mindsets beyond the focus of solely making money to the reality of the broad social impact business has on society.

Business and government scandals are well documented. The costs of unethical behavior in business go beyond financial impact and affect the life of the business, its people, creativity, productivity, and the entire community. Research shows that companies which focus beyond the bottom line and focus on other attributes as well, such as creativity, a commitment to ethics, and encouraging employee input, averaged 571% higher earnings, 417% higher return on investment, and 363% higher stock prices when compared to entities without a strong focus on corporate and individual integrity (Thompson, 2002).

While not all unethical behavior can be prevented, providing a focus on educating future business and government leaders about strong ethical and social responsibilities can change the business culture one graduate at a time. Schools of business at universities around the country are working to improve the knowledge and application of workplace and personal ethics in the lives of their students. We give specific attention here to Troy University (Troy) and Mississippi College (MC), the institutions of the authors, and how their universities have approached the study of ethics. Each university uses a combination of theories and purposes each student must develop her or his own set of virtues to serve as a guide in making both personal and business decisions throughout their life time.

DISCUSSION

Both business schools follow the accreditation standards of The Association to Advance Collegiate Schools of Business (AACSB), the leading international accrediting body. One of AACSB's core values and guiding principles is each school must encourage and support ethical behavior in both professional and personal actions of their students, faculty, administrators, and professional staff through appropriate systems, policies, and procedures (AACSB, 2013). AACSB charges each university with the task of adhering to the accreditation core values and guiding principles based on and consistent with the university's individual mission. Interestingly, both Troy and MC have added courses to their curriculums over the past few years with specific focus on ethical leadership and responsibilities; and, both schools encouraged faculty to enhance existing courses by emphasizing or adding ethics components.

Troy, a public institution founded in 1887, has a current enrollment of nearly 25,000 students. The mission of the Sorrell College of Business at Troy supports the overall university mission by preparing its diverse student body to become ethical professionals equipped to compete in the global business environment through its quality education in global business.

MC, a private Christian university founded in 1826, has a present enrollment of over 5,000 students. The mission of the School of Business at MC is to provide the highest quality business education where students are prepared with a sound understanding of essential business principles, effective communication skills, and an appreciation for social responsibility and ethical values.

Troy offers an undergraduate management course in *Business and Society* which serves as its staple course on ethics and focuses heavily on ethics, social responsibility, business culture, and values reaching across national and international cultures. *Ethical Leadership and Management in a Global Economy,* required in Troy's graduate business degrees, is designed to equip students with critical leadership skills and a solid understanding of ethical theory they need to become effective leaders in today's turbulent times. The class explores the latest thinking in leadership theory and contemporary practices at work within organizations throughout the world including discussion on ethical scandals and political turmoil Students are encouraged to examine emerging topics, leadership vision and courage, and to lead virtual teams and make actual leadership decisions.

Discussing corporate social responsibility in the classroom is one way to integrate sustainability and ethical behavior into a business plan. A "study away" opportunity was created where students could take an online course and spend a week visiting various businesses throughout Alabama which have a specific focus on sustainability, ethics and social responsibility. One visit included a trip to a small company in Montgomery, AL working with farmers in Haiti to grow, process, and export chocolate. With the help of the company and the local government, Haitian farmers and processors were able to earn income and create a sustainable way of living. Troy also integrated an independent study course in sustainability into its Confucius Institute with a study abroad to China. Study abroad trips are also planned for Costa Rica in 2016 and Cuba in 2017 to provide additional experiential learning opportunities.

Service learning projects provide another way to model sustainability and ethics in the local community. Over the last nine years 21 service learning projects have been completed as part of the MBA program. 85% of these projects were completed for local nonprofits, such as the Child Advocacy Center, the Phoenix City Housing Authority, and the Homeless Resource Network. Students, working with faculty and the nonprofit leaders, offer numerous and various ideas and solutions to the organization providing them with the opportunity to learn more about and be engaged in their communities, acquire team management skills, and work on real world issues having a lasting impact.

At MC, the *Faith and Business Ethics* course is required of all undergraduate business students. At the graduate level, the *Law and Ethics in the Business Environment* course is required for all MBA degrees. Both courses are designed to provide an overview of the fundamental concepts and principles of business ethics and use case studies and practical approaches to recognize and solve ethical dilemmas within a Christian foundation consistent with the school's mission. Students examine philosophical and theological backgrounds for ethics in order to develop a valid method of moral decision making. Students are exposed to the various types of corporate ethical codes of conduct existing in the marketplace today.

Each year, in an effort to expose students to a real world application of the ethical principles presented in the curriculum, MC hosts a speaker series and a week-long focus on ethical topics in all courses within the school of business. Throughout the week, speakers share their personal experiences discussing how their ethical framework intersects with and impacts their personal and business decisions and activities. The week concludes with a signature event welcoming nationally known business leaders including Dan Cathy, CEO of Chick-fil-A, Bill Rhodes, CEO of AutoZone, Mike Ducker, COO of FedEx, and Lieutenant General Robert R. Ruark, Director of Logistics for the Joint Chiefs of Staff. The speaker series during each semester has welcomed nationally known speakers including Secretary Condoleezza Rice, Speaker Newt Gingrich, Governor Jeb Bush, and WNBA owner Mary Brock; and local business leader, Joel Bomgar, and MC graduate, Grace Bateman.

MC students are also required to participate in service learning projects designed to provide opportunities for students to work with non-profits in the community. These projects teach students how to serve others within the context of the MC mission and teach students how to apply the principles of social responsibility in the community in which they live and in the businesses where they become employed.

CONCLUSION

Ethics matter! As businesses and governments work to become more transparent and socially responsible, it is more important than ever universities help students understand the role ethics and social responsibility play in business decisions. The courses offered at Troy and MC may only be a semester long, but the foundation laid within each student to develop a more morally-centered compass will last a life time. The ethical dilemmas they face occur in their homes, relationships, and workplaces…essentially in every area of their lives. And, their moral development needs to be grounded before they come face to face with ethical dilemmas as adults.

Employers want employees with a strong ethical foundation. Employers and accrediting bodies expect universities to include ethical training and discussion in their curriculums. Universities have the opportunity to shape the future of business and society by educating students on how to appropriately handle ethical dilemmas…and, in doing so, help future business and government leaders be proactive in preventing challenges rather than responding to them.

REFERENCES

AACSB. (2013), Eligibility Procedures and Accreditation Standards for Business Accreditation. Florida: AACSB International
Hill, A. (2009). *Just Business*. Illinois: InterVarsity Press.
Jennings, M.M. (2015). *Business Ethics*. Connecticut: Cengage Learning
Thompson, W.D. (2002). Restoring Integrity to Business. *Vital Speeches of the Day.* October 15, 69:1.

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Creating An Ethical Classroom

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ABSTRACT

While business school curricula offer courses devoted to teaching ethics, one of the ways professors can teach the subject to students is by conducting courses in an ethical manner with adherence to fairly-applied rules. This paper discusses the use of class rules not just as a means of conducting an ethical class but also as a learning exercise in a "class contract."

Keywords: Business ethics, education, ethical behavior

INTRODUCTION

After a quarter century of teaching courses in Business Law at various colleges and universities, I have observed a continuous decline in student behavior in class. The unwritten rules of deportment that were once taken for granted in higher education and elsewhere are no longer observed. Whether the behavior has resulted from an overall loosening of societal mores or poor high school conduct carrying over through the prolonged adolescence of the modern college student, it is clear that classroom decorum has declined during the past decade.

To remedy the problem I have devised a set of class rules that students must observe if they are to remain a student in the array of Business Law related classes that I teach. At the beginning of each semester, two copies of the rules are appended to my syllabus. Upon review of the syllabus at the first class, students read the rules along with other requirements for success in the class. Two copies are attached, one remains with the syllabus in the hands of the students, and the other is signed by each student and returned to me. I keep the signed copy on file during the semester and for six months after the course has concluded in the event that any student contests his or her grade or has any questions about the rules and their enforcement.

I make it clear to the students that unless each student signs a copy of the rules and agrees to abide by them, the student cannot remain a member of the class. Thus far, no student has declined to sign the rules nor to my knowledge has anyone dropped the class after being asked to observe.

There are seven rules that the students must agree to in order to remain enrolled. A copy of the rules is contained in Appendix I to this paper.

TARDINESS IS NEXT TO UNGODLINESS

As a courtesy to my students, I arrive a few minutes ahead of the appointed hour that class begins. I expect students to reciprocate this courtesy.

It has been my experience, as well as that of other professors, that students are often casual about arriving to class on time. I set the tone by being on time and I have a right to expect they will be punctual. If students are late, I will speak to them and warn them about the rule. The chastened student will comply with the rule or will be considered absent from that session.

EVERYBODY'S TALKING AT ME, I DON'T HEAR A WORD THEY SAY

The second rule has to do with another unfortunate habit that Generation X students have developed and that is the notion that they have the right to chat with each other while I am talking or another student is presenting, reading or responding to a question. I warn the students that most of the material that will appear on my examination will be taken from the notes that I will give in class and the information that I present will not necessarily be found in the textbook. Therefore, they will be required to take copious notes and pay close attention. I make good on this promise on the Mid-Term exam which is largely based on my class notes. Invariably grades on the Mid-Term are lower than students have come to expect in this era of grade inflation. Inevitably the attention level and the rate of note-taking ratchets up in the wake of an exam which has featured a few A's and B's, many C's and D's, and a sprinkling of F's.

This wake-up call causes students to buckle down and study hard for the final exam. As my high school principal used to say, "Work Works Wonders." She, as usual, was right.

I believe that the tone of the class is set by the instructor. Therefore, I hit the ground running. The first class session is much like the first class of any law school course. A few minutes are devoted to a reading of the class syllabus and taking an attendance. Thereafter, I lecture during the first class, not necessarily for the full time, but to set the pace for the class, which will be intense and intellectual. Personal comments that stray from the course material under study are few and far between. The business law classes are "all business" with very little frivolity. Students catch on immediately that the class is one they are to take seriously and one which they must attend.

Another section of the syllabus details the class attendance requirement. Students are allowed no more absences that the number of class meetings per week. If my class meets for two 75 minute periods, students are permitted two absences for the term. Since most of my classes are so-called "turbos", classes which meet for at least two and one-half hours, students are permitted one absence for the semester. Thereafter <u>five</u> points will be deducted from the final average unless a good excuse is presented. Such excuse is one that is accompanied by a doctor's note or an obituary notice. Other excuses are not acceptable. In the wake of this rule, students become cognizant of any classes they miss and know that they must husband their missed classes so they do not exceed the limit. Enforcement of the rule means that attendance is taken at every class by roll call. Passing around a sign-up sheet may tempt a student to "sign" or forge the name of a missing companion. Sign-up sheets can be used only randomly and in classes that are no larger than 40 in number.

WALK ON BY

You may have noticed within the last several years, students have developed a propensity to get up and walk out of class at whim. Apparently this is the legacy of too many ADD diagnoses or frequent attendance at sporting events, movies, plays and church services where strolling about has become a contagion. One of the rules that I oblige students to follow is that once they come to class, they cannot leave because it distracts other students and the instructor. The rules require that if a student must leave during class either because of some pre-arranged appointment or illness, he or she must sit near the door in the classroom so that departure can be as unobtrusive as possible. Once the student leaves the classroom, the student is gone for the duration. In my turbo classes which run for 2-1/2 hours there is a ten minute break about sixty minutes into the class, so if the student has left before the break, the student may return during the break for the second half of the class.

Students respect this rule because it fits in with the ethos of the class, namely, that the course is a serious intellectual endeavor that brooks no distractions from our educational mission.

CAN'T TAKE THE EXAMINATION? MAKE MY DAY!

One of the rules which I require students to follow is that any quiz or exam must be taken on designated dates which are announced at least two weeks in advance. The Final Exam date is prescribed by the University Registrar and is scheduled on the syllabus.

Students are informed that if they did not take the exam on the appointed date, they will receive a grade of F. Students are told that there will be no make-up exams, so exam dates are sacrosanct events not to be missed. When I tell the students the exam date and what will be covered from the text chapters, topics etc., I tell them that there will be no make-up exams, and that if the student is not present on the day of the exam, I will assume that the student has died. Only a student's death will excuse his/her failure to take the test or hand in an assignment on the appointed day.

In the five years since I have instituted these rules, only one student challenged me and failed to take a Final Exam on the appointed day. His excuse: he had been out drinking with a friend on Thursday night, the friend had been injured in an accident and he had to stay with his friend until the latter's parents arrived early Friday morning. The exam was on Saturday at ten o'clock. He told me of his indisposition at 9:48a.m. on Saturday morning. "Not good enough," I said. I gave him an "F" for the exam and he began an appeal of his grade. He later left the University. The "F" remains on his record.

In the wake of this rule, the stream of students calling to say they suffer from a headache, stomachache or other malady has dropped to zero. The number of relatives who mysteriously die around exam dates and coincidentally have services held on exam dates have also mysteriously disappeared. I feel personally responsible for ending a public health menace, ERD – Exam Related Diseases and for the declining mortality rate in student families. No wonder life expectancy is increasing. I have done my part!

THE PROLIFERATING "I"

Since I have instituted my draconian examination assignment policy, there is naturally no need for the grade of "Incomplete." Students seem to have developed a notion that a menu of five three-credit courses cannot be completed within a fifteen-week semester. Therefore, they ask the professor for an INCOMPLETE so they can complete assignments or take exams at a later date. I believe that the "I" grade should be banished from the grading lexicon of the modern college and university for several reasons. First I believe that it is unethical for a student to demand and for a professor to acquiesce to more time for one student to complete the requirements of the course than the majority of students in the class. If everyone were allowed to talk an "I", there would be no point in setting an exam date. Moreover, allowing students to take exams later gives some students more time to study than others is unfair to conscientious students who complete requirements on time. It also sets the stage for cheating since the "INCOMPLETE" contingent may learn the contents of the exam and take advantage of the information in an unsupervised setting.

Some universities have rules stating that a student who takes an INCOMPLETE can get a grade no higher than a C upon completion of the work for the course. Other schools have no such proviso so it is possible that the late exam taker could earn as high a grade as the student who took the exams and completed his/her assignments in a timely fashion. This is unethical and unfair to the latter. Incompletes also put an onus on professors who must devise a new exam, set aside time for proctoring and grading papers for a course that has long-since ended. The INCOMPLETE is unfair to all concerned including the students who seek them, the students who complete the course work in the allotted time, and to the already overburdened professor. A professor can set an appropriate tone on this subject by maintaining stringent requirements for the completion of all course requirements.

THE GRADE WHEEDLER

In recent years, a monster has begun stalking the halls of colleges and universities. This monster is the GRADLE WHEEDLER, a beast that preys on the weak willed professors who lack the backbone to stand up to students and maintain standards. There are two solutions to this menace. The craven alternative is for the professor to make himself scarce at semesters end and to simply ignore pending e-mails and voice messages from disgruntled students who plaintively claim that they "need" a higher grade for one of the following reasons.

  (a) Their scholarship depends on it.
  (b) Their eligibility to play varsity sports, hence their scholarship, depends on it.
  (c) Their parents will "kill" them. (There is no record of the rate of parental homicide in the wake of a child receiving a grade lower than "A.")
  (d) They did all the work!
  (e) You fill in the blank here.

The above group is the pleader types. They play on the professor's sympathies to get the latter to change their grade.

Less common but equally pernicious are the students who offer "logical" reasons why their answers are deserving of a higher grade than you gave them. Pointing out that you have seven years or more of higher education behind you and a decade or two of teaching experience while they have been studying the subject for only several weeks seems to take them back.

The rule I put on this list that has stopped all would be grade wheelers is "All grades are final." I will not revisit any paper, which I have already graded. Again, it is a matter of ethics. Why should a few students' papers or exams merit a second look? If a professor decides to raise the grade he/she looks weak and uncertain, and word will get out that the professor can be subjected to student blandishments. Smelling blood, more jackals will attack. Therefore, I notify students that they may not request and will not receive any grade other than the one they originally earned. Since I made this rule, no student has requested a grade change.

TECHNOLOGY INVADES THE CLASSROOM

People today carry with them a variety of devices that make them a modern communications center. Gone are the blissful days when one simply was unreachable. Students have cell phones and beepers so they can be instantly available to make and receive important phone calls from their roommates, boyfriend or girlfriend, Domino's Pizza or the President of the United States.

In my class, students are warned that devices are unwelcome and that they may not be used to make a call or to receive one. If they ring, buzz or beep during the class the student is banished for the duration of the class.

THE DECOROUS CLASSROOM

Today's students view their colleges as a period of extended adolescence where they may continue to practice the grisly habits and manners they acquired in junior high school.

My last rule reminds students that they are members of a professional school within the University. In 2000 a wealthy businessman, Charles F. Dolan, donated $25 million to Fairfield University's School of Business, which was named in his honor. I inform students they are expected to act in a decorous manner. As they are members of a community of scholars and future business leaders, I expect them to act accordingly. Males do not wear hats in my classroom. Once upon a time gentlemen doffed their hats as soon as they entered a building, a room, or an elevator. I see no reason for a young man to wear caps in my classroom and I view the habit of doing so as a breach of etiquette.

In addition, I do not allow students to eat food or drink beverages during the class. The classroom is not the cafeteria. Students should quell their hunger pangs before coming to class so they can focus their energies fully on the work at hand. No business allows snacking during business activities except during designated lunch hours and breaks. Students are allowed to bring water to class and candy to stave off starvation and fatigue during my turbo classes.

Finally the students sign a copy of the rules and return it to me for my files.

CONCLUSION

I regard this list of rules as one of the most important parts of my syllabus. The rules are important because by requiring them, I set a tone for the class. It is not a circus or an entertainment event but a serious intellectual enterprise that is part of their preparation to become future business leaders.

When college professors talk about ethical behavior in the classroom very often they refer to their efforts to thwart cheating by altering examinations and making their assignments so unique and peculiar to the class they cannot cadged from the internet or from term paper mills that are proliferating.

The ethical behavior that I am urging here has to do with a set of reasonable, fairly applied rules whose end is the goal of a successful class and in which all students understand what is expected and that breaches of the rules will not be tolerated.

What has been the reaction of the students to these rules? Some have confessed to being taken aback by them while others have confided that they have thought about fleeing the class for more familiar leniency to which they have become accustomed. Many students have commented that they appreciate the fairness of these rules. They agree that no student should have more time than another to complete assignments and that they know some students take advantage of weak-willed professors in an effort to improve their grade or having found out what material was tested on the exam so they can study to greater advantage than their colleagues.

A by-product of these rules is that they can be used by a professor at some point during the semester as a springboard for a discussion of business ethics or in a class involving contract principles. Are these rules a contract between the student and professor? Are they fair? Is this an adhesion contract to which students must acquiesce with no opportunity to negotiate? Should students be permitted to negotiate these points before signing them? Are students under duress when they agree because the alternative is to drop the class that they may need for their major?

These rules can provide the basis for many vital discussions about ethical behavior in the classroom and what they mean to both students and professors and future business leaders.

My fear is that as professors we teach courses about law and ethics but may not apply lawful and ethical principles to behavior in these courses. "Do as I say not as I do" should not be the rule. "Do as I do" should be.

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APPENDIX 1

CLASS RULES

In order to make our study of this course material as rewarding as possible, I require students to observe the following rules:

1. Students must be on time for class. Class will start promptly at the stated times.

2. Students are not to talk during lectures. Much note-taking and careful attention is required.

3. Students may not get up and walk out of class. This is distracting to other students and to the instructor. If you must leave during class, please sit near the door so you can slip out of the room as unobtrusively as possible. Once you leave the room, you may not return.

4. Exams must be taken on the dates designated. Assignments must be handed in on the due date. Failure to take exams or hand in assignments on the dates designated will result in an "F" for the exam or assignment. No makeup exams will be given.

5. All grades are final. Students may not request and will not receive any grade other than the one they have earned on exams and assignments.

6. Students may not use cell phones, beepers, etc. or answer these devices during class.

7. Students are reminded that they are students in the School of Business which is a professional school of the University. As a member of the community of scholars and future business leaders, students are expected to act accordingly. Gentlemen will not wear hats in the classroom, nor is eating food and drinking of beverages permitted, per edict of the Dean.

I have read and understand these rules. I agree to abide by them.

_____
Signature of Student   Date

How Sony Got its Groove Back: A Case Study in Turnaround Management

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ABSTRACT:

Turnaround management, the use of a collection of recovery-focused strategies to rebound after incurring substantial losses, stands as an oft-overlooked but nonetheless crucial strategic approach. Most organizations face decline at some point in their history, so understanding how best to cope with a dire situation can prove the essential factor in determining a company's survival. We believe that turnaround management stands as a highly relatable concept within the field of strategic management, since the notion of triumph in the face of adversity remains universal. In this paper, we provide a case study of Sony Corporation's fall and subsequent revival, a learning experience that can be employed as a teaching tool to acquaint learners with the key tenets of turnaround management. Suggestions are made to facilitate instructors' applying the case as either an open-ended exploration or as an analytical postmortem.

Keywords: Strategic Decline, Turnaround Management, Turnaround Types, Strategic Renewal

INTRODUCTION

Individuals who find themselves caught in a seemingly interminably worsening situation can often feel discouraged, sometimes to the point that they lose the will to soldier on. Within the realm of business, this situation may arise when a firm's strategic leaders become embroiled in what appear to be inescapable downward spirals of falling profits, diminishing market share, and ever-worsening prospects for the future. In 2011, Sony Corporation executives were faced with this very situation when the company's share prices plummeted and the organization's survivability was brought into question ("Stringer theory," 2011). Rather than buckling under the immense pressure, however, Sony has begun its phoenix-like ascension, thanks in no small part to the resolve of the firm's top management team. The case presented herein attempts to provide an interesting and highly relevant study of one company's struggles with catastrophic losses and its subsequent recovery and revival. Everyone can relate to the universal notion of triumph in the face of adversity, so we include allusions to a boxing match in which a boxer who is performing poorly makes a miraculous comeback to snatch victory from the jaws of defeat. In addition, the fact that Sony produces consumer electronics and popular entertainment properties makes the company an entity with which students can identify, which can seamlessly engender spirited discussion.

The purpose of this paper is to a) highlight a real-world situation that aptly embodies the strategic management concept of turnaround and b) provide a suggested framework of how best to approach the discussion in a manner that will engage and inspire students while promoting thorough contemplation of heretofore insufficiently explored subject matter.

Studies have shown that students tend to learn best when they are engaged in work that is both enjoyable and connected to the real world (Malone & Lepper, 1987; Newmann, Wehlage, & Lamborn, 1992). For this reason, we include in this article colorful language and striking imagery designed to provide instructors with possibilities for dramatizing real-life events in a way that will foster a dynamic discussion of the topic at hand. It is recommended that learners be presented with this case in a manner not unlike an interesting narrative in an effort to capture their attention and their imaginations. While this case is intended for use in an undergraduate strategic management class, we believe that its approachability also lends the case to introducing students to some of the core principles of business strategy and turnaround. In the context of this application, certain suggested questions that require respondents to apply a depth of knowledge might best be omitted, and aspects of the case itself may require slight modifications to streamline and simplify the narrative.

We present two alternative methods for delivering this case. Students may be assigned the readings ahead of time; then, the instructor can present the case in class as a series of "rounds," with each round's ending with one or more questions for discussion. This is the delivery method that we explain throughout this paper. Alternatively, the readings and all questions can be assigned as homework, and the class can be dedicated to discussing the answers.

LITERATURE REVIEW

Declining businesses or industries have been characterized as entities experiencing, over a period of time, diminishing demand or declining financial performance, usually caused by technologies' becoming obsolete, shifting demographics, or changes in social and fashion trends (Chan, Flynn, & Chinta, 1991; Harrigan, 1980). Empirical studies show that firms in such situations focus their efforts on improving their finances and tend to place a lesser emphasis on investments in product differentiation (Chan et al., 1991).

Most organizations face a decline, at some point, and it is in this situation that a company tends to respond with a "major effort to turn around" the firm's fortunes (Hofer, 1980 p. 20). A turnaround is defined as two or three consecutive years of increase in financial performance following a period of two or three years of decline (Hofer, 1980; Smith & Graves, 2005). This improvement is usually accompanied by high levels of capital expenditure, low levels of working capital, and low retained earnings (Chan et al., 1991).

There are two broad types of turnarounds: strategic – also called entrepreneurial – and operational. Strategic turnarounds involve changing the company's strategies in one or more of its existing businesses, or entering a completely new business. Operational turnarounds focus on operational and financial targets without changes to the firm's strategy. These two types of turnarounds can be further subdivided according to the main activities and objectives of the firm (Harrigan, 1980; Hofer, 1980; Schendel, Patton, & Riggs, 1976). Based on Chan (1991), Smith and Graves (2005), Harrigan (1980), and Hofer (1980), we summarize, in Table 1, the types of turnarounds and each type's main characteristics.

Table 1: Types of Turnarounds

TYPE	SUBTYPE	EXAMPLES OF TACTICS
STRATEGIC or ENTREPRENEURIAL Relevant when the firm's operations are not in crisis, but it has lost its strategic position.	Concentration	• Increase investment in one or more core SBUs to dominate or improve market share. • Invest in product diversification. • Sell or spin-off non-core SBUs. • Horizontal integration.
	Diversification	• Vertical integration. • Acquire unrelated business.
OPERATIONAL Used when a firm has a moderate or strong strategic position but weak operations.	Cost-Cutting	• Collect receivables and stretch payables. • Cut inventories. • Decrease waste.
	Revenue-Generating	• Focus on the current line of products and/or reintroduce past products through reductions in prices and increases in advertising or direct sales. • Try a variety of revenue-generating actions, including selling products that the firm may not plan to sell again in the future. • Keep R&D expenditures and staffing at moderate to low levels.
	Asset-Reducing	• Sell assets that will not be used within the next 1 or 2 years. • Divest assets according to the firm's long-term potential.
	Combination	• Pursue a mix of cost-reducing, revenue-generating, and asset-reducing strategies.

Several analyses must be performed prior to initiating a turnaround effort. First, it is important to establish that the firm's value as a going concern is more than its liquidation value (Hofer, 1980). This requires assessing the company's operating health and strategic health. The company's operating health is based on its financial condition, its market and technological positions, and its production capabilities. The company's strategic health is based on its position on a product/market matrix, its technological and production competencies, and its financial capabilities (Hofer, 1980).

In order to stem the decline, the second step involves identifying and addressing the causes of the crisis. Correcting the firm's present troubled course requires developing support among stakeholders such as suppliers, creditors, and employees; stabilizing the internal climate; and reevaluating the decision making process. These steps may require a change in the top management team, since it may not be able to rally the stakeholders around the new strategies or to transform the dysfunctional culture and process that led to the decline (Hofer, 1980; Kanter, 2003; Smith & Graves, 2005).

TEACHING THE DECLINE-TURNAROUND SEQUENCE

It is human nature to root for the underdog. American popular culture, in particular, celebrates indefatigability, as evidenced by countless romanticized professional sports stories, classic literature in which the protagonist experiences a downfall and must overcome misfortune to emerge victorious, and movies such as MGM's – now a subsidiary of Sony – own *Rocky* film series. The power of comeback stories derives from their ability to place the everyman/woman in the shoes of a downtrodden individual and beg the fundamental case study question "What would you do?" We believe that the very concept of turnaround, especially in the case of Sony in particular, has the power to engage audiences on a fundamentally human level by highlighting the power one possesses to refuse passive acceptance of what appears to be irrevocable fate and, instead, through hard work and strategic planning, successfully rewrite destiny.

This case study references readings concerning Sony Corporation that appeared in popular media between 2011 and 2013. Ideally, these articles should be read chronologically in order to give students a better sense of how Sony's situation actually evolved over time. The following list contains readings that we have successfully used for over twelve sections of *Strategic Management* in the last three years. Instructors can supplement additional documents that they feel will contribute to their students' understanding of the case.

- Sir Howard Stringer: Sony's Savior? *60 Minutes*, January 2006. (This report includes an approximately four-minute video that can be shown in class). (Schorn, 206)
- Stringer Theory, *The Economist*, May 2011.
- Sony Falls Most in Eight Months on Full-Year Loss Forecast, *Bloomberg.com*, November 2011.
- Cracking up, *The Economist*, January 2012.
- Same old or new different? *The Economist*, February 2012.
- Sayonara Sony: How Industrial, MBA-Style Leadership Killed a Once Great Company, *Forbes* (Hartung, 2012).
- Sony Replaces Strategy Officer After Sales Forecast Cuts, *Bloomberg.com* (Yasu. Huang, and Amano, 2013).

Making its way to the ring: Sony Corporation
Sony Corporation (NYSE: SNE) is a Tokyo, Japan-headquartered multinational consumer electronics manufacturer and entertainment purveyor founded in 1964. Throughout its history, Sony has experienced multiple environmental shifts whilst maintaining and creating a brand known the world over. While the company's success is well-noted, the firm has, in recent years, been plagued by multiple obstacles. Some stumbling blocks have dealt crippling blows to the organization, but Sony, by virtue of devoted and insightful leadership, is currently in the midst of a strong resurgence. The story of Sony Corporation's turnaround spans more than seven decades and traces the rise of a powerful multinational company, the fall of this global enterprise, and the resurrection of a humbled and wiser organization better equipped for the modern business world.

Students should be able to answer questions such as:
1. *Who are the main players (name and title/position) identified in the case?*
2. *In what business(es) and industry(ies) is the company involved?*

Round 1: Sony comes out swinging

In 1946, electronics store proprietor Masaru Ibuka and radio repair shop owner Akio Morita founded Tokyo Tsushin Kogyo, a telecommunications company that, in 1958, was renamed Sony ("Akio Morita," 2015). At the time, Japanese-produced goods had acquired a negative reputation for being of poor quality, a perception that Sony would help change.

Morita, after witnessing how frequently American workers tended to switch jobs, encouraged select Japanese employees to consider leaving their current employers in favor of taking positions with Sony. In the collectivist Japanese culture, one was typically expected to remain loyal to his/her employer, so this was something of a radical idea. The approach worked, and Sony was able to attract a hand-picked, talented workforce. This competitive advantage permitted Sony to create products attributed a markedly higher quality than that of most other goods produced in Japan at the time. Customers appreciated the value of Sony's superior products and were willing to pay the associated premium prices. Sony flourished and was able to diversify and grow into a prominent player on the world stage.

At this point, instructors may wish to ask students questions such as:
3. *What were the factors that contributed to Sony's early success?*
4. *Why was job mobility higher in the United States than in Japan? How can this factor affect the nature of an industry?*

Round 2: Sony stands tall

Despite suffering through several rough patches – particularly in the early 1980s – Sony proved resilient. The company realized great success with the Walkman audio cassette player and was later instrumental in the creation of the compact disc. This involvement led to the development of the Discman, which also proved a winner. The firm capitalized on its momentum by acquiring multiple media producers, and the mid-1990s saw Sony's making a bold move by branching out into a new market that few had dared enter and in which even fewer had been successful. This market was the videogame industry, and Sony quickly eradicated all skepticism with the lucrative launch of the PlayStation, which ultimately attracted the interest of new customers and captured a substantial portion of Sega's and market leader Nintendo's customer bases. Released five years later, the PlayStation 2 became the best-selling videogame system of all time. Sony-backed blockbuster films such as 2002's *Spider-Man* bolstered the company's fortunes, as PS2s continued to fly off shelves, with even non-gamers' buying the console for its ability to play DVDs, a new movie delivery medium that was rapidly replacing aging VHS technology. When Sir Howard Stringer was appointed CEO in 2005, the company was fairly stable; however, unfortunately for Sony, its good fortune was not destined to last.

Questions that could elicit interesting commentary include:
5. *What were the factors that contributed to Sony's success from the late 1980s until the early 2000s?*
6. *How can the appointment of a new CEO affect a firm's strategy? Is it best to promote a new CEO from within an organization, or is it better to bring in an outsider? Defend your position.*

Round 3: Sony's back is against the ropes

For a number of years, Sony's television product division served as a cash cow for the company. In the early 2000s, however, the commoditization of flat panel LCD televisions led to the significant slimming of margins not just for Sony but for all TV manufacturers ("Cracking up," 2012). As a result, one of Sony's major profit generators all but disappeared in less than a decade. At the same time, the company's PlayStation business faced its own difficulties. Following the exceptional successes of the original PlayStation and its widely-adopted successor, Sony was poised in 2006 to duplicate its previous victories, but a confluence of perhaps misguided strategic decisions and a seeming lack of regard for consumers' interests placed the company's gaming division in peril. Many industry analysts posit that, after selling through unprecedented numbers of PS1s and PS2s, Sony Computer Entertainment may have grown complacent and arrogant, mistakenly believing that the company's bargaining power over buyers would be powerful enough to command a higher asking price for the company's new PlayStation 3, a price higher than that set by Microsoft, just one year prior, for its Xbox 360 videogame entertainment system (Johnson, 2010).

"Father of the PlayStation" and then-President of Sony Computer Entertainment Ken Kutaragi, in announcing the comparatively expensive initial models (SKUs) of the PlayStation 3 – US$599/$499, as compared to the US$399/$299 Xbox 360 – famously embodied the division's perceived arrogance by identifying the PS3 as a system

designed exclusively "for consumers who think to themselves 'I will work more hours to buy one'. We want people to feel that they want it, irrespective of anything else" (Ashcraft, 2013), a quote that remains to this day a source of much industry ridicule. This and other missteps – the difficulty of developing for the PS3's complex proprietary operating system, avant garde marketing campaigns that failed to connect with consumers, and more – led Sony's new system to stumble out of the gate, allowing Microsoft to further increase its lead in the console space and leaving the door open for venerable videogame company Nintendo to overtake both competitors in terms of mass appeal with its innovative Wii game console.

Many blame Howard Stringer's cost-cutting measures for Sony's downfall (Hartung, 2012; "Stringer theory" 2011). While it is unlikely that this course of action did singlehandedly account for all of the company's struggles, it may have diverted the firm away from focusing on one of its core competencies. Sony had worked diligently to become a brand that was synonymous with quality; customers were positive that purchasing a Sony product meant buying with confidence. After Stringer implemented strategies aimed at lowering the cost structures of multiple divisions of the organization, the quality of several offerings decreased. Although cutting costs was likely a necessity, doing so resulted in Sony's straying, to some extent, from its focus on designing and selling top-tier, cutting edge products for which individuals were willing to pay a premium in exchange for outstanding performance and reliability.

Little did Sony executives know that the company would soon be forced to weather – in some ways, quite literally – a perfect storm of setbacks.

At this time, questions such as the following may be posed:
7. *How can commoditization affect the profit-making potential of an industry?*
8. *Can success serve as a double-edged sword? How so? Support your answer with examples drawn from other industries.*

Round 4: Sony may be down for the count
On March 11, 2011, a 9.0-magnitude earthquake off the Pacific coast of Tōhoku created a massive tsunami that devastated eastern Japan. Amidst the tragic destruction, a multitude of businesses were profoundly affected through the damage incurred to their physical structures and/or disruptions in their supply chain systems. Several of Sony's factories sustained heavy damage, and the company was forced to cope with debilitating logistical complications.

Just one month later, a group of malicious hackers breached the servers of Sony's PlayStation Network online videogame service and compromised the personal information – including customer names, addresses, and credit card details – of an estimated 77 million accounts in what Reuters called "the biggest Internet security break-in ever" (Reynolds, 2011). The breach necessitated the online service's being taken offline for twenty-three days, drawing the ire of customers concerned about the exposure of their sensitive personal information and of gamers frustrated by their inability to play and download games. The attack could not have come at a less opportune time, as the PlayStation 3 had been, in recent months, regaining ground lost to Microsoft's Xbox 360 and was on track to soon overtake the competition; sales of the PS3 waned in the wake of shaken consumer confidence, and it would be more than a year and a half until the system could, at last, supplant the Xbox 360's lead.

Sony's string of bad luck continued as, later in 2011, flood waters inundated the Thailand factories that manufactured a majority of the company's products. To make a bad situation even worse, Sony Pictures subsidiary Metro-Goldwyn-Mayer Pictures (MGM) faced bankruptcy, a drastic financial setback which delayed the next installment in one of Sony Pictures' most profitable film franchises, the legendary *James Bond 007* espionage action movie series. It is ironic that this twenty-third *007* film bore the moniker *Skyfall*, as the addition of its troubled production to Sony's ever-growing litany of concerns contributed to the impression that, for Sony Corporation, the sky might truly be falling.

Instructors may elicit responses to the following suggested questions:
9. *List at least three factors in the general environment and explain how they* [negatively] *affected Sony?*
    [Instructor note: In order to fully answer this question, students should perform a PESTEL (Political, Economic, Social, Technological, Environmental, Legal) analysis. For additional information, we suggest the following reports concerning the consumer electronics industry: Euler Hermes report (Soo, 2014) and Consumers Electronics Association (2015)]

10. *What are the characteristics of the industry(ies) in which the company competes, and how is the industry / are the industries changing?*
    [Instructor note: This question requires that students perform a Five Forces analysis of the consumer electronics industry in addition to completing a PESTEL analysis.]
11. *Identify the relevant stakeholders. What claim(s) does each stakeholder group place on the company?*
12. *What is the crisis that Sony faced? What are some symptoms of the decline? Present at least four different symptoms and/or crises.*

[Instructor note: If presenting as solely an oral discussion, simply ask students the following two questions. If using visual aids, draw an empty version of the table presented in Table 2. If assigning as homework, provide a printed version of the empty table and ask students to fill in their answers.]

13. *What external factors led to Sony's decline? (See Quadrant A of Table 2)*
14. *What internal factors led to Sony's decline? (See Quadrant C of Table 2)*
15. *You have been hired by Howard Stringer to advise him on the company's turnaround. What specific actions would you recommend?*

[Instructor note: If this case is to be presented as an open-ended assignment, stop here and ask students to place themselves in Howard Stringer's shoes. If this case is not presented as an open-ended assignment, instructors can supply students with the information contained within the following sections and ask students to conduct a postmortem.]

Round 5: Sony shows signs of life
Sony was in dire need of a new, more effective strategic direction. In April 2012, Kaz Hirai was appointed President and CEO of Sony Corporation. While Hirai had already proven himself a worthy leader during his time spent leading Sony's videogame division, some questioned whether he had the ability to right the company. Luckily, the new CEO of Sony had a plan.

Whereas Stringer had attempted to implement a "four-screen" plan hinging on televisions, phones, tablets, and PCs, Hirai rallied employees behind his "One Sony" vision (Duncan, 2012). Hirai announced that Sony would refocus on its core businesses and recommit to enhancing the quality of the firm's offerings. He contended that the company had shifted its attention away from creating "wonderful products" that would delight consumers with an unparalleled customer experience (Blagdon, 2012). In order to save the organization, Sony would need to once again place the customer at the forefront. The company would streamline its low-margin television division and selectively apply a similar cost-cutting mentality to its other product lines that had, over time, become increasingly commoditized. Hirai saw highly attractive opportunities in the medical and mobile industries and sought to capitalize on these potentialities. Based on his extensive experience in the videogame industry, Hirai also knew that Sony held a secret weapon within its portfolio, a product line that was on the brink of returning to its former glory.

Hirai made it his mission to ensure that the PlayStation product line would regain its place as the company's chief revenue generator. Bolstered by a strong lineup of first-party exclusive titles and strong support from third-party game developers and publishers, the PlayStation 3 turned a corner in 2013, when sales of the PS3 overtook its primary competition, Microsoft's Xbox 360 and Nintendo's Wii, first in global sales and then in US sales, finally breaking the Xbox 360's 32-month tenure at the top of the console sales chart (NPD Group). As the PS3's lifespan came to an end, development was already underway on its successor, a system codenamed Orbis, which would soon be known to the public as the PlayStation 4. Throughout the platform's development, Hirai emphasized making smart investments that would allow hardware sales to turn a profit much sooner than was the case with the PS3 (Langley, 2013). In an effort to reduce costs and increase competitiveness, he also advocated the adoption of externally-developed innovations, as Sony's history of rather strictly adhering to internally-developed, proprietary technologies had proven both costly and limiting (Morris, 2013). Hirai's strategic decisions would soon pay off, as Sony geared up to release what would become its extremely well-received PlayStation 4 game console.

Relevant questions include:
16. *How did Sony address each of the external factors that you identified as leading to the firm's decline? (See Quadrant C of Table 2)* [Instructor note: If presented as an open-ended case, then instead ask *"How should Sony address each of the external factors that you identified as leading to the firm's decline? (See Quadrant C of Table 2)"*]
17. *How did Sony address each of the internal factors that you identified as leading to the firm's decline? (See Quadrant D of Table 2)* [Instructor note: If presented as an open-ended case, then instead ask *"How should Sony address each of the internal factors that you identified as leading to the firm's decline? (See Quadrant D of Table 2.)"*]
18. *Of the turnaround actions that Sony adopted, which were most vital to the firm's turnaround? What would you have done differently?* [Instructor note: If presented as an open-ended case, then instead ask *"Of the turnaround actions that you suggested, which do you think are most vital to the firm's turnaround?"*]

Table 2. An Analysis of the Causes of Sony's Decline and the Company's Turnaround Actions.

	CAUSE OF DECLINE	**TURNAROUND ACTIONS**
EXTERNAL	*Quadrant A (Question 13)* ● Global economic crisis ● Earthquake and tsunami ● Flooding in Thailand ● Hacker groups ● Competitors (Apple, Samsung, new companies from China and South Korea) ● Many suppliers increased capacity, thereby creating a glut and forcing prices down ● Changes in the buying habits of Sony's customers ● Strengthening of the yen	*Quadrant B (Question 15)* ● Communicate with external stakeholders about progress toward revenue targets ● Outsource operations and some production outside of Japan (reduces the risk of other environmental disasters and also hedges Sony's currency risk) ● Sell off unprofitable business units ● Upgrade IT security
INTERNAL	*Quadrant C (Question 14)* ● Leadership ● Focus on manufacturing and cost-cutting rather than on innovation (particularly in markets such as smartphones and tablet PCs) ● Overexpansion ● Poor marketing ● Lack of effective strategic controls ● Internal culture that values seniority over performance ● Vulnerable data servers ● Japanese culture does not reward risk-taking ● "A chaotic jumble of divisions that do not trust each other" ("Same old or new different?," 2012)	*Quadrant D (Question 16)* ● Increase network security ● Create new business ● Communicate with internal stakeholders about changes in the company ● Institute organizational change efforts ● Increase R&D investment ● Effect changes in R&D and marketing divisions ● Revamp organizational structure ● Find a new CEO ● Promote younger executives

Round 6: Sony wins with a shocking knockout
The PlayStation 4 launched in North America on November 15, 2013. The system was heralded a triumph right out of the gate. The sales numbers for Microsoft's Xbox One, released one week later, paled in comparison to those of the PS4. Sony followed this extremely lucrative launch with similarly successful launches in Europe, Australia, its

domestic Japanese market, and a number of other territories throughout the world. While Sony's videogame division had briefly faltered during the PS3 era, the records that the PS4 broke, after only a few months on the market, promised great prosperity for not only Sony Computer Entertainment, but also for Sony Corporation overall. The PlayStation brand has once again become a true tentpole behind which the company can position itself and that can potentially provide great stability for a company once on the brink of financial ruin. After suffering great adversity, Sony Corporation has regained the confidence of shareholders and is well on the road to recovery (Yin-Poole, 2014).

Optional in-depth discussion of the videogame industry:
As one of the most popular forms of entertainment among today's youth, videogames can serve as a jumping-off point for much insightful and compelling discussion about business strategy. Instructors may wish to further discuss this subject, should students show particular interest, and we provide a brief overview of the industry to aid in preparing for such a discussion. If in-depth discourse on the topic is not desired, the dialogue can move forward to the next section.

The term "videogame" (alternatively, "video game") has, over the more than half-century of the medium's existence, become something of a misnomer. While videogames have always served as a source of amusement and escape, the interactive entertainment products of today bear little resemblance to the outmoded images of Atari 2600 games that spring to many people's minds in reaction to the term. Some modern games cling to the simpler mechanics and pure focus on play that early games popularized, but a vast majority of current games continually push the boundaries of what is possible within the medium, weaving into the experiences sophisticated stories, nuanced social commentary, and layered character development that can draw players into a fully-realized world in a way that movies, TV shows, and literature simply cannot. It would in no way be hyperbolic to regard many presently-active game directors as true auteurs who strive to craft art that will inspire audiences to contemplate their own values, the global community, and the human condition.

Atari Inc. introduced home videogame consoles to a mainstream audience; but, in 1983, the industry crashed. Following this collapse, Japanese game and toy company Nintendo released the Family Computer, or Famicom, in its homeland. In 1985, the system was redesigned and shipped to American retailers under a new name, the Nintendo Entertainment System (NES). Nintendo's efforts rebuilt the gaming industry, and later competition from Sega and other new entrants created a thriving market propelled by innovation. Intriguingly, Nintendo inadvertently led Sony – now one of the company's chief competitors – to enter the console gaming market when Nintendo enlisted Sony's help to design a CD-ROM-based accessory for the Super Nintendo Entertainment System. When Nintendo blindsided Sony by instead partnering with Philips to design the add-on, Sony used the knowledge and capabilities developed through the company's strategic alliance with Nintendo to launch the PlayStation in 1994 (Japan; 1995 worldwide). The platform was a massive hit, and the PlayStation 2, released in 2000, achieved the highest total sales of any gaming console (NPD Group). In an effort to prevent Sony's potential dominance of home entertainment, Microsoft threw its hat into the ring, in late 2001, with the introduction of the Xbox videogame console. Acting as a Trojan horse intended to compel consumers to associate Microsoft with living room entertainment devices, the Xbox paved the way for the company's follow-up hardware, the Xbox 360, which is widely regarded as the first videogame console to transcend this somewhat limited categorization. The Xbox 360 proved able to evolve into a true multimedia device capable of delivering many diverse forms of content beyond the scope of videogames.

As of 2015, all of the main players in the videogame industry – Nintendo, Sony, and Microsoft – offer devices that do more than merely play videogames; to varying degrees, each features Web browsing, music, TV, and movie-watching functionality. Although the industry is largely consolidated, a number of companies have launched, or are planning to soon launch, fringe products targeted at nontraditional audiences. Prominent firms such as Google, Apple, and Amazon.com have entered the market by way of hardware broadly focused on multimedia in general but incorporating gaming capabilities as one feature included in the package. Smaller firms, such as Ouya and Nvidia Corporation, continue to strive to carve out niches for themselves by selling lower-priced "microconsoles." While advancements in gaming on personal computers evolves incrementally, the console business tends to trend in cycles, with all of the main actors in the industry's typically launching their newest hardware products within a year or two of their competitors' releases. After the longest console generation in the history of the business, the current generation of consoles commenced in the Fall of 2012 with the launch of Nintendo's Wii U. In recent years, Nintendo has been less of a direct rival to Sony and Microsoft, instead holding fast to its own unique style and focusing more on a younger-skewing demographic. For this reason it was not until Fall 2013 that the current

"console war" began in earnest when Sony launched the PlayStation 4 and Microsoft released the Xbox One, both within one week of each other. Thus far, Sony has been in the lead, initially by a wide margin, with the PS4's currently outselling the Xbox One nearly 2:1 (James, 2015). Amusingly, Sony executives were caught off guard by the unexpectedly strong initial sales of the PS4. Even the President of Sony's Worldwide Studios, Shuhei Yoshida, was somewhat stupefied by the extremely positive market reaction, stating "We are so happy. But I for one am a bit nervous because we do not completely understand what's happening. You need to understand why your products are selling well so you can plan for the future, right? It defied the conventional thinking" (Sinclair, 2014). Two years removed from the launches of both systems, the field remains wide open. Although Microsoft is currently lagging behind, the firm is intent on regaining its share of the market through aggressive price cuts, bundling options, marketing efforts, and premium exclusive content.

Since the gaming industry is so heavily based on technology, conditions within this business sector change rapidly. New advancements portend the rise of personal virtual reality devices offered by large corporations such as Facebook, Samsung, and Sony itself; holographic technology from Microsoft; and televised e-sports (videogame competitions that can draw audiences on par with those of traditional sporting events, which have already achieved this status in some regions, especially South Korea and other Asian territories). Given the cyclical nature of the console business, instructors may wish to use the opportunity to discuss the concept of punctuated equilibrium theory, which states that environments cycle through long periods of stability, followed by brief periods of dynamic change, before settling into a new and different stable state. Students can then prognosticate on the direction the industry is headed; predict what future actions Sony, Microsoft, and Nintendo might take; assess how new entrants might affect incumbents; and think critically about how one might effectively compete within the videogame industry.

Potential topics of discussion concerning the videogame industry include:
   A. *Yoshida seemed puzzled by the early success of the PlayStation 4. What factors do you think led to the PlayStation 4's early success?* [Instructor note: This question requires students to perform additional research.]
   B. *How can Sony maintain its lead? What actions can Microsoft take to catch up to Sony? How does Nintendo fit into the equation?*
   C. *What factors do you think will most affect the videogame industry in the next five years? In the next ten years? Why?*

Scouting report: The battle ahead
For Sony executives, the state of the enterprise could not be clearer. While Sony may have won a hard-fought battle, the firm's strategic leaders recognize that the war is far from over. Ever humble, Kaz Hirai was quoted as saying, in an April 29, 2015 interview, with the Wall Street Journal

> Have we turned the corner or not? We're still not profitable. We're still not paying dividends. Our credit rating is still not where it should be. So from that perspective, have we turned the corner? No, we're still in the mode of trying to turn the corner. However, if we're talking about the organization and our strategies and where we want the company to be next year, two years from now, three years from now, based on our midterm strategy, and whether we have started to really embark on a lot of these initiatives that we talked about doing three years ago—from that perspective, yes we're starting to turn the corner (Hirai, 2015).

While Sony is not yet entirely out of the woods, there is no denying that the organization has taken great strides to reorient itself in an effort to regain its past glory. Sony has struck a blow against its competition, across multiple fronts, by refreshing aging product lines, innovating in industries key to its ongoing survival and success, and revitalizing the drive for excellence in providing customer value and satisfaction, key company hallmarks that had, for some time, fallen by the wayside. In restoring Sony's emphasis on providing world-class value, Hirai has led the miraculous turnaround of a massive global enterprise formerly facing possible bankruptcy and has brought it back on track to, once more, regain its place among the most highly-renowned brands in the world.

Questions regarding Sony's turnaround in general might include:
   19. *Identify the three key tenets of turnaround management.*
   20. *How did Kaz Hirai apply the three key tenets of turnaround management to lead Sony through the crisis that the company faced?*

REFERENCES

Akio Morita. (2015). *Engineering and Technology History Wiki.*

Ashcraft, B. (2013). Thanks for all the Memes, PS3! *Kotaku.* Retrieved from http://kotaku.com/5985243/thanks-for-all-the-memes-ps3

Blagdon, J. (2012). Kaz Hirai Details his Plan to Save Sony. *The Verge.* Retrieved from http://www.theverge.com/2012/2/2/2765928/kaz-hirai-4-point-plan

Chan, P. S., Flynn, E. J., & Chinta, R. (1991). Business Firm Performance Types and the Strategic Implications. *Journal of Applied Business Research ,* V.7, No. 2, pp 30-39.

Consumers Electronics Association. (2015). New Tech to Drive CE Industry Growth in 2015, Projects CEA's Midyear Sales and Forecasts Report. Retrieved from http://www.ce.org/News/News-Releases/Press-Releases/2015-Press-Releases/New-Tech-to-Drive-CE-Industry-Growth-in-2015,-Proj.aspx

Cracking up. (2012). *The Economist*. Retrieved from http://www.economist.com/node/21543215

Duncan, G. (2012). Can Kazuo Hirai Save Sony? *Digital Trends.* Retrieved from http://www.digitaltrends.com/computing/can-kazuo-hirai-save-sony/

Harrigan, K. R. (1980). Strategies for Declining Industries. *Journal of Business Strategy,* V. 1, No. 2, 20-34

Hartung, A. (2012). Sayonara Sony: How industrial, MBA-style Leadership Killed a Once Great Company. *Forbes.* Retrieved from http://www.forbes.com/sites/adamhartung/2012/04/20/sayonara-sony-how-industrial-mba-style-leadership-killed-once-great-company/

Hirai, K. (2015). Q&A: Sony CEO Kazuo Hirai Says Company Must Evolve. Retrieved from http://blogs.wsj.com/japanrealtime/2015/04/29/qa-sony-ceo-kazuo-hirai-says-company-must-evolve/

Hofer, C. W. (1980). Turnaround Strategies. *Journal of Business Strategy,* V. 1, No. 1, pp 19-31.

James, D. (2015). PS4's Outselling The Xbox One by Almost 2-To-1. And That's the Good News... *TechRadar.* Retrieved from http://www.techradar.com/us/news/gaming/consoles/ps4-s-outselling-the-xbox-one-by-almost-2-to-1-and-that-s-the-good-news--1298498

Johnson, J. (2010). How Sony Lost its Way. *Gizmodo.* Retrieved from http://gizmodo.com/5477633/how-sony-lost-its-way

Kanter, R. M. (2003). Leadership and the Psychology of Turnarounds. *Harvard Business Review,* V. 81, No. 6, pp 58-67.

Langley, H. (2013). PS4 Built on a Budget to Avoid PlayStation©3 Loss-Making Syndrome. *TechRadar.* Retrieved from http://www.techradar.com/us/news/gaming/consoles/ps4-built-on-a-budget-to-avoid-playstation-3-loss-making-syndrome-1150491

Malone, T. W., & Lepper, M. R. (1987). Making Learning Fun: A Taxonomy of Intrinsic Motivations for Learning. In R. E. Snow & M. J. Farr (Eds.), *Aptitude, Learning, and Instruction* (Vol. 3, pp. 223-253). Hillsdale, NJ: Lawrence Erlbaum.

Morris, C. (2013). Sony Gets A Corporate Reboot At E3 Gaming Show. *CNBC.* Retrieved from http://www.cnbc.com/id/100810827

Newmann, F. M., Wehlage, G., & Lamborn, S. D. (1992). The Significance and Sources of Student Engagement. In F. M. Newmann (Ed.), *Student Engagement and Achievement in American Secondary Schools* (Vol. 1, pp. 11-39). New York: Teachers College Press.

Reynolds, I. (2011). Sony CEO Apologises to Gamers; Shares Fall 2 Pct. *Reuters.* Retrieved from http://www.reuters.com/article/2011/05/06/idINIndia-56814220110506

Same Old or New Different? (2012). *The Economist*. Retrieved from http://www.economist.com/blogs/schumpeter/2012/02/sonys-new-boss

Schendel, D. E., Patton, G. R., & Riggs, J. (1976). Corporate Turnaround Strategies: A Study of Profit Decline And Recovery. *Journal of General Management,* V.3. No. 3, pp 3-11.

Schorn, D. (Writer). (2006). Sir Howard Stringer: Sony's Savior? 60 Minutes. New York: CBS.

Sinclair, B. (2014). We Don't Know Why PS4 Is Selling - Yoshida. *GamesIndustry.biz.* Retrieved from http://www.gamesindustry.biz/articles/2014-08-19-we-dont-know-why-ps4-is-selling-yoshida

Smith, M., & Graves, C. (2005). Corporate Turnaround and Financial Distress. *Managerial Auditing Journal,* V. 20, No. 3, pp 304-320.

Sony Falls Most in Eight Months on Full-Year Loss Forecast. (2011). *BloombergBusiness.* Retrieved from http://www.bloomberg.com/news/articles/2011-11-04/sony-falls-most-in-eight-months-on-forecast-of-fourth-straight-annual-loss

Soo, D. (2014). *Industry Outlook: Consumer Electronics.* Owings Mills, MD: Euler Helmer. Retrieved from http://www.eulerhermes.com/mediacenter/Lists/mediacenter-documents/Industry-Report-Consumer-Electronics-Dec14.pdf

Stringer Theory. (2011). *The Economist*. Retrieved from http://www.economist.com/node/18745381

Yasu, M., Huang, G., & Amano, T. (2013, 11/08/2013). Sony replaces strategy officer after sales forecast cuts. *Bloomberg.com.* Retrieved from http://www.bloomberg.com/news/articles/2013-11-08/sony-replaces-chief-strategy-officer-after-sales-forecast-cuts

Yin-Poole, W. (2014). Tomb Raider, Vita's No-Show and the Mystery of 10m PS4 Sales. *Eurogamer.net.* Retrieved from http://www.eurogamer.net/articles/2014-08-19-tomb-raider-vitas-no-show-and-the-mystery-of-10m-ps4-sales?utm_source=twitter&utm_medium=social&utm_campaign=socialoomph

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The WTI-Brent Spread: Examining the Factors Behind It

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ABSTRACT

The goal of this paper is to examine and analyze the factors that explain the WTI-Brent spread. Historically these two benchmarks moved in tandem with very small differences between them but in the recent past, they started to diverge. An objective of this paper is to provide a learning opportunity for students taking classes in energy economics and students taking classes in econometrics or forecasting.

Keywords: West Texas Intermediate (WTI) crude oil, North Sea (Brent) crude oil, WTI-Brent spread

INTRODUCTION

World oil markets have experienced a volatility not seen for some time. Oil prices have gone from the single digits in the early years from the 1950s to the early 1970s when the oil majors dominated the market to double digit prices in 2008 and down again to the mid-40s (Oil Price net) in September of 2015. The history of oil prices can be broken into two eras. The first one is the golden era of low and stable oil prices when the "seven sisters" ruled the global oil markets. These were: The Anglo-Persian Oil Company (BP), Gulf Oil, Standard Oil of California (SoCal), Texaco (Chevron), Royal Dutch Shell, Standard Oil of New Jersey (Esso) and Standard Oil Company of New York (ExxonMobil). This era was "golden" to the oil majors since they controlled every aspect of oil production and were vertically integrated from the oil well to the pump with little control by the oil producers.

The second period was the post 1973 era. Following the first oil shock, oil prices were volatile since then to the present (Figure 1, Oil Prices). The prices shown in Figure 1 from 1861 to 1944 are US averages while the prices from 1945 to 1983 are Arabian Light posted at Ras Tanura and the prices from 1984 to 2014 are Brent dated. The volatility was brought about by a change in property rights from the oil majors to the oil producers. Once the change in ownership and control was completed by members of the Organization of Petroleum Exporting Countries (OPEC), they demanded higher prices and a higher share of the oil revenue. Moreover, the instability was also fueled by two major historical events. The first one was the Yom Kippur war of 1973 followed by the Arab oil embargo. This removed oil from the world markets leading to the first oil shock. The second one was the Iran revolution of 1979 and the strikes that took place which led to further spikes in oil prices.

Given the importance of oil in the world economy and its impact on economic growth, the market needed benchmarks to facilitate and enhance global trade as well as transactions in financial markets. WTI (West Texas Intermediate) and Brent (North Sea) came to become those benchmarks that made it easy to not only trade in oil in the spot market but also in the future's market. Oil has gone from being a physical commodity demanded mostly by end users to a financial asset traded in the future market.

Figure 1: History of Oil Prices: 1861-2014
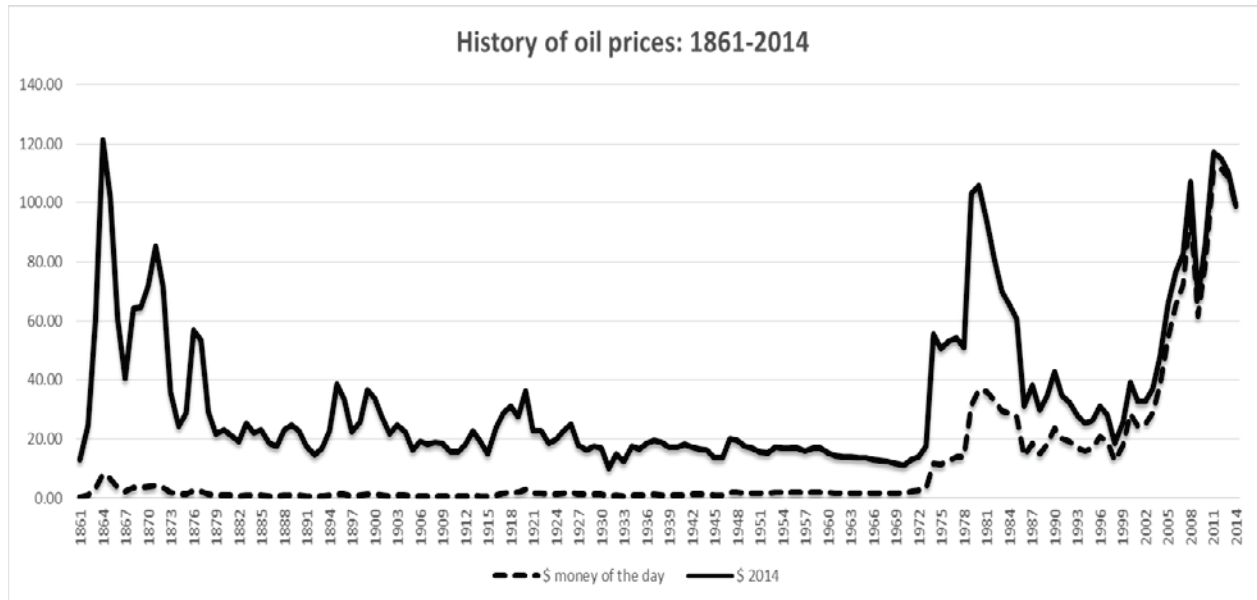
Data source: British Petroleum, Statistical Review 2015

THE WTI-BRENT SPREAD

The goal of this paper is to examine and analyze the factors that explain the WTI-Brent spread. Historically these two benchmarks moved in tandem with very small differences between them but in the recent past, they started to diverge. A number of factors will help explain this.

Not all oil was created equal. There are different types of crude. The West Texas Intermediate or WTI is a light crude (also referred to as sweet crude) which does not need as much energy in order to extract its derivatives such as gasoline, diesel and other by products. Light crude have a high API (American Petroleum Institute) gravity usually 35 degrees and up (Figure 2, U.S. WTI). WTI being a light crude is easier to process since it is less viscous compared to the heavier crudes produced by Saudi Arabia or Iran for example. The North Sea Brent crude is also a light sweet crude with just over one API degree difference between it and the WTI benchmark. In terms of quality, they are very similar and thus represent good indicators for the world oil markets but more importantly should not differ much in terms of price. In fact, if one were to judge them by the API gravity, WTI should theoretically sell at a small premium vis a vis Brent and yet we recently seen the opposite.

However, since other crudes are heavier as we can see in Figure 2, these will price at a discount from the benchmark. Heavier crudes have lower API gravity and requires more processing but produce derivatives that are less valuable which explains their lower price in world oil markets.

Figure 2: Density and Sulfur Content of Selected Crude Oils

Density and sulfur content of selected crude oils
sulfur content (percentage)
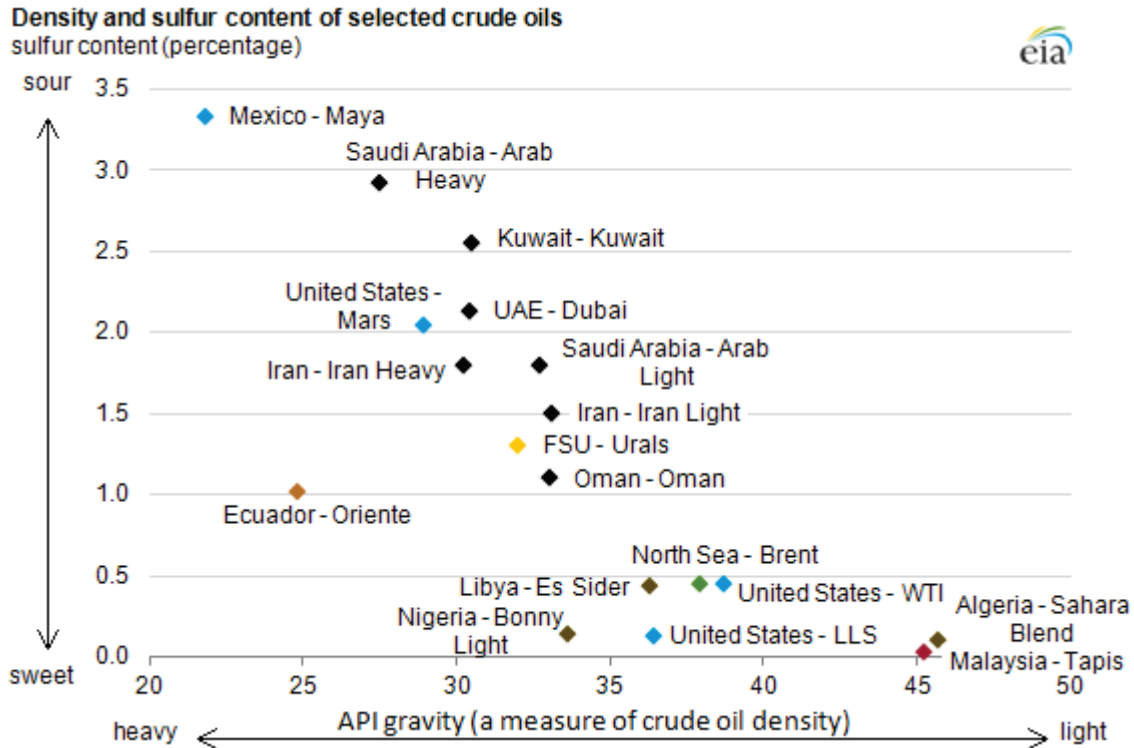
WTI and Brent are then the benchmarks for the world oil market and since they are similar, their price paths coincide for the 2006-2010 period but then start to diverge in 2011 (Figure 3).

Figure 3: The WTI-Brent Spread: 2006-2015
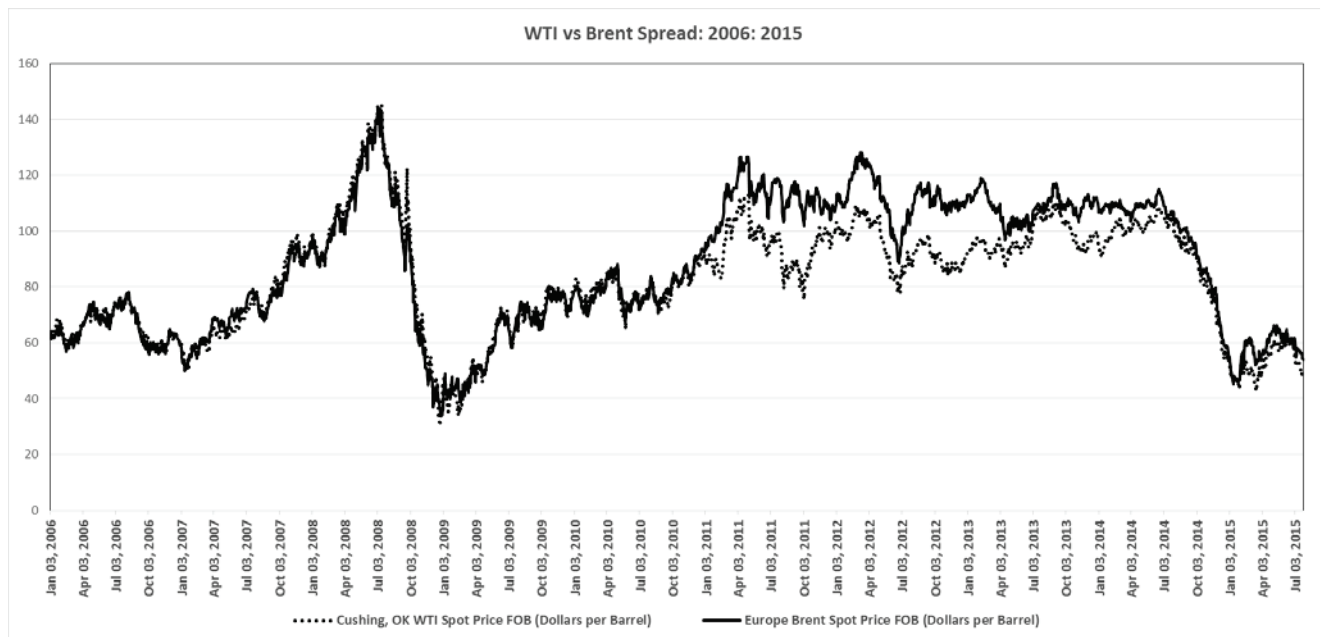
Data Source: EIA--U.S. Energy Information Administration

WHAT FACTORS EXPLAIN THE SPREAD?

The empirical work done on this subject (Heir and Skoglund, 2014) points to a number of reasons that have caused the divergence between the WTI and Brent. Prior to 2011, WTI and Brent moved in tandem with the spread in favor of WTI. This was due to the transportation costs of Brent to the U.S. This changed in 2011 with a reversal of the WTI-Brent spread which shifted to the latter. A number of factors explain this sudden shift. First, the pipeline infrastructure in the U.S. in the Cushing hub is inadequate to handle the large quantities of oil that goes through it is partly to blame for the spread initially. However, additional pipelines have been added to help the bottleneck and allow more of the oil to reach markets which mitigates the problem somewhat but a slight Brent premium still exists. Second, the surge of U.S. oil production due to shale oil proved to be a game changer that rattled world oil markets and tested the capacity of the Cushing storing and pipeline infrastructure. Given the limits of the storage capacity and the difficulty in shipping the oil to the refineries, WTI further dropped in price. Third, given the U.S. ban of oil exports, the surplus in WTI oil further added to the slight premium in favor of Brent. Finally, cost differential in shipping the WTI vs Brent oil to other markets further added to the spread.

However, the EIA notes that the spread did narrow in 2013. The spread reached a 23 dollars in favor Brent in that year but has dropped the single digits since. A number of factors are cited for the return of the WTI and Brent their historical spread levels. One reason for the drop in the spread starting in 2013 is the displacement of Brent by the U.S. oil surge of light sweet crude. Another factor cited by the EIA is the additional storage and pipeline capacity have improved in Cushing and lessening the downward pressure on WTI prices.

TIMES-SERIES FORECASTING MODEL

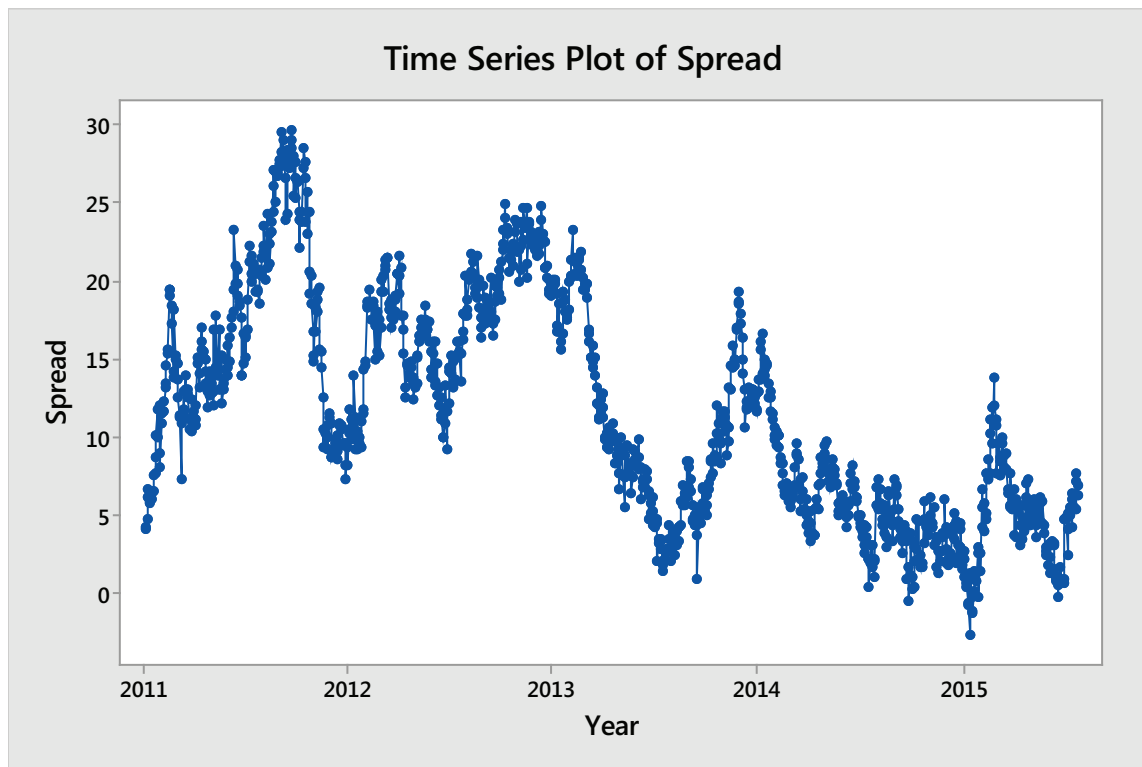**Figure 4: Time Series Plot of WTI-Brent Spread for Years 2011-2015**

Figure 4 shows the values of the WTI-Brent spread for the years 2011 thru 2015 when the spot prices of a barrel of WTI crude oil were diverging from the spot prices of a barrel of Brent crude oil.

Figure 5: Single Exponential Smoothing Series of WTI-Brent Spread for Years 2011-2015
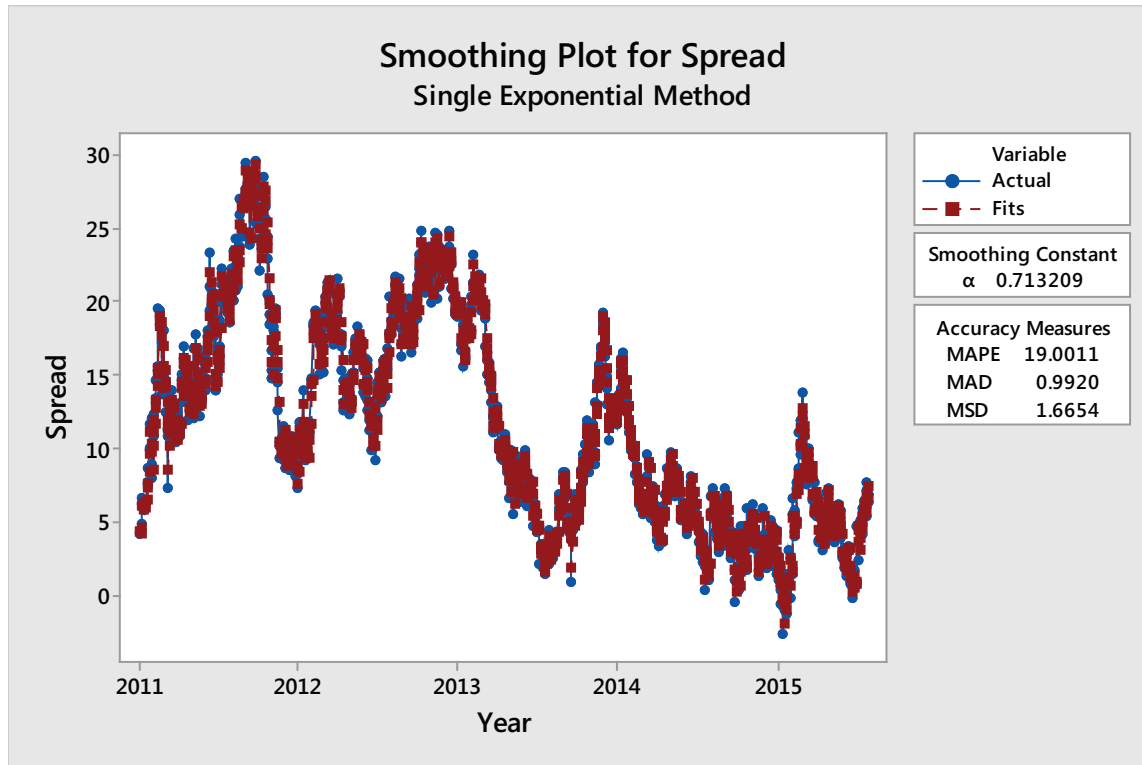

Figure 6 shows the single exponential smoothing series for the WTI-Brent spread for the years 2011-2015. This single exponential smoothing series with a smoothing constant of alpha = .713209 fits the actual values with a mean absolute percentage error of 19.0011 percent, a mean absolute deviation of .9920 dollars, and mean squared deviation of 1.6654 dollars squared.

CONCLUSION

The future of the WTI-Brent spread will depend on the U.S. surge in oil production and how long it will continue. However, that may be tempered by Non-OPEC oil production. The oil cartel has adopted a strategy to defend its market share and refused to lower its production. It has done this despite the need for oil revenue in both the "rich" and "poor" within the OPEC cartel and particularly in a post Arab spring environment for the Arab oil exporters and Saudi Arabia the dominant producer in particular. If, as alluded to in the press, Saudi Arabia's goal in refusing to taper its oil production and thus force the rest of OPEC to fight for market share, is to make the U.S. shale oil production unprofitable, then we may see a reversal of the US surge and a return to the WTI-Brent spread favoring the former. Oil price forecasts range from a low of $20 a barrel to $46. Some U.S. shale oil producers will be squeezed at the low end of the price forecast. However, we should note that these are only forecasts and many in the past proved to be wrong. It is important to remember that the main problem when it comes to oil is not whether we have enough oil or not but rather the geopolitics particularly in the volatile Middle East. The problem then is not below ground but above it.

TASKS FOR THE STUDENT

1. Write a brief history of each of the seven major oil producers taking into consideration the type of oil produced and the barrels of oil produced annually.
2. Write a brief history of each of the major oil exporting countries taking into consideration the type of oil produced and the barrels of oil produced annually.
3. Use other smoothing methods such as moving averages, single exponential smoothing, and double exponential smoothing to create smoothing time series for the WTI-Brent spread in figure 4. Use EIA data for the years 2011 through 2015 found at this URL: http://www.eia.gov/dnav/pet/pet_pri_spt_s1_d.htm
4. Construct and plot the WTI-OPEC basket price spread using data from British Petroleum's site and from the OPEC's website. Use smoothing methods such as moving averages, single exponential smoothing, and double exponential smoothing to create smoothing time series to estimate the WTI-OPEC basket price spread. Use the URL: http://www.eia.gov/dnav/pet/pet_pri_spt_s1_d.htm or BP's http://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy.html
5. Construct and plot the Brent-OPEC basket price spread using data from British Petroleum's site and from the OPEC's website. Use smoothing methods such as moving averages, single exponential smoothing, and double exponential smoothing to create smoothing time series to estimate the Brent-OPEC basket price spread. You can use the following URL: http://www.opec.org/opec_web/en/data_graphs/40.htm and http://www.eia.gov/dnav/pet/pet_pri_spt_s1_d.htm

REFERENCES

British Petroleum, *Statistical Review* 2015,
    http://www.bp.com/en/global/corporate/about-bp/energy-economics/statistical-review-of-world-energy/statistical-review-downloads.html.
EIA--U.S. Energy Information Administration, http://www.eia.gov.
Heier, Martin and Sindre Skoglund, Crude Oil Price Differentials, *Norwegian School of Economics*, Bergen, fall 2014.
EIA--Price difference between Brent and WTI crude oil narrowing, June 28th, 2013, http://www.eia.gov/todayinenergy/detail.cfm?id=11891.
Oil price net, http://www.oil-price.net/.
The Wall Street Journal, "Oil-Price Slump Could Force U.S., Non-OPEC Suppliers to Make Deep Cuts", September 11, 2015,
 http://www.wsj.com/articles/oil-price-slump-could-force-u-s-non-opec-suppliers-to-make-deep-cuts-441959208?cb=logged0.757710931476789.

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Using "13 Days: The Cuban Missile Crisis" to Teach About Negotiation[1]

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ABSTRACT

While many films have negotiation scenes in them, the film "Thirteen Days" a dramatization of Robert Kennedy's account of the Cuban Missile Crisis, is unique in that it involves one long extended negotiation. While the film covers a complex potentially cataclysmic international conflict, the negotiation issues that are raised are applicable to the more mundane negotiations that any of us might be involved in. The paper describes how the film can be used to teach negotiations.

Key Words: Negotiation, Multi-party negotiations, Cuban Missile Crisis, Underlying interests, Positions versus interests, Back door channels, Indirect communication

INTRODUCTION

Most commercial films involve dramatic tension or conflict of some sort. Conflict typically leads to some kind of negotiated resolution (peaceful or not) and this means that most films involve negotiation or conflict resolution. Thus there are countless opportunities for teachers of negotiation, conflict, and conflict resolution to tap commercial films for examples to use in class. This can be quite valuable because being able to watch others negotiate as well as critique and analyze the negotiation can be a critical addition to the many exercises and role plays that are central to most negotiation classes.

The film "13 Days," based on Robert Kennedy's posthumous (1969) book, <u>Thirteen Days: A Memoir at the Cuban Missile Crisis</u> is a dramatization of the actual events of the Cuban Missile crisis (1962) .[i] While many films have segments with conflict resolution, the film "Thirteen Days" covers one extended negotiation, from beginning to end. There are few films that basically focus on one negotiation. This makes the film a particularly rich trove of negotiation issues and is particularly appropriate for students because it is based on one of the most precarious situations of the last half of the twentieth century. It was an event that many observers thought could easily lead to nuclear confrontation. Not only can this film help teach about negotiations, but it can expose students to one of the most consequential moments of the Twentieth Century.

While the events covered in the film deal with a momentous crisis in international affairs, many of the issues that are raised have correlates in our more typical business and even personal lives.

BACKGROUND

We have probably never been as close to a nuclear war as we were in October 1962. The US Military Forces were at their highest state of alert. Cuba, with the support of the USSR, had a legitimate fear that a military invasion of that island was imminent. USSR forces in Cuba were ready to use nuclear weapons in defense of Cuba.

At the time, the Cold War was at its hottest. The USSR felt far behind in the arms race. Their missiles could only reach as far as Europe, while the US missiles could reach any target in the USSR. A year before, the USSR had triggered the "Berlin Crisis," with the building of the Berlin Wall. Also in 1961, the US supported a botched invasion of Cuba (The Bay of Pigs).   Ever since the failed invasion, Cuban Prime Minister Fidel Castro (later President) felt that a second attack was inevitable. Castro searched for a way to defend Cuba from this future attack.

Early in 1962, Soviet Premier Nikita Khrushchev agreed to a plan by Fidel Castro to place intermediate range missiles in Cuba. Castro felt (with Soviet support) this would be a deterrent against a potential US assault on Cuba. In the summer of 1962 the Soviet Union worked quickly and secretly to build its missile installations in Cuba.

THE FILM

The film, *Thirteen Days* (2000), dramatizes the thirteen days spanning the first discovery of the Soviet installations in Cuba. These were discovered during routine reconnaissance flights; the film ends thirteen days later with the resolution of the negotiation which involved the Soviets' agreement to break down the installed missiles and return them to the USSR. The film focuses entirely on the US side of the negotiation. Even thirty eight years after the

events, little is known about the Soviet deliberations during the crisis. The film focuses on a variety of negotiations including:

- President Kennedy negotiating with his close advisors (primarily his brother, Attorney General Robert F. Kennedy, and his Chief Political Advisor and long time friend, Kenny O'Donnell).
- President Kennedy negotiating with members of his ExCOMM, the committee assembled to advise him during the crisis; the group consists of his military Chiefs, virtually all of whom were hawks and who viewed Kennedy and his political allies as "weak."; other members included Secretary of Defense McNamara, Secretary of State Dean Rusk, McGeorge Bundy, and Adlai Stevenson, among others
- Adlai Stevenson at the UN negotiating with Soviet UN representative Valerian Zorin; this was a public televised negotiation
- Robert Kennedy negotiation with Soviet Ambassador Anatoly Dobrynin
- A "backdoor" negotiation between Journalist John Scali and Alexandr Fomin
- President Kennedy negotiating with himself and with an imagined Premier Khrushchev

ISSUES FOR A NEGOTIATION CLASS

The situation was unique (we can hope); students are never likely to negotiate in a situation with such potentially momentous consequences. Yet many of the challenges of this negotiation can be found in many of our own negotiations.

History affects Negotiation: The crisis occurred a year after the Bay of Pigs invasion where American supported Cubans attempted to invade Cuba and overthrow Castro. Castro and the Soviets expected the Americans to try again. On our side, there was a long history of distrust. This was the middle of the Cold War.
Many of our everyday negotiations, both personal and professional are affected by past circumstances and past negotiations.

Know your "enemy": Throughout the crisis, President Kennedy constantly tries to think about the actions and reactions from Premier Khrushchev's point of view. "How is Khrushchev going to interpret this…?" the President asks repeatedly.

It is critical in our everyday negotiations that we attempt to understand how the situation looks from the other side; we need to put ourselves in the "other person's shoes."

Who are we dealing with? Who is the decision maker? There was much speculation on the American side that Khrushchev had been deposed and the "hardliners" in the Soviet Union were in power and we were dealing with a puppet. There was no way of knowing who we were dealing with. We can speculate that the Soviets had the same concern that President Kennedy had been overthrown by the American military.

In our professional negotiations, it is not uncommon to find that we are not dealing with the "decision maker." Or even if it is the decision maker, we may be totally unaware of the forces constraining that decision maker. We have to figure out who the key decision makers are.

Conflict across the Groups and within the Groups: There was great division and distrust within the American ExComm. The Joint Chiefs were itching for military confrontation and thus strongly in favor of a quick first strike invasion of Cuba and openly questioned the weakness of Kennedy's unwillingness to immediately support a strike and invasion. Kennedy pushed for a negotiated agreement with varying levels of support among his non-military advisors (e.g. McGeorge Bundy, Robert McNamara, and Dean Rusk)

Multi-party negotiations: This was a complex multi-party negotiation involving a number of parties on our side: President Kennedy, his brother Robert, his advisors, the Military, the press, the public, and finally the Soviet Union. Of course, the Soviet Union had multiple parties and interests, all basically unknown to us.

Multi-party negotiations suggest coalitions and alliances and these shift over time. To some degree President Kennedy had more in common with some of his "adversaries" than he did with his own team, particularly the Joint Chiefs who were far more "hardline" than JFK. Solving this crisis involved forming a coalition with a counterpart (Khrushchev) without any direct contact with him, or even knowing if he was still in power.

Presumably there was similar conflict within the Soviet Decision making team, although subsequent historical documents released after the fall of the Soviet Union have shed little light on the dynamics of the Soviet decision making process curing the crisis.

Similar challenges can confront our own multi-party negotiations. We may find ourselves negotiating for our "team" and there can be distrust and dissension within our own team. Members of our team may not trust us to be "tough" enough in our negotiations with the other side. Commonly, members of a team feel that their negotiator will get "taken" by the other side.

Communications (like reading tea-leaves): Very little of this negotiation took place with direct communications between the USSR and The USA. Late in the negotiation there were two letters purportedly from Premier Khrushchev to President Kennedy, but there was never complete confidence about the author of the letters, the conditions under which the letters were written, or what the contents meant. The two letters came one day after the other and the tone was completely different leading to heightened confusion.

Much of the communication between the countries involved taking actions that were meant to communicate a message or intent or attempting to interpret the other side's actions and infer motives and intent from those highly ambiguous "messages. For example, the USSR claimed that the installation of missiles in Cuba was meant to communicate a "defensive" action; the US interpreted the action as "offensive" and a threat to the US mainland. Another example, was the US sending a U2 reconnaisance plane over Cuba during the crisis to take photographs to see if the missiles were operational. The plane was shot down. The US had to try to figure what the Soviet Union thought was the intention of the U2 flight, which would influence how we were to interpret whether the Soviet action was an escalation of the conflict. When the Soviet tanker *Grozny* came close to our blockade, we had to interpret the meaning of this action.

There was an attempt at back channel communications, but of course, this also leads to much confusion. Was the back channel communication legitimate; whom did the agent speak for? Could he be trusted? Did he speak for Khrushchev?

Communications is often a problem in all of our negotiations, personal and professional. As with the Cuban Missile Crisis, we are often left to interpret the implications and meaning of actions and words, the exact meaning of which can never be determined. We may have few ways of verifying the accuracy of our interpretations and base our actions and reactions on our perceptions and misperceptions.

Quality of Information: This was very hard to come by. It was crucial to understand and predict the intentions of the other side and there was very little information on which to base these assumptions. For example, during the crisis, a U-2 flight entered Soviet territory illegally; the Soviets had to interpret whether this was an error or intentional and provocative. Similar to the comments on communication, verifying the accuracy of information can be very difficult in our negotiations.

Interests vs. positions: As in most negotiations, positions become hardened; from the US point of view, the missiles had to be removed. A key to the negotiation was the interests on the Soviet side; as it came out that their interests were to not have Cuba invaded and to have missiles removed from Turkey, a "solution" became more apparent. The key was for Kennedy to think about this from Khrushchev's point of view.

Fisher and Ury (1991) focus on this as a key point in effective negotiations. It is essential in our negotiations to identify underlying interests behind hardened positions. This was a key in President Carter's "solving" the negotiation between President Sadat and Prime Minister Begin in the 1978 agreement between Israel and Egypt and it is just as true in our everyday negotiations.

Offers and Plausible Deniability and private agreements: There is still disagreement about whether there was a quid pro quo in terms of our agreeing to remove the missiles from Turkey in exchange for the USSR's removing missiles from Cuba along with our agreement not to invade Cuba. In Robert Kennedy's version, we made a commitment to remove the missiles from Turkey some time after the Cuban Missile Crisis, but it could not be seen as a quid pro quo. President Kennedy was quite clear that the US could not be seen as bowing to Soviet pressure (or blackmail) on the Turkey issue; on the other hand, he had already planned to remove the obsolete Turkey missiles. He was willing to make a spoken pledge in private that the missiles would be removed. He stated clearly that if this ever became public he would deny it and cancel the agreement.

This is an interesting issue for negotiators. Private agreements provide plausible deniability if the negotiator needs it. This "private" agreement was critical to resolving the crisis but it couldn't be part of any public statement. President Kennedy could "deny" there was any direct quid pro quo. This issue can come up in our professional negotiations. We can make private assurances that we may choose not to be part of a formal agreement for political reasons. "I promise I will make it up to you next time…." Of course, there are problems with private agreements.

They are often a key to solving a conflict, but they are also a source of distrust among a negotiator's constituencies who fear the negotiator made some kind of "side deal" against the wishes of the constituents. There is pressure for transparency which makes private agreements difficult.

Exploding offers, Time Pressures, deadlines, contingency agreements: Given the situation, the offers that were made by the Americans involved huge time pressures. There was fear that every day meant more of the Cuban Missiles became operational; a resolution had to come quickly before this happened. Once operational, an invasion was probably the only option.   All of these elements are common in our everyday negotiations.

Relationships: The key breakthroughs came about as the result of informal relationships. The backchannel offer was made by Alexandr Fomin, who contacted his neighbor, John Scali, an ABC reporter, who reported the contact to the Kennedys. Fomin was an old war friend of Khrushchev. Fomin and Scali were outside of all formal channels involved in the crisis. Fomin carried an offer from Khrushchev and Scali carried an offer from President Kennedy to take to Khrushchev. Neither Fomin nor Scali could be sure the other could reliably speak for his "superior."

The final negotiation was between Anatoly Dobrynin and Robert Kennedy. Despite the decades of well earned distrust between the US and USSR, Dobrynin and the Kennedys respected each other and had developed a relationship. This was significant.

It is obvious that personal relationships and past history of trust or distrust can play a huge role in our everyday personal and professional negotiations.

CONCLUSION

While the momentous events covered in Robert Kennedy's book and subsequent film are highly unusual and unique, the characteristics of the negotiation are not unique. The film provides a powerful opportunity to learn about negotiations by observing a well acted dramatization, and to also learn about one of the critical events of the Twentieth Century.

Using this film not only teaches about a critical event in Twentieth Century history, but it is a compelling case study that focuses on many key elements of negotiation and also helps convey the notion that we can learn much about negotiations by following current events. Few events in our recent history provide such a rich lode of information about negotiation. George Mitchell's mediating the conflict in Northern Ireland is another one.

The recently completed agreement (late Summer 2015) between the P5+1 countries and Iran over the Nuclear Program is another example. It is much too early for the major players to share their insights and for many analyses to emerge, but some good sources already exist. Wendy Sherman, the lead negotiator for the United States and number three in the State Department has shared her thoughts about the challenges of this negotiation. The most detailed so far was her discussion with David Sanger of the New York Times at the Kennedy School of Harvard University. The video of this discussion is available. ("The Iran Nuclear Discussions: A Discussion with Wendy Sherman", October 6, 2015, JFK Jr. Forum, Harvard University)

Appendix 1: Chronology of the crisis in 1962

October 14	Pres. Kennedy ordered reconnaissance photographs to be taken over Cuba
October 15	Reconnaissance photographs showed Soviet missiles being built in Cuba
October 16	President Kennedy was informed; he organized the EX-COMM, group of 12 most important advisors
October 18	Gromyko and Kennedy meet for two hours. Gromyko assures Kennedy that Soviet aid to Cuba has been only for the "defensive capabilities of Cuba."
October 20	Kennedy's Press Secretary announces that the President is canceling the remainder of his campaign trip because of an "upper respiratory infection." Kennedy meets with his advisors and orders a defensive quarantine instituted as immediately. The President's television address is scheduled for the next evening.
October 21	Kennedy is told by General Maxwell Taylor that an air strike could not guarantee to destroy all Soviet missiles in Cuba. Kennedy decides on a **quarantine** of Cuba for the time being. Kennedy requests that the press not deny him the "element of surprise" or he warns, "I don't know

	what the Soviets will do." Another U-2 flight that day reveals bombers and Migs being rapidly assembled and cruise missile sites being built on Cuba's northern shore.
October 22	Congressional leaders assemble at the White House. They are shown the photographic evidence of the Soviet missile installations. The congressional leaders express support, but many advocate stronger action. The President addresses the nation in a televised speech, announcing the presence of offensive missile sites in Cuba. U.S. military forces go to DEFCON 3. U.S. base at Guantanamo Bay is reinforced by Marines. "Any nuclear missile launched from Cuba would be regarded as an attack on the US by the Soviet Union." "I have decided to quarantine the island." Military readiness raised to DEFCON 2.
October 23	Kennedy orders six Crusader jets to fly a low level reconnaissance mission. Organization of American States (OAS) unanimously approves of the quarantine against Cuba. By the end of the day U.S. ships had taken up position along the quarantine line, 800 miles from Cuba. Late in the evening, the President sends Robert Kennedy to the Soviet embassy to talk with Ambassador Dobrynin. Kennedy receives a letter from Khrushchev in which Khrushchev comments that there is a, "serious threat to peace and security of peoples." President decides to give Khrushchev more time and pulls the quarantine line back to 500 miles.
October 24	Soviet ships en route to Cuba with questionable cargo either slow down or reverse their course except for one. Military forces go to DEFCON 2 the highest ever in U.S. history.
October 25	Kennedy sends a letter to Khrushchev laying the responsibility for the crisis on the Soviet Union. EX-COMM discusses a proposal to withdraw U.S. missiles from Turkey in exchange for the withdrawal of Soviet missiles in Cuba.
October 26	Khrushchev sent an impassioned letter proposing removing Soviet missiles and personnel if the US would guarantee not to invade Cuba. The Soviet ship Marucla is cleared through the quarantine. During an EX-COMM meeting, Kennedy says that he believes the quarantine alone cannot force the Soviet government to remove its offensive weapons from Cuba. A CIA report from that morning states that there was no halt in progress in the development of the missile sites and another reconnaissance flight reveals the Soviets were also attempting to camouflage the missiles. Aleksandr Fomin, who was known to be the KGB station chief in Washington, requests a meeting with ABC News correspondent John Scali. Fomin proposes the dismantling of Soviet bases under U.N. supervision in exchange for a public pledge from the U.S. not to invade Cuba.
October 27 (worst day)	A **second letter** from Khrushchev proposes a public trade of Soviet missiles in Cuba for U.S. missiles in Turkey. An American U-2 is shot down over Cuba killing the pilot, Major Rudolf Anderson. Another U-2 accidentally strays into Soviet airspace near Alaska nearly being intercepted by Soviet fighters. Robert Kennedy suggests ignoring the second letter and contacted Ambassador Dobrynin saying we

	would agree to the first letter. Dobrynin and Robert Kennedy meet and discuss the price of removing the missiles from Cuba. Kennedy writes Khrushchev a letter stating that he will make a statement that the U.S. will not invade Cuba if Khrushchev removes the missiles from Cuba.
October 28	Khrushchev announces over Radio Moscow that he has agreed to remove the missiles from Cuba.

Appendix 2: Selected Critical Negotiation Scenes and time in "Thirteen Days"

0:13:28	First meeting after discovery of missile installation
0:17:10	First meeting of ExComm, Kennedy, advisors, Generals, Joint Chiefs
0:26:24	Second meeting of ExComm
0:28:18	Kennedy vs. the Generals
0:50:42	Kennedy on TV explaining crisis to the public
1:20:35	McNamara vs. Admiral
1:24:03	Trial Balloon
1:33:30	This is Khrushchev communicating with Kennedy
1:40:10	Should we consider a back channel negotiation
1:42:13	Back Channel negotiations with Fomin
1:44:02	Interpreting and reacting to letter purportedly from Premier Khrushchev
1:46:41	Second Letter: what does it mean?
1:59:30	Should we accept the deal
2:09:02	Robert Kennedy negotiating with Anatoly Dobrynin

Bibliography

Allison, G and; Zelikow, P.(1999). *Essence of Decision, Explaining the Cuban Missile Crisis*. New York: Addison Wesley Longman.
Carter Center, (2003). "Camp David Accords: Jimmy Carter Reflects 25 Years Later". Carter Center.
Fisher, R and W. Ury, (1991). *Getting to Yes*, New York: Penguin.
Kennedy, Robert F. (1969 Posth.). *Thirteen Days: A Memoir of the Cuban Missile Crisis*. New York: W. W. Norton.
Khrushchev, S. (October 2002). "How My Father And President Kennedy Saved The World". *American Heritage* 53 (5).
The JFK Jr. Forum, "The Iran Nuclear Negotiations: A Discussion with Wendy Sherman, Harvard Kennedy School, October 6, 2015.
http://www.bing.com/videos/search?q=kennedy%20forum%20sherman&qs=n&form=QBVR&pq=kennedy%20forum%20sherman&sc=0-18&sp=-1&sk=&ghc=1#view=detail&mid=1F82802B98FDBB583D261F82802B98FDBB583D26

[1] An earlier version of this work was presented at the National Business and Economic Research Conference, March 2014, Hilo, HI.

[2] It should be noted that not there is substantial disagreement among scholars about Robert Kennedy's version of events. Students are told that this film is a dramatization of events and should not be regarded as necessarily historically accurate.

Manuscript Guidelines, Submission and Review Process

TOPIC AREAS (BUT NOT LIMITED TO THESE):

- Course design – current courses, new courses, new trends in course topics
- Course management – successful policies for attendance, homework, academic honesty …
- Class material
  - o Description and use of new cases or material
  - o Lecture notes, particularly new and emerging topics not covered effectively in textbooks
  - o Innovative class activities and action-learning – games, active learning, problem based
- Major or emphasis area program design that is new or innovative.
- Assessment – all aspects including AACSB and university level assessment strategies and programs
- Integration of programs or courses with other academic disciplines
- Internship programs
- Business partnerships
- Successful student job placement strategies
- Any topic that relates to higher education business education.

SUBMISSION AND REVIEW PROCESS:

Copyright

- Manuscripts submitted for publication should be original contributions and should not be under consideration with another journal.
- Authors submitting a manuscript for publication warrant that the work is not an infringement of any existing copyright, infringement of proprietary right, invasion of privacy, or libel and will indemnify, defend, and hold Elm Street Press harmless from any damages, expenses, and costs against any breach of such warranty.

Prepare your manuscript

- See the Style Guideline page for specific instructions.
- Articles must make a contribution to business education innovation.
- Manuscripts should be limited to 8 to 10 pages or less, although longer will be accepted if warranted.
- Articles can be either regular research papers, or shorter notes that succinctly describe innovative classroom teaching methods or activities.
- Manuscripts should be completely finished documents ready for publication if accepted.
- Manuscripts must be in standard acceptable English grammatical construction.
- Manuscripts should be in MS Office Word format. Word 2007 files are acceptable, as are earlier versions of Word. If you are using a new version of Word after Word 2007, save in Word 2007 format.

Submit your manuscript

- Manuscripts may not have been published previously or be under review with another journal.
- Submit the manuscript attached to an email to **submit@beijournal.com**
- We will respond that we have received the manuscript.
- Article submissions can be made at any time.
- Submission deadlines: September 15 for December issue, March 15 for June issue.

Manuscript review

- The editor and reviewers will review your submission to determine if 1) the content makes a contribution to innovative business education, 2) is of the proper page length, 3) is written in proper grammatical English, and 4) is formatted ready for publication.
- Submissions not meeting any of these standards will be returned. You are invited to make revisions and resubmit.
- If the submission meets the standards, the manuscript will be sent to two reviewers who will read, evaluate and comment on your submission.
- The editor will evaluate the reviews and make the final decision. There are 3 possible outcomes:
    o Accept as is.
    o Accept with minor revisions.
    o Not accepted.
- Reviews will be returned promptly. Our commitment is to have a decision to you in less than two months.
- If your paper is not accepted, the evaluation may contain comments from reviewers. You are invited to rewrite and submit again.

If your paper is accepted

- Minor revision suggestions will be transmitted back to you.
- Revise and send back as quickly as possible to meet printer deadlines.
- Upon final acceptance, we will bill you publication fees. See www.beijournal.com for latest per page fees. Sole author fees are discounted.
- The fees include all costs of mailing a copy of the issue to each author via standard postal ground.
- Delivery to locations outside the continental US will cost an additional $10 per author for 5 day delivery.
- Faster delivery methods are available for US and international delivery. Contact the editor for a specific pricing.
- All publication fees should be remitted within 10 business days of acceptance, if possible.
- If you decide not to publish your paper with BEI Journal after submitting payment, we will refund publication fees less $200 to cover costs of review and processing.
- Cancellation cannot occur after the paper has been formatted into the final printer's file.

Manuscript Style Guide and Example

An example is providing following these instructions.

This style guide represents style guidelines in effect for future issues.

Authors are responsible for checking for correct grammar, construction and spelling. Authors are also responsible for formatting pictures, tables, and figures such that a pdf black and white file sent to the publisher will reproduce in a readable manner.

General Setup:
- All fonts other than exceptions noted below: Times New Roman. 10 point for text. Other sizes as noted below
- Margins: 1 inch on all sides of 8½x11 inch paper size.
- No headers or footers.
- Absolutely no footnotes or endnotes via footnote or endnote formatting. For footnotes or endnotes, place a number of the footnote in the proper location as a superscript. Then at the end of the paper or bottom of the page, add the footnote as text with a superscript number to correspond to that footnote.
- Page numbering bottom centered.
- No section breaks in the paper.
- No color, including url's. Format to black. No color in tables or figures. Use shading if necessary.
- All pages must be portrait orientation. Tables and figures in landscape orientations should be reformatted into portrait orientation.
- All paragraphs should be justified left and right, single spaced, in 10 point Times font, no indent on first line, l line between each heading and paragraph.
- One line between each paragraph.

Titles, Authors, and Headings:
- ## Title centered 14 point bold. One line between title and author's name.
- ## Authors: centered, 12 point. Name, affiliation, state, country.
- One line space to **ABSTRACT** (title 10 point, bold, all capitalized, aligned left; text of abstract 10 point, no bold)
- After **ABSTRACT**, one line space, then **Keywords**. Followed by one line space to first major heading.
- **HEADINGS, MAJOR**, 10 point, bold, all capitalized, aligned left.
  The specific headlines will be based on the content of the paper, but major sections should at a minimum include an abstract, keywords, introduction, conclusion, and references.
- **Sub-headings**: 10 point, bold, first letter capitalized, no line to following paragraph. Align left.
- *Third level headings: Italic*, 10 point, first letter capitalized, no line to following paragraph. Align left.
- **Keywords:** heading: 10 point, bold, first letter capitalized, no line to following paragraph. Align left.
  Your list of keywords in 10 point, no bold.

Tables, Figures and Graphs:
- All fonts 10 point.
- Numbered consecutively within each category. Table 1, Figure 1 etc.
- Title: 10 point, bold, left justify title, one space, then the table, figure, etc.
- Example: **Table 1: Statistical Analysis**

References:
- APA format when citing in the text. For example (Smith, 2009).
- References section: 8 point font, first line left margin, continuation lines 0.25 inch indent. Justify left and right. No line spacing between references. List alphabetically by first author.
- Specific references: Last name, First initial, middle initial (and additional authors same style) (year of publication in parentheses). Title of article. *Journal or source in italics.* Volume and issue, page number range.
- Example: Clon, E. and Johanson, E. (2006). Sloppy Writing and Performance in Principles of Economics. *Educational Economics*. V. 14, No. 2, pp 211-233.
- For books: last name, first initial, middle initial (and additional authors same style) (year of publication in parentheses). *Title of book in italics.* Publisher information.
- Example: Houghton, P.M, and Houghton, T.J. (2009). *APA: The Easy Way!* Flint, MI: Baker College.

Example (note that this example represents a change from previous style guides)
Evidence to Support Sloppy Writing Leads to Sloppy Thinking[1]

Peter J. Billington, Colorado State University - Pueblo, Colorado, USA (12 point)
Terri Dactil, High Plains University, Alberta, Canada

ABSTRACT (10 point, bold, all capitalized, left justified)

(text: 10 point Times font, no indent, justified, single space, 150 words maximum for the abstract)
The classic phrase "sloppy writing leads to sloppy thinking" has been used by many to make writers develop structured and clear writing. However, although many people do believe this phrase, no one has yet been able to prove that, in fact, sloppy writing leads to sloppy thinking. In this paper, we study the causal relationship between sloppy writing and sloppy thinking.

Keywords: sloppy writing**,** sloppy thinking **(10 point, bold title, first letter capitalized, left justified).**

INTRODUCTION (10 point, bold, all capitalized, left justified).

The classic phrase "sloppy writing leads to sloppy thinking" has been used by many to make writers develop structured and clear writing. However, since many people do believe this phrase, no one has yet been able to prove that in fact, sloppy writing leads to sloppy thinking. Is it possible that sloppy writing is done, even with good thinking. Or perhaps excellent writing is developed, even with sloppy thinking.

In this paper, we study the writing of 200 students that attempts to test the theory that sloppy writing leads to sloppy thinking.

PREVIOUS RESEARCH

The original phrase came into wide use around 2005 (Clon, 2006), who observed sloppy writing in economics classes. Sloppy writing was observed in other economics classes (Druden and Ellias, 2003).

RESEARCH DESIGN

Two hundred students in two business statistics sections during one semester were given assignments to write reports on statistical sampling results. The papers were graded on a "sloppiness" factor using…

Data Collection (Sub-heading, bold but not all caps, 10 point, aligned left, bold, no line after to paragraph)
The two hundred students were asked to write 2 short papers during the semester…

Data Analysis(Sub-heading, bold but not all caps, 10 point, aligned left, bold, no line after to paragraph)
The two hundred students were asked to write 2 short papers during the semester…

DISCUSSION

The resulting statistical analysis shows a significant correlation between sloppy writing and sloppy thinking. As noted below in Figure 1, the amount of sloppy writing increases over the course of the spring semester.

Figure 1: Sloppy Writing During the Semester
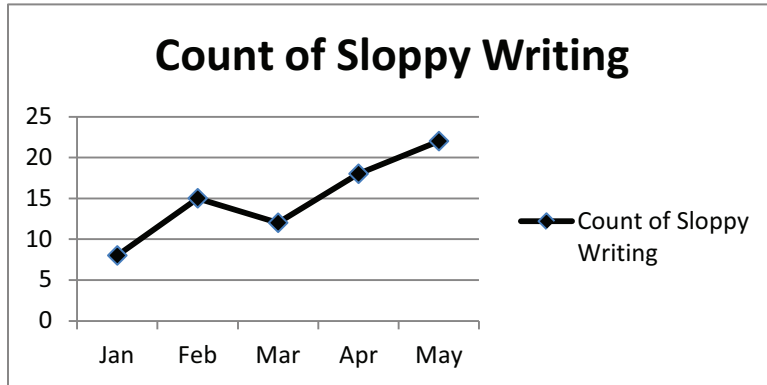
The count results were compiled and shown in Table 1 below.

Table 1: Counts of Good and Sloppy Writing and Thinking (bold, 1 line after to table, left justify)

	Good Thinking	Sloppy Thinking
Good Writing	5	22
Sloppy Writing	21	36

*-Indicates significance at the 5% level)

As Table 1 shows conclusively, there is not much good writing nor good thinking going on.

CONCLUSIONS

The statistical analysis shows that there is a strong relation between sloppy writing and sloppy thinking, however, it is not clear which causes the other…

Future research will try to determine causality.

REFERENCES (title10 point, all caps, bold, align left, one line to first reference)
   (1line spacing) (All references 8 point, indent second line 0.25 inch, justify left and right)

Clon, E. (2006). Sloppy Writing and Performance in Principles of Economics. *Educational Economics*. V. 14, No. 2, pp 211-233.
Devad, S. and Flotz, J. Evaluation of Factors Influencing Student Class Writing and Performance. *American Journal of Farming Economics*. V. 78, Issue 3, pp 499-502.
Druden, G. and Ellias, L. (1995). *Principles of Economics*. New York: Irwin.

(short bio section optional, can run longer than these examples; removed before sent to reviewers)

Peter J. Billington, Ph.D., is a professor of operations management at Colorado State University – Pueblo. His research interests span from lean six sigma to innovative education.

Terri Dactil, Ph.D., is a professor of business communication in the College of Business at High Plains University, Alberta, Canada. His research interests include instructional methods to improve student communication skills.

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[1] A previous version of this paper was presented at the 27th Annual Conference of Questionable Research.