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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.

We invite you to read about innovations published and apply in your classroom. We also encourage you to develop your original creative ideas, prepare an article, and submit for review.

This particular issue includes a number of interesting classroom innovations in diverse areas.

Peter J. Billington
Editor

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Peter J. Billington, Ph.D.

Professor Emeritus, Colorado State University – Pueblo, CO

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The Effect of Incentivizing Active Textbook Reading on Test Performance in Undergraduate Macroeconomics Courses

Robert D. Mason, Georgia Gwinnett College, Georgia, USA
William B. Holmes, Georgia Gwinnett College, Georgia, USA

ABSTRACT

Guided by literature, this paper tests whether encouraging students to complete hand-written notes on assigned textbook material improves test performance. The paper investigates whether incentives to complete the notes, coupled with instructor-guided practice and feedback, had any meaningful effect on test performance. The results show that the incentives were successful in getting most students to take advantage of the opportunity to earn a reward towards their final grade, but the study does not show a statistical difference in test performances between treatment and control sections. The paper concludes by providing possible explanations for the null results as a guide for future research.

Keywords: note-taking, reading compliance, textbook use, motivation, economics education

INTRODUCTION

A common practice among those who teach introductory economics courses is to adopt a textbook to enhance the classroom learning experience. Many lecturers review assigned content from the textbook, work through problems with students, and augment the content with relevant examples from present and historical events. Instructors often test students' knowledge of textbook content using instructor-selected test bank questions provided by the publisher of the textbook. Outside of lecture, many instructors expect students to engage meaningfully with the textbook. However, without clear expectations and frameworks, reading is an activity for which some students' effort may lapse.

Survey data show that lapses in effort are common among undergraduate business majors. Although the reasons for lapses are varied, the study of the relationship between textbook use and student performance is limited and has shown conflicting results. This paper contributes to the literature by testing whether incentivizing students' engagement with the textbook, through instructor-guided note-taking, practice, and feedback, improves discipline literacy and test performance in introductory macroeconomics courses.

LITERATURE REVIEW

The failure of students to complete their assigned course readings before class appears to be a common occurrence in higher education. According to Hobson (2004) multiple studies have shown that compliance with course reading is about 20-30% per class on any given day. The National Survey of Student Engagement (2018) reports that only 28 percent of first-year business students self-identify as always coming to class having completed readings and assignments.

The reasons for low reading compliance rates among students have been attributed to factors including poor reading or study skills, misunderstanding student motivation, problems with reading, time constraints, and perceived insufficient payoff (Leamson, 1999; Warnick, 2017;). Among these factors, the perceived usefulness of the content appears to be an important motivating factor for students. Hobson (2004, p. 2) writes:

Surveys show that students see a weak relationship between course reading and academic success. Student perception and linked behavior collected in the National Survey of Student Engagement (2001) for example, underscores the extent to which students relegate course reading to the margins of necessary activity; most college students reported that they do not read course assignments.

Students' perception of the usefulness of reading appears to be tied to performance. French et al., (2015, p. 174) report survey data showing that students who read "often" performed better than students who did so "sometimes", but students who read "rarely" performed better on tests than those who read "often".

Among those ascribing to the benefits of reading, researchers have addressed the general problem of student motivation. A number of studies, mostly observing K-12 students, have examined the role of extrinsic factors to motivate effort to improve performance. Kremer, Miguel, and Thornton (2009) observed improvements in exam scores and attendance in response to monetary rewards in a Kenyan girls' school. Jackson (2010) examined the success of a program that paid high school students to take Advanced Placement (AP) courses. Students received compensation between 100 and 500 dollars for every AP course they completed. He observed that course completion, college enrolment, college completion, future employment, etc., increase in response to the monetary payment. Jackson also found that students who participated in the program were more likely to go to college, graduate, and receive higher wages.

Fryer (2011) collected a series of unique experiments that tested for an achievement effect as a result of monetary compensation. His set of randomized field trials involving 18,000 students, however, show only modest returns to paying students for grades in a few experiments, while most experiments showed null results. He provided a behavioral economic explanation for the statistically insignificant results:

The standard economic model implicitly assumes that students know their production functions – that is, the precise relationship between the vector of inputs and the corresponding output. If students only have a vague idea of how to increase output, then there may be little incentive to increase effort...the qualitative data also demonstrate that students had little idea about how to translate their enthusiasm into tangible steps designed to increase their achievement... Not a single student mentioned: reading the textbook, studying harder, completing homework, or asking teachers or other adults for help with confusing topics (p. 1971-72).

To satisfactory effort comes reward. Levitt, List, Neckermann, and Sadoff, (2012) found, among other results, that both financial and non-financial incentives led to improved performance and that incentives framed as gains or losses have similar effects. Echoing the methods of behavioral economists, they apply financial theory to rewards. Under the theory of individual discounting, in which an individual subjectively reduces the value of an object or reward based on temporal distance, they opine that in the absence of immediate incentives many students put forth low-effort on standardized tests owing to high subjective discount rates.

Cash incentives, and experiments like Fryer's, are rare. More generally, as is the case with this paper's study, grades are the primary motivator. As Warnick (2017, p. 80) writes:

First, grades can function as a temporary placeholder for future economic rewards. The idea is that, if one gets good grades, one can enter better colleges and universities and be accepted into competitive professional programs, thereby increasing one's earning potential.... Second, grades function as incentives because with good grades come social recognition and honours.

Determining qualification for reward can take many forms. In the Dallas reading program, documented by Fryer (2011), students demonstrated that they had completely read a book through a performance-based test. However, verification and performance should be two separate measures whenever the measure of performance has multiple influences such as outside study aids and life events. How a particular individual performs, pass or fail, may not reflect whether the student read assigned material. In these instances, the performance measure is a poor verifier of reading.

In choosing a verification method that is not based on performance, the methods that have potential to improve student performance should be among the preferred methods. Kuh, Pace, and Vesper (1997) performed an exploratory study on twenty-two-year old first and second-year undergraduate students in order to examine "the relationships between exposure to good practices in undergraduate education and academic gains of men and women undergraduates at different types of institutions" (p. 437). They identify three good practices to promote learning: faculty-student contacts, cooperation among students, and active learning. With respect to active learning they find that "active learning had the strongest positive influence on academic gains, exceeding the influence of any other variable" (p. 443).

In line with Kuh's et al., (1997) findings, Pace (1998) emphasized that the quality of student effort is crucial to how much the student will learn. Pace notes students gained more from their college experience when they invested more time and effort in educationally purposeful tasks, a notion echoed by Kuh (2002, p.1):

What students do during college counts more in terms of desired outcomes than who they are or even where they go to college. That is, the voluminous research on college student development shows that the

time and energy students devote to educationally purposeful activities is the single best predictor of their learning and personal development.

For this paper's purposes, students' construction of notes to make sense of textbook readings and complete practice exams/assignments will serve as verification that a particular student has read assigned textbook material prior to completing in-class tests. The choice to use notes as verification is not random. A sizeable literature focuses on the decoding functions of reading and the role of note-taking in encoding and recall.

This literature suggests that note-taking enhances the processing and encoding of information (Di Vesta & Gray, 1972; Bretzing, 1979; Einstein, 1985; Peper & Mayer, 1978, 1986). For example, Di Vesta and Grey (1972, p. 8) write "the behavior of the student employing encoding or other transformational processes reflects a transaction between the learner and the material to be learned, that is, it assumes or suggests an active learner". Consistent with these findings on the benefits of note-taking, in a study with student volunteers enrolled in principles of macroeconomics courses, Cohn, Cohn, and Bradley (1995) find that note-taking improved student performance.

The benefits of note-taking also appear to be mediated by a number of factors including length, presentation mode, and test mode (Kobayashi, 2005; Kiewra, 1988, 1989; Hidi & Klaiman, 1983). With regard to presentation mode and content, Kiewra (1989, p. 168) states:

Whether or not notes are reviewed, there is strong evidence that more note-taking leads to higher achievement.... Note-taking may especially aid students with low prior knowledge about the lecture topic on far transfer tasks... little can be said about the quality of notes students should record other than their need to be organized and to contain supporting detail.

Other studies examining the encoding effect of note-taking during lectures have also shown that both quantity and quality of notes are positively correlated to better academic and test performance (Nye, Crooks, Powley, & Tripp, 1984). Regarding quality, students' notes that capture important lecture points are better for recalling lecture content (Kiewra & Fletcher, 1984), and aid in recollecting information of lower importance (Pevery et al., 2007). The quality and quantity of notes taken during lectures are also affected by the volume and speed by which the content is delivered (Pevery & Sumowski, 2012). When students are required to keep up with the lecturer's speed of talk, rather than take notes from a text at their own preferred speed, information may be hastily written down and the encoding of information for recall may be weak (Ladas, 1980; Piolat, Olive, & Kellogg, 2005; Ryan, 2001). As Ladas (1980, p. 52) writes "The applied problem of note-taking from lectures is that under certain conditions - such as fast rate of presentation, rapid development or student unfamiliarity with the material - taking notes can interfere with encoding." More recent studies on both lecture and text note-taking have also suggested that students value the self-regulating use of note-taking and often prefer taking long-hand notes to increase recall of textbook readings (Mueller & Oppenheimer, 2014; Berry, Huber, & Rawitch, 2018).

To enhance the analysis, this paper also considers the role of schemas, problem-solving, and mental engagement to facilitate reading comprehension in a discipline. As Schoenbach, Greenleaf, & Murphy (2012, p. 35) note:

Students' engagement with and comprehension of texts is increased by activities that help them understand that reading is an active, problem-solving process to make meaning. They must draw on all their knowledge and experiences, because a good reader's whole self is involved in reading.

In this paper, the instructors set clear reading purposes using note-taking strategies that tap into students' background knowledge to connect reading content and discipline applications. These strategies include graphing, summarizing, paraphrasing, and organizing reading content in a way that interconnects economic principles. Students were provided opportunities to review and adapt their notes through practice exams and assignments, developing expertise in the area of study through deliberate attention and feedback (see Ericsson 2014; Newport 2016). This process also took place in a classroom community in which students were motivated to perform well. For many students, motivation to purposely engage with academic literacy requires a framework that incentivizes engaging with learning activities that lead to academic improvement in the discipline.

METHODOLOGY

Data

The study used students' performances on tests of economic theory, taught in introductory macroeconomics courses at a southeastern regional college in the United States, for this study's data set. The college is an access institution with an enrollment of 12,052 students during the fall semester 2016 of which 67.7 percent were full-time students, 32.3 percent were part-time students, and 3.8 percent were joint enrollment students (high school and college). The gender breakdown of the student body was 56.2 percent female and 43.8 percent male. The racial composition of the student body was 33.3 percent Black, Non-Hispanic, 33.0 percent White, Non-Hispanic, 18.1 percent Hispanic, 10.7 percent Asian, 3.7 percent Multi-ethnic, 0.9 percent race undeclared, 0.2 percent American Indian/Alaskan Native, and 0.1 percent Native Hawaiian or Pacific Islander. The average age of the student body was 22.7 years with 63.8 percent 18-22 years, 26.0 percent 23-34 years, 4.2 percent 25-44 years, and 2.1 percent 45 years and older. Non-traditional aged students (degree-seeking) were 14.4 percent of the student body.

The subject pool consists of 263 students spread across eight course sections offered by two professors over two 16-week semesters. Both professors (hereafter referred to as PA and PB) have more than ten years of teaching experience each. During the course of an academic year, PA taught one section twice a week during the day and one section once a week at night each semester. The primary difference between day and night sections is that the day section met twice per week for 75 minutes per meeting while the night section met once per week for 150 minutes. PB taught two sections each semester, all sections met twice a week for 75 minutes. The professors did not collaborate on content of course material, and each taught their own sections as similarly as possible. Each semester each professor offered one section taught with an inducement towards the students' final grades to turn in hand-written notes of textbook chapters (the treatment section), while none of the other sections had such an inducement (the control section).

PA taught four sections of Principles of Macroeconomics over two semesters serving 126 students collectively. Half of those students (63) had the opportunity to earn points towards their final grade by completing hand-written notes of textbook chapters. PB also taught four sections of Principles of Macroeconomics over two semesters serving 144 students, 73 of whom were able to earn the reward.

The textbook used by both professors was Mankiw (2008) *Principles of Macroeconomics, sixth edition*. The textbook follows a standard outlined format for presenting material in chapters, sections and sub-sections. Each chapter is approximately 20 pages and begins with a brief explanation of the importance and application of the content of the chapter. Within each chapter there are figures, tables, 'in the news' examples of the concepts discussed, 'quick quiz' self-tests for students to review summaries and complete unanswered questions.

For the treatment sections, Professors A and B instructed students to take (and turn in) hand-written notes written in their own words. The use of summarizing, retelling, and paraphrasing readings are activities that help students understand that reading is an active, problem-solving process to make meaning. Students were also instructed to incorporate graphing and problem-solving content covered in the chapters and integral to the economics discipline. The professors also assigned practice exams (Professor A) and broad-spectrum online supplemental learning activities (Professor B) that needed to be completed while taking notes on textbook content. The professors used a similar reward system while varying the type of test preparation each provided to students. Professor A posted online practice exams from the textbook's publisher that covered the same chapter content on which students were asked to take notes. Answers for the practice exams were posted the same day (but after) the practice exams were due. The grade students received for the practice exams rewarded the completion and application of the note-taking task prior to completing in-class exams. The professor provided feedback in class, and held a question and answer review session, following each practice exam and before the in-class exam used to measure performance. The professor also encouraged students to repeat the practice exams while referring to their notes and modify the notes, if needed, after each review session. Notes were due one week prior to each exam. The professor returned the notes, with a score, before in-class exams, so students could have them for review.

Professor B also provided an incentive for students to take notes on textbook content. Professor B assigned practice assignments from the textbook's publisher-provided online platform that covered the same chapter content on which students were asked to take notes. Students received feedback from the publisher's digital platform after the completion of each assignment. Students received a grade for the practice assignments to incentivize the use of

notes during practice assignments and prior to in-class exams. The professor provided feedback in class following each practice assignment. The professor also encouraged students to repeat the practice assignments while referring to their notes and modify the notes, if needed. Notes were due one week prior to each exam. The professor also returned the notes, before in-class exams, so students could have them for review.

The performance data consists of student test scores recorded each semester. The content of these tests included theory, the application of theory to quantitative questions, and recall and use of terminology. The test formats were multiple-choice questions drawn from a test bank that accompanied the textbook provided by the publisher. PA used the same tests for all sections in both semesters so that all students, regardless of semester or section, took the same test. PB changed the tests from one semester to the next, but both sections (control and treatment) took the same tests in each semester.

PA graded notes on a zero-one scale. To receive credit, students needed to submit at least two pages of notes on assigned textbook chapters. Most students submitted, on average, between three and six pages. Students were informed at the beginning of the semester that they needed to include concepts from the entire chapter in order to receive the reward. The summarized notes also needed to include key concepts and theories discussed in class and covered in the textbook, such as graphs and problem-solving content.

The reward for note-taking could account for as much as 15 percent of a student's grade. The presence of this grade item causes the relative weights of graded items to change between the control and treatment section. For the purpose of comparison, students in the treatment section also had online practice exams that accounted for an additional 15 percent of their grade while the remaining 70 percent of the grade consisted of two midterms, each accounting for 20 percent of students' grades, and a comprehensive final exam worth 30 percent of the students' grades. In the control sections, the grading weights were 25 percent for online homework assignments, two midterm exams each of which counted for 20 percent of a student's grade, and 35 percent for the final exam. Students could observe class averages of all grades after completing assignments and tests. PA used a curve to assign final grades, announcing in advance that the overall class grade point average would fall between 2.7 and 3.1 on a 4-point scale.

PB had a similar grading scale for notes which accounted for 15 percent of students' final grade. The remainder of PB's grades were distributed as 25 percent for online practice assignments, 30 percent for two midterm exams, and 30 percent for the final exam. In the first semester of the test, PB offered a five percent bonus for those students who consistently turned in exceptionally detailed notes. PB removed this inducement the second semester. PB did not announce a curve in advance but applied a uniform curve on exam scores across all sections after the exams. In the control classes, the online practice assignments counted for 40 percent by absorbing the 15 percent attributed to notes in the treatment sections.

Description of test

The following proposition is tested: does rewarding students to engage in active note-taking of introductory economics textbook chapters, while providing opportunities for instructor-guided practice and feedback, improve performances on multiple-choice tests of these chapters? The test employed a difference in means test within a parallel, randomized experimental design with two control variables. Each of the eight experiments compared a different treatment and control section. By repeating the experiment eight times, the test controlled for confounding factors such as demographic differences, prior attainment, experience, etc., with the assumption that these outside influences will be normally distributed across treatment and control sections. Within the subject pool the test considered that day and night students might have differences that affect performance. The test alternated the treatments between day and night students to account for any differences between these sections. The test also considered whether explicitly rewarding quality affected performance. Each professor taught both treatment and control sections to reduce the likelihood of violating the independence assumption present in nested data (Wampold & Serlin, 2000).

In this design the test avoided relying upon multiple regressions or structural equation modeling if either no statistical difference exists in test performances between treatment and control sections, or if in each experiment there is a consistent difference between the sections based on the treatment. If the results had been mixed, then a more restrictive, in a degrees of freedom sense, identification method would be warranted.

The test averaged raw scores on exams for both the treatment and control class sections for comparison purposes. The students did not know in advance that there would be differences in class assessments prior to enrollment, so there is no sample selection bias on the part of the participants. The test assumed that prior knowledge and skill differences are randomly distributed between treatment and control sections.

The results reported here include control for the type of students (day versus night students), and for the incentives provided (greater and lesser rewards for note-taking). Since both professors are experienced in teaching the course and used the same textbook and test bank, there were likely only minor if any changes to their teaching styles from one semester to the next, and, to the extent that they exhibited improvement in instruction, the parallel design ensures that each performance test occurs under similar circumstances for control and treatment sections.

In all sections, students were able to observe their performance on online practice exams and assignments and chapter note-taking prior to each exam, and each midterm provided a preliminary signal (grade) in advance of the final exam. Students had both short-term signals in the form of a grade for note-taking prior to each midterm, and long-term signals of their performance in the form of midterm scores prior to the comprehensive final exams in both treatment and control sections. The control sections had the same signals as the treatment sections except for the note-taking grades.

In PA's treatment sections, some students did not participate in the note-taking activity. In order to comprehensively analyze the data, the performances of these students were treated in three ways: first by including their performances in the control section, second by dropping their scores from the study, and lastly by including their performances in the treatment section to compare the performances of each section.

RESULTS

The professors administered three exams in each macroeconomics section (exam 1, exam 2, and the final). After each exam, the professors performed a difference in means test to determine whether test performance differed between the control and treatment sections. Table 1 reports the results for the case in which test results of students who did not complete their notes were included in the control section.

Only PA had students in the treatment section who did not take advantage of the opportunity to complete the note-taking activity. In Table 2, the first grouping entitled "students without notes are dropped," and includes only members of the treatment section that turned in their notes. Data from those students who were in the treatment section and did not turn in their notes were dropped in this section. A limitation of this approach is that the test loses power when some of the data is discarded. Therefore, as a robustness check, the second section reported in Table 2 includes all students' results for each section regardless of note-taking completion status in the treatment section.

DISCUSSION

The difference in means tests suggest that the action of rewarding students for building their discipline-related literacy, through active note-taking, focused practice, and feedback, does not significantly improve test performance. In Table 1, the comparison of mean test scores between the control and treatment sections are not significantly different at the $\alpha = 0.05$ level for a one-tailed t-test. PA's Spring 1 t-statistic is marginally significant, but it is negatively signed indicating that the treatment section did not perform as well as the control section. The general insignificant differences in the results does not provide positive evidence that the incentivized activity provided any appreciable benefit.

The results in Table 2 are similar to those in Table 1 except the Fall 2 exam shows a significant improvement in test performance associated with taking notes. However, with 24 independent experiments there is a 70.8 percent probability that one result will be statistically significant at the 0.05 level. Further, this exceptional result is more likely statistical noise because in this experiment the test scores of those who did not complete the note-taking activity were counted as being among the test scores of those who did. By mixing their scores into the treatment section, the performance of the treatment section became statistically better than that of the control section, even though the newly included performances were by those students who likely did not engage in the treatment.

Table 1. Mean Test Score Comparisons (**bold** signifies significance at the alpha = 0.05 level)

Professor	Exam	Treatment		Control		Test for Difference in Means:
		Mean	S.D.	Mean	S.D.	t-statistic
A	Spring 1	22.28	6.04	24.94	5.93	-1.79
A	Spring 2	22.03	6.94	22.94	2.10	-0.69
A	Spring Final	38.27	8.68	35.80	21.22	0.63
A	Fall 1	24.39	7.34	25.44	5.00	-0.64
A	Fall 2	22.80	6.48	20.94	3.76	1.37
A	Fall Final	33.64	8.93	35.24	12.32	-0.52
B	Spring 1	72.15	14.80	77.35	14.71	1.49
B	Spring 2	69.10	16.51	70.67	16.95	0.40
B	Spring Final	71.70	15.39	76.99	14.38	1.50
B	Fall 1	74.80	18.06	73.68	14.68	-0.29
B	Fall 2	70.61	14.57	71.07	13.87	0.14
B	Fall Final	73.41	16.12	72.26	17.30	-0.29

The results of the study are robust to type of students (traditional students versus night students), to the incentives provided (greater or lesser rewards for note-taking), and across professors. The results may be generalizable to the institution at which this experiment took place and, perhaps, to similar institutions employing common practices. Since both professors are experienced, there was likely little change in their teaching styles from one semester to the next. To the extent that the professors exhibited improvement in instruction, the parallel design ensures that each experiment occurs under nearly identical instructional design and delivery.

CONCLUSION

Requiring students to read textbook and other course materials is a common practice in higher education. In this study students earned rewards in the treatment section for active note-taking on macroeconomics reading assignments. The treatment sections acquired 86.36 percent of PA's incentive points (corresponding to a completion rate of acceptable assignments) and 100 percent of PB's. Despite the successful use of the incentive to motivate students to take notes on textbook readings and complete follow-up practice exams/assignments, guided by instructor feedback, this activity did not result in improved students' test performances. This outcome has several possible explanations, which could be examined in future research.

Table 2. Alternate Treatment of Omitted Notes (**bold** signifies significance at the alpha = 0.05 level)

Treatment type	Exam	Treatment		Control		Test for Difference in Means:
		Mean	S.D.	Mean	S.D.	t-statistic
Students without notes are dropped from treatment section	Spring 1	21.38	9.41	24.61	5.91	-1.59
	Spring 2	22.03	9.03	22.47	1.17	-0.26
	Spring Final	38.69	8.59	35.24	20.77	0.88
	Fall 1	24.77	15.14	25.13	5.22	-0.12
	Fall 2	23.67	12.61	19.53	3.51	1.56
	Fall Final	33.64	8.93	35.24	12.32	-0.52
All results by initial section type	Spring 1	24.19	5.93	24.61	5.91	-0.28
	Spring 2	22.56	7.12	22.47	1.17	0.07
	Spring Final	38.67	8.59	35.24	20.77	0.88
	Fall 1	25.03	14.91	25.13	5.22	-0.04
	Fall 2	22.06	6.50	19.53	3.51	1.92
	Fall Final	33.64	8.93	35.24	12.32	-0.52

Future studies can use the findings of this paper as a foundation to examine whether the reading of disciplinary texts, such as economics, requires further understanding on the customary ways of student thinking and reading in the discipline. This research could focus on the social and collaborative dimension of classroom literacy. This approach could examine how students share in class and in groups the particular comprehension problems that arise while reading the textbook and the effect these discussions have on students' review of the readings (e.g., quality of notes taken) and their performances on tests.

Additional quantitative studies in discipline-related reading and performance are also needed in undergraduate business courses, such as economics. Few studies have examined the role of reading comprehension at a metacognitive and social level in the business curriculum.

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Robert D. Mason received his PhD in Economics from the University of Georgia. His current research is in price theory and monetary economics. <https://orcid.org/0000-0003-0236-5348>.

William B. Holmes is an Associate Professor of Economics at Georgia Gwinnett College. Dr. Holmes received his PhD in economics from Georgia State University. His research, which focuses on areas of applied microeconomics including experimental and environmental economics, has been accepted for publication in the *Journal of Applied Economics and Policy*, *Land Use Policy*, and other peer-reviewed journals.

Negotiation Fairness Norms: An Effective Classroom Exercise

Michael R. Carrell, Northern Kentucky University, Highland Heights, Kentucky, USA

ABSTRACT

The successful teaching of commonly utilized negotiation concepts can be greatly enhanced by effective classroom exercises. This paper provides a classroom tested exercise that in only a few minutes successfully teaches students four commonly employed negotiation fairness norms; (1) equality, (2) equity, (3) need, and (4) status quo. It was developed, utilized and refined in classrooms over several years. The exercise not only enables students to correctly define and identify these norms in negotiation situations, but more importantly they recognize the norms as ones which they themselves and/or others have used in their daily personal and professional lives. The exercises and test questions included in this paper were developed by the instructor from actual cases in his professional life as a negotiator and mediator, and have been classroom tested. The exercises can easily be utilized in courses on organizational behavior, management, psychology, negotiation, and labor relations.

Keywords: Teaching negotiation, negotiation, teaching negotiation norms, fairness norms, equality norm, equity norm, need norm, status quo norm.

INTRODUCTION

Teaching negotiation concepts, skills and theory to undergraduate students is a rewarding experience. Many of the key concepts, skills and theories are best taught with effective classroom role plays, simulations, and exercises. Fortunately negotiation lends itself to the utilizations of these active learning methods because many “real world” negotiations are conducted one – on – one or between two teams of negotiators. This exercise was developed by the author based on his thirty plus years of professional negotiating in the private and public sectors, as well as many years of teaching negotiation courses. The exercise provides true “teachable moments” of the fairness norms which are commonly employed by experienced and novice negotiators alike. The goals of this paper are to provide instructors with an easily adopted exercise that effectively demonstrates the four fairness norms, and to provide test questions on the four norms.

Fairness Norms

Richard Shell, director of the Wharton Executive Negotiation Workshop, in his landmark book *Bargaining for Advantage*, (1999) pointed out how the negotiation process involves one of human nature’s most basic psychological drives – the need for fairness in in both words and actions. Shell further stated that socially accepted fairness norms give negotiators leverage when they frame proposals with them. Negotiation scholars have concluded that the fairness norms may be the most commonly accepted and employed norms in typical settings. Several authors (Shell, 1999; Welsh, 2004; Bazerman, 2019), agree the fairness norm includes four major variations: 1. the equality norm – divide the amount equally or the “50 / 50 rule” or “split the difference”; 2. the equity norm – divide the amount based on the relative inputs or efforts of the parties (Adams, 1963); 3. The need norm – divide the amount based on the relative need of the parties; 4. The status quo norm – divide the amount based on the current state. Fairness, or justice, has become a workplace cornerstone of Western culture. Many social movements have built on the labor movement standard of “equal pay for equal work” (Moghaddam, 2017). What exactly is equal or fair often depends on which of the four norms is being utilized.

Furthermore, in their classic book, *Getting to Yes*, Fisher, Ury and Patton (1991) claimed that utilizing fairness norms can benefit a negotiator in at least three ways; (1) accepting an offer based on a norm such as fairness is easier than accepting an offer that is randomly tossed out; (2) an offer based on a norm is more persuasive and thus more likely to receive serious consideration; (3) people are more likely to accept an offer based on a norm rather than on that is a pressure tactic. Once two parties exchange initial offers and begin the process of “dividing up the pie”, what motivates one to accept an offer they may not have accepted before the negotiation began? The framing of offers with socially accepted fairness norms can provide a context that leads to a settlement (Carrell & Heavrin, 2014). Fairness norms therefore influence the “give and take” of negotiations because they impact parties’ positions and expectations (Albin, 1993). Negotiators rely upon their own perceptions of fairness in making offers, and in evaluating the offers of others. They work to achieve an outcome they consider fair, or, fair enough (Welsh, 2004).

THE LESSON PLAN

After an introduction to the general topic of fairness norms utilized in a negotiation, but before any discussion of the four specific norms in the exercise, student volunteers are asked to come to the front of the classroom, one pair at a time. The instructor has provided no prior discussion of fairness norms in order that the students, like all people, respond as they would in a normal negotiation situation. Each pair of students is given a 4" x 6" card and told to silently read the instructions on their card, and then negotiate with their partner.

Equality Norm

The first pair of students is each given a card with the following instructions;

“You and your partner can earn 10 bonus points in this class. The only requirement to receive the points is both of you must agree on how to split the 10 points between you. You have five minutes to negotiate a mutually agreeable division of the points.”

The typical pair of students only take less than a minute to agree on a 5/5 division of the points. When asked why they so easily and quickly agree on a 5/5 division, almost all respond with something like; “That is fair” or “It’s an even split”.

The instructor then asks by a show of hands how many other students in the class agree with the split, and again, virtually all students respond positively. This is the teachable moment – when the instructor then points out the exercise has demonstrated the Equality Norm, which is a commonly applied fairness norm by most people in similar settings.

Equity Norm

A second pair of students is each given a card with the following instructions;

“You and your partner can earn 10 bonus points in this class by participating in a 15 minute experiment. The only requirement to receive the points is both of you must agree on how to split the 10 points between you. You have fifteen minutes to complete the experiment and then after the experiment is finished, you must negotiate a mutually agreeable division of the points.”

The experiment used by this author, and of course others could be used as well, involves one student with both arms extended to the fullest, holding a textbook in each hand for as long as possible. The other student is given a watch and told to time the first student’s time holding the books. Most students holding out the books tire and stop in less than five minutes – it is harder than one might think! Then the students decide how to divide the 10 bonus points. From the start the one holding the books demands more than half the points because they did the harder task. The most commonly agreed upon split is 8/2.

The instructor then points out the students did not use the equality norm – but instead based the split on the relative efforts of the two students which is more in alignment with the inputs – which is the Equity Norm, and like the equality norm, is commonly applied by most people in appropriate situations.

Need Norm

A third pair of students is each given a card with the following instructions;

“You and your partner can earn 10 bonus points in this class. The only requirement to receive the points is both of you must agree on how to split the 10 points between you. Both of you just finished a class project and contributed equally to it. However, you need 7 bonus points (the other card reads 3) to earn an “A” in the class and you partner needs 3 bonus points (the other card reads 7) to earn an “A”. You have five minutes to negotiate a mutually agreeable division of the points.”

After both students explain to the other their situation regarding needing an A, they almost always quickly agree to split the points 7/3, and when asked why, simply respond because both then can earn an “A”.

The instructor asks the class how many agree with the split and the vast majority agree with the split. The instructor then points out the exercise has demonstrated the application of the Need Norm, which is a commonly applied fairness norm.

Status Quo Norm

A fourth pair of students is each given a card with the following instructions;

“You and your partner can earn 10 bonus points in this class. The only requirement to receive the points is both of you must agree on how to split the 10 points between you. You are a business major, and the other student is a history major (reversed on the other card). Both of you just finished a class project. The last time you had this opportunity you awarded 6 points to the student majoring in business, and 4 points to the other student, majoring in history. You have five minutes to negotiate a mutually agreeable division of the points.”

Of the four exercises, this one usually causes the most disagreement, and yet a majority of the time the two students agree to split the point 6/4 rather than lose the points when time runs out.

The instructor then asks the class why the students agreed to the 6/4 split, and the answer is – when absent any other logical reason, keep the split as it was in the past. The instructor then points out the exercise has demonstrated the Status Quo Norm, which is yet another commonly applied fairness norm.

Instructor: Post Activity Discussion

The instructor after the four pairs of students have completed their exercises can point out that all students entered the class without giving much thought to what social norms affect how they negotiate. And yet, they consistently applied the four fairness norms in appropriate situations! When one student in each pair offered the split that they eventually, and usually quickly, accepted, they were using what Shell (1999) calls “normative leverage” – a commonly accepted social idea of fairness that leads people to accept an outcome they otherwise might not accept.

Teaching Effectiveness

In an introductory course on negotiation in which the exercise was utilized, two hundred thirty four students in six classes were four exam questions that required them to correctly identify which of the four norms had been employed in a negotiation situation. Students correctly identified ninety two percent of the norms utilized in the following test questions.

Exam instructions; Please read the following negotiation situation and then identify which negotiation norm was utilized by the parties involved.

The Estate of Mrs. Butler. The will of a deceased woman, Mrs. Butler, states that her three adult children must agree on how to divide her estate. When they get together they find each has a different strategy.

One child suggests that her sister and brother are both financially better off than her and both have new cars, and thus she should get their mother’s new Mercedes – Benz.

1. She is using which norm?

- A. Equality
- B. Equity
- C. Need*
- D. Status Quo
- E. None of the above

Mrs. Butler's second child firmly states that the only fair method of dividing the estate is to sell everything and give each child one third of the proceeds.

2. She is using which norm?

- A. Equality*
- B. Equity
- C. Need
- D. Status Quo
- E. None of the above

A close family friend suggests that due to their state of grief the three should not make a decision at this time or for several months, but instead place the assets in a secure account until they are over the death of their mother.

3. He is using which norm?

- A. Equality
- B. Equity
- C. Need
- D. Status Quo*
- E. None of the above

Mrs. Butler's third child notes that she, and she alone, provided daily care of their mother for the past few years, and thus should receive a greater share of the estate.

4. She is using which norm?

- A. Equality
- B. Equity*
- C. Need
- D. Status Quo
- E. None of the above

CONCLUSIONS

Effective classroom teaching almost requires faculty to enhance their lectures with active learning methods such as role plays, exercises, and simulations. Teaching negotiation concepts because of the nature of the subject – essentially a two party process, not only requires such active learning methods, but makes the context makes it easy for effective methods to be employed in the classroom. Negotiation practitioners and authors (Shell, 1999; Fisher, Ury, Patton, 1991; Carrell and Heavrin, 2008) have identified the critical roles that fairness norms play in most negotiation situations. This paper provides four exercises that teach students those norms – equality, equity, need, status quo. The exercises have been classroom tested and refined over several semesters. In addition the paper includes test questions on the norms which students by their level of success (92%) have demonstrated that the exercises were successful. Finally, the author can report witnessing in the classroom many, many examples of students experiencing a true teachable moment when they themselves utilize fairness norms during the exercise.

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Michael R. Carrell, DBA is a Regents Professor of Management in the College of Business at Northern Kentucky University, Highland Heights, KY. His research interests include Human Resource Management, Negotiation, and Labor Relations.

Revising Quantitative Assignment Policies to Improve Student Achievement in an Online Operations Management Course

Claudia H. Pragman, Minnesota State University, Mankato, USA

ABSTRACT

Instructors must make time to monitor and reflect on how their assignment policies support student achievement. They need to experiment with their policies and tweak them to help students learn the material. In this study, the author analyzes the quantitative assignment scores of 332 students over seven consecutive semesters in an undergraduate operations management course. The original assignment policies, characterized by generous completions times and several opportunities for revision, resulted in poor student performance. After tightening the assignment policies, the overall average of the student assignment scores increased by 15%. Data analysis using a series of t-tests revealed these results to be statistically significant with a large effect size.

Keywords: online course management, operations management, quantitative assignment policies

INTRODUCTION

This study will focus solely on the policies for quantitative assignments given to students in an online, upper-level undergraduate operations management course. These assignments comprise multiple-part problems or exercises, selected from a textbook publisher's problem bank, that students solve using mathematical models and Excel. Although there is a great deal of non-quantitative content in operations management, this study concentrates on the quantitative assignments because students find them difficult and time-consuming to complete. This operations management course is required of all business majors at the author's university, and a significant number of students enroll each semester. Typically, the author's department offers five or six face-to-face sections and one or two online sections of the course per semester. Currently, the author is the only instructor teaching the online sections; therefore, the course content and its policies are this instructor's own design. The quantitative assignments discussed in this study contribute 40% to the students' semester grade, with the remaining 60% coming from reading assignments, PowerPoint presentations, video assignments, discussions, and chapter exams. Each semester students' average final course grade is between a B and a C+. Readers should note that the author is the instructor referenced in this article.

When the instructor began teaching the course online, she established policies for the quantitative assignments that she believed would be beneficial to student success. Those policies included access to the textbook and tutorials for solving the problems, an entire week and three attempts to complete the exercises, a student-moderated Q & A discussion board, and opportunities to ask the instructor questions about solving the problems. Over the course of several semesters, the author became aware that these policies did not achieve the desired results. Instead, from semester to semester, the average homework scores were consistently lower than anticipated. Checking time and date stamps for the assignments revealed that most students waited until the due date to begin their work, leaving almost no time to ask other students or the instructor for help or to take advantage of more than one attempt to complete the exercises. The instructor wondered if her policies were, in fact, encouraging procrastination and enabling poor time management.

During the past academic year, the instructor made changes to the quantitative assignment policies in the hope that student learning and assignment scores would improve. The policy changes were developed based on student feedback from end-of-semester course evaluations, discussions with other faculty who teach online courses, and research concerning the pedagogy of teaching online. The primary policy changes focused on reducing the number of attempts and the time allowed to complete the assignments, but also giving students access to publisher-provided tools that would provide answers to their questions. The goal was to create policies that would mitigate procrastination and provide students with new resources available to them 24/7. In the discussion and conclusions sections of this article, the author will report the outcomes of the policy changes and recommendations for future policy changes, respectively.

PREVIOUS RESEARCH

In recent years, the number of courses, even entire programs, offered online has grown tremendously. Students voluntarily or involuntarily enroll in online courses. Those students who volunteer to register for online courses want the flexibility such courses can offer. While other students who prefer taking courses face-to-face, choose to enroll in online courses to avoid commuting to campus, to balance work and family commitments, and to resolve scheduling conflicts (Lee, Stringer, and Du, 2017). In other instances, students enroll in online courses because it is the only mode of delivery offered for that course (Wright and Holmberg-Wright, 2018). In this study, both modes of delivery are available for the operations management course, but many students, especially student-athletes, voluntarily register for the course online.

In the case of operations management, students may avoid taking the course online because of its content. Students, instructors, and researchers find the content of the course to be challenging. Asef-Vaziri (2015) characterizes that content as quantitative, data-driven, and analytical. Furthermore, he writes that students lack the necessary foundation to succeed in the course because they have not done well in prerequisite courses or retained the knowledge needed to succeed, namely knowledge of mathematics and statistics. Students in this author's online operations management course are sometimes surprised to discover the course has quantitative components; rather, they assume those more difficult elements will be omitted.

Lacking quantitative and analytical skills are, indeed, barriers to success. But students' lack of study and time management skills pose additional obstacles. Nicolau (2015) found evidence that students' grades suffered when they procrastinated. He tracked the lead time that students gave themselves for assignments and discovered that students who began their assignments in advance earned higher grades than those who allowed themselves less lead time. Nicolau concluded that students who waited longer to begin their work sacrificed the benefits gained from seeking feedback in advance of the assignments due date. Furthermore, Artino and Stephens (2009) also found that procrastination and poor time management impeded student success. Their research uncovered that motivation and self-regulation were necessary for students to be successful. Students demonstrated motivation by being interested in the course content, wanting to succeed, and believing that they would be able to use what they learned in other courses. Self-regulated students possessed the abilities to set their goals and manage the learning process by developing strategies to achieve those goals. According to Shaker, Nathan, and Dale (2014), one of the most effective strategies was scheduling; successful online students benefited from scheduling time to do their coursework.

The research literature makes it clear that there is a great deal of thought necessary when it comes to designing and redesigning online courses. In this study, the focus is on the redesign of an online course. According to Baran and Correia (2014), redesigning requires reflection about content, policies, and students' capabilities and behaviors. Other researchers advise instructors to select learning platforms and software that are both easy to use and support students' learning (Riley et al., 2017) as well as students' independence and autonomy (Baran, Correia, and Thompson, 2011). The author considered all of these factors when making changes to her quantitative assignment policies.

RESEARCH DESIGN

The author conducted this study, involving 332 students over seven consecutive semesters, spring 2016 through spring 2019. Each term, students completed nine quantitative assignments. While the problems assigned varied from semester to semester, the nine topics remained the same—break-even analysis, statistical quality control, project management, aggregate planning, independent demand inventory, dependent demand inventory, logistics and transportation, line balancing, and forecasting. Appendix A provides detail about the problem types assigned for each topic. The instructor created the assignments using algorithmic problems selected from the textbook publisher's problem bank; each student solved the same multi-part problems, but with data randomly generated for individual problems. Although the number of problems assigned for each topic varied, the total points awarded for each assignment was the same; therefore, no single quantitative assignment was worth more than another.

During the entire study, students learned to solve the exercises by reviewing tutorials prepared by the instructor using SoftChalk, a web-based program for authoring digital content; those tutorials included text, images, videos demonstrating how to solve the problems, and self-check quizzes. In addition to the tutorials, students were able to

reference their textbook, post questions to a student-moderated discussion board, and ask the instructor questions about solving the problems.

Data Collection

For five consecutive semesters, spring 2016 to spring 2018, the policies for completing the quantitative exercises remained the same: start dates were 12:00 a.m. Mondays and end dates were 11:59 PM on Sundays; students were allowed three attempts to complete the assignment; after submitting each attempt, their assignments were autocorrected, and the correct and incorrect answers identified; after the first and second attempts, students revised the answers to their original problems. Detailed solutions were only published after an assignment's due date. For each of the above-mentioned semesters and policies described, the average scores for each of the nine assignments were calculated and analyzed for the 236 students enrolled in the author's operations management course during this time period.

Beginning in fall 2018, the author changed the assignment policies. The quantitative assignments opened at midnight on Sundays and were due by 6:00 p.m. on Fridays, allowing students to complete the exercises and review their solutions before taking the chapter exam the next day. In addition, the students were limited to two attempts, but they were able to access hints provided by the publisher and to check their answers one time per problem. The publisher's hints, when available, were brief videos demonstrating the Excel solution to a similar problem. Students could also refer to their textbook, post questions to the discussion board, and contact the instructor for help. The 6:00 p.m. Friday due date was chosen because other students and the instructor were more likely to be available to answer questions during "regular" business hours.

At the end of the fall 2018 semester, after examining the average scores, there was evidence of improvement. However, there remained evidence that most students were not beginning to work on their exercises until the day they were due. Many still did not have a chance to ask questions or take advantage of the second attempt to revise their work. The fall 2018 assignment policies remained in effect during spring 2019 except the number of attempts was reduced to one. The author's intent was to encourage students to use their resources sooner, rather than later, on that single attempt. The number of students enrolled in the 2018-2019 academic year was 96. These policy changes raised questions. Were the average assignment scores from spring 2016 to spring 2018 different from one another? And were the means from fall 2018 and spring 2019 different from each other? Furthermore, did the changes in assignment policies affect the scores?

Data Analysis

To answer the above questions, the author conducted a series of tests of mean differences. The first analysis was to test for differences in the means of the nine quantitative assignments across five semesters, spring 2016 to spring 2018. During those terms, the same policies—three attempts and a week to complete the assignments—were in effect. A two-factor ANOVA without replication (or a randomized block design) was used to test for differences between the means; the semesters were the treatment, and the assignments were the block.

For the second analysis, because the same assignments were measured at two different times, the author used a paired t-test to check for differences between the fall 2018 and spring 2019 semester means. In these two semesters, the assignment policies reduced the time allowed and the number of attempts to complete the assignment; however, students were given the additional resources of hints and one opportunity per problem to check their answers before submitting their assignments.

The final analysis was to assess the overall means of the assignments before and after the assignment policy changes. To do this, the author averaged the mean of each assignment across the semesters prior to the policy changes, spring 2016 to spring 2018, and the semesters after the policy changes, fall 2018 and spring 2019. Once again, a paired t-test analysis examined the data for a difference in the mean percent scores before and after the policy changes.

For all three analyses, the data were assignment scores measured as percent; and the null hypotheses were that the means were equal, and the alternative hypotheses stated that the means were not equal. All analyses specified a 0.05 level of significance, and their results are presented in the next section.

DISCUSSION

The first analysis, a two-factor ANOVA without replication, investigated the difference in the mean percent scores across the five semesters before assignment policies were changed. As indicated below in Table 1, the mean assignment scores (measured in percent) did not differ significantly from semester to semester, $F(4, 32) = 0.08$, $p = 0.989$; however, there were significant differences in the means between the various assignments, $F(8, 32) = 10.50$; $p < .001$, and a medium to large effect size, $\eta^2 = .73$.

Table 1: Two-Factor ANOVA without Replication of Mean Scores for Spring 2016 to Spring 2018

Assignment	Mean	Variance
Break-Even Analysis	0.8256	0.0005
Statistical Quality Control	0.7116	0.0016
Project Management	0.7130	0.0020
Aggregate Planning	0.5271	0.0100
Independent Demand Inventory	0.5978	0.0106
Dependent Demand Inventory	0.6153	0.0014
Logistics and Transportation	0.6342	0.0086
Line Balancing	0.6979	0.0006
Forecasting	0.5181	0.0020
Spring 2016	0.6393	0.0139
Fall 2016	0.6466	0.0172
Spring 2017	0.6519	0.0137
Fall 2017	0.6557	0.0139
Spring 2018	0.6513	0.0083

Source of Variation	SS	df	MS	F	P-value	F crit
Assignments	0.3877531	8	0.0484691	10.495835	4.448E-07	2.2443961
Semesters	0.0014343	4	0.0003586	0.0776506	0.9885814	2.6684369
Error	0.1477741	32	0.0046179			
Total	0.5369616	44				

Post-hoc Tukey comparisons traced the source of the significant differences in the average assignment (percent) scores. Of the potential 36 pairwise comparisons, 11 were significant. At the 0.01 level of significance, the break-even analysis score (0.83) was significantly higher than the forecasting (0.52), aggregate planning (0.53), independent demand inventory (0.60), dependent demand inventory (0.62), and logistics and transportation scores (0.63). In addition, the mean percent scores for the project management (0.71) and statistical quality control (0.71) assignments were significantly higher than the scores for forecasting (0.52) and aggregate planning (0.53) assignments at the 0.01 level. Finally, the mean percent score for the line balancing assignment (0.70) was significantly higher than the forecasting assignment (0.52) at the 0.01 level of significance and higher than the aggregate planning assignment (0.53) at the 0.05 level.

In summary, this analysis revealed that the scores on the assignments differed significantly by assignment but not by semester. The results for the difference in the assignments did not surprise the instructor; the instructor knows from teaching operations management that some topics are more difficult than others. Additional discussion about this finding will take place in the conclusions section of this study.

The next step in the analysis was to determine whether or not there were differences in the assignment scores between the fall 2018 and spring 2019 semesters. For this purpose, the author conducted a paired t-test for the mean difference in the scores for the two semesters. The results of that analysis are presented in Table 2.

Table 2: Paired T-test of Mean Scores (percent) for Fall 2018 and Spring 2019 Semesters

Assignment	Fall 2018	Spring 2019	Difference (Fall 2018 - Spring 2019)
Break-Even Analysis	0.9403	0.9667	-0.0263
Statistical Quality Control	0.8627	0.8510	0.0117
Project Management	0.8593	0.7030	0.1563
Aggregate Planning	0.8477	0.8450	0.0027
Independent Demand Inventory	0.8113	0.8130	-0.0017
Dependent Demand Inventory	0.7593	0.7770	-0.0177
Logistics and Transportation	0.7550	0.6623	0.0927
Line Balancing	0.7503	0.7160	0.0343
Forecasting	0.7117	0.7113	0.0003
Semester Mean Scores (as percent)	0.8109	0.7828	0.0280

The above table identifies the scores for the fall 2018 assignments ($M = 0.81$, $SE = 0.02$), the spring 2019 assignments ($M = 0.78$, $SE = 0.03$), and their differences. Based on the results of the paired t-test, the average difference, 0.03, CI [-0.02, 0.07], was not significant ($t(9) = 1.41$, $p = .195$, and represented a small-sized effect, $d = 0.30$).

After learning that the overall assignment scores did not differ significantly in these last two semesters, the author analyzed the scores based on the assignment policies in effect at the time the data were gathered. To do this, the author averaged the nine assignment scores across the five semesters (spring 2016 to spring 2018) when the students had an entire week and three attempts to complete the exercises and compared them to the assignment scores averaged over the last two semesters (fall 2018 and spring 2019) when students had fewer attempts and less time to complete the assignments, access to hints, and the ability to check their answers one time. These two new groups were named pre-policy change and post-policy change and tested for significant differences between the two groups using a paired t-test.

Table 3 provides the mean scores for the assignments prior to the policy changes (spring 2016 to spring 2018; $M = 0.65$, $SE = 0.03$), after the policy changes (fall 2018 and spring 2019; $M = 0.80$, $SE = 0.03$), and their differences. Note that the column of difference scores are all negative, indicating that every quantitative assignment had a higher average score after implementing the policy changes. Based on the results of the paired t-test, the average difference, 0.15, CI [-0.21, -0.08], was significant ($t(9) = -5.09$, $p < .001$, and represented a large-sized effect, $d = 1.5$).

Table 3: Paired T-test of Mean Scores (percent) for Pre- and Post-Policy Changes

Assignment	Pre-Policy Change	Post-Policy Changes	Difference
Break-Even Analysis	0.8256	0.9535	-0.1279
Statistical Quality Control	0.7116	0.8568	-0.1453
Project Management	0.7130	0.7812	-0.0681
Aggregate Planning	0.5271	0.8463	-0.3192
Independent Demand Inventory	0.5978	0.8122	-0.2143
Dependent Demand Inventory	0.6153	0.7682	-0.1528
Logistics and Transportation	0.6342	0.7087	-0.0745
Line Balancing	0.6979	0.7332	-0.0352
Forecasting	0.5181	0.7115	-0.1934
Policy Mean Scores (as percent)	0.6490	0.7968	-0.1479

CONCLUSIONS

Two-Factor ANOVA without Replication for Spring 2016 to Spring 2018

Using a two-factor ANOVA without replication to study the data from spring 2016 to spring 2018, the author analyzed the performance of 236 students while the original assignment policies were in effect. From semester to semester, the overall average of the scores did not change; they were consistently disappointing. However, the analysis revealed that there were significant differences in the average scores for individual assignments. The scores for the break-even analysis, statistical quality control, project management, and line balancing assignments were higher, and the ones for forecasting, aggregate planning, independent demand inventory, dependent demand inventory, and logistics and transportation were notably lower. Based on the author's experience, students find the latter group of assignments more challenging because they must choose the appropriate mathematical model, from several, to solve the exercises. This variation in difficulty is the reason that the quantitative assignments are worth the same number of points. The author does not want students' grades affected disproportionately. Nevertheless, it is worth noting that students' performance was consistent during the five-semester time period when the original assignment policies were in place.

Paired T-test for Fall 2018 and Spring 2019 Semesters

Beginning in fall 2018, the author changed the assignment policies; the 96 students in this part of the study had less time and fewer attempts to complete the assignments, but they had access to hints and the chance to check their answers one time before submitting their assignments for grading. Essentially, these policies remained the same in the spring of 2019, although the number of attempts allowed was reduced from two to one. A paired t-test analysis compared the scores from one semester to the next. The difference in the overall average assignment scores between the two semesters was not significant, and no semester consistently had higher individual assignment scores than the other. Therefore, students' performance was stable for the entire academic year.

Paired T-test for Pre- and Post-Policy Changes

To summarize, there were no significant differences in the overall mean assignment scores from spring 2016 to spring 2018 when the original assignment policies were in effect. Furthermore, there was no significant difference between the overall scores in the two semesters after the policies changed. By averaging the nine quantitative assignment scores from spring 2016 to spring 2018 semesters to form the first group and then averaging the same assignment scores for fall 2018 and spring 2019 to create the second group, a paired t-test analysis tested for a difference in the means of the assignments before and after the policy changes.

The analysis revealed that the difference in the mean assignment scores before the policy changes was significantly different from the scores after the policy changes. Scores after those changes were nearly 15% higher than before the policy adjustments. Moreover, the average score for all nine quantitative assignments was higher after altering the assignment policies. These results indicate that students' performance benefited from the access to the hints and the opportunity to check their answers one time but not negatively affected by having less time and fewer attempts to complete their assignments.

Future Quantitative Assignment Policies

While preparing to teach the operations management course online, the instructor created tutorials that simulated the methods used to solve the quantitative assignments in her face-to-face classes. What the instructor failed to do was to provide an in-class equivalent for students to get timely answers to their questions when they had difficulty solving the problems. Upon reflection, the author was not providing students with the timely feedback they needed. Their fellow students or instructor could not be on-call 24/7. Students needed new ways to get on-call answers to their questions. The assignment policy changes begun in fall 2018 are a step in the right direction. By allowing students access to problem-solving hints and the ability to check their answers for each problem, students did not have to rely on other students' or the instructor's availability.

When the author read the course evaluations in spring 2019, no one complained about having only one attempt to complete the quantitative assignments, but several students lobbied for more than one opportunity to check their answers. One student wrote, "How can I learn anything if I can only check my answers one time?" That made the author realize that students can benefit from knowing whether their answers are correct and using that information to redirect them to the tutorial for help. By providing students with a second opportunity to check their answers, they are more likely to try learning how to solve the problem rather than getting angry and giving up on the assignment.

Another frequent comment from the spring 2019 course evaluations was about the due date for the quantitative assignments. Students wrote that they did not have enough time to study for the chapter exam, due on Saturday, because the detailed solutions for the quantitative assignments were not available until after the quantitative assignment's Friday due date. Many students argued they required more time to learn from their mistakes on the quantitative assignment before taking the chapter exam. If the instructor wants to discourage procrastination and help students manage their time well, the due dates for assignments need to support those intentions. Looking back on the original policy of all assignments opening at midnight on Monday and closing at 11:59 p.m. on Sunday, it is evident that students did not benefit from that freedom and flexibility. Moving the quantitative assignments' due date to Friday was a step in the right direction, but students need more time between the quantitative assignment and chapter exam due dates.

Going forward, the instructor will revise her policies to encourage students' time management and provide them with timely feedback to improve their success. To accomplish these goals, she intends to open the assignments at midnight on Saturday and have the quantitative assignments due on Wednesday by 6:00 p.m. and the chapter exam due by Friday at 6:00 p.m. The policies for the quantitative assignments will allow students only one attempt to complete the assignment and still have access to the publisher's hints but provide two opportunities to check the correctness of their answers before submitting their assignment. The revised due date intervals should encourage students to begin their assignments earlier, and have more time to ask the instructor questions about the quantitative assignments and study for the chapter exam.

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APPENDIX A

Each semester, operations management students were assigned nine quantitative assignments. Below is the list of those assignment topics and details about the specific problem types included in each topic.

1. Break-Even Analysis
 - Process Choice
 - Equipment Choice
2. Statistical Quality Control
 - Process Capability
 - Mean and Range Charts
 - p-Charts
 - c-Charts
3. Project Management
 - Critical Path Method
 - Critical Path Method with Three Time Estimates
4. Aggregate Planning Techniques
 - Constant Workforce
 - Variable Workforce
 - Variable Inventory Levels
 - Stockouts, Overtime, and Subcontracting
5. Independent Demand Inventory
 - Single-Period Model
 - Fixed-Order Quantity Model
 - Reorder Point Models
 - Fixed-Time Period Model with Safety Stock
 - Price-Break Models
 - ABC Classification
6. Dependent Demand Inventory
 - Material Requirements Planning
 - Lot Sizing—Lot-for-Lot, Least Total Cost, and Least Unit Cost
7. Logistics and Transportation
 - Factor-Rating Systems
 - Transportation Method of Linear Programming
 - Centroid Method
8. Line Balancing
 - Longest Task Time
 - Greatest Number of Following Tasks
9. Forecasting
 - Simple Moving Average
 - Weighted Moving Average
 - Exponential Smoothing
 - Linear Regression Analysis
 - Decomposition of a Time Series
 - Forecast Errors—MAD, MAPE, and Tracking Signal
 - Multiple Regression Analysis

Claudia H. Pragman, Ph.D., is a Professor of Management in the College of Business at Minnesota State University, Mankato. Her teaching responsibilities include undergraduate and MBA operations management courses and MBA statistics. In recent years, Dr. Pragman has been teaching her undergraduate operations management course online. That experience has developed her interest in researching the pedagogy of online education.

Using Documentary Films to Teach Sustainability Within a Supply Chain Management Framework

Girish Shambu, Canisius College, Buffalo, New York, USA

ABSTRACT

A sustainability-driven model of the supply chain, proposed in Annie Leonard's viral video *The Story of Stuff*, was used in an undergraduate course to critique three supply chains: fast fashion, fast food, and bottled water. The five stages of Leonard's supply chain model—extraction, production, distribution, consumption, and disposal—were analyzed in each of the three industries with the help of the documentary films *The True Cost* (fast fashion), *Food, Inc.* (fast food), and *Tapped* (bottled water). Student responses were strongly favorable.

Keywords: sustainability, supply chains, documentary film, fast fashion, fast food, bottled water

INTRODUCTION

Business school accrediting bodies are placing an increased emphasis on sustainability. The current version of the AACSB document, *Eligibility Procedures and Accreditation Standards for Business Accreditation* (2013), opens with a preamble that stresses that “companies become more accountable for their actions, exhibit a greater sense of social responsibility, and embrace more sustainable practices.” The document proceeds to highlight the importance of sustainability on both its social and its environmental dimensions. Sustainability also appears in the document as part of a short list of required “general business knowledge areas,” alongside other important curricular areas such as financial markets, and systems and processes in organizations.

Rusinko (2010) and Godemann et al. (2011) propose a matrix that lays out a four-stage process for incorporating sustainability into a business education program. The stages are (1) “Piggybacking” (adding sustainability content to existing courses), (2) “Digging Deep” (integrating sustainability content into new stand-alone courses), (3) “Mainstreaming” (infusing sustainability throughout existing the curriculum structure), and (4) “Focusing” (developing new cross-disciplinary sustainability courses required for all business majors). Painter-Morland et al. (2016) evaluates the opportunities and challenges of each of these four stages, and expands the model by proposing a fifth stage: one that goes beyond curricula to systemic institutional integration. The approach described in our paper employs documentary films to help infuse sustainability concepts into a supply chain management course for students who are either management majors or international business majors. The course, and the program of which it is a part, belong to stage 2 (“Digging Deep”) of the model described above.

Shrivastava (2010) argues that practices in teaching sustainability often foreground analytical tools and optimization models which call upon intellectual abilities to solve sustainability problems. In its place, that study argues for an alternative focus that integrates cognitive (intellectual) learning with emotional engagement, resulting in a “pedagogy of passion for sustainability.” Clemens and Hamakawa (2010) single out the field of sustainability teaching as an especially fertile one for the use of films. Berk (2009) gathers copious research evidence to support the claim that films and videos have the ability to spur strong emotional engagement in the classroom. Collectively, the above studies have motivated the use, in our study, of films to teach sustainability.

At the start of the course titled “Sustainability and Supply Chains,” we present two models of a supply chain: a “classic” or conventional model based upon well-established textbooks in the field; and an “alternative” approach, rooted in a sustainability consciousness, with roots in Annie Leonard's viral animated documentary and book, both titled *The Story of Stuff* (Leonard, 2007, 2010). Leonard's model is then applied to three supply chains—fast fashion, fast food, and bottled water—through viewings of documentary films that that are centered on each of those three industries. The paper concludes with an account of student responses to this approach.

SUSTAINABILITY AND *THE STORY OF STUFF*

We begin the course by defining the concepts of sustainability and the triple bottom line. The Brundtland Commission Report defines sustainability as meeting “the needs of the present without compromising the ability of future generations to meet their own needs” (Brundtland Commission, 1987). The intersection between this formulation of sustainability and the impact of business practices can be found in the idea of the “triple bottom line” (Elkington, 1997; Savitz and Weber, 2006). In this model, the impact of business practices is examined and analyzed in terms of three categories: People, Profit and Planet. In other words, business practices have social, economic and environmental impacts. The goal of sustainable practices is to achieve a balance of these three impacts with the ultimate, overarching goal of maintaining the long-term well-being of humankind (People), the success of commerce (Profit), and the flourishing of the Earth (Planet).

In the typical business course, the “economic bottom line” receives significantly more attention than the “social bottom line” or the “environmental bottom line”. The topic of sustainability opens the eyes of the typical undergraduate business student to the fact that the economic well-being of a firm often comes at the expense of negative social and environmental impacts. Rather than describing these impacts in an abstract fashion, our course roots them in the context of supply chain management. At the start of the course, two contrasting models of the supply chain are presented. The first is a standard, frequently invoked model that is encountered, with minor variations, in various OM and SCM texts—for example, Chopra and Meindl (2016). Figure 2 represents Annie Leonard’s view of the supply chain, infused with a sustainability consciousness, in her video *The Story of Stuff*.

Figure 1: The traditional supply chain (4 stages)

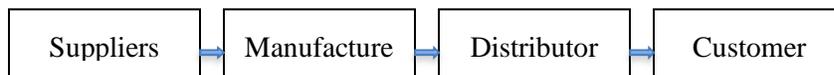
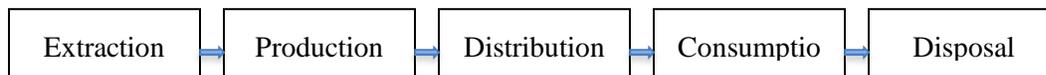


Figure 2: The supply chain according to *The Story of Stuff* (5 stages)



In Figure 2, rather than referring to the first stage as “suppliers,” Leonard chooses to call it “extraction.” This is part of a two-fold tactic used throughout the video. First, Leonard replaces *actors* with *actions*. This imposes a principle of accountability upon the supply chain, as the language moves away from simply noting the role of a member (“supplier”) to the problematic actions performed by that member (“extraction”). The second tactic, related to the first, is a shift away from the relatively “neutral” language widely used in introductory textbooks to a more *critical* language that explicitly passes ethical judgement upon those practices. By referring to the process of sourcing raw materials as “extraction,” the video conjures up an image of environmental harm and natural resource exploitation.

For these two reasons—emphasizing the harmful actions that occur within the supply chain, and putting to work a critical language—*The Story of Stuff* provides a framework for viewing supply chains in a way that foregrounds issues of sustainability. After presenting this model, the course proceeds to overlay this supply chain framework upon three industries—fast fashion, fast food, and bottled water—that are fraught with sustainability issues. Rather than presenting the issues in these three industries using a more conventional, case study methodology, the course does so using documentary films.

THE FAST FASHION SUPPLY CHAIN: *THE TRUE COST*

The fast fashion industry is part of a newly emerging global “discount economy” whose principal aim is to reduce prices to the customer. This objective is a primary driver for all decisions made within the fast fashion supply chain. Andrew Morgan’s documentary *The True Cost* (2015) takes its title from an idea that is integral to *The Story of Stuff*. The idea is that of “externalized cost,” a term that attempts to encompass all the costs not captured by the purchase price of the product—specifically, the costs stemming from the impact of business practices on society and the

environment. The low prices that are the key to the success of the fast fashion industry are achieved partly at the expense of negative social and environment impacts at every stage of the supply chain.

The film does not proceed sequentially through the supply chain, but instead moves back and forth between various stages of the supply chain. After the class watched the film, the class discussion borrowed the structure of the supply chain model of *The Story of Stuff*. As the class conversation about the film proceeded, we made note, on the blackboard, of where each discussion point or issue belonged: under extraction, production, distribution, consumption, or disposal. This provided a way of organizing the conversation, as well as reinforcing Leonard's sustainability-conscious view of the supply chain. This discussion method was employed in the case of all three documentary films in the course.

The True Cost consists of interviews with a variety of figures: journalists, scholars, entrepreneurs, farmers, production workers, clothing designers, activists, and medical doctors. While there is no literal example of "extraction" in the film, the growing of cotton serves as a close approximation to this stage of the supply chain. The film travels to farms in Texas and in Punjab, India, for interviews with farmers and agricultural workers. An organic cotton farmer in Texas highlights the fact that she is part of a small minority since most cotton is grown with the aid of pesticides, which damage the soil, the water, and the air in large expanses of Texas. The film visits a small village in Punjab that has an extraordinarily high incidence of birth defects and cancer among children; the area also has a high rate of pesticide use on agricultural land. We also visit tanneries in Kanpur, in North India, where the toxins from leather production flow into the river Ganges daily, resulting in a range of medical ailments (such as skin conditions) for residents of the area.

To illustrate the production phase of the supply chain, we are transported to Bangladesh, which is home to 4 million workers, or a full 10% of the garment workers of the world. The voice-over narration tells us that 85% of those who work in the country's 5000 clothing factories are women. Rather than keep the discussion at a de-personalized level, as the typical textbook does, we meet one of these workers, through whose experience we view the environment and conditions of clothing production. Shima, a 23-year-old factory worker, tells of her attempt to form a union at her workplace, and how she and other workers were locked in a room and physically beaten by staff in punishment for their efforts. Students are horrified by Shima's stories—and remember them weeks and months after viewing the film. In addition, media coverage and footage of the horrific aftermath of the 2013 Rana Plaza fire makes a strong impact on students.

The distribution stage of the supply chain is represented by large, powerful retailers such as H&M, Gap, and Forever 21. The film provides a historical context by describing how past fashion practices differ from current ones. Until a couple of decades ago, the industry relied on "seasonal selling," wherein new garment designs would be released a couple of times a year, thus bringing a surge of customers into stores. Fast fashion is trend-driven, thus resulting in (as the film puts it) "practically 52 seasons a year." New trends are born and die quickly; but their novelty (combined with low prices) draws customers into stores on a steady basis.

These two factors—low prices and constant turnover of new garment designs—spur over-consumption. The average American consumer, the film reports, purchases 400% more items of clothing each year than he or she did two decades ago. The film also invokes the influence of Earnest Elmo Calkins, often called "the father of modern advertising," who advocated the idea of "consumptionism": "There are two kinds of products: those that you use and those that you use up. Consumptionism is about treating things that consumers use as things they use up." In other words, clothes were once goods that were durable and had a long life, but fast fashion attempts to turn them into a disposable commodity in order to accelerate the rate of consumption.

Over-consumption leads us to the final stage of the supply chain, that of disposal—which is, the film points out, "the dirty shadow of the fast fashion industry." Only a fifth of all the clothes donated find a place on thrift store shelves; a majority of the rest are destined for landfills. The latter volume is on the rise, since the average American generates 82 pounds of textile waste each year. Most of this waste is non-biodegradable. Clothes made until a few decades ago were composed mostly of organic fibers, but today's garments frequently contain artificial, synthetic fibers such as polyester, rayon and viscose, which are difficult to recycle and also take decades to decompose in landfills.

Few of the students were aware of these realities; this new knowledge also disturbed their preconceptions about an industry whose products they purchase regularly.

THE FAST FOOD SUPPLY CHAIN: *FOOD, INC.*

Robert Kenner's documentary *Food, Inc.* (2008) centers its critique on industrial food production practices that are at the heart of the fast food industry. As in *The True Cost* above, the film does not move through the supply chain in sequence from extraction to consumption and disposal. It moves back and forth in the supply chain, examining issues at various stages of the chain. It thus becomes a fruitful exercise for students to recall details from the film and slot them into Leonard's five-stage model from *The Story of Stuff*.

The first ("extraction") stage of the supply chain is represented here by commodity crop agriculture—mainly corn. The film lays out why, thanks to government subsidies, corn is over-produced in order to keep its prices low, so it can serve as feed for livestock. There are more acres devoted to corn in the USA than to any other crop. Most corn is farmed conventionally, not organically—that is, with the aid of pesticides and herbicides—thus posing significant environmental and health risks.

The film tracks two major stages that comprise the production phase of the fast food supply chain: the raising of livestock in factory farms as a source of supply for meat production, and the slaughterhouses in which meatpacking takes place. We are taken inside a factory farm, which houses chickens in closed, windowless metal buildings, contributing to air and soil pollution, and resulting in a poor quality of life for animals. We learn from interviews that large corporations, such as Tyson Foods, typically contract out the raising of chickens to smaller farms. In doing so, they use their power to make unreasonable demands, such as frequent facility upgrades, which leave the farm owners in an economically perilous position. We also see aerial views of CAFOs ("concentrated animal feeding operations"), in which large numbers of cattle are confined and fattened, leading to the creation of mass quantities of manure, which endanger the air, the soil, and groundwater.

The other major phase of production takes place in slaughterhouses run by the meatpacking industry. The majority of the meat produced by the industry is processed in a mere thirteen slaughterhouses; these are gigantic, high-volume facilities which are very different from their counterparts a few decades ago. Today's slaughterhouses are high-pressure working environments that employ large numbers of migrant and undocumented workers—partly because meatpacking jobs are among the most dangerous in the industry, and such workers have few options available to them. Further, it is an industry that has seen massive consolidation over the years; more than 80% of beef-packing is performed by just five firms. This has meant that, given the size and power of these firms, company practices have been difficult to change.

Public health concerns related to meat production have loomed large in media reports over the last couple of decades. Contamination, due, for example, to manure finding its way into the meat, has resulted in disease outbreaks, such as those linked to E. Coli. The film follows a woman, Patricia Buck, whose young son succumbed to the illness contracted from tainted meat. We see Buck meeting with politicians in an attempt to create a bill called the Meat and Poultry Pathogen Reduction and Enforcement Act (informally known as "Kevin's Law," named after her son).

In the documentary, the primary focus of the consumption phase of the supply chain is on public health. Because billions of dollars in agricultural subsidies are given out by the government, commodity crops like corn and soy are sold at artificially cheap prices to the factory farming industry. This results in two major sustainability issues: first, the cow's diet has now changed from grass (the food of this species for centuries) to grain such as corn and soybean because it is cheaper. A greater likelihood of disease accompanies this change of diet, especially since the industry employs overfeeding to increase the yield per animal. Second, it helps fast food to be sold at rock-bottom prices, far lower than the fruits and vegetables that are necessary for human beings to maintain a healthy diet. This artificial disparity in food prices impacts low-income people most of all, with pervasive public health consequences. Finally, the disposal phase of the supply chain is not overtly taken up by *Food Inc.* Nevertheless, students in the class initiated a substantive discussion on discarded packaging material from fast food.

THE BOTTLED WATER SUPPLY CHAIN: *TAPPED*

The documentary *Tapped* (Stephanie Soechtig and Jason Lindsey, 2009) sets the stage for its analysis with an ominous statement delivered by the narrator: "By the year 2030, two-thirds of the world will be lacking in clean,

drinking water.” After establishing the urgency of the global freshwater crisis, the film begins its narrative proper with the extraction stage of the supply chain by means of a case study.

By speaking to several residents of a small, rural town, Fryeberg, ME, we learn how Nestlé, one of the largest food corporations in the world, has been quietly and inconspicuously water mining on the outskirts of town. One of the largest bottled water companies in the world—with a portfolio of brands that includes Poland Spring, Perrier and San Pellegrino—Nestlé has been extracting water from town at a cost of between 6 and 11 cents a gallon, selling its finished product at a price over one hundred times that cost. The narrator explains that 75% of the earth’s surface is covered with water, but most of it is salt water; only 1% of the surface water is drinkable. In the U.S., surface water (as in rivers, lakes or streams) is held in a public trust, but groundwater falls under a different set of rules, which differ from state to state. In Maine, the rule is “absolute dominion,” in which landowners may use as much groundwater as they desire. The rule thus favors large-scale water-mining by big, multinational corporations. It becomes clear that what we are witnessing is one instance, a microcosm, of a pervasive problem across the country.

The film then moves to other locales—North Carolina and Georgia—where we see footage of parched land and dead vegetation edited together with shots of bottling operations in those locales. Residents complain in interviews that even though their neighborhoods are suffering severe drought conditions, the water-bottling operations of large firms (such as Coca-Cola and Pepsi) continue their production, exempt from the restrictions imposed upon the rest of the population. Not only is this double standard a problem, but studies (we are told in the film) have linked over-pumping of groundwater to lower stream levels and depleted fish populations. We see footage of water company executives in Congress, denying that company operations contribute to the water issues being faced in various communities. When questioned further, these executives admit that their assertions are based solely on internal studies conducted by the corporations, and not external, independent ones.

To highlight the sustainability impacts of the production stage, the film moves to Corpus Christi, TX, the site of the Flint Hills refinery, one of the largest privately-owned petroleum refineries in the nation. It is here that the majority of the PET (polyethylene terephthalate) used in water bottles is manufactured. Interviews conducted with a variety of residents of the town reveal a significantly higher-than-average incidence of illnesses including cancer and birth defects. Residents complain of having bought their homes, without being informed of it, on a former toxic waste disposal site. A former official of the state pollution control agency speaks of the reluctance of the agency in holding the refinery accountable.

Another major problem at the production stage is the lack of regulation of the bottled water production process. The film interviews the sole person at the FDA (Food and Drug Administration) who is responsible for regulating the entire industry. The paltry resources devoted to industry oversight are in marked contrast to the strong regulatory restrictions to which municipal tap water is subjected. Further, the film explains, as much as half or more of the bottled water sold in the country is not spring water but, in fact, simply tap water.

In addressing the consumption stage of the bottled water supply chain, the documentary begins by situating the issue in a historical context. Although Americans began consuming Perrier water in glass bottles in the 1970s, it wasn’t until 1989, when clear, lightweight plastic bottles made of PET were introduced, that consumption sharply increased. The powerful marketing campaigns in favor of bottled water have tagged the product as “pure” and “safe” despite the fact that it typically undergoes less scrutiny compared to tap water.

The disposal stage of the supply chain is of critical sustainability import for this industry. Nearly 50 billion plastic water bottles are sold annually nationwide, and over 75% are not recycled. In the U.S. the lion’s share of the burden of recycling falls not upon the corporations but upon under-resourced municipalities. Firms exacerbate this issue by throwing their lobbying weight behind curb recycling rather than bottle return programs. The film points out that nearly half of the U.S. population does not have access to curb recycling, which means that billions of plastic water bottles end up in landfills or at the bottom of the Pacific Ocean. In the film’s finale, a marine research scientist outlines the ravages of plastic debris upon the marine ecosystem.

STUDENT RESPONSES

A survey was administered at the end of the course, to which 25 students responded. The survey asked students if they would recommend the continued use of documentaries in the course in the future—and if so, why they believed that the use of documentaries was effective in the course.

Unanimously, all students indicated that they found the use of documentary films to be an effective learning method in the course. Three reasons stood out in the frequency of appearance in the survey responses. First, that the documentaries offered a way to “visualize” the issues that students read about and discussed during class. To travel around the country or the globe (as these films did) and see cinematic images of industrial, social and environmental conditions, seemed to make an impact on the students. Second, a large number of students remarked on how the films made them reflect about their own actions and their consequences. The films also helped make many students see how their own consumer choices (of clothes or food or water) contributed to the negative impact of those industries. Third, several students remarked that the films made it easier for them to bring up sustainability topics in conversations with friends and family. The documentary that students favored the most was *The True Cost*. The most common reason cited was twofold: that students were not previously aware of most business practices in the fast fashion industry; and the fact that the industry was one that implicated them personally, since nearly all students were regular customers of fast fashion retail. One criticism stood out: some students felt that the documentaries were “too old,” and two students recommended that any documentaries used in this course be no more than five years old.

In order to permit a variety of perspectives to emerge in the classroom, the course was designed in a way that encouraged interactive discussions. In particular, two counter-arguments were raised by students. First, some students argued that outsourcing fast fashion garment-making to lesser developed countries such as Bangladesh has a net positive impact for citizens of that country because it provides employment. Second, one student argued that the fast food industry has an overall favorable effect on society because it allows economically disadvantaged populations to obtain access to protein-rich food at a low price. Counter-arguments such as these were valuable because they catalyzed discussions and permitted analyses that the class would otherwise not have pursued.

CONCLUSION

Below is a table summarizing the social and environmental impacts highlighted by each of the documentaries. For future incarnations of this course, I plan to expand the supply chains taken up in this course to include Big Pharma and Amazon. Documentary videos on supply chain practices in these chains already exist, and promise to be useful.

Figure 3: Key social and environmental impacts of the supply chain addressed by the documentary films

	Social Impact	Environmental Impact
<i>The True Cost</i>	<p><u>Extraction</u>: Pesticides used to grow cotton create community health hazards due to polluted water, air and soil.</p> <p><u>Production</u>: Bangladeshi workers with low pay and benefits who toil in dangerous workplace conditions.</p> <p><u>Consumption</u>: 2 factors fuel over-consumption: rapid trends and low price.</p> <p><u>Disposal</u>: Shipping used and poor-quality clothes to the Global South (e.g. Africa).</p>	<p><u>Extraction</u>: Environmental ravages to the land, air and water from the use of pesticides.</p> <p><u>Production</u>: Pollution from chemicals and dyes in the garment production process, exacerbated by location of factories in countries with weak environmental laws.</p> <p><u>Distribution</u>: Carbon footprint due to fossil fuel use by global transportation.</p> <p><u>Disposal</u>: Majority of clothes end up in the landfill; non-biodegradable synthetic fabrics.</p>
<i>Food, Inc.</i>	<p><u>Extraction</u>: Monsanto’s patenting of seeds, and its treatment of small farmers.</p> <p><u>Production</u>: Unhealthy and inhumane conditions in feedlots, factory farms, and slaughterhouses.</p> <p><u>Consumption</u>: Agricultural subsidies make cheap fast food all too affordable—causing negative health effects.</p>	<p><u>Extraction</u>: Use, in cotton fields, of powerful pesticides that pollute air, soil, and water.</p> <p><u>Production</u>: Massive environmental effects of feedlots and factory farms including greenhouse gas emissions and pollution.</p> <p><u>Distribution</u>: Transportation costs of pre-packaged fast food ingredients to restaurant locations.</p>
<i>Tapped</i>	<p><u>Extraction</u>: Water mining by large firms takes public water from “the commons”.</p> <p><u>Production</u>: Health consequences for communities in the vicinity of plastic-producing refineries.</p> <p><u>Consumption</u>: The dangers, to consumers, of poor bottled water regulation.</p>	<p><u>Extraction</u>: Over-pumping of water by bottled water firms contributes to habitat loss and drought conditions.</p> <p><u>Production</u>: Pollution from refineries that manufacture plastic products.</p> <p><u>Distribution</u>: Fossil fuel emissions from transportation of bottled water across states.</p> <p><u>Disposal</u>: The serious environmental crisis created by billions of discarded plastic bottles.</p>

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An Assessment of Specialized Master's Programs in U.S. Business Schools

Betty Vu, California State University Dominguez Hills, Carson, California, USA

Wang-Chan Wong, California State University Dominguez Hills, Carson, California, USA

ABSTRACT

The Graduate Management Admission Council has reported that the demand for specialized master's degrees such as the Master in Management (MM), Master of Science (MS) in Accounting, Finance, Marketing, etc., is rapidly increasing (GMAC, 2017). There is a perception in the media for the assumed need and growing popularity of these types of programs among schools and students; however, there have been no formal studies to assess the current situation. We collected data on these programs from various sources and made an assessment based on evidence and analytical results. We identified the typical school profile that offers these types of programs. We further identified factors that would affect a school's decision to offer these programs such as school ranking, self-perception of the schools, operational budgets, and the relationships of MBA and doctoral program offerings. The results confirm certain observations previously reported in other reports but also dispute long-standing assumptions. The report sets the baseline that enables us to carry out future studies on the awareness and acceptance of these specialized master's programs by students and employers. We believe this is the first comprehensive assessment of the current status and trends in specialized master's programs offered by U.S. business schools.

Keywords: Specialized master's degree program, MBA, AACSB, Ranking

INTRODUCTION

Since the first MBA program offered by Harvard University in 1908, MBA degrees have become overwhelmingly available all over the globe. Attending an MBA program is a popular path for young people to pursue and it is considered the most popular and successful U.S. export to the world (Pfeffer & Fong, 2002). The perception of a business school's reputation is usually measured directly by the success of its MBA program. Recently, the MBA engine has been losing steam: Zell (2001) summarized the findings of an empirical study showing the paradigm has shifted to revenue-driven and customer-focused curriculum especially in public universities supported by government funding. These changes have had a profound effect on business schools in the past two decades. In a book by Garvin, et al (2010), the authors painted a bleak future for U.S. MBA programs and warned that they must change especially considering enrollment declines in U.S. MBA programs and the rise of high-quality global MBA programs offered by other countries. *The Wall Street Journal* recently reported that business schools, including reputable top-tier schools, are considering dropping full-time MBA programs due to low enrollment (Gee, 2017; US News, 2017). Enrollment declines are due to several factors: fewer employers are reimbursing the cost of MBAs for their employees; fewer students can afford the debt of a graduate degree in addition to the costs incurred from their undergraduate education; a booming job market deterring students from attending full-time MBA programs; and finally, an increasing number of schools offering multiple program formats such as online (AACSB and non-AACSB accredited programs) or reducing residential credit time such as one year MBA programs (AACSB, 2018). In an ever-growing competitive market, schools have started offering 12- to 18-month "specialized" master programs in functional areas such as accounting, finance, marketing and management. These programs usually do not require working experience for admission and are attractive to many recent college graduates. We collected the data of these programs of U.S. business schools from different sources. Careful analyses confirm certain facts previously known but also dispute certain general assumptions about these programs. We believe this is the first report that gives a comprehensive assessment on these specialized master's programs.

PURPOSE OF THE STUDY

While there are many articles reporting on the rapid growth of specialized master's programs, there have been no formal studies to assess their status. We attempt to make an assessment based on evidence by collecting and analyzing available data. We aim to investigate the type of school that offers specialized master's programs, asking such questions as: What are their likely profiles? Does school ranking make a difference? Will middle- and lower-tier schools offer more choices since their MBA programs may not be as competitive as upper-tier schools? What are the relationships of the specialized master's programs to existing MBA and doctoral programs that the school offers? Does a school's self-perception affect its offering of specialized master's programs? For instance, if a school

considers itself research oriented, will it have a higher chance of offering specialized master's programs? Additionally, how do operational budgets factor in? To have successful specialized master's programs, schools need sufficient financial support to promote the programs, especially when they are competing with traditional MBA programs for funding.

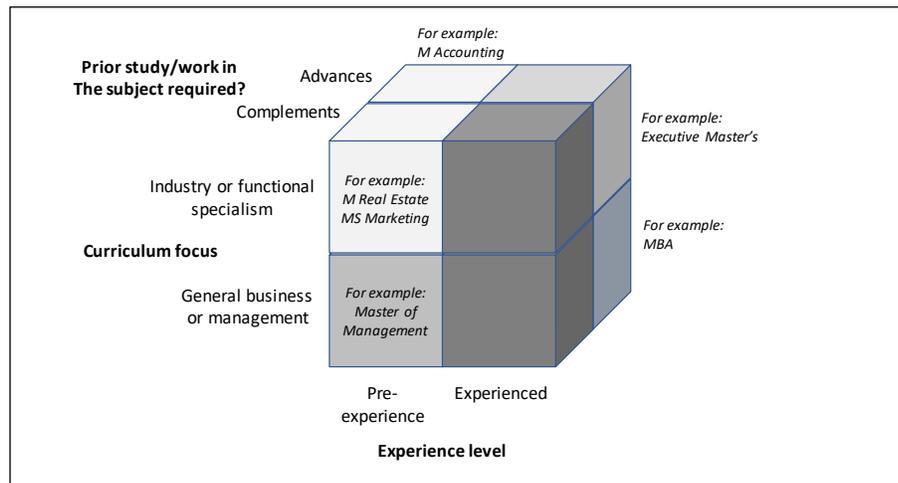
GENERAL MBA, MBA WITH SPECIALIZATIONS, AND SPECIALIZED MASTER'S PROGRAMS

There is an abundance of business master's programs currently being offered in the U.S. Hunt and Speck (1986) identified five categories which can be further simplified and grouped into three types: general MBAs, MBAs with specializations, and specialized master's programs. A general MBA program typically offers courses in overall management, spanning the fundamentals of all core business areas rather than focusing on specific functional areas. MBA with specializations require first-year students to take general courses that provide a solid foundation in company management. In their second year, students can choose to specialize in a functional area such as finance, marketing, and so on. The differentiation between a general MBA and an MBA with specialization is clear: the general MBA offers training and knowledge for people who want to manage a company but do not have a preference for a specific functional area -- the general MBA program trains students to be generalists. On the other hand, students who choose to pursue MBA with specializations have a specific career path in mind: while they still want general management knowledge and skills, they also want a deeper understanding and acquire more specialized skills for specific business functions. These two programs fall into the normal MBA curriculum framework: two years of full-time study for students with working, preferably managerial, experience. The expansion from general MBA to MBA with specialization is certainly not without concerns. In a frequently cited article by Gupta, et al (2007), the authors compared the traditional MBA and the MBA with specializations and discovered a disconnect between what employers wanted and what students preferred. The study found that employers preferred general MBA programs, while students believed that specializing in a functional area would give them better job opportunities. Driven by student demands and the pursuit of sustainable revenue, many business schools have moved towards satisfying student demands by offering both general MBA programs and MBAs with specialization. As the competition for students grow amidst revenue declines, schools are pushing shorter term, specialized master's programs to serve a different student segment: recent college graduates without extensive working experience.

SPECIALIZED MASTER'S PROGRAMS

The world of business master's degrees is prolific with many new innovative programs. In a recent webinar by GMAC entitled "Application Trends Among Business Master's Programs: Comparing the US and Europe" (Loades & Hazenbush, 2018), a classification framework was defined to disambiguate a wide range of business master's degree programs. The framework, as depicted in Figure 1 below, is based on three dimensions: experience level, curriculum focus, and whether prior study or work in the subject is required.

Figure 1: Business Degree Classification Framework



The first dimension is the experience level of incoming students: whether they are recent college graduates without much working experience, or they have worked in industry for some time. The second dimension concerns a program's curriculum focus: does it emphasize a specific industry or function, or does the program focus on general business and management? Finally, the "prior study or work" dimension asks how much previous subject knowledge students need to have before entering the program: will the program build upon their earlier studies, effectively advancing and expanding their knowledge, or will it complement and deepen what they already know?

While the appropriateness of the framework's dimensions is still debatable, one thing is clear: specialized master's programs are for recent college graduates who do not have extensive working experience. Specialized master's programs offer both general business and management studies (e.g. Master of Management), and industry/functional specialties (e.g. MS in marketing, finance, etc.). There is a wide spectrum of specialized master's programs offered by business schools. Table 1 shows the top 10 specialized master's programs offered by schools as reported in the AACSB 2015-2016 Business School Questionnaire report (AACSB 2016), and the top 10 programs reported by Poets and Quants (Poets and Quants 2017).

Table 1: Top 10 Specialized Master Programs Reported by AACSB (2016) and Poets and Quants (2017)

	AACSB (2016) Total # of Schools: 581		Poets & Quants (2017) Total # of Schools: 83	
	Program	Count	Program	Count
1	Accounting	401	Accounting	75
2	Finance (including Banking)	270	Finance	56
3	Marketing	148	Analytics	36
4	Management	147	Management	25
5	CIS/ MIS	138	Marketing	21
6	Econ/Managerial Economics	115	Information Systems	18
7	HR Management	101	Supply Chain Management	18
8	International Business	96	Taxation	12
9	Supply Chain/Transport/Logistics	79	Human Resources	10
10	Taxation	67	Healthcare Administration	8

The top ten specialized master's programs in both reports are similar; they are comprised of the traditional business functional areas. There are also many other innovative specialized master's programs not listed in the top ten. For example, the 2016 AACSB survey reports that approximately 30% of schools offer programs in areas outside of these traditional programs. Similarly, there are many non-traditional business programs listed in the Poets & Quants 2017 report, such as actuary science, business for veterans, innovation, investment management, investor relations, and media management, to name a few. Presumably, these are niche programs that the offering schools have competitive advantages within their market.

“LET THE BUYER BEWARE”

There are also specialized master's programs that are joint programs between a business school and another discipline such as engineering, communications, computer science, and so on. These programs create additional opportunities for a business school to broaden its influence through collaboration, as other disciplines see it as a viable expansion to leverage on the popularity of business schools. In addition to the numerous specialized master's programs offered by business schools, there are also many other professional business-related master's programs offered by non-business schools such as university extensions schools, continuing education entities, and other related professional schools such as communication schools, psychology schools, etc. Some of these are joint programs with business schools, while many are not. They offer easier access to master's programs that support lifelong continuing education. Oftentimes these programs are interdisciplinary, for example, a joint program of communications and marketing. They offer unique professional training that meets the needs of students and the job market. Since there is no accreditation process monitoring these programs, quality can vary greatly. Responsibility falls on the schools to maintain high standards. In this study, we focus only on specialized master's programs offered by AACSB accredited business schools.

RESEARCH METHODOLOGY

To answer the questions stated in the Purpose of The Study section, we collected data from three different sources: the AACSB repository, data from the Poets and Quants website, and the *U.S. News's* annual ranking of the U.S. business schools.

Every year, AACSB distributes a comprehensive Business School Questionnaire (BSQ) survey to its members (note that a school does not need to be accredited to become a member). The survey data are accessible to the public via its DataDirect portal. We collected the 2017 records of 647 U.S. business schools through this portal (AACSB, 2017).

This dataset contains 11 attributes: School Name (hyperlinked to the school member details in AACSB), Accreditation Status (Business, Business & Accounting, Not Accredited), Institutional Control/Type (Public or Private), Degree offered (UG undergraduate, Mgen, Mspc, Doctoral), In-State tuition fees for its undergraduate and MBA programs, Out-of-State tuition of its undergraduate and MBA programs, and the Operational Budget. The majority of these attributes are self-explanatory except the attributes Mgen and Mspc. The definitions of Mgen and Mspc can be found in the BSQ instructions. Essentially, Mgen is the MBA or executive MBA (EMBA) programs while Mspc is the specialized master's programs that prepare students seeking specialized roles in business, management, and related professions. Note that Mgen, Mspc and Doctoral are Boolean attributes that indicate whether a school offers these programs or not.

While filling out the BSQ, a school is asked to self-report its General Orientation and Scholarly Orientation as defined by AACSB. These are self-perceived characteristics and values of these two categories are summarized in Appendix A. General Orientation is how a school gauges itself in prioritizing teaching, research, and services. Scholarly Orientation is how a school sees itself in terms of research, and whether they emphasize pedagogical, discipline-based, or business practice research. Unfortunately, the data retrieved directly from AACSB's public portal (AACSB 2017) do not include these two orientation values. A web crawler script was written to follow the school's hyperlink in the original dataset to extract these two values of the schools.

Poets and Quants is a popular website about business schools that houses a special directory dedicated exclusively to specialized master's programs that spans over 60 webpages (Poets and Quants, 2017). We wrote a web crawler to traverse these 60 webpages to collect school names and their specialized master's programs. We collected the records of 379 specialized master's programs offered by 85 schools. After cleaning the data by eliminating non-U.S. schools, 83 schools were retained in the dataset. For each of these 83 schools, we further summed up the number of specialized programs they offered. As a side note, among these 83 schools, the highest number of specialized master's programs offered by a single school was 12, and the average was 4.5. The Poets and Quants dataset was then merged with the AACSB dataset.

US News publishes a list of the best business schools every year. We collected the top 100 schools of 2017 (US News 2017) from their website and consolidated them with the AACSB and Poet and Quants dataset above. The final dataset has 647 records with 16 attributes as depicted in Table 2. Statistical analyses were conducted, and their results are presented in the following sections.

Table 2: Final Dataset Data Dictionary

Attribute Name	Description	Value
ID	School ID, Primary Key	Integer
School	School name	String and hyperlink
Accredit	Accreditation type	{Business, Business and Accounting, Not Accredited}
Type	School type	{Public, Private}
UG	Offers undergrad program?	Boolean
Mgen	Offers MBA program?	Boolean
Mspc	Offers Specialized Master's program?	Boolean
Doc	Offer Doctoral program?	Boolean
# of Mspc	Number of specialized master's programs offered	Integer
GO	General Orientation	Integer of {1 ..7}, each represents one GO category
SO	Scholarly Orientation	Integer of {1 ..16}, each represents one SO category
Operational Budget	Operational budget	Currency

DESCRIPTIVE STATISTICS RESULTS

There are 647 schools in the dataset; among them, 409 public schools and 238 private schools. 524 out of these 647 schools are AACSB-accredited, with 354 and 170 public and private schools, respectively. Since we only focus on AACSB-accredited schools, we removed the non-accredited schools from the list to obtain the 524 AACSB-accredited schools in the dataset. The school types and the programs they offered are summarized in Table 3.

Table 3: AACSB-accredited Schools by Type and Program

AACSB Accredited (Total: 524)		
Type	Private	170 (0.32)
	Public	354 (0.68)
MBA	No MBA	70 (0.13)
	MBA	454 (0.87)
Specialized master's	No specialized master's	167 (0.32)
	Specialized master's	357 (0.68)
Doctoral program	No Doctoral	375 (0.72)
	Doctoral	149 (0.28)

Out of the 524 accredited business schools, 68% of them are public and 32% are private. 87% of them offer MBA programs, 68% offer specialized master's programs, and 28% offer doctoral programs. The differential between MBAs and specialized master's program offerings is smaller than one would presume.

The cross-tabulations of school types with the programs are shown in Table 4. The percentages are for the column of the categories. For example, out of the 25 private schools that do not offer doctoral programs, 84% (21 out of 25) do not offer MBAs or specialized master's programs, while 16% (4 out of 25) do not offer doctoral programs but do offer specialized master's programs. Public schools that do not have doctoral programs offer the most specialized master's programs, accounting for approximately 25% of the sample dataset.

Table 4: Cross-tabulation by Type and Program

	Private			Public		
	No Doctoral	Doctoral	Total	No Doctoral	Doctoral	Total
No MBA						
No Specialized Master	21 (0.84)	0 (0.00)	21	31 (0.75)	0 (0.00)	31
Specialized Master	4 (0.16)	4 (1.00)	8	10 (0.24)	0 (0.00)	10
Total	25 (1.00)	4 (1.00)	29	41 (1.00)	0(0.00)	41
MBA						
No Specialized Master	27 (0.26)	3 (0.08)	30	81 (0.40)	4 (0.04)	85
Specialized Master	78 (0.74)	33 (0.92)	111	123 (0.60)	105 (0.96)	228
Total	105 (1.00)	36 (1.00)	141	204 (1.00)	109 (1.00)	313

CONTINGENCY TABLE ANALYSES

To further study the relationships between school type and programs, three contingency table analyses were conducted between specialized master's programs with school types, MBA, and doctoral programs, respectively. The null hypothesis (H_0) is that the two categorical variables are independent while the alternative hypothesis (H_a) states that the two categorical variables are related. The results of these three contingency analyses are summarized in Table 5.

The results indicate that school type, such as private or public, is independent of its offering of specialized master's programs. However, offering an MBA program is related to offering specialized programs, with 74.67% of schools that offer MBA also offering specialized master's programs. Finally, doctoral programs are also related to specialized master's programs, with 95.30% of schools offering both doctoral programs and specialized master's degrees.

Table 5: Contingency Table Analysis Results

	School Type		MBA Program		Doctoral Program	
	Private	Public	No MBA	MBA	No Doctoral	Doctoral
No specialized master's	51	116	52	115	160	7
%	30.00	32.77	74.29	25.33	42.67	4.70
Specialized master's	119	238	18	339	215	142
%	70.00	67.23	25.71	74.67	57.33	95.30
chi2	0.4054		66.9422		70.7970	
Pr	0.524		0.000		0.00	
Ha?	No		Yes		Yes	

CORRELATIONS WITH SELF-REPORTED ORIENTATION

The annual AACSB Business School Questionnaire (BSQ) asks schools to self-report their General Orientation and Scholarly Orientation. These orientation values are summarized in Appendix A. General Orientation asks schools to define their emphases and priorities on teaching, intellectual contributions, and service. Since AACSB accreditation requires the faculty of accredited schools to conduct scholarly activities, the Scholarly Orientation portion of the survey asks schools to define what type of research they emphasize: pedagogical, discipline-based, or business practice research. Pedagogical research focuses on teaching methods and curriculum development, while discipline-based research is academic research that directly contributes to a discipline such as marketing or information systems. Both areas generate publications in refereed journals and conference proceedings, which can result in increasing the scholarly impact factor of the researcher and the institution they represent. Contributions to business practice research are essentially professional reports that appear in trade journals and other publications for practitioners. Typically, AACSB-accredited schools emphasize the first two types of publications.

We analyzed self-reported orientations in relation to specialized master's programs. Consequently, only 477 of the 524 accredited schools reported their General Orientations and Scholar Orientations. None of the top 5 schools in *US News's* top 100 schools (USNews 2017) reported their orientations, although it should be noted that some non-ranked schools also did not report their orientations. Table 6 summarizes these results.

Table 6: General Orientation and Scholarly Orientation Summary

General Orientation	Freq.	Percent	Scholarly Orientation	Freq.	Percent
BPA-1	208	43.61	BPB-1	117	24.53
BPA-2	64	13.42	BPB-2	49	10.27
BPA-3	2	0.42	BPB-3	7	1.47
BPA-5	151	31.66	BPB-4	24	5.03
BPA-6	43	9.01	BPB-5	8	1.68
BPA-7	9	1.89	BPB-6	23	4.82
Total	477	100	BPB-7	58	12.16
			BPB-8	37	7.76
			BPB-9	14	2.94
			BPB-11	51	10.69
			BPB-12	24	5.03
			BPB-13	65	13.63
			Total	477	100

For General Orientation, no school claimed to be BPA-4, defined as “placing high emphasis in Intellectual Contributions, medium emphasis on Service, and low emphasis on Teaching.” Most schools (43.61%, 208 of 524) reported that their primary emphasis is on Teaching-Intellectual-Service (BPA-1) and 31.66% (151 of 524) schools said they are BPA-5, which places high emphasis on both Teaching and Intellectual Contributions but low emphasis in Service. As for Scholarly Orientation, fewer schools claim they were BPB-3 and BPB-5; these two categories prioritize learning and pedagogical research over discipline-based research and contributions to practice. Almost a quarter of them (24.53%, 117 out of 524) categorized themselves as BPB-1, prioritizing discipline-based research for their faculty. The percentage is in line with our expectations since AACSB accreditation requires an established

percentage of faculty to be Scholarly Academic (SA) qualified which necessitates heavily academic research publications in qualified refereed journals and conference proceedings from the faculty.

General Orientation and Scholarly Orientation are correlated as shown in Table 7. We group and show the high emphasis for each General Orientation code (BPA) in the table to facilitate the discussions. For instance, BPA-1, BPA-3 and BPA-6 have high emphasis on Teaching while BPA-2 emphasizes on Intellectual Contributions and BPA-5 emphasizes equally on Teaching and Intellectual Contributions. The results indicate that Scholarly Orientation BPB-1 (Discipline-based Scholarship) is associated with BPA-2, and BPA-5, with 37.61% (44 schools) and 40.17% (47 schools), respectively. We conclude that if a school sees itself as a research-oriented university, intellectual contributions are important, or at least as important as teaching.

Table 7: Correlation between General Orientation and Scholarly Orientation

General Orientation	Scholarly Orientation											
	BPB -1	BPB -2	BPB -3	BPB -4	BPB -5	BPB -6	BPB -7	BPB -8	BPB -9	BPB -11	BPB -12	BPB-13
BPA-1 (Teaching)	25	36	7	8	6	17	14	26	8	8	16	37
BPA-3 (Teaching)	0	0	0	0	0	0	1	1	0	0	0	0
BPA-6 (Teaching)	1	7	0	1	2	1	4	6	2	2	5	12
BPA-2 (Intellectual)	44	0	0	7	0	0	2	0	0	11	0	0
BPA-5 (Teaching & Intellectual)	47	5	0	8	0	5	36	4	4	27	3	12
BPA-7 (Teaching, Intellectual & Service)	0	1	0	0	0	0	1	0	0	3	0	4

chi2 = 258.3852 Pr = 0.000

We further examined the correlation between offering specialized master's programs and a school's self-reported orientation. As depicted in Table 8, specialized master's program offering is correlated with both General and Scholarly Orientations. As for General Orientation, 95% of BPA-2 schools and 93% of BPA-5 schools offer specialized master's program. For Scholarly Orientation, 84%, 88%, 85% and 86% of schools who are BPB-1, BPB-4, BPB-7 and BPB-11, respectively, offer specialized master's program. These schools emphasize on discipline-based scholarship. Schools that perceive themselves as research-oriented offer specialized master's programs at a greater rate than teaching oriented schools.

Table 8: Correlations of Specialized Master’s Programs with General and Scholarly Orientations

	General Orientation					
Spec. Master	BPA-1	BPA-2	BPA-3	BPA-5	BPA-6	BPA-7
No	108	3	2	11	32	4
%	49%	5%	40%	7%	55%	29%
Yes	114	61	3	143	26	10
%	51%	95%	60%	93%	45%	71%
Total	222	64	5	154	58	14
chi2 = 110.1934 Pr = 0.00						

	Scholarly Orientation											
Spec. Master	BPB-1	BPB-2	BPB-3	BPB-4	BPB-5	BPB-6	BPB-7	BPB-8	BPB-9	BPB-11	BPB-12	BPB-13
No	20	26	5	3	7	12	9	25	5	8	11	29
%	16%	52%	63%	12%	64%	46%	15%	58%	33%	14%	44%	40%
Yes	105	24	3	23	4	14	51	18	10	48	14	43
%	84%	48%	38%	88%	36%	54%	85%	42%	67%	86%	56%	60%
Total	125	50	8	26	11	26	60	43	15	56	25	72
chi2 = 74.3219 Pr = 0.000												

SCHOOL RANKINGS

We were interested in exploring the relationship between school ranking and specialized master’s programs. Based on the top 100 best business schools from *US News’s* 2017 report, we partitioned the rankings into four groups based on their rankings: top-tier = {1..29}, mid-tier = {30..59}, low-tier = {60..100}, and the last group is for the non-elite schools that are not in the top 100 list. As shown by the results in Table 9, the correlation between specialized master’s programs and school ranking is significant. 65.9% (259/393) of the non-elite schools offer specialized master’s programs. In total, 76.4% of all specialized master’s programs are offered by these non-elite schools. Within the top 100 list, every mid- and low- tier school offers specialized master’s programs while 19% (4/21) of the top-tier schools do not offer specialized master’s programs at all.

Table 9: School Tier vs. Specialized Master’s Program Offering

	School Tier				
Specialized master's program offering	Top	Mid	Low	100+	Total
No MS	4	0	0	134	138
%	2.9	0	0	97.1	100
Yes MS	17	32	31	259	339
%	5.01	9.44	9.14	76.4	100
Total	21	32	31	393	477
%	4.4	6.71	6.5	82.39	100
chi2 = 31.7445 Pr = 0.000					

Since schools usually offer more than one specialized program, we further investigated whether school ranking is related to the *number* of specialized programs offered. The results show that they are *insignificant*. School ranking is independent from the number of specialized master’s programs a school will offer.

We further analyzed the offering of specialized master’s program by the non-elite schools and summarized the findings in Table 10 below.

Table 10: Specialized Master’s Program Offering for Non-elite Schools

	Specialized master's program		Total
	No MS	MS	
MBA			
No MBA	0	13	13
row %	0	100	100
col %	0	5.02	3.58
MBA	104	246	350
row%	29.71	70.29	100
col%	100	94.98	96.42
Total	104	259	363

Among the 363 non-elite schools, 5.02% of them offer MS or 29.71% offer MBA alone, while 94.98% offer both.

LOGISTIC REGRESSION ANALYSIS

Finally, we carried out a logistic regression with specialized master’s programs (Mspc) as the binary outcome variable, i.e. whether or not a school offers specialized programs. There are six predictor variables: Mgen (binary, does the school offer MBA programs?), Doc (binary, does the school offer doctoral programs?), OpBudget (currency, the operational budget of the school), and three other categorical variables Type (school type with value of {private, public}), GO (General Orientation; GO has 7 categories as listed in Appendix A), SO (Scholarly Orientation; SO has twelve categories as listed in Appendix A). The results of the logistics regression analysis are summarized in Table 11 after eliminating null values. For brevity purpose, only significant coefficients are shown in the table.

Table 11: Logistic Regression Results

$\log \left(\frac{p}{1-p} \right)$	Coef.	Std. Err.	z	P>z	$\frac{p}{1-p}$
Mgen	1.195734	0.4263516	2.8	0.005*	3.31
Doc	1.242342	0.6236561	1.99	0.046*	3.46
OpBudget	4.66E-08	1.69E-08	2.75	0.006*	1.0
Type.public	-0.7698969	0.2836768	-2.71	0.007*	0.46
General Orientation					
...
BPA.5	1.509229	0.406105	3.72	0.000*	4.52
...
Scholarly Orientation					
...
cons	-0.5134686	0.559255	-0.92	0.359	.60
n = 474			* Significant at 5%		
Likelihood ratio chi2 = 181.55; Prob > chi2 = .0000					
Pseudo R ² = 0.3175					

Variable p is the probability that a school offers specialized master’s programs. The logistic regression equation of the log odds, i.e. $\log \left(\frac{p}{1-p} \right)$ becomes:

$$\log \left(\frac{p}{1-p} \right) = -0.5134686 + 1.195734 \times Mgen + 1.242342 \times Doc + 4.66e^{-8} \times OpBudget - 0.7698969 \times Type.public + \{ \dots + 1.509229 \times BPA.5 + \dots + \dots \}$$

The regression indicates that Mgen, Doc, OpBudget, Type.public, and BPA.5 are significant. The likelihood ratio chi-square and the p-value indicate that the overall model is also statistically significant. This confirms that offering MBAs, doctoral programs, and the school’s operational budget will increase the log odds of a school in offering specialized master’s programs. The last column $\frac{p}{1-p}$ in Table 11 shows the odds of offering specialized master’s programs versus not offering it. For instance, all things being equal, if a school offers MBA program, the chance of offering a specialized master’s program is 3.31 times higher than not. If it offers a doctoral program, the chance of it offering a specialized master’s program is 3.46 times higher than not. If a school self-reports its General

Orientation as BPA.5 that emphasizes “equal for teaching and intellectual contributions,” the chance of it offering a specialized master’s program is 4.52 times higher than not offering it. However, if the school is public, its chance of offering specialized master’s programs drops to 46%. This does not conflict with the previous observation that school type and the offering of specialized master’s programs are independent in the contingency table analysis. Table 5 shows that there is no dependency between school type and the offering of specialized master’s programs. However, when other predictors such as the offering of MBAs, doctoral programs, operating budget and the various self-reported orientations are considered, school type becomes significant in predicting the offering of specialized master’s programs.

DATA ANALYSIS SUMMARY

We collected and consolidated data from multiple sources on AACSB-accredited U.S. business schools to better understand the nature of specialized master’s programs. In this section, we summarize the statistical analysis results in different categories.

General School Profiles

Among the 524 AACSB-accredited schools, 68% of them offer specialized master’s programs. The top ten most popular programs are still in the traditional functional business areas such as accounting, finance, marketing, etc. Analysis shows that private schools have a higher chance of offering specialized master’s programs than public schools. Private schools often have less bureaucratic processes in approving and modifying curriculum to meet perceived student demand, employer feedback, and industry trends. In comparison, state institutions likely have several layers, including an oversight entity to grant approval in offering new programs. For example, the California State University system requires approval from both the University and the Chancellor’s Office. The Chancellor’s Office oversees 23 campuses in the state of California and compares individual campus offerings to ensure that each campus does not cannibalize the other. This finding also supports the observation in Zell (2001) that the revenue-driven paradigm shift has a lasting effect since programs continue to proliferate in the market. For public-funded institutions, schools need to choose to support its MBA or the shorter-term specialized master’s programs. In order to gain more control in program offerings, some business schools in public universities have even privatized or contemplated privatizing their MBAs. For instance, University of California, Los Angeles (UCLA) Anderson School of Business completed its transition in 2014 from public funding to privatization for all their programs except the doctoral degree and one undergraduate major in accounting (Rivard, 2014).

It is interesting to discover that public schools without doctoral programs offer the most specialized master’s programs. Since these institutions are AACSB accredited, there may be excess capacity for faculty to create and manage additional graduate programs at the master’s level. Alternatively, the graduate programs create faculty capacity to teach undergraduate curriculum. The minimum number of qualified scholarly academic faculty needed to satisfy AACSB standards creates the opportunity for non-doctoral institutions to increase specialized master’s program offerings. The growth in specialized master’s programs may also be an incentive for faculty to focus within their specific expertise rather than towards a generalized management degree such as the MBA.

Offering MBA and doctoral programs are correlated to offering specialized master’s programs: 72.3% of schools that offer MBAs also offer specialized master’s programs, and 95.42% of schools offering doctoral programs also offer specialized master’s programs. Logistic regression results also support the hypothesis that a school’s offering of MBA and doctoral programs can positively predict the offering of specialized master’s programs. For the same reasons above, schools that offer MBA and doctoral programs are more likely to offer specialized master’s programs since they have existing resources to support new programs. The marginal increase of operational budget when offering these specialized master’s programs may be offset by increased incremental revenue.

In addition to the school type and the other graduate programs they offer, the school’s operational budget is important. It is expected that operational budget is a significant indicator that predicts the probability of a school offering a specialized master’s program. The development and marketing of new programs requires financial allocations from existing revenue streams. As discussed above, most schools that offer specialized master’s programs also offer MBAs, and these new programs need to compete with the MBA for budget allocation. In the future, it will be interesting to see how budget levels are different between MBA and specialized master’s programs since the current dataset does not have the breakdown available.

School Ranking

If the assumption of offering specialized master's program is to attract additional students to offset declining MBA enrollment, top tiered schools would not be interested in specialized master programs. Every low- and mid-tier elite school offers specialized master's program while 65.9% of non-elite schools offer them. The Matthew Effect, by which the rich get richer while the poor get poorer, is in full display. Low- to mid-tier schools are attempting to offset declining enrollment in the MBA, increase overall revenue, and add a level of distinctiveness to compete against other institutions to attract students. Non-elite schools have similar strategies as the low- and mid-tier elite schools; 94.98% offer both MBA and Specialized master's programs. Only 5.02% offer the specialized master's program and 29.71% offer MBA alone. For non-elite schools, it is still beneficial to offer both programs instead of taking a risk to drop the MBA completely. MBA is still a recognizable brand that the general public is familiar with and positively associates with business schools. It will be interesting to further study the size of these programs among non-elite schools to understand their focus and resources allocation.

Self-Perception

Schools with self-reported General Orientations of BPA-2, BPA-5, and Scholarly Orientations of BPB-1, BPB-4, BPB-7 and BPB-11, offer greater number of specialized master's programs than other orientations. These schools emphasize on discipline-based scholarship and on intellectual contributions. Among all self-reported orientations, BPA-5, "Equal for Teaching and Intellectual Contributions," stands out as a significant predictive factor of schools offering specialized master's programs. As illustrated by the logistic regression (Table 11), a BPA-5 school is 4.52 times more likely to offer specialized master's programs.

CONCLUSIONS

This paper reports a comprehensive assessment of offering specialized master's programs in U.S. AACSB-accredited business schools. Coward (2016) reported that there has been a boom in these special business degrees in recent years. The Graduate Management Admission Council (GMAC) (2017) also shows that demand is rising rapidly for specialized master's degrees. There are several factors that contribute to the increasing supply of these programs. Firstly, the programs are created by business schools in response to industry trends or employer demands. Many schools added specialized master's programs in high-demand fields such as financing or business analytics (Baron, 2015) due to employer feedback. Other schools were driven by industry demand such as accounting or finance. For example, many state certified public accountant licensures require 150 units of education but the typical bachelor's degree in accounting is 120 units. To meet the educational requirements of certified public accountant licensure, the Master in Taxation or equivalent is a popular addition within business schools to retain their undergraduate accounting students. Consider another example, financial service companies seeking students with a greater degree of competence and licensure increase the demand for the Master in Financial Engineering. The increased demand for business analysts is driving popularity of the Master in Business Analytics degree (GMAC, 2018). Secondly, the increase in marketability of the specialized master's programs to potential students offsets the decline in MBA enrollment. Smaller schools can create niche programs based on their own competitive edges, centered on their unique faculty expertise and/or their relationships with local or regional industries. Finally, demand and perceived value of these specialized master's programs are high among students with no working experience. The phenomenon of unemployed and underemployed millennials in recent years has caused significant debates in higher education. As reported by GlobeNewswire (2013), the millennial unemployment rate was 11.5% in December 2012, while it was 7.8% across the board. A majority of the media painted a bleak picture on the unemployment and underemployment of millennials (Goodman (2015), Goldstein (2016), Selingo (2016)). Most of the specialized master's programs do not require work experience for admission. Recent college graduates find these programs attractive, believing that the programs will provide them the necessary technical skills for employment, or, at the least, helps them buy time to explore career options (Smith-Barrow, 2013). Furthermore, these specialized master's programs do pay off financially for students. An AACSB report shows that the average base salary for a business student with a bachelor's, a specialized master's degree and an MBA degree are \$48,878, \$54, 237 and \$99,450, respectively (AACSB 2016).

There is no doubt that business schools will continue to offer these specialized master's programs due to the demands of the job market or perceived student demand, higher unemployment rates among recent undergraduate graduates with no or little relevant work experience, and opportunity to increase or diversify school revenue. The

paper was not able to address if employers and HR managers are aware of these specialized master's programs and if these programs meet employer's demands. Are business schools confident enough in the knowledge and skill sets provided will translate to employment opportunities or career advancement for their students? As more students are attracted to these specialized master's programs, what is the ethical responsibility to ensure these programs are known to and accepted by employers as MBA alternatives?

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Betty Vu, Ph.D, from California State University, Dominguez Hills manages the graduate programs within the College of Business Administration and Public Policy. Her professional and research interests include organizational development, leadership, and talent management.

Wang-Chan Wong received his Ph. D. and M. Sc. in computer science, and M. Sc. in business administration from University of California at Irvine. He was a tenured full professor of Computer Science at California State University; he is now a tenured full professor of Information Systems of the same campus. His current research interests are in blockchain (provenance and fintec), machine learning (TCM herbs recognition), and innovative teaching/learning pedagogies.

APPENDIX: General Orientation and Scholarly Orientation Definitions

General Orientation Code			
Code	High Emphasis	Medium Emphasis	Low Emphasis
BPA-1	Teaching	Intellectual Contributions	Service
BPA-2	Intellectual Contributions	Teaching	Service
BPA-3	Teaching	Service	Intellectual Contributions
BPA-4	Intellectual Contributions	Service	Teaching
BPA-5	Equal for Teaching and Intellectual Contributions		Service
BPA-6	Teaching	Equal for Intellectual Contributions and Service	
BPA-7	Equal for Teaching, Intellectual Contributions, and Service		
Scholarly Orientation Code			
Code	High Emphasis	Medium Emphasis	Low Emphasis
BPB-1	Discipline-based Scholarship	Contributions to Practice	Learning & Pedagogical Research
BPB-2	Contributions to Practice	Learning & Pedagogical Research	Discipline-based Scholarship
BPB-3	Learning & Pedagogical Research	Discipline-based Scholarship	Contributions to Practice
BPB-4	Discipline-based Scholarship	Learning & Pedagogical Research	Contributions to Practice
BPB-5	Learning & Pedagogical Research	Contributions to Practice	Discipline-based Scholarship
BPB-6	Contributions to Practice	Discipline-based Scholarship	Learning & Pedagogical Research
BPB-7	Equal Emphasis on Discipline-based Scholarship and Contributions to Practice		Learning & Pedagogical Research
BPB-8	Equal Emphasis on Contributions to Practice and Learning & Pedagogical Research		Discipline-based Scholarship
BPB-9	Equal Emphasis on Discipline-based Scholarship and Learning & Pedagogical Research		Contributions to Practice
BPB-10	Learning & Pedagogical Research	Equal Emphasis on Discipline-based Scholarship and Contributions to Practice	
BPB-11	Discipline-based Scholarship	Equal Emphasis on Contributions to Practice and Learning & Pedagogical Research	
BPB-12	Contributions to Practice	Equal Emphasis on Discipline-based Scholarship and Learning & Pedagogical Research	
BPB-13	Equal Emphasis on Discipline-based Scholarship, Contributions to Practice and Learning & Pedagogical Research		

Undergraduate Business Curriculum Revision: Moving To a More Flexible, Employer-Driven Model

Chris Ward, University of Findlay, Findlay, Ohio, (USA)

Scott Grant, University of Findlay, Findlay, Ohio, (USA)

ABSTRACT

This paper outlines the current challenges and disruptions to higher education, motivations to change business undergraduate curriculum, competencies expected by employers to demonstrate career readiness, and a review of current trends in business school curriculum. Lastly, the authors share our new curriculum model for business undergraduate students.

Keywords: Undergraduate business curriculum, higher education challenges

INTRODUCTION

Business students graduating from college are expected to hit the ground running with a multitude of skills and numerous experiential learning opportunities that can clearly articulate these skills to prospective employers. As organizations get leaner, students need to demonstrate they can do the work required for cross-functional positions. Entry level marketing positions, for example, often state proficiencies in Excel, analytics, search engine optimization, creative software, such as the adobe creative suite, and specific project management or CRM programs, as requirements in job postings.

In addition, employers aren't asking 'what do you know', they ask 'what have you done'. Many students are being more purposeful about the courses they take, the type of work they want to do, and who they work for, in order to better answer this important question. All of these expectations are making it clear to higher education, particularly business schools, that equipping students with relevant skills and experiences in a flexible format is critical to long-term viability and competitiveness.

CHALLENGES AND DISRUPTIONS TO HIGHER EDUCATION

Behara and Davis (2015) identified three major challenges to higher education. First, the skyrocketing tuition costs and the expectation of a return on investment. Parents, in particular, want to know their son or daughter is going to get a good-paying job in their field of study. Second, the disruptive changes in the delivery of education. Specifically, they note "technology now allows more and more learning to take place online, both remotely and asynchronously" (p. 312). For example, MOOCs and other certifications are free, self-paced, and filling a knowledge gap for people updating their skills or broadening their skill base. And third, many employers are not satisfied with the quality of graduates they hire. Students, according to employers, are not able to apply what they have learned. Many universities are adopting innovative techniques, such as the flipped classroom, self-paced learning, service offerings, delivery, and creating more affordable opportunities to adapt to these disruptions.

According to Behara and Davis (2015), four-year institutions are particularly vulnerable to these challenges. Tuition cost is being disrupted by Community Colleges who are now granting four-year degrees or with creative solutions, such as the those employed by Minerva Schools at KGI in San Francisco. For example, computer-based techniques, such as neuroscience and human cognition, are used in courses and students are linked to peers around the world using real-time video.

The second challenge, disruptive changes in the delivery of education is of particular significance for traditional universities and often overlooked. This disruptive innovation "... initially takes root as simple, often less-attractive solutions at the bottom of the industry, but then relentlessly move up in that industry and displace established competitors" (Behara & Davis, 2015, p. 310). Examples include University of Phoenix, DeVry University, and Southern New Hampshire University (SNHU). All three of these institutions are accredited and offer business degrees or specializations in specific content areas such as accounting or business management. While online educational offerings are not new, SNHU is serving students in a more customized, self-paced environment. Most

four-year institutions are not equipped /designed to accommodate this flexibility. The third disruption, employer satisfaction with graduates, will be discussed in more detail in the next section.

MOTIVATION TO CHANGE AND CURRENT STATE

Other studies have identified various motivations to revise or integrate curriculum. A survey done by Athavale, Davis, & Muring (2010) revealed the following factors as motivation for integrated undergraduate core curriculum: Critical to future success of students (76.9%), part of accreditation requirements (26.6%), initiated by faculty (20.3%), encouragement or pressure from recruiters or employers (18.2%), encouragement or pressure from advisory board (16.8%), and pressure from current students (4.9%). Hamilton, McFarland, and Mirchandani (2000) added “The redesigned curricula must cut across traditional boundaries to develop and reinforce the appropriate bundle of technical knowledge as well as social and organizational skills” (p. 103). Relevance, furthering the institution’s mission, and intellectual growth of faculty were cited by O’Keefe and Hamer (2011) as important reasons for curricular revisions.

Our motivation to change our curriculum was two-fold. The first is employers and the desire for our students to meet, or exceed, their expectations. But what do employers want from recent graduates? Multiple resources provided insight into the skills or competencies viewed as important to employers. Brooks & Calkins (2014) identified applied and basic skills desired by employers. Applied skills included analytical, oral and written communication, interpersonal, decision-making, creativity, and leadership while basics skills were related to business disciplines (accounting, finance, marketing, etc.). Some of these skills overlapped with The National Association of Colleges and Employers (2019) list of eight competencies that prepare graduates for workplace transition. These eight competencies include critical thinking/problem solving, oral/written communication, teamwork/collaboration, digital technology, leadership, professionalism/work ethic, career management, and global/intercultural fluency. We also reviewed feedback from internships, engaged with our advisory board and employers seeking our graduates, spoke to recent graduates, and searched websites like Indeed to determine the requirements for entry level positions.

The second motivation to change was student-driven. Over the course of the past three to four years, students have become more focused on the skills they want to acquire and how each course builds or complements their overall educational knowledge base. These students were requesting an individualized major in order to select courses that aligned with their career goals. This overall goal of increasing employability is supported in the literature (Perry & Prenkert, 2012). While we were able to develop these individualized majors for several students, this was not a long-term solution.

We were already incorporating various certifications, service learning, and projects with local businesses and non-profit organizations into some courses to provide students with hands-on experience. The research supports that certifications provide external validity (Staton, 2016; Goldring 2017; LeClair (2018), and Clarke, Murphy, Wetsch, & Boeck, 2018). Current certifications embedded into courses include Beginner Google Analytics and Hubspot Marketing (Email, Content, Inbound, Social Media, and Inside Sales). The Hubspot Email Marketing certification was selected because employers often voiced their concern about students’ ability to construct appropriate emails. As noted by Badua (2015), “An email or memo consisting of concise but grammatical and intelligible sentences is what is demanded and impressive in the modern corporate environment” (p. 52).

In addition to the certifications, free software, such as Canva (graphic design), Tableau (interactive data visualization), and Venngage (infographics) are incorporated into classes to expose students to these tools and develop their digital skills. Miller, Mangold, Roach, and Holmes (2013) noted, “...as students learn to use each technology tool, they also learn how to learn” (p. 123). The faculty teaching these courses also attained the certifications to show the students the importance of becoming life-long learners.

Going beyond certification and exposure to software was important to us. This knowledge was reinforced and applied using live projects. Live projects, Hamilton, et al (2000) noted, “...enhance the learning of material taught in class and thus provide a high degree of relevancy and increase the students’ hands-on experience as they learn by doing” (p. 107). In fact, we currently partner with an English professor who teaches content writing in an Advanced Writing course. Students in this course are partnered with a non-profit organization to develop and write marketing content. About midway through the semester, our Principles of Social Media students and Advanced Writing students meet to communicate the next level of marketing for the organization, then evaluate and develop social

media content. This interdisciplinary approach, combining writing and marketing skills, has provided our students with additional hands-on experience which makes them more attractive to employers.

CHANGING THE CURRICULUM

We are likely not much different than other business schools, our curriculum had evolved over time, adding and deleting courses or modifying course content, but had not been through a comprehensive overhaul in at least a decade. For over two years, the concept of creating a more flexible curriculum had been discussed but the internal process to achieve these changes seemed overwhelming. Proposals had to be written, prerequisites had to be reviewed, faculty had to work together to develop and agree to the new curriculum, and lastly, we needed a step-by-step plan. The step-by-step plan was developed by the university's director of accreditation and external affairs, chair of the department, and several faculty. The first step was to develop a new business core and write the proposal. Next, faculty met by discipline to discuss the current curriculum, identify knowledge or skills gaps, bring evidence of best practices, review interdisciplinary courses, and develop a proposal. Due to internal and accreditation expectations, proposals had to include a current and proposed catalog copy, rationale, projected impact (tuition/income, faculty, support staff, other programs, current and potential students, facility, and equipment), proposed implementation timeline, and student transition plan.

Finally, in fall of 2018, with looming catalog deadlines, we jumped in with both feet. It was now or, due to internal policies, wait another two years. First, college of business faculty, as a whole, discussed and agreed on a core business curriculum. Courses were added, deleted, or modified. Our process is supported by Lawrence (2012) who concluded "Delivering the program in an integrated manner forces everybody involved to talk about who is teaching what, and this reduces duplication of effort and, where duplication occurs, it can be done in a conscious manner to reinforce critical concepts" (p. 43). For example, four one-hour leadership courses were added to the core and Principle of Finance replaced Corporate Finance. Leadership was noted as a critical competency by The National Association of Colleges and Employers (2019). These changes were based on best practices and research. Teams of faculty, gathered by discipline, were then charged with developing a proposal for their respective emphasis. Involving faculty in the "...conceptualization, development, implementation and delivery, and assessment" (p. 13) of the curriculum, as noted by Athavale, et al (2010) is critical to success. The following paragraphs will provide an example of old and new marketing curriculum as well as the rationale for these changes.

The old and new marketing curriculum is provided in Table 1. The new curriculum provides flexibility, adds specific courses for those students who wish to consider employment in specific fields, and adds interdisciplinary courses as options. The flexible curriculum with electives to choose from was our most significant change. Borin, Metcalf, & Tietje (2007) noted some advantages and disadvantages to this type of curriculum. Advantages included variety, flexibility, and attractiveness to new faculty. Disadvantages, they noted, were lack of focus, faculty workload, lack of compelling mission, lack of faculty cohesion, lack of integration, and textbook focused. For us, the advantages, especially students seeking a variety of career paths, outweighed the disadvantages. Many of our marketing courses do not have a traditional textbook or, an online textbook is used to become familiar with theories, and not a primary resource. Integration and curriculum mapping are key, especially the certificates, as it helps develop problem solving and critical thinking skills through project-based learning. Specific courses, such as Brand Management (part of the Sport Business Emphasis) and Hospitality Marketing and Sales (part of the Hospitality Emphasis) were added as electives in case students wanted additional knowledge in those fields. Lastly, the interdisciplinary courses in communication, New Media Design and Digital Storytelling, were included as electives to better utilize talent at the university and increase communication skills of our students. In addition to the business core and flex curriculum, specific general education courses are either prerequisites or highly suggested during advising sessions. These include Introduction to COMM180 (Digital Media), ART205 (Digital Design), GEOG200 (Human Geography), ESOH240 (Energy for a Sustainable Future) and ENGL282 (Advanced Writing - Content Writing). Lastly, this T-shaped learning provides a breadth and depth of knowledge and skills necessary for students to develop the competencies desired by employers.

The operations and logistics emphasis curriculum also changed significantly. We have numerous distribution centers, manufacturing, and logistics companies in our region seeking skilled employees. Again, conversations with employers and best practice drove our changes. Courses such as FNCE340 – Financial Statement Analysis, SYSA235 – Integrated Software, CSCI 285 -SQL & Business Intelligence Tools for Decision Making, ESOH150 - OSHA Hazardous Waste Site Worker (40-Hour Safety) Training (AHTC), ESOH180 - Industrial Processes and Hazard Recognition, and ESOH205 - OSHA Practice and Standards were added as electives. Note again, the

interdisciplinary nature of the elective courses. Only two courses, the Financial Statement Analysis and Integrated Software are business courses. These changes were made to emphasize decision making skills and expose students to the current knowledge requirements of position in the operations/logistics field.

Table 1: Old and New Marketing Curriculum

Old curriculum		New curriculum	
ACCT 220	Principles of Financial Accounting	ACCT220	Principles of Financial Accounting
ACCT 221	Principles of Managerial Accounting	ACCT221	Principles of Managerial Accounting
BUAD 220	Principles of Management	BUAD101	Leadership and Dev - Self Assess
BUAD 310	Business Law-	BUAD201	Leadership & Dev: Professional Prep
BUAD 311	Business Communications	BUAD301	Leadership & Dev: Comm. Engagement
BUAD 320	Org Behavior and Leadership	BUAD401	Leadership & Dev: Leadership Capstone
BUAD 350	International Business	BUAD220	Principles of Management
BUAD 390	Business Research	BUAD310	Business Law
BUAD 435	Logistics and SCM Mgt Techniques	BUAD311	Business Communications
BUAD 493	Business Policy/Strategic Mgt	BUAD390	Business Research
BUAD 493L	Business Policy/Strategic Mgt Lab	BUAD493	Business Policy
ECON 200	Principles of Macroeconomics	ECON200	Macroeconomics
ECON 201	Principles of Microeconomics	ECON201	Microeconomics
FNCE 320	Corporate Finance	FNCE300	Principles of Finance
MRKT 326	Principles of Marketing	MRKT326	Principles of Marketing
MRKT 377	Consumer Behavior in Marketing	Required Courses:	
MRKT 445	Professional Selling	MRKT 377	Consumer Behavior in Marketing
MRKT 477	Advertising and Public Relations	MRKT 445	Professional Selling
MRKT 485	Marketing Management	Select six courses from:	
SYSA 235	Integrated Software	BUAD 352	International Marketing
SYSA 340	Management Information Systems	BUAD 499	Business Internship
SYSA 360	Operations Management and	COMM 375	New Media Design & Production
MRKT 480	Retail Management or	COMM 382	Digital Storytelling
BUAD 352	International Marketing	HMGY 346	Hospitality Marketing and Sales
		MRKT 370	Principles of Social Media
		MRKT 400	Topics in Marketing
		MRKT 477	Advertising and Public Relations
		MRKT 480	Retail Management
		MRKT 485	Marketing Management
		SBST 360	Brand Management

All of our programs went through the curriculum review. Our focus throughout this process was outcomes driven – the knowledge, skills, and dispositions deemed important to employers. Liesz & Porter (2015) stated “As business educators, we need to provide our students a more accurate understanding of what business integration is and how all of the different disciplines and areas of business work together to create value and achieve success” (p. 51).

CONCLUSION

Curriculum revision is not easy, but is a necessary, ongoing task to stay relevant. Research, including best practices, provided a checks and balances for validating proposed changes, however, the various stakeholders were more challenging. For example, depending on the size of the employer, specific skills were expected. Some employers want deep learning (analytics, etc.) in areas while others prefer a broad set of skills (video production, graphic design, analytics, etc.). Parents and students are often focused on job-specific skills but may not understand the integration subtleties or the industry specific expectations.

As recommended by Lawrence (2012), “No single approach to integration seemed to produce the majority of benefit for students – we didn’t find a silver bullet. Rather, it was the fact that we integrated at multiple levels and in multiple ways that collectively produced the benefits” (p. 43). The proposals are done and the new curriculum will be launched in Fall 2019 but our work is never done. Our alumni network, current and future employers, and advisory board will be continually engaged to evaluate our students and stay abreast of industry shifts. This network

acts "...as important contributors to business engagement in learning and teaching, significantly impacting not only business influence on curriculum design but also directly affecting the level to which the curriculum is perceived to meet the needs of surrounding business" (Plewa, Galan-Muros, & Davey, 2014, p. 46). The ideal learning situations for students" Wilson, McCabe, and Smith (2018) noted "is to touch all modes of learning in a recursive process where immediate or concrete experiences are the basis for observations and reflections" (p. 56). Through the combination of industry-based certifications, community-based projects, internships, and our new flexible curriculum, our students should have the ability to reflect on their learning and build their critical thinking and problem solving skills.

Finally, faculty internships and consulting, as suggested by Liesz & Porter (2015), are an additional way to keep pace with industry. One of the authors will be on sabbatical in Spring 2019. She will be working in multiple organizations in the community to gain an understanding of the current skills needed by employers. This approach to keeping faculty current in the field through sabbaticals or other release time will hopefully keep us abreast of employer needs.

This was a good first step. Ongoing assessment, communication with employers, and continuous feedback from our students will be key to understanding if these changes were successful and provide additional opportunities for change.

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Chris Ward, EdD is a Full Professor of Business at the University of Findlay. Dr. Ward's research interests include experiential learning and innovative teaching pedagogies. She teaches marketing, operations, and leadership.

Scott Grant, EdD is an Assistant Professor of Business at the University of Findlay. Dr. Grant's research interests include social media and personal branding. He teaches marketing and leadership.

X-treme Makeover: A Case Study of Microsoft's Dramatic Xbox 180 Strategy Reversal

Cory Angert, University of Houston-Downtown, Texas, United States

ABSTRACT

Firms must often modify their intended strategies based on changing environmental conditions. Although planning represents an essential component of strategizing, managers need to remain flexible so that certain elements of an organization's planned, or deliberate, strategy can be discarded in favor of unplanned, or emergent, strategy elements, as necessary. The real-world case study herein provided vividly illustrates this strategic management concept by documenting a historic and remarkable strategic pivot enacted by one of the world's most prominent technology companies, Microsoft Corporation; the case should particularly pique the interest of business students by virtue of its significant ramifications for the videogame industry. Additional readings are suggested, for instructors seeking to provide students with further context, along with discussion questions intended to strengthen student critical thinking and strategic management learning.

Keywords: deliberate strategy, emergent strategy, abandoned strategy, pivot, Microsoft Corporation, Xbox

INTRODUCTION

Former heavyweight championship boxer "Iron" Mike Tyson once said "Everybody has a plan until they get punched in the mouth," a sentiment that holds true for corporate strategic leaders. Strategists recognize that planning ahead constitutes best practice, yet they must concurrently acknowledge that one can never fully foresee all potential eventualities. Unfortunately, no one has a magic crystal ball that can reveal the future (if you are reading this and do, please kindly share with me next week's winning lottery numbers), so managers must factor a certain degree of unpredictability into any plans that they lay out concerning a firm's future. An effective strategist must conceive of a compelling vision and develop mechanisms through which key strategic targets can be achieved; but, at the same time, the individual must also embrace the possibility of volatility by remaining flexible enough to, when necessary, modify these plans.

This case study examines the intriguing reversal of strategy that internationally-recognized technology firm Microsoft Corporation (NASDAQ: MSFT) effected in the interval between the company's worldwide reveal of its interactive entertainment console, the Xbox One, and the system's actual distribution to the public. Incredibly, after being confronted with an unanticipated extremely frosty fan reaction, the multibillion-dollar firm completely reversed course on nearly all of the policies deemed unpopular that the company had originally planned to implement. Research has previously called for more fully familiarizing students with the concept of managerial adaptability when faced with changing circumstances (Starbuck, 2018), and past studies have shown that positive real-world experiences keep students engaged in the learning process (Malone and Lepper, 1987; Newmann, Wehlage, and Lamborn, 1992). This exceptional case proves noteworthy, especially from an educational perspective, because a reversal of this magnitude remains rare, and the case provides an opportunity to clearly illustrate the elements, both proactive and reactive, that comprise an entity's overarching realized business strategy.

A theoretical framework built on existing literature is provided in an effort to analyze the situation from a strategic management perspective, particularly for instructional purposes within a university-level business course. Brief historical and industry background informs readers of the circumstances preceding the focal scenario in order to paint a clear picture of the market for those unfamiliar with the videogame industry. Equipped with this knowledge, readers are then guided through the significant events that transpired during Microsoft's major strategic pivot that unfolded from May 2013 through November 2013. Finally, additional readings and discussion questions are presented for erudition and discussion, either individually or in groups.

THEORETICAL FRAMEWORK

Greek philosopher Heraclitus posited that "The only constant in life is change;" extensive research (e.g. By, 2007; Kennerley and Neely, 2003) bears out the veracity of this supposition within the field of management. Markets can exhibit great volatility, unpredictability, and dynamism (Anand and Ward, 2004; Li and Liu, 2014; Schilke, 2014),

and – most relevant to the case at hand – all three of these factors tend to heavily impact high-technology business environments such as that of the videogame industry (Lê, Massé, and Paris, 2013). Since the future is not known, strategic decision makers can only do their best to make informed prognostications about what the future holds and devise alternative courses of action aimed at accounting for potential contingencies.

While research supports the notion that planning can result in improved performance (Capon, Farley, and Hulbert, 1994; Khandekar and Pence, 2017; Miller and Cardinal, 1994; Rudd, Greenley, Beatson, and Lings, 2008), strategic decision makers must also be able to improvise, particularly when unexpected events transpire. Strategic elements once thought beneficial to achieving organizational success must often be abandoned, or discarded, in favor of alternate options that better fit a company's present reality. Overall, the strategy that a firm ultimately adopts is composed of two types of strategic components: 1) deliberate, or planned, strategy elements and 2) emergent, or unplanned, strategy elements (Mintzberg and Waters, 1985). Strategic leaders must proactively develop deliberate courses of action that will set a firm on a predetermined path by which the organization can achieve its desired outcomes while at the same time remaining open to the possibility that eventualities initially unaccounted for could arise, thereby necessitating reactive alterations to the previously-established trajectory (Rudd et al., 2008). These adaptive modifications replace certain deliberate strategy elements, thus reorienting the strategic plan in a more appropriate and advantageous direction. The recalibration sometimes represents an incremental shift but could alternately, as in the present case study, lead to a dramatic swing, or pivot, that essentially places the firm on an altogether different strategic track.

Essentially, the business strategy that a firm adopts can be summarized with the formula DELIBERATE STRATEGY ELEMENTS + EMERGENT STRATEGY ELEMENTS - ABANDONED STRATEGY ELEMENTS = REALIZED STRATEGY ($D + E - A = R$), wherein the deliberate strategy elements represent the firm's original plans, the emergent strategy elements represent newly incorporated ideas, and the abandoned strategy elements represent pieces of the firm's original plans (deliberate strategy elements) that were discarded in favor of newly incorporated ideas (emergent strategy elements). Please keep this formula in mind while reading through the details of the following case.

CASE STUDY

Microsoft Corporation (NASDAQ: MSFT) is an American technology company known for such widely-used products as the Windows operating system, the Office productivity software suite, and the Azure cloud computing platform. Most germane to the present discussion is another piece of the Microsoft corporate portfolio first formally introduced to consumers in 2000 (Morris, 2000) – the Xbox entertainment brand. What began as Microsoft's somewhat risky attempt to break into a highly-competitive videogame industry environment dominated by the likes of Sony Corporation (makers of the PlayStation line of gaming and entertainment consoles) and Nintendo Co., Ltd. (makers of the Nintendo Entertainment System, Nintendo 64, and Game Boy, among others) has since steadily expanded to include three generations of Xbox hardware, each with multiple offshoot variants and configurations; an online service that operates across consoles, personal computers, and other consumer devices; and a media distribution platform offering music, movies, and television shows. [The music service was eventually discontinued, and the movies and TV service was later rebranded under the general Microsoft banner.]

From the outset, it was clear that Microsoft viewed the full scope of the Xbox brand not simply as a family of products designed solely around videogames but as a means by which the company could infiltrate and ultimately own the living room. In fact, the original Xbox console, by many accounts, was launched largely in response to what Microsoft saw as competitor Sony's own attempt to leverage its already-popular and rapidly growing PlayStation brand as a "Trojan Horse" that could facilitate the Japanese entertainment giant's dominance over consumers' leisure spaces (Morris, 2000; Surowiecki, 2001). For its first foray into the industry, however, Microsoft recognized that, in order to win the trust of the core gamer demographic that the firm sought to capture, the company would need to remain laser-focused on videogames and little else. *First gain a foothold in the videogame industry and then worry about expanding into other complementary realms* served as Microsoft's organizing principle.

Xbox and Xbox 360

Microsoft's executives recognized that they faced an uphill battle if they wished to unseat Sony from its leadership position and, as such, accepted that the first Xbox console might never turn a profit. The Xbox team even briefly considered simply giving the system away as a free loss leader in order to quickly amass a huge install base, thereby usurping Sony's formidable market share competitive advantage (Barbosa, 2015). Although most videogame

consoles (other than those manufactured by Nintendo) tend to follow a razor-and-blade business model, wherein a dependent product less likely to warrant repeat purchase (i.e., a gaming console) is sold at a loss so as to widen the potential market for complementary products of which customers stand to purchase larger quantities (i.e., games, accessories, and services), simply handing out free systems would have proven a radical move. Hesitant to embark upon this extremely unconventional tack, Microsoft decided to follow the more traditional approach.

When the console launched in the United States on November 15, 2001, it carried an initial price tag of US\$299, and quickly sold through 550,000 units in its first week of release (Thorsen, 2005). Despite a strong start, the Xbox had little hope of catching up to the PlayStation 2's sizable lead in console sales, with each system's eventually being discontinued after lifetime sales of approximately 24 million Xboxes compared to a whopping 150+ million PlayStation 2s (Minotti, 2014). While such a sizable sales discrepancy could be viewed as a decisive victory for Sony, Microsoft considered this contest only the first battle in a war that would be waged for years to come.

In keeping with Microsoft's long-term strategic orientation of not expecting to win the console wars within a single generation, the company, in 2005, rather abruptly ceased production of the Xbox in favor of directing all of its gaming division's efforts toward its next console, the Xbox 360, which went on sale November 22 of that year for US\$399. (A feature-stripped Core model was also sold in some markets, including the United States, where it cost US\$299.) With the Xbox 360, Microsoft successfully capitalized on the inroads into the videogame industry that the previous system had allowed the company to make, and it rode the wave of goodwill, customer loyalty, and momentum that the decisions and strategic moves of the previous four years had created. In that time, Microsoft had proven itself a serious force with which to be reckoned, building from scratch blockbuster franchises such as the cultural phenomenon that is the *Halo* series, updating and securing the exclusive rights for classics such as *Ninja Gaiden*, and rolling out a cutting-edge online service that proved more advanced than those of even industry incumbents Sony and Nintendo. With the Xbox 360, Microsoft continued to launch new franchises including the popular *Gears of War*, to revamp classics such as *Banjo-Kazooie*, and to bolster its online framework with new and exciting features. In addition, Microsoft's decision to prematurely discontinue the first Xbox console, in order to clear the proverbial runway for the Xbox 360, served as a key factor in the Xbox 360's success, as this strategy allowed Microsoft the ability to arrive first-to-market in the new console generation. (The videogame industry tends to operate cyclically, with competing home consoles' usually being introduced within a span of a few months to one year from one another – sometimes even launching less than a week apart!) A short time after the Xbox 360's release, buyers discovered a flaw caused by a manufacturing defect in the system's architecture; but, the first-mover advantage that Microsoft gained by launching its console ahead of the competition's systems was arguably worth the unprecedented estimated \$1.15 billion that Microsoft allegedly spent repairing and replacing malfunctioning hardware (Taub, 2007).

Despite eventually losing some steam and ground to its closest competitor, the PlayStation 3 (Strauss, 2011), the Xbox 360 ended its run at a very respectable 80+ million in console sales (Moriarty, 2013). Hot on the heels of Microsoft's seven-plus-year success story of the Xbox 360, the company stood poised to triumphantly debut its next major interactive entertainment platform to a decidedly receptive audience, fans largely content with the brand that the company had steadily built over the course of two console generations. In May of 2013, Microsoft would, with the reveal of its much-anticipated next-generation gaming console, give the world a first glimpse of what the company believed to be the Xbox brand's spectacular future.

Xbox One

The reveal

In a televised special simulcast around the globe across multiple internet streaming services, then-President of Microsoft's Interactive Entertainment Business Don Mattrick took the stage at the Microsoft campus theater on the morning of May 21, 2013, to unveil Microsoft's third-generation console, the somewhat confusingly-named Xbox One. (Although it was the third major system in Microsoft's product line, the suffix "One" was appended to allude to the company's "all in one" marketing campaign.) The audience in attendance, as well as the gaming aficionados eagerly tuning in both on television and online, excitedly anticipated a first look at astounding new videogames featuring stunning high-definition graphics, groundbreaking gameplay innovations, and other quantum shifts that could only be made possible through the generational leap in technology that the Xbox One represented. Instead, following the name and system design reveal, the presentation took, in the eyes of gamers, an unexpected downward turn as executives demonstrated a number of the console's secondary media capabilities, none of which pertained to videogaming.

It soon became clear that Microsoft's direction for the Xbox One had shifted from gamers, the market most clearly targeted by the company's previous consoles, to a broader, more general audience. Although the Xbox 360 had drastically widened the scope of what videogame consoles could do by allowing users to download applications enabling playback of movies and TV shows (via Netflix, Hulu, Amazon Video, etc.), watching and recording live TV (via Windows Media Center), viewing online user-created video content (via YouTube, Twitch, etc.), streaming music (via iHeart Radio, Last.fm, etc.), browsing the web (via Internet Explorer), and performing several more functions, Microsoft had heretofore marketed previous Xbox consoles as gaming machines, first and foremost. While the Xbox One announcements shocked many, the new direction should not have come as a surprise. The renouncing of Xbox as solely a gaming brand had been foreshadowed nearly twelve years prior; recall that, right from the start, the vision for Xbox was to first become an established living room fixture and then parlay this valuable real estate into entertainment domination. The Xbox One represented Microsoft's most earnest attempt yet to bring to fruition the company's grand vision. With the Xbox One, the organization was clearly attempting to reorient its marketing message, as well as the entire Xbox brand and division, toward a wider audience. Whether this perhaps risky gamble of prioritizing a broader audience's preferences over those of Microsoft's most loyal fans would prove a winning strategy remained to be seen.

The beginning of the press conference saw Microsoft executives' touting the Xbox One's live TV features, Skype communication capabilities, sports programming widgets, and TV Guide-style channel listings, with nary a whisper of videogames. It was not until more than halfway through the one-hour media briefing that the first videogame trailer played (a compilation of mocked-up visuals meant to represent the level of graphical fidelity that the developers at EA Sports sought to achieve – but would not actually reach – in their upcoming Xbox One titles). By the end of the event, Microsoft had showcased a new installment of its racing simulation series *Forza Motorsport*, a brand new intellectual property called *Quantum Break*, the kernel of an idea for a live-action *Halo* television series shepherded by film director Steven Spielberg (a project that, at the time of this publication, has still not materialized), and footage of the next *Call of Duty* game (a title that failed to fully utilize the new system's capabilities because publisher Activision desired to release the game both on the new generation of hardware – Xbox One and Sony's upcoming PlayStation 4 – as well as on the previous generation's consoles of Xbox 360, PlayStation 3, and Nintendo's Wii U, thereby compromising the software's technological potential).

Unfortunately for Microsoft, in stark contrast to the expected positive reception of its Xbox One's reveal, reactions generally qualified as decidedly underwhelming, to say the least, with headlines' declaring "Xbox One? More like Xbox None" (Hruska, 2013) and "That Xbox One Reveal Sure Was A Disaster, Huh?" (Plunkett, 2013). Additionally, even more concerning to gaming enthusiasts was the fact that the event took place against the backdrop of swirling rumors regarding a number of restrictions set to be built into Xbox One's hardware and software architecture; completely absent from the media briefing were any specifics about these distressing rumblings that many perceived as anti-consumer measures. Perhaps cognizant of the controversial nature of the planned policies, Microsoft executives refrained from providing specifics during the official broadcast but, when faced with pointed questions from reporters, seemingly confirmed many of the feared practices.

In an unparalleled departure from the customary standard operating procedure adopted by every videogame entertainment console that had come before, the Xbox One would require an online check-in once every 24 hours; failure to connect to the internet within this limited, specified time frame would result in the console's being rendered unusable – a veritable brick – except for a handful of very basic system functions. Arguably even more distressing for consumers was Microsoft's stance on the freedoms that gamers would be sacrificing in using the new system: the company announced that all games sold for the Xbox One were to be coded with sophisticated digital rights management (DRM) software that would disallow a game disc's operation on any console other than the first one on which the disc was loaded. This meant that games purchased by one customer (A) could not be played on another's (B's) Xbox One unless the original purchaser (A) was physically in the same location and signed into his/her profile on the other individual's (B's) console. By the same token, games could no longer be lent to others, and game rental services would effectively become obsolete (although Microsoft professed to be working on a post-launch solution). Perhaps the most significant implication of this new DRM approach was the potential doom that it portended for the thriving videogame aftermarket, which had become the life blood of some retailers such as GameStop: used games could no longer be freely sold.

Prior to Microsoft's proposed introduction of this extremely restrictive DRM, used games could be sold at garage sales, auctioned off via websites such as eBay, and readily resold to willing buyers. Platform holders Microsoft, Sony, and Nintendo, as well as game developers and publishers, have always resented this second-hand market

(Cook, 2012; Dring, 2019; Humpries, 2013; Kain, 2013a; McIntyre, 2014) because used-game sales meant that an individual could purchase a game directly from someone who had bought the game, played it, and was then ready to sell it. Although the platform holder, developer, and publisher earned revenue from the initial videogame buyer's purchase, these entities were excluded from proceeds derived from secondary market transactions. Essentially, those responsible for the creation and initial distribution of videogames were losing sales because the secondary buyers purchased directly from the primary buyers, rather than purchasing new copies through retailers. This conundrum is certainly not unique to the videogame industry, as secondary markets exist for most consumer goods. A concern unique to the gaming industry, however, is that, while the physical discs generally do not degrade over time as do most other products, many titles lose their value to consumers once the player has completed the game; thus, players who finish a videogame, or just decide that they have exhausted their use of the game, often desire to sell the disc, which still functions as well as would a new copy. This defining characteristic presents a lucrative opportunity for resellers to formalize the practice at scale. In the videogame industry, several stores and services have arisen to facilitate the process of selling used games. At the time, GameStop was by far the most prevalent means by which customers could offload unwanted titles; the store actively incentivized a cycle of customers' trading in their used games to accrue sufficient credit to buy others' used games that had been traded to the store, titles which would, subsequently, then likely be again traded for others to buy. This behavioral loop of buying used games, trading them to buy more, and then selling those back in order to buy the next round equated to incalculable lost sales for game creators. Microsoft's intended Xbox One DRM restrictions laid the groundwork to either completely prevent companies such as GameStop from buying and selling used games or, at the very least, regulate the secondary market so that platform holders and game developers and publishers could secure a percentage of these aftermarket transactions.

Understandably, these perceived anti-consumer impositions did not sit well with Xbox's core audience (or with companies of GameStop's ilk, whose principal profits depend on the used game market). The reveal of additional disenchanting details further rankled the target market, as Microsoft announced that the Xbox One would not operate if the included Kinect camera sensor and microphone array peripheral were disconnected at any time; a microphone-equipped headset would not come bundled with the system, thus making it more difficult for online teammates to communicate with one another in multiplayer games; independent developers would not have the ability to self-publish their games, leading to a narrower assortment of Xbox One titles, since developers not signed to a Microsoft-sanctioned publisher would simply forego releasing their games on the Xbox One in favor, instead, of releasing their games on other platforms; and games would be region-locked, meaning that software sold in one country would not operate on hardware purchased in another country. While the severity of these issues paled in comparison to the always-online and DRM concerns, these additional constraints fueled an already-raging inferno within the gaming community – a community particularly accustomed to loudly voicing its displeasure online.

The reaction

Gaming and internet culture markedly overlap, so gamers' complaints often spread like wildfire throughout social media, frequently going viral almost immediately. Angry tweets and vicious memes decried Microsoft's plans, and ill-conceived comments made by Microsoft executives likely did not help alleviate the situation. For example, Microsoft Corporate Vice President Phil Harrison's attempts to mollify consumers only served to further intensify their ire when he tone-deafly reassured them that a friend could continue to play an owner's physical copy of a game after the owner had left the friend's house . . . *as long as the friend paid the full price of the game to license it to his/her online profile*, remarking "At the end of the play session, when I take my disc home - or even if I leave it with you - if you want to continue to play that game [on your profile] then you have to pay for it. The bits are already on your hard drive, so it's just a question of going to our [online] store and buying the game, and then it's instantly available to play" (Bramwell, 2013). Microsoft Studios Creative Director Adam Orth callously tweeted "Sorry, I don't get the drama around having an 'always on' console. Every device now is 'always on.' That's the world we live in. #dealwithit" (Koetsier, 2013). Encapsulating the core of the debacle, Don Mattrick, the man who originally debuted the Xbox One, mocked in an interview "Fortunately we have a product for people who aren't able to get some form of connectivity; it's called Xbox 360" (Cooper, 2013). When attempting to convince consumers to purchase a product for which the company is going all-in, such as the Xbox One, it is probably not the best strategy to respond to objections by snidely directing those customers to the previous model (especially when the Xbox 360 was entering its sunset phase). Had Microsoft communicated more details about its plans for family sharing (up to ten family members could share a single copy of a game, be it a physical or digital copy) or how the company's DRM plans could lead to lower game prices, the public might have been more receptive. As things stood, the firm's poor messaging left the door wide open for its closest competitor, Sony, to land a crushing blow.

Practically all of the major players in the gaming sector make most of their biggest announcements and lay out their plans for the rest of the year and beyond at the videogame industry's annual trade event, the Electronic Entertainment Expo (E3). Since these huge multinational firms each fire their biggest artillery back-to-back against one another, all within the span of two or three days, E3 is typically quite the spectacle – but 2013's show would be one for the history books. At its June 10th online-streamed and televised E3 presser, Microsoft finally focused more acutely on games, announcing and showing first footage of Xbox One videogame launch titles and teasers of those in production for future release. However, the fact that Microsoft made absolutely no mention of the console's objectionable pre-stated restrictions before ending its presentation with an announcement that the Xbox One would release on November 22, 2013, at a price of US\$499, most definitely did nothing to assuage gamers' grievances.

Just seven hours after Microsoft's E3 2013 press conference, Sony showed the world its next addition to the PlayStation family of products, the PlayStation 4 (PS4). The company had previously teased some of its upcoming PS4 game lineup at an event similar to Microsoft's pre-E3 event, but this online-streaming press conference was the first time that Sony had displayed the hardware, which landed Sony its first jab as the PS4 boasted a much-smaller footprint than that of the rather ungainly Xbox One. Sony scored more points with the gaming audience by focusing primarily on games, largely eschewing in-depth discussion of the new system's media capabilities and other such ancillary features. Many analysts' expectations that Sony's approach to DRM would mirror Microsoft's restrictive policies, however, engendered trepidation that Sony would negate much of the goodwill that the company's presentation had been building (Fahey, 2013; Meixsell, 2013; Tassi, 2013). Thus, the point in the presentation at which Sony Computer Entertainment America President and CEO Jack Tretton took the stage to detail how the PS4 would operate with regard to DRM and usage concerns had all in attendance and online on the edges of their seats.

Contrary to analysts' pessimistic predictions, Sony leapt at the opportunity to take full advantage of Microsoft's apparent missteps; with a "mic drop moment," the company proudly proclaimed, both orally and through a triumphantly succinct slide projected onto the stage screen, "PS4 SUPPORTS USED GAMES." When this statement was met with thunderous cheers from the crowd, a follow-up graphic explained that the options users would have for disc-based games mirrored those of previous generations, reading "TRADE IN GAMES [sic] AT RETAIL, SELL IT TO ANOTHER PERSON, LEND IT TO A FRIEND, OR KEEP IT FOREVER." Tretton's announcement that "In addition, PlayStation 4 disc-based games don't need to be connected online to play" generated another huge round of applause, and the CEO further explained "and it won't stop working if you haven't authenticated within 24 hours." The final announcement – that the PS4 would cost, at US\$399, \$100 less than the price of the Xbox One – constituted the icing on the fan-service cake. In terms of customer perception, Sony had seemingly KO'd the competition before the bell had even rung.

The pivot

With both consoles on track to release before the end of the year – PS4 on November 15 and Xbox One on November 22 – the Xbox team needed to act quickly. From the first moment of the public's vociferous outcry, Microsoft had continually seemed to be disregarding mounting pressure to announce a course of action more palatable to consumers. Retailers began accepting preorders for the PS4 and Xbox One, manufacturing partners ramped up production, and all other relevant stakeholders began preparations for the impending launches. Outwardly, the company held firm that all of its controversial policies and strategic decisions would remain in effect; internally, however, feverish reevaluation was actually underway. Microsoft employees were instructed to repeatedly maintain that the company would not budge from its announced stance, staunchly asserting that absolutely nothing would change.

On June 19, 2013, everything changed.

In a complete and shocking about-face, Microsoft posted a press release on its Xbox Wire website entitled "Your Feedback Matters – Update on Xbox One" in which the company capitulated by stating that "An internet connection will not be required to play offline Xbox One games" and customers will be able to "Trade in, lend, resell, gift, and rent disc-based games" (Microsoft, 2013). Microsoft had just abruptly reversed its most onerous and scorned policies in what social media would snarkily deem "The Xbox One Eighty / Xbox 180."

From that momentous declaration, the floodgates opened. No longer did users have to keep the included Kinect peripheral plugged in at all times for the console to function (Schreier, 2013). This turned out to be an especially prudent call, since Central Intelligence Agency (CIA) employee and subcontractor Edward Snowden had begun, on June 5, to expose the extent of the United States government's classified surveillance program, a revelation that decidedly unnerved the public. Technology-based privacy concerns dominated national headlines throughout the

summer, so relinquishing the stipulation of having to keep an advanced camera and always-live microphone array permanently hooked up helped the firm sidestep what could have become a massive consumer protections fiasco. Additionally, this decision afforded Microsoft the ability to eventually unbundle, and later discontinue entirely, the Kinect sensor accessory, thereby substantially lowering the Xbox One's price (by the equivalent of approximately US\$100 in most territories) and making the system more competitive within the console market (Warren, 2014). Headsets were now to be included with every system sold, thereby better enabling in-game communication and markedly facilitating online community building (Reilly, 2013). Independent game developers were given the green light to self-publish for the Xbox One, thereby serving to broaden the catalogue of titles that would be available to customers (Kastrenakes, 2013). Region locking was also left by the wayside in favor of allowing hardware and software sold in different areas to retain worldwide interoperability (Serrels, 2013). The Xbox One that hit the market in the United States and twelve other countries on November 22, 2013, assumed the form of a very different beast than the console originally pitched mere months before (see Table 1 below).

Table 1: Microsoft's Xbox One Strategic Shift

Original Strategy	Revised Strategy
Failure to check in at least once every 24 hours renders Xbox One virtually inoperable	No online check-in necessary
Game discs can only be used on others' Xbox One consoles while the original owner is signed in	Game discs can be used on any Xbox One regardless of who is (or is not) signed in
Game discs cannot be lent to others	Game discs can be lent to others
Game discs cannot be rented (at least initially)	Game discs can be rented
Game discs cannot be freely sold/traded (complete details never fully disclosed)	Game discs can be freely sold/traded
Disconnecting the Kinect sensor renders Xbox One entirely inoperable	Disconnecting the Kinect sensor has no effect on Xbox One's operation
Communicator headset not included with Xbox One	Communicator headset included with every Xbox One
Independent developers not permitted to self-publish games	Independent developers permitted to self-publish games
Games are region-locked (i.e. software sold in one region of the world incompatible with hardware sold in a different region)	Games not region-locked (i.e. software sold in one region of the world compatible with hardware sold in a different region)

In the years since the Xbox One's debut, continued strategy revisions have been enacted, but none has enabled Microsoft's Xbox One the ability to catch up to Sony's PlayStation 4. As of late 2018, nearly 90 million PS4s had been sold, while fewer than half as many (approximately 40 million) Xbox Ones had made their way into consumers' homes (D'Angelo, 2019). A number of factors, including an edge in hardware power, a greater number of compelling exclusive titles, and comparatively superior global brand awareness and loyalty, may have contributed to Sony's sizable lead. Analysts agree, however, that Microsoft's initial stumbles likely played a significant role in the Xbox One's being relegated to a distant second place (Polanco, 2018). Microsoft made an admirable attempt to pivot and then regroup, but these efforts may have been too little too late, as a company's alienating its core market frequently has the effect of turning away the would-be early adopters so crucial to success. Without positive word-of-mouth from those who stand to serve as brand ambassadors, a firm sacrifices a valuable demographic that might have otherwise evangelized the product and stimulated additional demand. For the next-generation Xbox, Microsoft will need to heed all of the lessons that it gleaned from the mismanaged debut of the ill-fated Xbox One and apply that knowledge so that the firm makes a clear and compelling pitch that will help the company regain the market share that it lost during the 2013-2020 console cycle. Game on!

ADDITIONAL READINGS

Instructors may wish to supplement the provided case study with additional readings. Some suggested articles (listed thematically) include:

- Marshall, R. (2019). The History of the Xbox. *Digital Trends*. Retrospective documenting major historical Xbox milestones. (<https://www.digitaltrends.com/gaming/the-history-of-the-xbox/>)
- Brown, M. (2018). Complete List of All Xbox One Consoles. *Windows Central*. This source details the many forms that the Xbox One has adopted throughout its product life cycle, including a streamlined, moderately upgraded model (Xbox One S) and an iteration boasting significantly upgraded hardware specifications (Xbox One X). (<https://www.windowscentral.com/xbox-one-console-list>)
- Shaw-Williams, H. (2013). Has Microsoft Abolished Used Games on the Xbox One? *Game Rant*. Confusion abounds as gaming press attempt to parse what Microsoft's policies mean for the used games market. (<https://gamerant.com/xbox-one-no-used-games/>)
- Stuart, K. (2013). Xbox One DRM Restrictions Dropped After Gamer Outcry. *The Guardian*. News article documenting and contextualizing Microsoft's policy reversals. (<https://www.theguardian.com/technology/2013/jun/19/xbox-one-drm-second-hand-restrictions-abandoned>)
- Kohler, C. (2013). Xbox One Proves It: Don't Mess with Used Games. *WIRED*. The author reflects on what Microsoft's used games policy reversals mean for the videogame industry. (<https://www.wired.com/2013/06/xbox-one-used-games-drm/>)
- Usher, W. (2013). Gamers Aren't Angry at The Xbox One, They're Angry Microsoft Almost Killed Gaming. *CinemaBlend*. The author colorfully puts into perspective why Microsoft's deliberate strategy elements drew the ire of gamers. (<https://www.cinemablend.com/games/Gamers-Aren-t-Angry-Xbox-One-They-re-Angry-Microsoft-Almost-Killed-Gaming-57835.html>)
- Kain, E. (2013b). Xbox One Vs. PS4: Why Sony is Still the Best Choice for Gamers. *Forbes*. Detailed categorized comparison of the PS4 and Xbox One. (<https://www.forbes.com/sites/erikkain/2013/07/25/xbox-one-vs-ps4-why-sony-is-still-the-best-choice-for-gamers/#35d9ee042589>)
- Kuchera, B. (2017). Why PlayStation Beat Xbox This Generation (and What It Taught Microsoft). *Polygon*. Editorial analysis of Microsoft's missteps in contrast to Sony's well-developed strategy and how the lessons that Microsoft learned helped shape the strategic vision adopted for the Xbox One X hardware redesign. (<https://www.polygon.com/2017/12/8/16751740/playstation-vs-xbox>)
- Gurwin, G. (2019). Xbox Scarlett vs. PS5: Here's What We Know So Far. *Digital Trends*. Sony's PS4 and Microsoft's Xbox One successors compared. (<https://www.digitaltrends.com/gaming/xbox-scarlett-vs-ps5/>)
- Tracy, P. (2019). Sony PS5 vs Xbox Project Scarlett: Which Next-Gen Console Will Win? *Tom's Guide*. Detailed categorized comparison of Sony's PS4 and Microsoft's Xbox One successors. (<https://www.tomsguide.com/us/sony-ps5-vs-xbox-project-scarlett,review-6575.html>)
- West, J. (2019). PS5 vs Xbox Project Scarlett – Will Sony Dominate the Next-Generation or Can Microsoft Stage a Huge Comeback? *GamesRadar+*. Another detailed categorized comparison of Sony's PS4 and Microsoft's Xbox One successors. (<https://www.gamesradar.com/ps5-vs-xbox-project-scarlett/>)
- IGN Staff (2019). PS5 vs. Xbox Scarlett Comparison Chart. *IGN*. Continually updated wiki page contrasting Sony's PS4 and Microsoft's Xbox One successors. (https://www.ign.com/wikis/playstation-5/PS5_vs._Xbox_Scarlett_Comparison_Chart)

DISCUSSION QUESTIONS

Included below are some suggested questions designed to generate discussion and/or to assist in evaluating student understanding, application, and mastery of the focal strategic management concepts. As Egleston (2013) points out, "Although a case may well present a vast amount of data, it is still finite and available" and "many commonly used cases have been compromised." Bearing in mind these considerations, instructors may also wish to consider developing unique in-depth "interactive, progressive case study" assignments focused on such activities as reenacting Microsoft's Xbox One reveal event with students' attempting to justify and better communicate Microsoft's original intended strategy; developing and focus testing a marketing plan for Microsoft's next Xbox console; or formulating and presenting a business plan for a startup firm intent on entering the videogame industry, with students' roleplaying potential investors.

- 1a. Identify the deliberate elements of Microsoft's strategy.
- 1b. Identify the emergent elements of Microsoft's strategy.
- 1c. Identify the abandoned elements of Microsoft's strategy.
- 1d. Do you agree with all of Microsoft's strategic revisions? Why or why not?

- 2a. What do you perceive to be Microsoft's strategic mistakes?

- 2b. What do you perceive to be Microsoft's strategic successes?
3. What role, if any, do you think groupthink played in Microsoft's initial policy decisions? How could groupthink have been mitigated in this scenario?
4. Why do you think Microsoft altered its strategy? On what key factor do you believe the company primarily based its decision to enact a strategic pivot?
- 5a. Under what circumstances should a company enact a strategic pivot? Support your response with a real-world example. Analyze your selected example using the formula $D + E - A = R$.
- 5b. Under what circumstances should a company avoid enacting a strategic pivot? Support your response with a real-world example.
6. What impact did Microsoft's policy reversals have on the Xbox One's market performance? Did the firm's initial stance damage the company or the brand? If yes, how so? Did the events that transpired help the company or the brand in any way? If yes, how so?
7. What do you believe would have happened had Microsoft launched the Xbox One with all of its initial plans intact?
8. Do you believe that Microsoft or another firm should revisit the approach that Microsoft originally planned to adopt? Could such a plan be feasible in the future? Why or why not?
- 9a. What lessons did you learn from the situation?
- 9b. What lessons do you believe Microsoft learned from the situation?
- 9c. What lessons do you believe Microsoft should have learned from the situation?
10. What learned principles do you believe Microsoft should apply when launching its next console? How can the company avoid repeating past mistakes? List at least five (5) strategies that you would recommend Microsoft adopt for the next generation of Xbox.

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Teaching Mixed Strategy Equilibrium Through a Classroom Experiment

Jung S. You, California State University-East Bay, CA, USA

ABSTRACT

A mixed strategy, a strategy of unpredictable actions, is commonly used in business, politics, and sports. Teaching mixed strategies, however, poses a pedagogical challenge as the game theory involves with calculating probabilities and random actions. We design a simple experiment in which students play a zero-sum game in multiple iterations and possibly figure out the optimal mixed strategy (equilibrium) through the game. Our results confirm that students can arrive at the idea of mixed strategy equilibrium through an interactive experiment without learning through a lecture.

Keywords: zero-sum game, strategy, randomness, interactive learning, experiment

INTRODUCTION

A mixed strategy is a strategy in which a player randomly takes actions from a set of available actions, based on a set of calculated probabilities (Pindyck and Rubinfeld, 2005). Using a mixed strategy, the player would benefit from being unpredictable; thus, the other players cannot predict which action is going to be played (McCain, 2004; Bernheim and Whinston, 2008). Professional sports players often use mixed strategies in soccer, tennis, baseball, and football, all within which there is a winner and a loser (Chiappori et al., 2002; Walker and Wooders, 2001). The application of mixed strategies extends to dealing with terrorism, tax evasion, playing poker, beating the stock market, and winning a new product market against competitors.

Our question for this paper started from observation and feedback that mixed strategies are difficult to teach and understand. First, the difficulty of teaching and understanding mixed strategies comes from the misunderstanding of a mixed strategy itself. A strategy in a game is a plan of actions throughout the game; thus, randomness in a mixed strategy is imposed on actions. Finding a mixed strategy equilibrium means that a player calculates the probabilities of taking actions for an upcoming game, and those actions will be displayed according to the probabilities in the game. Second, students often do not understand how to take random actions according to chosen probabilities. For example, people are known to have difficulty generating random numbers.

In this paper, we introduce a classroom experiment in which pairs of students play a zero-sum game called “matching pennies.” A zero-sum game always has a winner and loser, and computing the probability of taking each action is easier than for non-zero-sum games. We hope our experiment provided students with an interactive and deep learning environment in which they did not need to memorize definitions and methods, but instead their intuitive ideas led to productive conversations to identify a solution. We surmise that finding mixed strategy equilibrium in a zero-sum game becomes intuitive to students when they play the game while interacting with other students. Using data generated from the experiment, we tested whether students implemented a mixed strategy as their best plan to win the game. Our test results confirm our conjecture.

CLASSROOM EXPERIMENT

The “matching pennies” game involves two players. One player in each pair is referred to as Player 1 and the other as Player 2. Each player holds a penny and displays either heads (H) or tails (T) simultaneously in each round. Player 1 gains one point and Player 2 loses one point if the coins show the same side, and Player 1 loses one point and Player 2 gains one point if the coins show different sides, in each round. Table 1 shows the bimatrix form of the game where the left number in each cell is the payoff of Player 1. Since each player wins 1 or loses 1 depending on the opponent for the same side, the best strategy in theory is to play a mixed strategy in which each player chooses H or T with equal chance, that is, unbiased coin toss.

In our classroom experiment, we had 36 students divide into pairs and play 20 rounds of the game without seeing the bimatrix form. Students who participated in the experiment had not learned the concept of mixed strategies. On the instructional handout, students had to write their strategies to win the game, actions, and payoffs. To incentivize the

students to play the game seriously, we announced that each student’s cumulative payoffs after 20 rounds would be proportionally converted into participation credits that they needed to collect for their final grades.

Table 1: Matching Pennies

		Player 2	
		H	T
Player 1	H	1, -1	-1, 1
	T	-1, 1	1, -1

The following box provides the class handout for the game (The rounds after the first round are omitted due to repetition in Table 1):

Decide who is Player 1 or Player 2. Each of you shows a coin simultaneously. Player 1’s payoff is 1 (or -1) and Player 2’s is -1 (or +1), when the two coins show the same side (or different sides), respectively. Before playing this game, read the questionnaires below.

Question 1) For each round, write down your strategy in the “Your action” column to play Head (H) or Tail (T) before you and your opponent take simultaneous actions. At the end of each round, write down your payoff for that round and also compute your cumulative and average payoffs in Table 1.

Table 1	Your action (H or T)	Opponent’s action	Your payoff	Your cumulative payoff	Your average payoff
Round 1					

Question 2) What do you think the best strategy is for this game?

RESULTS

Our data consist of records of actions and payoffs written in Table 1 of the class handout that 36 students in 18 pairs submitted after a total of 20 rounds of the game. We cross-checked the actions and payoff calculations the students reported and did not find any mistakes in them. As we mentioned in the previous section, the mixed strategy equilibrium is for every player to choose heads and tails with an equal chance, i.e., 50%, in each round. To check whether this theoretically optimal strategy was implemented, we tested a hypothesis.

Hypothesis 1: The frequency of heads (H) and tails (T) is each 50%.

As each student played the game paired with the same opponent over 20 rounds, we applied the McNemar test used on paired nominal data. The player’s choice is choosing heads or tails, which we interpreted as a binary trait. In our data, one sample is a pair of Player 1 and Player 2 matched. Recall that we had 18 pairs, and each pair played the matching pennies game for 20 rounds. The number of observations can be expressed as $n = 20 \times 18 = 360$. To apply the McNemar test, we can set one treatment as “Player 1’s choice probability of H is 0.5” for each pair and another treatment as “Player 2’s choice probability of H is 0.5” for each pair. Then, the null hypothesis is translated into the following: “The joint probability of Player 1’s H and Player 2’s T is equal to the joint probability of Player 1’s T and Player 2’s H. The McNemar chi-square statistics is defined as $(b-c)^2/(b+c)$ with degrees of freedom=1, where b is the sample number of Player 1’s H and Player 2’s T, and c is the number of Player 1’s T and Player 2’s H. We found that $b=88$ and $c=91$ in our data; thus, the McNemar test statistic is 0.0503. The chi-square statistics of 0.02 with degrees of freedom 1 has p-value of 0.90 and the chi-square statistics of 0.06 has p-value of 0.80. Therefore, we cannot reject the null hypothesis.

The hypothesis test confirms that students implemented the mixed strategy equilibrium in the matching pennies game. For a simple zero-sum game, students could figure out the mixed strategy equilibrium intuitively without

learning the concept. This seems contrary to the answers of Question 2 from the handout. Only 2 students out of 36 participants wrote that their strategy is to toss coin randomly. Others wrote they tried to find any patterns in the opponents. Such an answer might imply that students tried to hide their own patterns while looking for patterns in their opponents' action; that is, they tried to be unpredictable. If that is the case, performing random actions with equal chance in the 'matching pennies' game is quite simple, unlike generating multiple actions randomly.

CONCLUSION

Teaching any concept involving randomness or probability presents a pedagogical challenge (Vahey, Enyedy, and Gifford, 2000; Konold et al., 1993; Tversky and Kahnemann, 1982). Moreover, randomness is easier to disprove than to prove since for disproving randomness, it is sufficient to show one type of systematic trend (Wagenaar, 1970; Wagenaar, 1972). This applies to teaching mixed strategies and testing on mixed strategy equilibrium.

Our results imply that students arrived at the benefits of a mixed strategy through playing the zero-sum game. Once students learned the concept of mixed strategies that naturally arose throughout playing the game, they tended to reflect the experience and understood the idea of mixed strategy equilibrium.

In the future, we look forward to learning and developing an effective method to teach mixed strategies in non-zero-sum games through an interactive learning process. Non-zero-sum games are often more common than zero-sum games, but they require more sophisticated calculations of probabilities and devices to guide players in taking actions according to those probabilities.

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Jung You: I am an assistant professor in the department of Economics at California State University, East Bay. I am interested in the issues surrounding fair, efficient, and sustainable allocations of public goods; such as education, utilities, and infrastructure. My teaching practice includes game theory, public sector economics, microeconomic theory, and environmental economics in undergraduate and graduate levels. My research interests include: 1) sustainable resource allocation and pricing design within game theory models; 2) electricity and energy market analysis; and 3) the development of performance metrics applicable to education and business practices.

Why You Should Care: Using Relevance to Increase Student Motivation to Learn Material in a Required Core Course

Thomas J. Liesz, University of Nevada – Reno, USA

ABSTRACT

Faculty teaching required core courses – particularly courses that are quantitative in nature – often face a student audience that is largely uninterested, disengaged, and unmotivated to learn. If the students see little or no value in the material that makes up a given course, they will put forth little or no effort which makes for an uncomfortable and unrewarding class environment for the students and instructor alike. Taking the time to establish the usefulness and/or relevancy of the course topics to the students goes a long way in overcoming this situation.

Keywords: relevance, usefulness, managerial finance, personal finance

INTRODUCTION

“And why should I care about this topic?”, asked the young woman sitting in the first row of the lecture hall. The inquiry took me by surprise and I was unsure of how to answer her. My first thought was that she was just a troublemaker trying to make my job a bit more difficult. But then I thought, “What a great question!”. She wanted to know why she should spend the time and effort to pay attention to that day’s lesson. More specifically, she was looking for **relevance**.

In an educational context relevance is what, in the mind of the student learner, at that moment in time makes the content being presented worth learning. In today’s classrooms where faculty now compete with cell phones, laptop computers, and other electronic devices in addition to the age-old distractions of noise, talking, and gazing out the window it is particularly important to establish relevancy as a precursor to learning. “Relevance is the key that unlocks the door to learning”, Fred Ende (2011)

Kaakinen and Hyona (2005) found that if learners can be aided in determining what constitutes relevant to-be-learned information, they put forth more effort to learn. McCrudden, Schraw, and Kambe (2005) found that students shown the relevance of what they were about to learn did so more efficiently. Rossing and Long (1981) found a statistically positive correlation between perceived value and a desire for knowledge among adult learners.

Kember, Ho, and Hong (2008) conducted a study with students across nine different academic programs of study within three separate universities and identified eight principal facets that impacted motivation for students learning. The most prominent factor was “establishing relevance” of what was being taught. In particular three types of relevancy were noted: relevance to local issues, relevance to everyday applications, and relevance to current topics.

Edelson and Joseph (2004) developed a framework for learning that centered upon motivating students by gaining their interest through demonstrating the usefulness of the material. This was largely accomplished by linking learning objectives to activities that established the relevancy of material through “meaning and value” to the students personally and professionally.

THE CASE OF FIN 301: (PRINCIPLES OF MANAGERIAL FINANCE)

Virtually all four-year programs in business administration require students to take a three-credit course in corporate or managerial finance. The pre-requisites for this course are usually two semesters of economics, two semesters of accounting, at least one semester of statistics, and a math course that could be anything from college algebra to calculus. It is probably fair to say that most of the students do not count these courses among their favorites taken to date. Yet they are called upon to recall and apply a number of topics from each of these courses while in the finance course.

Quite frankly, many of the students who populate a typical intro finance course would not take it if they were not required to, see little or no reason why they need such a course, and do not hide their disdain for the course from their instructors. Thus, teaching a class full of largely unmotivated, uninterested students presents quite a challenge.

THE SOLUTION

On the very first day of class the students are told the story of the young woman student I encountered some years ago and presented with the concept of “Why Should You Care” slides that will be used for each new topic throughout the entire course. Indeed, the first such slide is introduced right at that point: Why You Should Care about taking a managerial finance course. The reasons given are:

- Finance is involved with managing money more effectively, which (usually) leads to profitability and success (both professionally and personally).
- Finance interacts with all other functional areas of a business.
- Every decision that is made in a business will eventually flow to and/or impact the firm’s “bottom line”.
- This bottom line is captured in the firm’s financial statements (which is why you need to study & understand Accounting).
- Managerial finance allows the numbers to make sense to us & we can thus use them to the advantage of the firm & its stakeholders.
- Many of the concepts and techniques used in managerial finance are applicable to personal finance, and understanding them will make us all better managers of our own finances throughout our lives.

The hope is that the students now have a personal connection to the course due to comprehending how the material that will be covered has relevance to them both professionally and personally. A similar set of Why You Should Care points of relevance has been developed for each topic covered in FIN 301. A few representative samples follow.

Review of Accounting

- Financial statements tell the story of a business in numbers.
- Recall that every business decision made is reflected in the financial statements.
- While not economic reality, it generally is the best info that we have regarding the financial health of a business.
- The manipulation of financial statement numbers helps us uncover both strengths & weaknesses.

Financial Planning

- Firms have to predict financing needs before the funding is actually needed.
- Understanding this process will help ensure that the firm does not become **illiquid**.
- Thinking about goals and establishing priorities helps to explore options and avoid surprises.
- These concepts work for personal finance as well, i.e. funding saving and investment goals (such as retirement) .

Time Value of Money

- This is one of the most important topics in personal and corporate finance – the Time Value of Money (TVM).
- TVM allows us to (among other things):
 - Calculate how much wealth you can accumulate by saving and investing money over time
 - Determine how much money you need to set aside now to reach a savings target in the future
 - Compare amounts of money that occur at different points in time
 - Calculate payments on consumer loans and other debt
- Understanding TVM can personally net you thousands of \$\$ over your lifetime!

Risk and Return

- There is risk any time we cannot be certain about the future outcome of any particular activity or event.
- Understanding the nature of the risk, and its potential ramifications, helps the decision maker act in an optimal way.
- Managing risk is becoming a more important – and necessary – skill in business as well as in life.

Capital Budgeting

- Achieving important financial objectives (growth and profitability) depends largely upon making correct capital budgeting (fixed asset acquisition or investment) decisions.
- These investments represent large expenditures of funds that are committed for lengthy periods of time.
- Just as in personal finance, the more something costs, the more time & effort you put into making an optimal decision.
- Once a “go” decision is made, it is both difficult and costly to reverse.

Cost of Capital

- The cost of capital is arguably the single most important piece of information a business needs to know when deciding whether to invest in assets or spend significant amounts of money.
- The return on an investment must exceed the cost of capital to create value for the firm, which leads to growth and profitability.
- The cost of capital is often used as a discount rate in capital budgeting decisions.
- Personal investing uses the same principle, i.e. returns from investments must exceed the cost of those investments for investors to create positive value in their portfolios.

EVIDENCE FROM THE CLASSROOM

At the end of each semester the FIN 301 students are asked to anonymously fill out a brief evaluation of the course in addition to the formal online student evaluations administered by the University. This form utilizes the classic “3-2-1 Feedback” technique. In particular, students are asked to list the three most important things they learned in the class, the two most interesting things they learned in the class, and one thing they still had a question about (including the question). Finally, they are asked about the impact, if any, the “Why You Should Care” slides had upon their learning.

For each of the past ten semesters a majority of the students have reported that the “Why You Should Care” slides had indeed motivated them to pay more attention in class and try to see how the material would be useful to them either professionally, personally, or both. A favorite comment from one student, “I had absolutely NO interest in taking FIN 301 and heard a lot of bad comments about it. But, I decided to give it a chance and saw how the stuff you were teaching had an immediate impact upon my personal finance life – thank you!”

CONCLUSION

Teaching required courses to students who may be largely disinterested and disengaged is a challenging task. Taking the time to demonstrate the relevance of the material to the students’ current personal and potential future professional lives may help overcome some of the reluctance on their part to take these courses seriously.

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Beyond The CPA: The Need to Map Your Accounting Department's Program to Various Professional Certifications

Letitia Meier Pleis, Metropolitan State University of Denver – Denver, Colorado, USA

ABSTRACT

As accounting faculty, one of our jobs is to help prepare students for their future careers. Involved with this is advising them on the correct classes to take in order to meet those career goals. Most accounting programs are designed to focus on the CPA (Certified Public Accountant) exam while not all students are looking to become public accountants and/or take the CPA exam. Additionally, other students are looking for more specific career goals than just public accounting and the CPA certification is only part of their overall plan. As accounting faculty, we need to be well versed in other certifications beyond the CPA and be able to help students plan out their courses in a manner that would server their needs best. The purpose of this paper is to provide information about the various certifications. This includes information on education requirements, testing requirements and experience requirements. The second purpose of this paper is to help accounting departments map their program against the body of knowledge requirements of the various certifications in order to help students plan out helpful courses. Finally, an example of mapping the requirements for four certifications against the course offerings of Metropolitan State University of Denver (MSU Denver) is presented.

Keywords: advising, accounting certifications, curriculum

INTRODUCTION

Experience with advising students and evidence from the AICPA (American Institute of CPAs) suggest that there is a gap between accounting graduates and those taking the CPA exam. In 2018, the number of new CPA exam candidates dropped to its lowest level in 10 years (AICPA, 2019). While the CPA certification is a very important designation it is not the goal of every accountant. For other accounting graduates the CPA certification is not their final goal and their career paths would be better served by multiple certifications. While surveys show that those with either a CPA or CMA (Certified Management Accountant) certification earn higher median salaries and total compensation than their noncertified counter parts, those with dual certifications had the highest salary and compensation amounts (Charles, 2019).

It is also important for accounting graduates to have an education beyond the CPA exam. According to the 2019 AICPA Trend report, there was an approximately 30% decline in hiring new accounting graduates by CPA firms. It appears that CPA firms are hiring individuals with different skill sets (AICPA, 2019). Despite this decline in hiring accountants at CPA firms, the Bureau of Labor Statistics (2019) projects a 10% growth in employment for accountants and auditors through 2026, which is faster than average for all occupations. There is a demand for accounting graduates, just not necessarily in CPA firms. In 2016, there was approximately 1.4 million employed as accountants and auditors, but only half are CPAs (Bureau of labor Statistics, 2019; NASBA, 2019).

While many accounting programs across the country are designed to match the body of knowledge requirements and/or the specific educational requirements for the CPA exam there is a lack in providing proper information for students looking for alternative certifications (either instead of CPA or in addition to CPA). In order to better serve accounting students; those that advise them need to be familiar with the various professional certifications available and the requirements of those certifications. The first objective of this project is to provide guidance on important certifications beyond the CPA.

The second objective of this project is analyze the exam content area of various professional bodies and to map this to various courses offered at MSU Denver. While preparing students to sit for professional certifications is only one aspect of the mission of the department, providing guidance to students on the relevant courses to help them pass the exam of their choice helps reach our goal of preparing students for their future careers. Further, mapping the body of knowledge objectives of the various professional certifications will help identify gaps in the accounting program and may lead to reexamining strategic planning.

Professional Certifications and Organizations

There are several available specializations available within the accounting profession. While it is nearly impossible to be familiar with every single one of them, it is important that advisors are aware that there are options other than the CPA that a student might find beneficial. A broader understanding of the primary ones will help an advisor guide a student in the appropriate course work needed.

METHODOLOGY AND RESULTS

Exam Content and Mapping to MSU Denver Courses

Table 1 lists six professional certifications that an accounting major may be interested in instead of or in addition to the CPA. The table includes the issuing body, the professional designation, its full name, and the website of the professional body. In addition, information on the licensure requirements regarding education, experience and whether an examination is to be taken is also given. In this project, three certifications were further analyzed (CIA, CFE, and CMA) and mapped to the courses available at MSU Denver. These three were chosen because of the availability of exam information, the number of individuals pursuing these certifications, and the global reach the certifications have.

Table 1: Professional Certifications

Issuing body	Professional Designation	Full Name	Website (www)	Certification Requirements		
				Education	Exam	Experience
AICPA	CGMA	Chartered Global Management Accountant	cgma.org	Not specifically stated	Yes	Three years
ISACA	CISA	Certified Information System Auditor	isaca.org	High school	Yes	Five years
IIA	CIA	Certified Internal Auditor	theiia.org	Bachelor's Degree	Yes	Two years
ACFE	CFE	Certified Fraud Examiner	acfe.com	Bachelor's Degree	Yes	Two years
AGA	CGFM	Certified Government Financial Manager	agacgfm.org	Bachelor's Degree	Yes	Two years
IMA	CMA	Certified Management Accountant	imanet.org	Bachelor's Degree	Yes	Two years

The Certified Internal Auditor certification is primarily for individuals pursuing a career in internal audit. Internal audit is a growing accounting field. The Institute of Internal Auditors has over 200,000 members and over 161,000 CIAs worldwide (IIA, 2019). The CIA exam pass rate over the last few years has been around 40%, which is lower than the CPA exam (Boyd, 2019). This would indicate a student with the right educational foundation might perform better than his/her peers.

The Certified Management Accountant certification is primarily for individuals pursuing a career in management accounting and/or financial management fields. The CMA is a globally recognized certification that added 11,530 new CMAs for the fiscal year ended June 30, 2019 and an almost 12% year-over-year increase in new CMA candidates in the U.S. In the almost 50 years of the program, 75,000 professionals have earned the CMA certification (IMA, 2019). While the CMA pass rates for the last few years have been around 58% for takes from US schools, those that have increased focus on the CMA exam have seen an overall pass rate of 79% or more (Sergeant, Charles, Krumwiede, 2019)

The Certified Fraud Examiner certification is pursued by individuals seeking out careers related to the detection or deterrence of fraud. There are many different career options for CFEs. This global anti-fraud organization has over 85,000 members and CFEs earn 31% more than their non-certified counterparts (ACFE, 2017).

For each certification, a list of topics the exam covered was obtained from the websites of the professional bodies. These topics were then compared to the topics listed in the regular course syllabus of the various related courses at MSU Denver. Course descriptions are available at www.msudenver.edu and samples of syllabi are available upon request.

Results

MSU Denver offers an undergraduate degree in accounting as well as a Master's of Professional Accountancy. The undergraduate program is similar to most traditional undergraduate accounting programs while the graduate program does have some additional unique opportunities. For all certifications, it is difficult to gain all the knowledge necessary for the exams from accounting undergraduate courses alone, but with early guidance, a student can build a good foundation by taking the appropriate related undergraduate courses. For instance, a student wanting to pursue the CMA would benefit from an additional advanced finance class that is not part of the normal accounting curriculum.

The exercise also helped identify areas lacking in the current curriculum. One of the areas that further development is necessary is technology and analytics. Not only is this an area that many accounting firms are looking at, it is also now 15% of Part 1 of the CMA exam (ICMA, 2020). It is also a good practice to keep up to date on the exam content. Both the CIA and CMA exams have made recent content changes. As a result, there are topics that are more in depth and changes in material covered in certain classes would benefit from updating.

Table 2: CIA Exam Content

<i>Content Area</i>	<i>Course</i>
Essential of Internal Audit Section	
Foundation of internal auditing	Internal Auditing
Independence and objectivity	Auditing, Internal Auditing
Proficiency and due professional care	Auditing, Internal Auditing
Quality assurance and improvement programs	Auditing, Internal Auditing
Governance, risk management, and control	Auditing, Internal Auditing, Strategic Cost Management (GR)
Fraud Risk	Fraud Awareness (GR)
Practice of Internal Audit Section	
Managing the internal audit activity	Internal Auditing, Internal Audit Project (GR)
Planning the engagement	Internal Auditing, Internal Audit Project (GR)
Performing the engagement	Internal Auditing, Internal Audit Project (GR)
Communicating engagement results and monitoring progress	Internal Auditing, Internal Audit Project (GR)
Business Knowledge for Internal Auditing Section	
Business acumen	Undergraduate Business Core
Information Security	Security Essentials
Information technology	Computer Information Systems, Accounting Information Systems
Financial Management	Managerial Finance

Table 3: CMA Exam Content

<i>Content Area</i>	<i>Course</i>
Part 1: Financial Planning, Performance, and Analytics	
Financial statements	Intermediate I & II
Recognition, measurement, valuation, and disclosure	Intermediate I & II
Strategic Planning	Strategic Cost Management (GR)
Budgeting Concepts	Cost Accounting
Forecasting Techniques	Cost Accounting, Strategic Cost Management (GR), Business Analytics II
Budgeting methodologies	Cost Accounting
Annual profit plan and supporting schedules	Cost Accounting
Top-level planning and analysis	Cost Accounting
Cost and variance measures	Cost Accounting
Responsibility centers and reporting segments	Strategic Cost Management (GR)
Performance measures	Strategic Cost Management (GR)
Measurement concepts	Cost Accounting
Costing Systems	Cost Accounting, Strategic Cost Management (GR)
Overhead cost	Cost Accounting
Supply-chain management	Strategic Cost Management (GR), Organizational Management, Operations Management
Business Process Improvement	Strategic Cost Management (GR)
Governance, Risk and compliance	Auditing, Internal Auditing, Strategic Cost Management (GR)
System controls and security measures	Accounting Information Systems, Seminar in Accounting Information Systems (GR)
Information systems	Accounting Information Systems, Foundations of Information Systems
Data governance	Accounting Information Systems, Seminar in Accounting Information Systems (GR)
Technology-enabled finance transformation	Accounting Information Systems, Seminar in Accounting Information Systems (GR)
Data analytics	Data Analysis for Fraud and Litigation (GR)
Part 2: Strategic Financial Management	
Basic financial statement analysis	Intermediate I
Financial ratios	Intermediate I
Profitability analysis	Strategic Cost Management (GR)
Special Issues (Financial Statement Analysis)	Mergers and Acquisitions, International Accounting, Advanced Accounting
Risk and return	Managerial Finance, Intermediate Finance
Log-term financial management	Managerial Finance, Intermediate Finance
Raising Capital	Managerial Finance, Intermediate Finance
Working capital management	Managerial Finance, Intermediate Finance
Corporate restructuring	Mergers and Acquisitions
International finance	Managerial Finance, Intermediate Finance
Cost/volume/profit analysis	Cost Accounting
Marginal analysis	Cost Accounting

Pricing	Cost Accounting, Strategic Cost Management (GR)
Enterprise risk	Strategic Cost Management (GR)
Capital Budgeting process	Strategic Cost Management (GR)
Capital investment analysis methods	Strategic Cost Management (GR)
Business Ethics	Accounting Ethics
Ethical considerations for management accounting and financial management professionals	Accounting Ethics
Ethical considerations for the organization	Accounting Ethics

Table 4: CFE Exam Content

<i>Content Area</i>	<i>Course</i>
Fraud Prevention and Deterrence Section	
Crime causation	Fraud Awareness (GR)
White-collar crime	Fraud Awareness (GR), Occupational Fraud (GR)
Occupational fraud	Fraud Awareness (GR), Occupational Fraud (GR)
Fraud prevention	Fraud Awareness (GR), Occupational Fraud (GR)
Fraud risk assessment	Fraud Awareness (GR), Occupational Fraud (GR)
ACFE Code of Professional Ethic	Accounting Ethics, Fraud Awareness (GR)
Financial Transactions and Fraud Schemes	
Basic accounting and auditing theory	Intermediate I, Auditing
Fraud schemes	Fraud Awareness (GR)
Internal controls to deter fraud	Occupational Fraud (GR)
Other auditing and accounting matters	Contemporary Auditing Issues (GR), Accounting Information Systems, Internal Auditing
Investigation	
Interviewing	Fraud Awareness (GR)
Taking statements	Fraud Awareness (GR)
Obtaining information from public records	Fraud Awareness (GR)
Tracing illicit transactions	Data Analysis for Fraud and Litigation (GR)
Evaluating deception	Fraud Awareness (GR)
Report writing	Fraud Awareness (GR)
Law	
Criminal and civil law	Legal Elements of Fraud (GR), Legal Environment of Business
Rules of evidence	Legal Elements of Fraud (GR)
Rights of the accused and accuser	Legal Elements of Fraud (GR)
Expert witness matters	Legal Elements of Fraud (GR)

SUMMARY

Not every accounting student will obtain a CPA and those that do might decide to take the extra step and add another certification. It is important that a student is provided the right guidance in course selection to be able to meet his/her future goals. By taking the time to map exam content to course topics an advisor can do a better job helping a student decide what classes to take. Further, as the objectives of the accounting program change the department can better understand weaknesses and strengths of the program. With many accounting programs looking to distinguish themselves from others, finding ways to emphasis non-CPA certification preparation opportunities might be very beneficial. Various professional bodies are looking to partner with university accounting

programs to designate the program as appropriate preparation for their certification. Both the IMA and the IIA have university partnership programs. Completing a similar mapping process as done here will help a program decide if they are able to apply for these designations.

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Designing and Implementing an Interdisciplinary Course with an Experiential Learning Project

Debra Arvanites, Villanova University - Villanova, PA, USA

James P. Borden, Villanova University - Villanova, PA, USA

ABSTRACT

Experiential and interdisciplinary approaches to teaching and learning have been shown to be effective methods in helping students to master a wide variety of concepts. Active learning enables students to transform experiences into knowledge while cross-functional methods lead to more comprehensive and integrated knowledge acquisition. This paper provides a detailed look at one school's development and execution of a team-taught, cross-functional (marketing and management) course that prominently features a team-based live case in collaboration with a variety of local business partners. The paper provides a comprehensive roadmap on how other schools may create a similar course, from the initial planning of the course, to its execution, to student deliverables. The paper also addresses potential issues that may arise when teaching such a course.

Keywords: interdisciplinary teaching, experiential learning, innovation, industry partnerships, AACSB

INTRODUCTION

Previous Research on Interdisciplinary Teaching and Experiential Learning

The AACSB, in its reports and its standards, has been a strong advocate for interdisciplinary teaching and experiential education. One report (AACSB, 2010) discusses the importance of integrated thinking and an integrated curriculum in supporting innovation, while a more recent report (AACSB, 2016) highlights the many opportunities for students to engage with off-campus parties as part of their learning. This type of engagement is consistent with the idea of cultivating a position at the intersection of academe and practice. In addition to these reports, AACSB standards have also specifically addressed the importance of active student engagement in learning (AACSB, 2013).

Experiential learning, also known as learning by doing or active learning, suggests that people learn best by acquiring new experiences and transforming those experiences into knowledge (Kayes, 2002). Research documents the benefits of active, hands-on learning, compared to more traditional forms of learning such as lectures, offering students the opportunity to directly put their knowledge to use (Armstrong & Mahmud, 2008; Dees & Hall, 2012; Devasagayam, Johns-Masten, & McCollum, 2012; Freeman, et al, 2014; Lester & Williams, 2010; Rosen & Rawski, 2011; Templeton, Updyke, & Bennett, 2012).

Employers are also supportive of an experientially-driven approach to learning. A survey by the Association of American Colleges and Universities indicated that 80% of employers would like schools to provide more experiential learning opportunities that place emphasis on the ability of students to apply their knowledge to real-world settings (Hart, 2008). Green & Farazmand (2012) note that the demand for college graduates with practical experience continues to grow as employers scale back their training programs.

While business schools have been criticized for not employing enough of these types of learning experiences (Templeton et al., 2012), there are some examples of successfully doing so

Reising and Dale (2017) discuss their development of an *integrated experience*. The integrated experience (IE) is a hands-on, experiential learning opportunity that has become the signature program of their college of business for implementing its mission of offering students real-world learning experiences. The IE is a 12-credit program that requires cohorts of students to concurrently take part in three core courses (Principles of Management, Principles of Marketing, Business Finance) and apply concepts they are learning in those core courses to a fourth course called the IE Practicum. In the IE Practicum, students develop and operate a business as a class. The IE provides evidence of a curriculum that is continuously improving in terms of innovation and engagement.

MIT's Sloan School of Management (2019) has implemented what it refers to as action learning, which emphasizes learning through doing. Students learn theory in the classroom, then apply what they've learned in the field, helping

organizations solve business challenges while at the same time solidifying their own knowledge. The action learning approach has five objectives: 1) learning in a complex real-world environment; 2) structuring and solving problems, developing project management skills; 3) collaborating effectively in teams; 4) reflecting for personal and professional growth; 5) learning to lead.

In addition to experiential learning, much has been written about the value of interdisciplinary approaches to learning. Interdisciplinary learning is the synthesis of two or more disciplinary perspectives (Klein, 1990); such approaches facilitate higher-order thinking (e.g., analyzing, applying, generalizing) by enabling students to engage in deep learning and create integrated knowledge that is more comprehensive than knowledge obtained from discipline-specific learning (Ivanitskaya, Clark, Montgomery, and Primeau, 2002; Klein, 1990).

Kleinberg (2008) notes that a problem (or project)-based instruction, which brings more than one discipline together to address a specific issue or solve real-world problems, is one of the effective interdisciplinary instruction methods. Instead of relying entirely on lectures and class discussions, problem-based learning enables students to learn through the problem-solving process itself and also provides students with an active learning environment (Carpenter and Fairhurst, 2005).

Pearce (1998) and Wright, Cushman, and Nicholson (2002) note that educational innovation should be based on partnerships between educators and industry, enabling students to work on real-world problems. Working on such problems offers students the opportunity to learn how to manage the difficulties associated with teamwork (Kimmons and Spruiell, 2005; Russ and Dickinson, 1999; Salemi, 2002). Powers, et al (1997) highlight the difficulties associated with real-world, project-based courses: managing multiple relationships, such as between teacher/client, teacher/student, and client/student; less control over what happens during the semester, since many of the variables affecting the class are largely out of the instructor's control; increased anxiety among the students because of the unfamiliar and ambiguous nature; getting students to reflect on their experiences; and determining the appropriate tie to give students necessary information. Gilbreath, et al (2001) notes that using businesspeople as members of advisory boards in a project-based course complicates the instructor's role and creates the possibility that the board members beliefs may differ with the instructors. However, such problems are offset by the advantages offered when using such advisers, such as the ability of the board members to share their experiences, motivate students to perform at higher levels, and add realism to the course.

Attempts at such interdisciplinary learning can be seen in integrative curricular development, new interdisciplinary courses, team-teaching, collaborative learning, and problem-based learning. Lim, et al (2012) describe an industry-engaged interdisciplinary project that was developed and implemented at a University which involved five courses, nine faculty members, approximately 100 undergraduate students, and a multichannel retailer as an industry partner. The project was found to be an effective way to enhance student learning, providing students with real-world experience and the opportunity to develop a set of skills such as communication skills, leadership skills, and critical, integrative, and adaptive thinking skills.

It is clear that there is value in an interdisciplinary approach to learning. When coupled with a real-world experiential project, such an approach can enhance a student's subject matter knowledge while also offering a glimpse into how companies approach business problems.

This paper will describe the design and implementation of an interdisciplinary course where students are engaged in solving a real-world problem faced by a business partner. Such a course features all the benefits noted above of a multidisciplinary approach to learning combined with a real-world, experiential component.

DESIGNING AND IMPLEMENTING THE COMPETITIVE EFFECTIVENESS COURSE

In 2006, Villanova's School of Business (VSB) established a task force to identify approaches to enhance the effectiveness of the faculty structure and innovativeness of the school's curriculum. The following year, after benchmarking 40 schools, and among other recommendations, the task force proposed that a cross-functional integrated core curriculum (ICORE) be established. The common thread of the proposed business core curriculum was a multi-disciplinary integration, which would begin in freshman year and continue throughout the senior year.

The perceived benefits included positioning VSB's undergraduate program as a leader in providing innovative and applied solutions to business and social problems. Consequently, the students of VSB would be differentiated in the marketplace due to their interdisciplinary approach which would prepare them to be creative and innovative problem solvers, who could adapt quickly to changing business solutions.

Competitive Effectiveness (CE) is a six-credit course that was created as a result of the task force's work. CE was launched in the fall semester of 2009. CE is a blending of Principles of Management and Principles of Marketing. The model is that the course is taught by two faculty, one from Management and one from Marketing. The two faculty are both in the classroom for the entire 110-minute class period. The class size for the sophomore level course is approximately 50 and the class is one semester in length.

A key feature and differentiating factor for CE has been a partnership with a live client (vs. case study). Students are presented with a current marketing challenge from a client partner and then work in teams of eight to ten. Their task is to respond with a marketing plan to meet a client's challenge. Appendix A provides relevant excerpts from the course syllabus. Please contact the authors for a complete syllabus.

Acquiring clients has happened through requests from clients to participate, faculty connections, and alumni connections. See Appendix B for a list of clients.

Operational Execution

Professors creating CE teams work to balance gender, class year (business minors may be Junior or Senior level students), and major when known. Students at Villanova choose their major early in the second semester, sophomore year, which means that the intended major for sophomores in CE is not known when professors form teams. Team size varies depending on enrollment and is generally between eight and eleven students per team with five teams in each section of CE. The five teams compete to "win" the strongest response to the client challenge via a presentation to the client at the end of the semester.

Client organizations commit to a significant amount of time spent with student teams. Depending on the client, two to six employees of the client organization (client coaches) come to Villanova five times during the semester for two-hours per section. The first visit is to launch the marketing challenge. The client organization gives an overview of their organization before introducing the challenge. Students are then given time to discuss the challenge in their teams and develop initial questions to clarify the marketing challenge. All students are in the classroom to hear the challenge and ask questions.

Approximately one month after the initial launch, the client coaches return to answer questions that arise as student teams research their challenge and begin to prepare a response to the client's challenge. The student teams meet one at a time, privately with the client coaches for this meeting and a second that happens approximately one month later. Private meetings are essential to preserve the ideas of each team and the spirit of competition for Competitive Effectiveness.

Less than one month after the second one on one coaching sessions, the coaches return to hear and judge final presentations. Others from the client organization, often executives with an interest in the marketing challenge, may join the coaches to judge final presentations and challenge student teams with questions about the plan. Client coaches then return the day following presentations to give feedback to each team individually and to announce the winning team.

Organization of Student Teams

In their teams, students organize themselves as an organization. They are provided with a personality inventory to use in addition to their own resumes as they determine leadership and team roles. Typical roles for a student team are Project Manager (PM); Human Resource Manager (HRM), Research Director, Management Deliverables Director, Marketing Deliverables Director, Editing Director. While Directors are named, students understand that some jobs – researching, writing and proofreading – often require that all team members participate.

The first written assignment for each team is to develop a team charter to guide the operations of the team. Each team is given inspiration for options to include in the team charter and then has the freedom to choose what the team believes to be most important to producing effective and efficient work on each management and marketing deliverables. Management deliverables are focused on understanding and improving team behavior so that the team

can produce a high quality marketing plan for clients. Components of the team charter often include: a team mission, statement of objectives for the semester, role descriptions and assignment of team members to roles with support for assigning individuals to roles, a decision-making process which includes voting rules (majority vs. super majority), norms for team meetings, communication processes to be used and a process for conflict resolution. All team members sign the team charter.

End of Semester Presentation

Student team marketing plan presentations are limited to twenty minutes. Ten minutes are for the delivery of the plan and ten minutes are Q&A. During the presentation, students are required to define a target market and communication plan to reach that target market. All recommendations must be backed by secondary and primary research and must ultimately show how a budget has been allocated and project an ROI for the plan. Primary research is required and students understand that given the budget limitations for their research, the results of that primary research are of limited usefulness. At least 15 teams of students collect primary research via Qualtrics and Amazon Mechanical Turk each semester. The college funds 100 responses per team. It is important, however, for the students to be exposed to a real primary research experience. This presentation is judged by the client team.

Marketing Plan Final Paper

The presentation made to the client team is developed from a written marketing plan. The written plan is graded by the marketing faculty member. The requirements of the marketing plan are fully explained in Appendix C.

Lessons Learned

CE is challenging to both faculty teaching the course and students receiving the course. We have learned that:

1. The cost of the course could be a concern. While each of the two faculty members contribute three-credits of content for each section of CE, because each faculty member is in the classroom for six-credits work of time, each faculty member receives six-credits of teaching load requirements.
2. Pairing faculty needs to be considered and done with the acceptance of each pairing. Teaching styles among faculty vary and pairing faculty whose styles are too different could result in lower course evaluations for the less preferred teaching style faculty member. Ultimately, given the administrative ramifications of lower teaching evaluations, faculty members might prefer to not participate with the team-taught course.
3. As new/different faculty pairings are assigned, it takes time for the new pairing to reach true integration. It takes at least two semesters working together to build the chemistry that allows for true integration of management and marketing concepts. Keeping teaching teams consistent over time helps to integrate teaching styles.
4. Evaluation parity needs recognition. In team-taught classes, it has been our experience that faculty receive lower evaluations for their team-taught class than they do for individually taught classes. This is a phenomenon that needs recognition in evaluating faculty for salary increases.
5. To be successful, faculty across sections need to collaborate and coordinate the topics covered and the degree to which management and marketing topics are integrated. Having all course materials common across all sections ensures that the course is viewed as equal across sections taught by varying faculty members.
6. It is important to have faculty coordinators whose job it is to ensure consistency across sections is a benefit. These coordinators bring all faculty teaching CE together before and after each semester to address concerns that need to be addressed and opportunities to change CE in ways that add value to the course over time.
7. The presence of an integration mechanism, for CE, a live marketing challenge is imperative. From benchmarking integrated courses at other universities, we know that a written business case can be an integrating mechanism. However, we believe that the interaction with professionals from a live organization provides deeper learning experience.
8. A differentiating advantage of CE is that client organizations have an opportunity to identify students for potential internships and employment positions; and, students have an opportunity to fast track into internship and employment positions.
9. Clients should be secured one year in advance of beginning the integrated course. Retaining clients and recruiting new clients over time is the responsibility of the faculty coordinators for CE. The value in retaining clients is that faculty members can coach students regarding client expectations and continue to add value to the client over time. The value in recruiting new clients is that the drain on client coaches time can cause client fatigue leading them to take a break from CE participation.

10. From the student perspective, CE is challenging and can produce anxiety. While there are a management faculty member and a marketing faculty member delivering material, the course is a single course. Students with more interest in one topic area than the other might feel that they would have been better off with two three-credit course grades than one six-credit course grade. Clearly, a six-credit course can have a detrimental effect on student GPAs. See Appendix D for student comments regarding CE.
11. Moving from two independent courses to one integrated course takes time. Recognizing that change is difficult for many, the way that an integrated course is initially presented must be positive and there needs to be an effort to clearly explain to students the benefits they can expect from the change. Three to four years after the change, the course is viewed as a part of the curriculum vs a change to the curriculum.

CONCLUSION

The AACSB has been a strong advocate for interdisciplinary teaching and experiential education.

This paper provided a detailed look at a team-taught, sophomore-year course, which features a comprehensive real-world team project that is aligned with such goals of the AACSB. The course, known as Competitive Effectiveness, is a six-credit integration of Principles of Management and Principles of Marketing. The project entails partnerships with a variety of local businesses to help those firms analyze a marketing challenge they are currently facing.

This paper provides the detail needed to guide other faculty and administrators in planning and executing such a course. Such information includes background on the design of the course, the student deliverables, student, faculty, and administrative challenges with such a course, and best practices.

The course has been well-received by students, faculty, administrators, recruiters, and our business partners as an effective approach for allowing students to apply their knowledge in a realistic business setting. In addition, the course offers the student the opportunity to further develop their oral and written communication skills.

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Appendix A – Relevant Excerpts from Syllabus for Competitive Effectiveness (CE)

Course Description & Format:

Modern organizations rely heavily on self-managed teams. To better prepare for this kind of work post-graduation, students are organized into project teams. Teams are assigned a marketing challenge by a client. The client is an actual organization working on the issue at the heart of the assignment.

This course is taught in an integrated and collaborative format by a team of two VSB faculty members representing the marketing and management disciplines. Both members of the faculty will be in the classroom and engaged in the discussions.

This class requires that students organize themselves as a project team, once they are given team assignments. Teams establish a charter, roles, operating norms, goals, controls, and procedures that enable them to function effectively and efficiently. Students are expected to utilize the team management and marketing principles learned through this course, and their learning from other courses, as they develop and execute their plans.

Much of the project is undefined; therefore, team members need to work together to figure out exactly how to achieve their objectives. Developing innovative solutions and managing uncertainty are important; this course provides the opportunity to develop those abilities. The professors for the course serve as coaches and are available to meet with students, in or outside of the classroom, to provide guidance. Formal team coaching/check-in sessions during class will be held multiple times by the professors.

Course Outcomes:

Student teams, using the knowledge and skills developed through this course, prior, and concurrent courses, are expected to:

- Develop and demonstrate effective communication, feedback, planning, problem solving, and decision-making skills.
- Create and present a viable plan that addresses the client's marketing challenge.

Students learn how the marketing and management functions of organizations interact and how the integration of management and marketing practices can enhance competitive effectiveness.

Students develop insights regarding their individual talents and interests. They have multiple opportunities to provide and receive peer feedback on performance, motivation, teamwork, and contribution to the team. The feedback helps students to identify behaviors that are effective and behaviors that need improvement. Consistent contribution to the success of the team is expected of each person and is an important factor in the course grade.

Course Objectives:

The objectives of this course are to develop:

- a broader appreciation of the interdisciplinary nature of business, particularly with respect to the connections between marketing and management
- an understanding of basic management and marketing principles, theories, and techniques
- teamwork skills used in self-managed work teams, focused on effectiveness, efficiency, and cohesion

- project management skills as team members organize, plan, and work together to achieve goals
- critical thinking and creative problem solving to develop solutions for the marketing challenge
- oral and written skills through interactions with within teams and with the CE faculty, representatives from the client, and other individuals in the Villanova community and beyond in an effort to produce a written and oral presentation of their marketing plan utilizing appropriate software
- research skills, through the use of Falvey Library (online) resources

Course Deliverables:

Your grade for this course will be based on the scores of three exams, four management assignments, three marketing plan assignments, and your overall marketing plan and client presentation.

Additionally, as part of your introduction to the fields of Management and Marketing, you will acquire first-hand experience in research by completing the CE research requirement; this involves participating in two research studies or by reading published scientific papers and writing scholarly summaries of these papers.

Student Evaluation Process:

Teamhelper is an online feedback tool that you will use during the semester. Teamhelper submissions are helpful for your team and are required at three points in the semester. Please see more information below related to the grading implications of Teamhelper feedback.

Important Team Grading Considerations (i.e., management and marketing assignments, marketing plan, and client presentation):

1. Team based grades are earned by all contributing team members based on the value they add to project team's activities throughout the semester.
2. Peer feedback and observation by the professors that indicates an individual's participation and/or contribution were inconsistent and unsatisfactory will result in a significant reduction in that individual's grade.
3. For every team assignment, each member is responsible for all content submitted. We expect that all team members contributed to and "signed off" on all submitted assignments. In the case of plagiarized content, poorly researched, and/or poorly presented information, every person on the team will be held equally responsible.
4. Late assignments will drop one grade level for each day the assignment is late. Assignments not turned in by the beginning of class on the due date drop one grade level (for example from a B to a B-), then one more grade level by the class time (even if class is not held) on the following day, and so on.

Important Individual Grading Considerations:

1. Teamhelper assignment completion: Teamhelper submissions are helpful for your team and are required throughout the semester. Failure by an individual student to complete a Teamhelper assignment will result in a 5% reduction in the team components of their grade (i.e., management & marketing papers, marketing plan, and client presentation) for that individual. This affects the grades for the individual (not the team) for each incomplete Team Helper assignment.

Appendix B - List of Clients

3M

American Eagle

Aramark

Campbell Soup Company

Comcast

Equifax

Ford Motor Company

Habitat for Humanity – Restore

Hershey Entertainment and Resorts

Hope Paige (medical ID)

IKEA

J&J – McNeil

Keystone Gardens

New Balance Shoes

Patrician Society of Norristown
Philadelphia Media Network – IMG
Reckitt Benkeiser
Red Cross
Rita’s Water Ice
Suzanna Foo
Tasty Baking Company
Vanguard

Appendix C: Marketing Plan Guidelines

Marketing Plan Guidelines

Organization Guidelines:

- Please target 30-40 pages. Fifty pages is the absolute maximum. This excludes blank pages, table of contents and covers, but includes citations. Remember that clear and concise writing is more important than the volume of pages. You can include supplemental information (e.g., your full survey responses) in appendices, which you need to refer to in the main document. These do not count in your page count.
- Two hard copies must be turned in.
- Use Arial or Calibri 12 point font, print in single space, with a blank line between paragraphs. Print on both sides of the paper. Left justify paragraphs. The hard copies of your report should be spiral bound.
- Identify the author(s) of each section next to the headings for each major section of the paper. We use this information to understand who to go to with specific questions about the section, not to allocate share of grade.
- Use tabs to separate sections in a logical way. Put a blank page in if you need it so that the sections start at the top of the right hand page after the tab (don’t put the tab in the middle of the text of the section). The blank page does not count as part of the 50 page limit.
- Use APA formatting for the citations. See the online guide for APA citations in your Blackboard page for the course.
- Include a title page with the client name, team name, team members’ names and submission date. You may include a brand-related graphic if you choose.
- Include a Table of Contents. Microsoft Word has a function called a “Master Document” that will format your table of contents for you, and generally format your paper. You do not need to use this function, but you may find it helpful.
- In addition to the two hard copies, submit an electronic version on a flash drive. Put your team name and class time on the flash drive, and in the name of the file itself.

Printing Guidelines (and helpful advice to keep your costs at a minimum):

1. Print two copies of your final document. This takes time at the print center, so leave 2-3 days (at least) to get this done.
2. Print the entire document on standard paper in black and white. This should be zero cost to you through the print center.
3. If you have any color pages, print these individually. Each color copy through the print center is about \$0.60 per page.
4. Insert your color pages in place of the black and white ones.
5. You can buy tabs through the print center or through an office supply store. You can put printed labels on them or have the print center print them. Having the print center print them for you costs about \$7.50 per set.
6. Once you have everything printed and collated and the tabs inserted, you can have the paper bound. Two clear covers (front and back) come with the binding, and cost under \$3.00 total. The print center does the actual binding for you.

MARKETING PLAN RUBRIC

The goal is to communicate the marketing and communications plan to the client, applying the language and concepts of marketing throughout, and supporting your assertions with research. Be clear, concise, accurate, and use

the correct terminology. The writing needs to be both factual and persuasive. You can reorganize the outline below if needed, as long as your paper is well organized and easy to follow.

- 1) Executive Summary (maximum of one page): Do this LAST, after your whole paper is done. Provide an overview of your solution to the client's problem, outlining the key concepts you think your client needs to know. Include your top line budget. Cite your sources.
- 2) Summary of marketing problem: Cite the case as needed.
- 3) Marketing objectives: What do you plan to achieve with your marketing plan? Be specific in terms of outcomes—do you want to drive sales? Increase brand awareness? Etc.? Cite the case as needed.
- 4) Company and Market Analysis.
 - a. Internal analysis of relevant strengths and weaknesses of the brand's presence in the market.
 - b. External analysis of relevant market trends (i.e., opportunities and threats) affecting the market. Use the relevant categories we discuss in class (social, economic, etc.).
 - c. Create one table using the TOWS matrix format with the top (3 to 4) S, W, O and T's. Place this table where you think it is most relevant in this section.
 - d. Competitive Analysis of the marketplace. Outline the relevant key strengths and weaknesses (3-4 each) of the key competitive brands in the category. Focus here on your specific product, not the company overall. You may also include other products or brands outside of the category that your research shows compete with your product for the consumer's attention and purchase.
 - e. Perceptual map of your product compared to competitors' offerings. Include explanations of the position of each product on the map, as well as an explanation of the axes of the map and a justification of why these were selected. Evaluate if and where there is an opportunity for product innovation that addresses unmet needs of your target audience and/or is underrepresented by competitors. This becomes the basis for your product innovation recommendations.

5) Market Research, Primary Data

You will have the opportunity to gather primary data from a real consumer sample using an online tool called Qualtrics, which will be discussed in class. It is important, before you launch the survey, to evaluate what insights you can obtain via secondary data, and what else you will need to gather yourselves via your survey.

- All Data: Integrate your secondary and primary data into the relevant sections of the paper.
- Primary Data: Additionally, present all of your primary data in its own separate section of the paper, ideally in an appendix.
 - i. The first time you discuss a piece of primary data, outline key aspects of your respondent sample (how many people, basic demographic characteristics) and indicate the method of data collection. Summarize your demographic data describing your sample in a couple of sentences up front. You do not need charts and graphs for this info.
 - ii. Name your survey, and use this name as your in-text citation in the paper. For example, (Primary Survey One, 2017). Include an entry in your bibliography.
 - iii. Round all reported numbers to one decimal place.
 - iv. Present your data and insights for all questions. If there is data you are not using, you need to report that, too.
 - v. You can group the results of like questions together, offering summary insights for the grouped questions.
 - vi. You don't need a graph or chart for every response. Use them when they help tell your story.

6) Marketing Strategy: Provide the following, plus your rationale for each.

- a) Segmentation strategy and segment definition. Determine if and how you want to further segment your target demographic group.
 - Identify and comprehensively outline the key segment(s) you plan to target with your marketing initiatives. Justify this choice in terms of meeting the set objectives of this campaign. Create a persona(s) for your segment(s) utilizing your research.

- Provide demographic, psychographic, and other relevant characteristics to describe the segment(s).
- Support your choices with research connecting relevant trends to your chosen segment(s).
- Describe how your current segment(s) is(are) engaged with the category and brand, as well as other client product categories/brands. Evaluate whether they are current brand or category users. Describe their attitudes, behaviors, and preferences towards the category and brand.
- Describe how your target market is likely to respond to the current marketing mix.

b) Targeting Strategy: Identify the method of targeting are you using and justify this choice.

7) Product Strategy

Discuss the current product offering (Vanguard PAS) and provide any recommendations for additional attributes, features, or functionality beyond what currently exists.

a) Describe any adjustments to the product (Vanguard PAS). Justify, using your research, why you are recommending this. Be sure to define:

- Product name
- Product benefits
- Product claims

Ensure that all product decisions are made with your target audience in mind.

b) Explain how the product will be distinguished from the competition, as well as how it fits in with the existing product portfolio.

8) Price

a) Describe any recommendations related to the price (fee) the product. Discuss the pricing strategy used for the product. Explain whether it is a premium or value offering, and explain your price in relation to other competitors in the category as well as existing products in the product line. Specify any changes you recommend based on your research.

9) Distribution

Discuss the current distribution strategy and provide any recommendations for changes based on your insights.

a) Recommend specific channels of distribution (direct to consumer or available through brokers or resellers) that your research shows will drive awareness, trial, and long term use. Consider whether it is appropriate to add new distribution channels for your target audience. Base this on research related to where your target audience purchases products in the category, as well as where they would want to purchase products in the category.

10) Promotional branding strategy

Identify and describe each of the items below, and provide support for why you chose what you chose using secondary and primary data.

- Specific campaign objectives
- Unique selling proposition
- Reasons to believe
- Positioning statement
- Tone/voice for the campaign
- Central communications theme

11) Promotional Schedule

Provide your rationale and research support for your promotional choices throughout this section.

a) Promotional time period length and budget: State and justify your budget as well as the duration of your campaign.

- b) Promotional schedule: Create a graph for the budgetary period that shows when each element of the promotional plan will be introduced and concluded. Indicate your promotional waves by name.
- c) Promotional choices:
- Describe the promotional mix you recommend, by waves. Justify each wave of your campaign, and specify how and why your objectives change with each wave across your campaign. Establish why these are relevant in terms of your target audience, as well as for the category.
 - Cost, Reach and Frequency: For each promotional choice, in each wave, provide a total cost, reach (if possible), CPM (if possible) and frequency for the wave.
 - You do not have to detail why you chose a particular promotional tool multiple times if the same elements are used again for each wave. Once you present a marketing tool (e.g., a magazine choice or online site for advertising), give the details and justification. If you use the same tool again in a subsequent wave, just note the tool, but do not provide the justification again. DO provide Cost, Reach, CPM and frequency for each promotional choice, every time.
 - Tell the story of how the elements of your promotion mix are integrated within each time period.
 - Consider paid, owned, and earned media in your plan. Clearly identify each.
 - Explain what metrics you will use to measure the success of your promotional plan (in general, or by promotional element). Be sure to describe here the very specific expected outcomes of your promotional strategy and convince the client of what they can expect in terms of ROI (i.e., the “size of the prize”).

Cost Guidelines: You will be given a promotional cost guideline document outlining media costs—refer to this for your pricing and budget.

Digital Cost/CPC: For SEO or online advertising, allocate the number of dollars for a website/ad/paid search, then calculate the reach. Or, determine what reach you want, then calculate the dollars you need to allocate.

Sales Promotions: You must budget for the cost of publicizing the sales promotions, and for the cost of any give-aways (e.g., t-shirts, gift card, etc.). You do not have to budget for “% off” amounts. However, these amounts (e.g., % off) have to make sense in your market, relative to competitors.

- d) Executions:
- Show and describe at least one execution of a sample advertisement.
 - Show and describe at least one execution of another promotional mix tool (website, direct mail piece, in-store advertisement, etc.).

12) Detailed Marketing Budget

- a) Create a detailed budget summarizing the promotional elements you specified above. Summarize the total budget for each category (i.e., advertising, PR, etc.), then provide detail by media vehicle. Do not use cents, and round to the nearest \$100.

13) Summary and Conclusion: This is your chance to wrap things up succinctly, and to sell your ideas. Highlight your key points. Half page max.

Appendix D – Student Comments

“Having two totally different topics be covered in one exam certainly made studying and preparing for it more difficult and challenging, however, I believe this helped me in my study habits for other courses and in general. The combining of the two fields was also what made our working with a real client possible, which is the highlight of the course for a lot of students.”

“CE is a very challenging course that pushed me to my limits in order to do well in the class which is worth a hefty six credits. However, it was a valuable experience of teamwork and leadership that I have used on countless occasions for internship interviews and extracurricular applications.”

“CE has earned the reputation of being a difficult and demanding class that can bring down GPAs due to its six credits. While that is not a misconception, that is not the mentality one should have prior to starting the course. For

me personally, CE will always be a reminder of seeing the fruits of diligent labor. With time management skills and a persevering work ethic, this six-credit course leads to strong learning and a major GPA boost."

"It's one of the most difficult classes at Villanova. In my class of 30 or so students, only two got As. There were several A-s. The team you get randomly assigned to really makes or breaks you. If you can't rely on teammates to get work done well, you're GPA will be in trouble."

"CE tackles a real business problem brought to us by a real client. You deliver a professional-grade presentation and marketing plan to the client because the people hearing the presentation and evaluating the marketing plan are no less than professionals."

"As intimidating as a six-credit course is at face value, especially considering the influence the weight that the class has on your semester's GPA, CE is a course where students' time management abilities are evaluated along with their ability to work in a collaborative, engaging team environment. The class, as a whole, is a very beneficial and immersive experience for students. Ultimately, it drives students to work much more efficiently and develop their communication and teamwork skills over the course of a semester."

"The legend of the course is that it is a rigorous course of work, but that with students working hard together, pays off. It is well known in VSB that continued diligence in this class results in a nice GPA booster, as a six-credit A would suggest."

"I viewed the CE course as one class, but with two separate components: management and marketing. A lot of hard work is required to succeed in the class, but it is great preparation for the increased workload as you move along in your education. The six-credit course will not be detrimental to a GPA as long as the student puts in the effort to pay attention in class, study outside of class and work regularly with your team."

"CE has contributed largely to my VSB education; I used much of the information and experience from the class in my internship and work experiences. CE allows students to learn how to work well in a team and gives the tools to succeed in the marketing and management fields, fields that interact with all aspects of business."

Teaching Law To Non-Law Students Through The Use Of Problems Instead Of Cases

Dr. Sharlene A. McEvoy, Fairfield University, Fairfield, CT

ABSTRACT

This paper examines some pedagogical tools for teaching law courses to undergraduates without resorting to techniques typically found in law school instruction.

Keywords: Law class, undergraduate

INTRODUCTION

One of the major challenges faced by professors in teaching law to undergraduate and graduate students is to make intelligible sometimes arcane and complex concepts. This paper will offer some recommendations for a way in which cases can be introduced in a student-friendly way.

One of the courses that is traditionally taught to undergraduate business students is a course called The Legal Environment Of Business. The course is a basic introduction to the legal processes, courts and such substantive areas of law as contracts, torts, business, organizations, among others, as time allows. The course is a single semester three credit class. Some colleges and universities offer Business Law I and II over two semesters which provides a survey of broad array of legal concepts including agency law, negotiable instruments, secured transactions, sales and warranties covered by the Uniform Commercial Code as well as antitrust law, securities regulation and bankruptcy.

Other Schools of Business offer other law courses with topics of concern to Accounting majors (a portion of the CPA exam is devoted to legal topics). Management majors will usually find an elective in Employment Law, covering topics relevant to human resource specialists (employment at will, workers' compensation as well as anti-discrimination laws).

Some colleges and universities offer courses toward a minor in Legal Studies which offer a broader array of law courses like Constitutional Law.

Whether the law courses are required or elective, professors with a Juris Doctor (J.D.) are usually recruited to teach them. Therein lies the problem. The Doctor of Law degree is a professional one preparing the holder for the practice of law not a career in academe. The skills required of a practicing lawyer are not needed by students pursuing undergraduate degrees.

Instruction in law school is based on the study of appellate cases at the state and federal level. The briefing of those cases is the primary method of class preparation. Law students are required to analyze cases presented in a legal textbook by distilling the facts, the issues of law presented, the decision of the judges and the reasoning. Legal texts have little explanatory material. The books consist of a string of cases from various jurisdictions grouped around the theme of the chapter in a text devoted to a single area of law like Torts, Contracts, Civil Procedure, Property and Criminal Law (Turow 1977).

Class instruction involves the law professor asking students a series of questions in a format known as the Socratic Method. This dubious instructional tool, introduced by Christopher Columbus Langdell, Dean of the Harvard Law School, often has the effect of intimidating the novice first year student and provides little illumination of the area of law under scrutiny (Turow 1977). Clearly these instructional devices employed in the law school setting have little use in undergraduate education. Some misguided business law professors even require undergraduates to brief cases! Students who are studying for a Bachelor's degree have no need for skills to be attained by a student who plans a career in law.

An effective device for teaching law to undergraduates regardless of whether the course is Business Law or something else, is to make material accessible. In doing so, the instructor must necessarily lecture about legal terms because learning the argot of law is similar to learning a foreign language. In this case, the language is Latin and relatively few students these days have that classical language as a foundation. The instructor needs to do a thorough job of lecturing about the areas of law under study.

The lectures should be supplemented by a study of problems drawn from cases. The problem is that undergraduate law text books also contain cases, albeit shorter excerpts than those included in the law school texts. The appellate judges who author these opinions are not noted for their skillful or engaging prose. Reading an appellate case even in a truncated form can be a daunting process.

The professor therefore, must find the most instructive cases and separate out the procedural issues that clutter the cases material that appears in the book. Phrases such as “motion for a summary judgment granted” are of little use to the student who is studying business law. The key to student understanding is a well-written fact situation distilled from an appellate case. The cases found in the most undergraduate text books are not particularly engaging and are unlikely to spark student discussion. Instructors should scour a variety of law books and online sources and assemble a set of problems based on cases that will provide a catalyst for student discussion. The subject matter of these problems should be as familiar to students as possible and should be presented “cold” with no advance preparation. One of the factors that inhibit class participation is the feeling of being unprepared. The student may not have read the chapters or pages assigned in the text or may have read them cursorily. The student is therefore reluctant to speak up in class, feeling at a disadvantage in matching wits with someone who might have read the material more thoroughly.

The instructor should pass out a copy of the “problem” just before the class discussion or assemble them in a Handbook provided to the student at the beginning of the semester. The “Handbook” might also provide outlines of the professor’s lectures in the front of the book (single sided), so students can write notes on the facing pages. The Handbook becomes a student workbook in lieu of a disjointed set of notes in a separate notebook. The results of the class discussion of the problem and the solution provided by the instructor once the discussion is exhausted can be recorded in the same book.

An effective way to focus student attention is to ask a student to read the problem (which should be no longer than a single page long) out loud. Students can follow along by reading their own copy which will take only a few minutes. Students like to be told a story and in this instance the student volunteer is reading a short story to the class. Once the reading is concluded, the instructor should spur class discussion by asking:

- Who are the parties?
- Who is suing whom?
- If you were a juror, how would you decide?
- If you were the judge, what questions would you ask?
- Who is the bad guy? (Usually it is the defendant)

With proper subject matter and incentives to reward class participation, there should be a lively exchange of students’ point of view. Once the instructor has decided that the discussion has run its course then he/she should ask the students to vote on which side should win. The professor should tell the students the outcome of the case and allow for a few questions before moving on to the next topic. The use of these problems is most effective once the professor has lectured about the subject because the principles to be applied are still fresh in the students’ minds.

LEGAL AREA	PROBLEM
Labor Law - Unions	Brazil, E, “Lusty Ladies Ready to Don Union Label, Nude Dancers at San Francisco Theatre Would Be First to Unionize”, <u>San Francisco Examiner</u> , Aug 11, 1996
Labor Law - Sex Discrimination	Shamian, J, “The Strange Loophole That Lets Hooters Hire Only Female Servers”, <u>Business Insider</u> , Sept 13, 2015
Intentional Torts Self-Defense Use of Force in Defense of Property	<u>Katko v. Briney</u> 183 N.W. 2d 657 (Iowa 1971) or Florida’s Stand Your Ground Law

LEGAL AREA	PROBLEM
Negligence (Torts) Contributory Negligence	Couple Kissing While Driving, Car Plunges into Canal <u>Hodges v. Nofsinger</u> 183 S.a. 2d 14 (1966)
Negligence (Torts) Unintentional Infliction of Emotional Distress	Wilson, M, "Other Stories of Funeral Home Mix Ups" <u>New York Times</u> , Mar 23, 2016.
Malicious Discharge/Emotional Distress	Waitress Fired Because Her Name Begins with "A" <u>Agis v. Howard Johnsons</u> 371 Mass 140 (1976)
Invasion of Privacy/Defamation Emotional Distress	<u>Hustler Magazine v. Falwell</u> 485 U.S. 46 (1988)
Administrative Agencies: Federal Communication Commission, Federal Trade Commission	George Carlin's "Seven Dirty Words" Truth in Funerals Rules <u>FCC v. Pacifica Foundation</u> 438 U.S. 726 (1978) Truth in Funeral Rules
First Amendment Freedom of Expression	<u>Cohen v. California</u> 403 U.S. 15 (1971)
Property Law (Adverse Possession)	<u>Walling v. Przbylo</u> 7 N.Y. 3d 228 (2006) N.Y. slip op. 04747
Discrimination in the Workplace or not Discrimination Based on Appearance	<u>Ulane v. Eastern Airlines</u> 742 F. 2d 1081 (1984) <u>Jordan</u> <u>v. New London CT Police Dept.</u> 2000 U.S. App LEXIS 22195
Disability	<u>Hodgon v. Mt. Mansfield Co</u> 624 A. 2d 1122, <u>Vt Sup</u> <u>Ct 1992</u>
Sales Contracts (Unconscionability) Uniform Commercial Code	<u>Jones v. Star Credit Corp.</u> 59 Misc 2d 189; 298 N.Y.S. 2d 246 (1969) N.Y. Misc LEXIS 1696 6 UCC Rep.
Employment-at-Will/Appearance Discrimination	<u>Nelson v. Knight</u> 834. N.W. 2d 64 (2013)

CONCLUSION

The mark of successful instruction in any area of endeavor is the ability of students to retain information from the course. A way to accomplish that goal is for instructors to fashion understandable fact situations in the form of problems culled from appellate case law. The edgier and more colorful the subject matter, the more likely students will get involved in class discussions and to remember what they have learned. The use of problems in lieu of cases will achieve that end.

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Institutional Inhibitions to Female Entrepreneurship in Nigeria: Implications for Entrepreneurship Education

Lawrence Femi Ademiluyi, PhD, Department of Business and Entrepreneurship Education,
Kwara State University Malete, Malete, Kwara State, Nigeria

ABSTRACT

Scholars have identified gender gaps in the fortunes of Nigerian small and medium scale enterprises especially in the areas of business longevity, profit margin and industry of preference, among others. The study sought female entrepreneurs' opinions on institutional factors inhibiting female entrepreneurship in Osun state, Nigeria. Confirmatory sequence mixed method design was adopted. The quantitative method unfolded first and was the main one; subsequently the qualitative study was performed to better understand and reinforce the quantitative results obtained. A sample of 250 female entrepreneurs was purposively drawn from the infinite population of the study. One research question guided the conduct of the study. A 25-item questionnaire was developed to elicit information on the institutional inhibitions to female entrepreneurship. The instrument was validated by two experts in the field of business and entrepreneurship education. The quantitative data collected were analyzed using percentage for the research question. Subsequently, a dozen respondents were interviewed to have clarifications on their responses. Respondents identified poor access to finance, unfriendly laws, inadequate support framework, and institutional discrimination against women as constraints to optimal female entrepreneurial engagement. The study concluded that any effort to promote entrepreneurship knowledge and interest among university students should factor in these inhibitions and identify strategies for navigating them. The study recommended, among others, that special attention should be paid to female entrepreneurship in respect of access to finance, entrepreneurship support structures, legislations and gender affirmative actions. The study also advocated the inclusion of practical steps for promoting female entrepreneurship in university entrepreneurship education curricula.

KEY WORDS: Institutional inhibitions, social-cultural inhibitions, female entrepreneurship, entrepreneurship education

INTRODUCTION

It is universally evident that governments can no longer be expected to provide employment for all job seekers streaming out of universities and other higher institutions of learning. It is estimated that over seventy per cent of Nigerian youths are either unemployed or underemployed (Shaibu & Mmeremiku, 2017). This high unemployment rate is the harbinger of endemic poverty, which in turn is partly responsible for much of the current national malaise. With Nigeria officially the most poverty-endemic nation in the world, it is only natural that desperate youths would be paying to be trafficked across the Sahara, at the detriment of their health, lives and freedom. Furthermore, evidence abounds that Nigeria's huge reservoir of unemployed youths is providing sustenance for the Boko Haram insurgency and other criminal groups throughout Nigeria (Agboola & Ademiluyi, 2015).

There is also a broad consensus that entrepreneurship is potentially the perfect panacea for the twin-challenge of youth unemployment and endemic poverty (Carter, Anderson & Shaw, 2001). Governments throughout the nation are therefore paying attention, or at least lip service, to the promise of entrepreneurship as potentially the silver bullet in the war on poverty (Okafor & Mordi, 2010; Global Entrepreneurship Monitor, 2014). Scholars have however, posited that unless adequate attention is paid to gender entrepreneurship issues, the effort to promote entrepreneurial engagement among Nigerian youths may produce only marginal results (Gartner, 2004, Brush, de Bruin & Welter, 2009; Marlow & Patton, 2015). There is consequently, the need to identify factors and policies which may best enhance female entrepreneurship while also identifying the impediments to entrepreneurial knowledge, entrepreneurial orientation and business start up among women.

Women have enormous potentials as factors in the war against poverty. Globally, women represent more than one third of the people involved in entrepreneurial activities (Global Entrepreneurship Monitor, 2014). In Kenya, for example, women owned 48% of Small and medium scale enterprises, contributed 20% of the GDP and created about 50,000 jobs annually since 2000 (St-Onge & Stevenson, 2005; Rono, 2016). In other parts of the world, female entrepreneurship has grown exponentially in recent years. Women-owned firms contribute nearly three trillion

dollars to the economy and are responsible for two million jobs in the USA. In the developing world, between eight to ten million formal, small and medium-scale enterprises have at least one female owner (Lemmon, 2012). The rate of new business formations has significantly surpassed the rate of new business formation by men in the USA. This is similar to the rate in developing countries. However, women still own and manage much fewer businesses. They earn less money, are more likely to fail and are often necessity investors than men (Minniti & Nande, 2010). Women are more likely to operate in the informal sector in the developing world (World Bank, 2010). Sixty three per cent of African women in non-agricultural labour force are self-employed in the informal sector (World Bank, 2010; Rono, 2016). Women-owned enterprises are smaller, less profitable and less likely to grow than those owned by men. Richardson, Miniti and Mende (2014) opine that women are disadvantaged by institutional factors like inadequate access to capital, gender biased business rules and regulations, gender unfriendly ethnic culture, negative perception of female entrepreneurs and poor management skills.

Women entrepreneurs, unlike their male counterparts, often have to fight against a "glass ceiling" of institutional and regulatory barriers as they desire independence and freedom for their careers (Okafor & Mordi, 2010).. In addition to the common challenges faced by all entrepreneurs, female entrepreneurs often have to deal with issues such as inequality, sexism and perception problems which often impede them from optimizing entrepreneurial opportunities (Supperakit, 2010).; Rono, 2016.

Researchers also aver that there is "gender gap" between male and female engagement in entrepreneurship. 'Gender gap' refers to the fact that lower number of women are engaged in formal entrepreneurial activities or are actually thinking about starting a business (Vosenberg, 2013). However, in a few countries like Panama, Venezuela, Brazil and Switzerland, the rate is actually similar between men and women, while in Ghana, it is 55% in favour of women (Schumpeter, 2012).

McManus (2017) posits, that women are often necessity entrepreneurs and while they are heavy in some industries, they are virtually absent in others, especially in the manufacturing and construction sectors. They are however, over-represented in the consumer sector and are mostly engaged in retail business (Win, 2007). Female's businesses also tend to be smaller, have fewer staff and less growth expectations (Langowitz & Miniti, 2017). Maintaining the growth beyond start up is also a major challenge for female entrepreneurs in developing countries (Vossenber, 2013).

Women also often lack career guidance, support services and information on business growth (Kitching & Woldie, 2014; Davis, 2012). Women are limited by the work-family interface (Winn, 2005). Furthermore, women in developing countries often rely on support from partners and relatives to start or grow business (Brush, de Brian & Welter, 2005). Female entrepreneurs are often affected by inadequate societal support (Aidis, 2007; Bard & Brush, 2012; Binuomote, 2017), legal barriers and procedures (Jamali, 2009) and inheritance rights challenge (World Bank, 2012). Finally access to finance is a huge problem to female entrepreneurs in most developing countries, compared to their male counterparts (Aidis, Welter, Smallbore & Isikova, 2015).

Nigerian women, especially Southern Nigerian women, are often actively engaged in business. 85 per cent of women and 68 per cent of graduate women plan to start a business one day (Ohakwe, 2012; Binuomote, 2017). Women own about 20 per cent of registered businesses in Nigeria (Halkias, 2011) and they dominate the informalsector, which constitutes 66 per cent of business establishments (Okafor & Mordi, 2010). Nigerian women however often resort to self-employment as a result of unemployment or to alleviate family poverty. They are therefore often sustenance investors. Furthermore, Nigeria is essentially a patriarchal society in which women are supposed to be subordinate to their men (Sanni, 2009). Women need their husband's approval to start business (Mordi, Simpson & Singh, 2010). Women are not supposed to outshine their husbands whether at home or in business. In Northern Nigeria, women are further affected by the Pudah institution, which compels women to wear veils on the rare occasions they are allowed to venture out of the homestead (Abdullahi, 2009). It has also been argued that only 10 to 15 per cent of Nigerian women have access to bank credit (Halkias, 2011). Male to female application and approval of Micro Finance Bank (MFB) loans are in the ratio of 65 to 35% (Ohakwe, 2017). Women are less likely to have the collateral needed to obtain loans from commercial banks and in some parts of Nigeria, inheritance laws prevent widows, wives and female children from laying claim to the type of property which may help entrepreneurial start-up.

There are regional variations in these indicators. While certain challenges are national, if not universal, others are regional and local. Since a previous research has investigated social cultural inhibitions to female entrepreneurship

(Agboola, Ademiluyi & Ademiluyi, 2015), this study seeks to identify institutional inhibitions to female entrepreneurship in Osun State, Nigeria.

STATEMENT OF THE PROBLEM

In the wake of the twin unemployment and security crises in Nigeria, entrepreneurship has become the primary instrument for productive youth engagement, poverty alleviation and economic growth. While women in South-Western Nigeria have a long history of business and entrepreneurial engagement, scholars have identified a “gender gap” in business mortality, size, industry and profit margin (Binuomote, 2017). This implies that optimal advantage is currently not being taken of female entrepreneurship. Since entrepreneurial knowledge, intention and longevity can only be ignited and sustained if entrepreneurial impediments are identified and removed, the study sought to identify the institutional challenges confronting female entrepreneurship in Osun State of Nigeria.

PURPOSE OF THE STUDY:

The purpose of the study was to identify institutional inhibitions to female entrepreneurship in Osun State, Nigeria.

RESEARCH QUESTION:

What are the institutional inhibitions to the development of female entrepreneurship in Osun State?

AREA OF STUDY:

The study was conducted in Osun State, which is one of the 36 states in the Federal Republic of Nigeria. The population is estimated at about 4.5 million with a GDP of about USD 7.28 billion and a per capital income of USD 2,074. The population density is about 240km² which makes it one of the most densely populated in Nigeria (Wikipedia, 2019).

PREVIOUS RESEARCH

A previous study on social-cultural inhibitions to female entrepreneurship was published in Africa Journal of Applied Research , Volume 1 number 1. Agboola, Ademiluyi and Ademiluyi (2015).

METHODOLOGY

Research Design

The researcher adopted mixed method design involving collection, analysis and integration of both quantitative and qualitative methods.. The researcher’s approach involves the use of qualitative approach within a dominant quantitative methodology.. The quantitative aspect involved the use of descriptive survey instruments. Descriptive survey involves the collection of quantitative data in order to test hypotheses or answer questions regarding the status of a subject.. Surveys are investigations in which subjects are studied in their natural environments without treatment (Gay, 2011). For the .qualitative aspect, 12 female entrepreneurs, purposively selected, were interviewed in depth. The questions were designed to obtain clarifications and detailed explanations on issues which were not clear from the questionnaire.

Mixed methods are ideal for studies in which quantitative approach cannot bring out all the salient points and emphases which the study demands. They are used to augment a quantitative outcome. Nworgu (2018) reports that mixed methods are ideal because researchers are able to use all the tools available to them to collect more comprehensive data. These provide results that have broader perspectives of of the overall issue or research problem (Morgan, 2016).. Specifically, this researcher used Confirmatory Sequence mixed method design in which quantitative method unfolds first and is the main one. Subsequently the qualitative study is performed to better understand and reinforce the quantitative results obtained.

Population

The population comprised female entrepreneurs in Osun State. The Osun State Ministry of Commerce listed 3,965 companies based in Osun State, owned or partly owned by women. At the informal level, Fayemi (2018) estimates that there are about 388,000 female petty traders and service providers in Osun State.

Sample and Sampling Procedure

A sample of 200 was drawn; 100 from the formal sector and 100 from the informal sector. The sample of 200 was randomly drawn from the list of female entrepreneurs provided by the Ministry of Commerce while the sample for

the informal sector was randomly selected using accidental sampling during visits to major markets and shopping centers in the major cities.

Instrument for Data Collection

A 25-item questionnaire was drawn by the researcher based on the research purpose and literature. The questionnaire had two sections. Section One sought demographic information about the respondents. Section Two sought respondents' opinions on institutional factors inhibiting female entrepreneurship development. The instrument was face and content validated by three experts whose comments and suggestions were taken into account in preparing the final version of the instrument. A pilot study was conducted in neighbouring Ogun State, using 35 respondents with similar characteristics with those to be studied. The reliability test yielded a Cronbach reliability coefficient of 0.78 which is considered reasonably high.

Administration and Analysis of the Instrument

The instrument was administered by the researcher, assisted by two trained assistants. 200 copies of the questionnaire were distributed. All were returned and found usable for the study. The research questions were analysed using percentage. For the research questions, 50 per cent and above were regarded as positive while anything below 50 percent was regarded as negative. Independent samples t -test was used for the test of hypotheses.

RESULTS

Table 1: Institutional Inhibitions to Female Entrepreneurship

S/N	Institutional Inhibition	Frequency	%	Remarks
1.	Negative attitude to female entrepreneurs By finance houses	196	98	Positive
2.	Poor access to finance by women	192	96	Positive
3.	Government regulations do not favour women	185	92.5	Positive
4.	Inheritance laws favour men over women	173	86.5	Positive
5.	Ignorance of start up process by women	168	84	Positive
6.	Inadequate support framework for women	168	84	Positive
7.	Institutional discrimination against women	155	77.5	Positive
8.	Entrepreneurship education contents do not address women's issues	155	77.5	Positive
9.	Cumbersome registration process discourages Women more than men	152	76	Positive
10.	Family responsibilities inhibit women	150	75	Positive
11.	Inadequate marketing outlet for business	147	73.5	Positive
12.	Poor access to entrepreneurship information	146	73	Positive
13.	Infrastructural challenges discourage women	146	73	Positive
14.	Challenges with custom and excise process	144	72	Positive
15.	Inadequate technical and vocational training	143	71.5	Positive
16.	Business rules and regulations skewed in Men's favour	143	71.5	Positive
17.	Society's negative perception of highly Successful female entrepreneurs	142	71	Positive
18.	Taxation regime not gender sensitive	135	67.5	Positive
19.	Poor female access to technology training	130	65	Positive
20.	Insecurity scares women from investment	128	64	Positive
21.	Economic policies not gender friendly	126	63	Positive
22.	Polygamy limits female investment capacity	125	62.5	Positive
23.	Religious strictures discourage full-time Female entrepreneurship	121	60.5	Positive
24.	Inadequate access to raw materials/resources	118	59	Positive
25.	Stringent bureaucratic control discouraging	117	58.5	Positive

Table 1 shows in percentages respondents' ratings of regulatory/institutional inhibitions to female entrepreneurship. Most respondents identified finance (98%), government regulations (92.5%) and inheritance laws (86.5%) as inhibitions to entrepreneurship success by women. The respondents also identified Inadequate support framework for women (84%), Institutional discrimination against women (77.5%) and defective entrepreneurship education contents (77.5%) as inhibitions to female entrepreneurs' success. Other identified inhibitions include cumbersome registration processes (76%), family responsibilities (75%) and inadequate access to entrepreneurship information (73%) The result shows that all the constructs listed on the table were identified as inhibitions to female entrepreneurship. The item with the least score is Stringent bureaucratic control which scored 58.5%.

ANALYSIS OF QUALITATIVE STUDY

All 12 female entrepreneurs interviewed identified access to finance as the pre-eminent problem faced by female entrepreneurs. According to one of them, commercial banks are wary of giving loans to female small and medium scale entrepreneurs (SMEs), especially unmarried ones. They often demand collaterals far beyond the reach of start up business women. Women are also scared by commercial banks' high interest rates which at 18-22% per annum, one respondent described as ruinous. They therefore access funds only from cooperative societies and community banks which can only give small, short term facilities.

The interviewees also blamed government laws and business regulations for most of the problems confronting female entrepreneurs. According to a SME woman, she has not made efforts to register her business because the process was too long, cumbersome and expensive, and she did not really know what benefits was derivable from registration. Another opined that registration would only increase her taxation burden, which she described as multiple and harsh, One interviewee listed eleven different taxes and rates she had to pay (some of them daily) and claimed that as the biggest problem confronting her as a female entrepreneur.

One interviewee blamed the Nigerian family institution for the major challenges faced by women. A woman is not expected to be richer than her husband since he, not she, is responsible for the family's sustenance. Few men would allow their wives to grow beyond petty trading. Another attributed her laid-back entrepreneurial posture to her Islamic faith. "There is no business I can do beyond buying and selling," a young female entrepreneur responded. "How can a faithful Muslim woman go from one office to another, begging for contracts?". Yet another interviewee, a very successful graduate with several years of entrepreneurship experience, attributed her enviable success to her readiness to ignore traditions. "I've always been unconventional. I was already established in business before I met my husband. And he knew *ab initio*: Business is my business!"

Another respondent, also a university graduate, identified inadequate training in entrepreneurship, creativity and innovation as the great banes of female entrepreneurship in Nigeria. "Beyond buying and selling, most of these women, including graduates, simply don't know what to do!" In her opinion the entrepreneurship education regime in most Nigerian universities and polytechnics are grossly inadequate. "The system does not recognize, much less understand, issues affecting females in entrepreneurship. The training manuals are focused on the alpha male. Yet, there are challenges which disproportionately affect women; cultural, legal, political and institutional challenges which trainers must address as the starting point for entrepreneurship education in women. Specific attention must be paid to the problems of women, even in institutional trainings manuals. That is the way to start."

DISCUSSION

The result of the research question shows in percentages respondents' ratings of regulatory/institutional inhibitions to female entrepreneurship. These include: poor access to finance (98%), government regulations (92.5%) and inheritance laws (86.5%) Inadequate support framework for women (84%), Institutional discrimination against women (77.5%) and defective entrepreneurship education contents (77.5%) as inhibitions to female entrepreneurs' success were, among others also identified as inhibitions to female entrepreneurship.

These problems all have regulatory, institutional or social-cultural origins. The complaint about vocational and technical training challenges the effectiveness of the nation's TVET institutions. The complaint about regulatory procedure challenges the Ministry of Commerce and the Corporate Affairs Commission; the grouse about inadequate information, and infrastructural support framework questions the effectiveness of the different relevant government agencies and non state actors in respect of their policies and practices on women.

Complaints about access to credit and finance validates in age long-thesis about the failure of Nigerian banks to fully support entrepreneurship in general and female entrepreneurship in particular. Female entrepreneurs are

supposed to provide collaterals to banks and other financial institutions to be able to access credit, yet cultural inheritance laws and conventions favour male children and often disfavor women especially in polygamous settings. The finding support those of Winn (2005), Win (2007), Schumpeter (2012), Vosenberg (2013) and Rono I(2016), who all identified gender gaps in several areas of entrepreneurship engagement on account of in-built institutional barriers consciously or inadvertently erected to the disadvantage of women.

The challenges facing female entrepreneurs are both institutional and traditional and they are deep-seated. It may no longer be enough for governments, entrepreneurship support agencies and non state actors (known in Nigeria as NGOs) to put in place structures and policies to enhance entrepreneurial engagement in general. It is equally important to pay particular attention to female entrepreneurship challenges. This is to remedy the ingrained gender discrimination in policies and culture since public business policies benefit female entrepreneurs much less than their male counterparts.

The disadvantage currently being suffered by female entrepreneurs in Nigeira, and Osun State in particular demands an affirmative action, a Marshall plan of sorts which would encourage female entrepreneurs not only by eliminating the in-built psycho-social inhibitions and cultural impediments faced by the tender gender, but also by actively putting in place institutional support and training frameworks for the protection and promotion of female entrepreneurs.

IMPLICATIONS FOR ENTREPRENEURSHIP EDUCATION

The findings of the study imply that university entrepreneurship education programmes need to pay clear and definite attention to gender factors in entrepreneurship training. The current entrepreneurship curricula appear to assume that young entrepreneurs all take off from the same starting block. They consequently do not emphasize that women may need to double their efforts in certain areas in order to match up with men. The current entrepreneurship curricula do not highlight the government policies, rules and regulations; taxation regimes which may not work in women's favour. They neither identify nor suggest means of side-stepping institutional and social-cultural barriers to female entrepreneurship. Access to financial support is an important area in which women are provably at a disadvantage, given the emphasis on collaterals and other guarantees. Yet current training regimes assume that all aspiring entrepreneurs are at par, irrespective of gender. For optimal effectiveness, entrepreneurship training must address female specific start-up and growth issues like access to finance, vocational and management training; business relationships among others. Gender specific management and communication challenges should also be identified and highlighted in the course of training. It has often been said that women have to work twice as hard to achieve the same results as men. This is particularly true of entrepreneurship. This reality must be drummed into the minds of aspiring female entrepreneurs to prepare them for the challenges they are bound to face in the male-dominated world of entrepreneurship.

CONCLUSION

With the research concluded, the following conclusions are presented:

Female entrepreneurs face many institutional inhibitions. These include poor access to credit, knowledge, poor infrastructures, unhelpful laws and regulations and inadequate support programme and reforms, infrastructural inadequacy, poor entrepreneurship education, social-cultural challenges, among others. While some of the challenges are universal and gender-neutral, many challenges affect women far more than men. Women are less likely to be able to operate in insecure and politically unstable environment than men. Bureaucratic challenges are also likely to affect women more than men, given their domestic and other responsibilities. Entrepreneurship education curricula must address these female specific problems by identifying areas of special challenges for women and developing means of overcoming them.

RECOMMENDATIONS

To redress the problems identified above the following suggestions are proffered:

1. A special female entrepreneurship support agency should be put in place to promote the interest of female entrepreneurs
2. The Nigerian Central Bank should direct commercial banks to promote female entrepreneurship by setting aside a certain percentage of their loans for female-owned businesses and by reviewing their insistence on fixed assets as collaterals.

3. The mass media should pay special attention to female entrepreneurship. Potential role models should be identified and promoted. Governments should also encourage publications supporting female entrepreneurship.
4. Laws and regulations should be reviewed to make them gender sensitive. Inheritance laws and practices, and discriminatory practices on widowhood should be reviewed.
5. Women-owned start up SMEs should be given long tax and rates breaks to make up for the in-built discriminatory challenges faced by women.
6. University entrepreneurship curriculums should be gender sensitive. Items identifying female entrepreneurs opportunities and challenges should be built into the syllabi of Entrepreneurship Education programmes.

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Can We Apply Aspects of Extreme Programming to Classes in Other Business Disciplines?

Denise Williams, University of Tennessee at Martin, Tennessee, USA
David William, University of Tennessee at Martin, Tennessee, USA

ABSTRACT

Extreme Programming is a software development approach that is iterative in nature and includes work done by pairs of people. Some aspects of Extreme Programming may prove to be beneficial in a classroom environment, even if the classes in question are not specifically devoted to programming. The goal of this work is to explore whether certain elements of Extreme Programming may assist in classes, to not only improve student learning of course content, but to also assist in the learning of general skills. These more general skills may relate to broader student learning outcomes.

Keywords: Extreme Programming, Business Classes,

INTRODUCTION

Extreme Programming is an Agile software development approach; Agile methodologies provide alternatives to traditional software development lifecycle models (Hadaar & Hazzan, 2008; Lindstrom & Jeffries, 2004; Qureshi, 2012). Extreme Programming is iterative, using short cycles of small goals to address specific, limited, project requirements (Cusumano, 2007; Hunt, 2006; Qureshi, 2012). While intended to facilitate software development in the context of changing client needs, the concepts of Extreme Programming have potentially broader applications. Several components of Extreme Programming may be applied to support student learning in a classroom, in not only programming classes—where the application is obvious— but also non-programming classes and classes not specifically related to software development. The goal of this work is to explore how some concepts of Extreme Programming can be applied to improve student learning in such classes. Specifically, such concepts as paired programming, focused iterative tasks tied to real world concepts, and the habitual introduction and testing of low-stakes assignments have the potential to improve not only student learning, but also the confidence of instructors in their evaluation of student performance. To illustrate this application, examples are provided of how to adapt Extreme Programming practices to classes outside of information systems and programming.

APPLICATION OF EXTREME PROGRAMMING

Extreme Programming uses short cycles with limited goals (Astels, 2003; Cusumano, 2007; Hunt, 2006). This practice can be applied in a classroom to create small projects that contribute to a larger concept or learning goal. One benefit of smaller components is that instructors can more easily observe when and where students may stumble in their learning and, consequently, better identify student misunderstandings of concepts or models.

Small Projects

The use of smaller projects provides one way for instructors to create lower stake assignments, not only to help manage student anxiety but also to help mitigate the negative impact of student procrastination. The value in mitigating the impact of procrastination is in helping to clarify where students have and have not learned correctly, and distinguishing those potential shortcomings from poor work primarily caused by time management issues. The use of iterative small projects still allows instructors to demonstrate the bigger picture of the greater concept, even while allowing a more modular approach to daily classroom tasks. In the same manner that breaking up large software projects into smaller projects can improve project success rates, using smaller projects may allow for better measures and improved analyses of key student learning outcomes. Smaller projects may also facilitate determining with greater precision the points at which misunderstandings and impediments to learning occur. In disciplines where students must learn new software or industry practices, these projects may help avoid problems due to failing to understand prior steps.

The short iterations of Extreme Programming target only currently projected target needs. This approach attempts to minimize spending time on needs that may change or evolve over time, reducing the potential loss of time and

resources rendered obsolete by changing project goals (Cusumano, 2007; Holmes, 2005; Hunt, 2006). While this limited, iterative approach may be less associated with specific student learning outcomes, there is an argument to be made that students will benefit from learning to adapt as circumstances change or evolve, learning to be agile learners in the classroom. Keeping the iterations limited to a very specific and less complex goals may also provide less cluttered projects, and may additionally allow students to invest more effort in the specific item to be learned as a benefit of more focused tasks. An Advertising and Promotion course utilizes frequent, low stakes design project assignments that students complete within the class time. One project requires students to create a food beauty shot photo. While this particular flipped-classroom example doesn't include iterative assignments, it does provide an actual example from a class outside of Computer Science or Information Systems.

Given the iterations and short cycles used in Extreme Programming, programmers must often adjust their code in response to the changes (Astels, 2003; Cooke, 2012; Cusumano, 2007). This creates a need to be adaptable and responsive to changes that emerge across iterations or over time for the project. This may be applied in a classroom environment to help students develop skills to prepare them for professional environments that will also change and evolve. Over time, new knowledge and technology emerges changing fields and industries. Seeking to help students to develop adaptability and agility in anticipating and succeeding in the face of environmental changes would help students to better prepare for careers after graduation. This approach may be useful for finance, economic or strategy simulations or activities where students are asked to make and implement decisions in a simulation by asking students to do more analytical work between iterations to identify environmental or market changes and their impacts before beginning the next round. One example in a course is the use of simulations in strategic management classes. The simulation requires student teams to make strategic decisions and allocate resources. Iterative cycles are done, and students see results for each round. An international finance class required students to work with a partner to manage a virtual portfolio. The resource used allowed for transactions for listed financial products using daily pricing. Students could demonstrate these strengths by restructuring or recontextualizing challenging classroom concepts or big picture ideas again and again over a single classroom term, or even a series of such classes. The desire for these demonstrated strengths is not new, as many existing capstone classes include activities that seek to accomplish similar goals.

Testing

One element of Extreme Programming is that while developing software, the work should always be tested while the software is being developed (Astels, 2003; Cooke, 2012; Cusumano, 2007; Holcombe, 2008; Hunt, 2006; Watkins, 2009). This helps identify problems more quickly. Utilizing this concept may help students learn from their errors by discovering errors more quickly. Requiring students to develop ways to test their work to identify potential errors offers an additional demonstration of student learning (and weaknesses or misunderstandings in that learning) while also helping students develop their skills in reviewing their work and anticipating potential problems. Applying this approach can encourage students to evaluate their work habitually. This approach may be well suited for activities relating to online campaigns or social media work utilizing analytics for interactions and responses, such as classes participating in Google's Online Marketing Challenge.

User Stories

User stories are used in Extreme Programming to better understand requirements (Astels, 2003; Cusumano, 2007; Hunt, 2006; Watkins, 2009). Identifying the manner in which customers will use software helps identify needs. This approach is comparable to translating academic concepts and models into how those concepts or models translate into real world applications. This may be particularly relevant to marketing classes or classes relating to understanding or identifying customer needs. Classes in Human Resources would be another potential area that might benefit from the use of user stories. Applying focus on user stories may also help students improve or reinforce their communication skills. If students are asked to explain their application of a concept or model, those explanations can assist instructors in confirming student understanding and student knowledge.

One might apply this iterative, targeted approach to a principles class in various business disciplines by introducing short essay assignments or presentations—perhaps as brief as a single paragraph or PowerPoint slide—due weekly. Each essay or item would enable students to describe a principal or model using a current class reading assignment to illustrate their evolving grasp of the concept. These concepts could, of course, be more thoroughly explored in more involved papers or projects, but the use of short, weekly assignments would not only allow students to isolate ideas in the hope of better understanding, but also to provide their instructor with a weekly indicator of student comprehension. These assignments could provide low-stakes opportunities for students to indicate their understanding, increase student confidence by keeping tasks discrete and limited in scope, discourage

procrastination by introducing frequent deadlines, and provide frequent instructor insight into student performance. This approach incorporates Extreme Programming's focus on short iterations (weekly assignments illustrating discrete concepts), targeted project needs (tying these assignments into specific weekly reading assignments), and user stories (allowing students to connect potentially complex concepts to specific examples; as well as providing instructors a dynamic weekly indicator of student performance).

Pair Programming

One of the most notable Extreme Programming practices is the use of pair programming. With pair programming, two programmers work together to develop code (Astels, 2003; Cusumano, 2007; Holcombe, 2008; Hunt, 2006; Watkins, 2009). One person is actively entering the code while their partner reviews the code as it is entered. This offers many potential benefits. For example, the partner should be able to spot errors more quickly than the typing coder (Astels, 2003; Hunt, 2006). Applying this in a classroom, two students would work together with one person reviewing the other student's work as it is done. Hadar and Hazzan (2008) suggest that class activities with students working together can support learning. They used some methods of software development in a MIS class to help students learn about collaboration in the context of software development (Hadaar & Hazzan, 2008). One author has experimented with using adaptations of pair programming in classes focused on data analysis.

Pair programming offers learning benefits to both students in a given pair. The partner student can learn from those things the typing student does, while the typing student can learn from the partner student's comments and oversight. Holcombe (2008) writes that pair programming supports learning and can facilitate sharing of expertise. This potential benefit of pair programming is also noted by Cooke (2012) and Lui and Chan (2008). Given that this benefit has been found of professionals using pair programming, it seems likely that applying how pair programming works to non-programming tasks should allow students to more directly learn from each other and help each other. Working in pairs may assist in addressing particularly challenging tasks (Astels, 2003; Holmes, 2005; Lui & Chan, 2008). Applying the idea of pair programming may allow students to explore more challenging problems than individual students otherwise could. Another benefit is that students would learn together which might improve student learning on particularly difficult concepts. This could be used in optimization activities to provide the same support and to facilitate learning about objective functions and constraints. Small activities in Accounting classes could help students learn from each other to improve understanding. While it is not such a differing example, applying these practices could facilitate and speed up learning, self-efficacy and proficiency when students in areas beyond information systems must learn to use software used by professionals in the discipline.

Continuing our hypothetical examples of Extreme Programming applications in other fields, students could prepare their weekly assignments in pairs. A single student in each pair could actively note their ideas about how to demonstrate a class concept by referring to a given reading assignment. The other student in that pair could then provide additional examples, ideas and constructive criticism to incorporate into the active partner's assignment. The partners could then switch roles and demonstrate a second concept. Each student would be able to take both an active, creative role, as well as a more critical one. Sharing thoughts and ideas in this way could potentially produce better results for both partners, increase confidence, and offer synergistic benefits. As partnerships could change weekly, each student could be exposed to a variety of perspectives and ideas, even as they contribute their own ideas and perspectives. This might be particularly helpful in classes requiring a great deal of creativity and/or innovation.

CONCLUSION

In conclusion, while Extreme Programming is designed to assist in software development by isolating iterative solutions to specific organizational needs, its concepts need not be so limited. Introducing Extreme Programming concepts into programming classes is obvious, but these concepts can additionally be applied in non-programming classes and classes not specifically related to software development. Student pairs of alternately active and overseeing partners can learn from each other. Assignments with limited scope and a narrowly targeted focus can offer students lower-stakes tasks, not only eliminating anxiety, but also demonstrating the close connection between the assignment and the targeted 'real world' task it addresses. Smaller tasks also enable an instructor to habitually evaluate a student's performance with some measure of confidence that the performance has not been distorted by procrastination or anxiety due to higher-stakes tasks. All in all, Extreme Programming concepts not only enable Agile programming development, they also have the potential to produce more agile learners.

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Corporate Social Responsibility and Corporate Finance Class Engagement

Mark Ray Reavis, University of Central Arkansas, Arkansas, USA

ABSTRACT

The purpose of the firm has been an important topic for business and society since the time of Adam Smith. In 1970, Milton Friedman wrote an article published in *The New York Times* addressing the issue and stating very clearly that the purpose of the firm is to increase profits. But, the view of society and many business leaders has changed over the past 50 years. In 2019, business leaders have redefined the purpose of business away from a stockholder focus and toward a stakeholder focus. While millennials tend to support the stakeholder view, they are not well educated on stockholder theory vs. stakeholder theory and they generally are not introduced to various entity types that currently exist to allow corporations to focus on social or business issues other than profit. This paper provides a tool for allowing professors of Corporate Finance classes to engage students in class by focusing on the important issue of the purpose of the firm. This focus, presented on the first day of class, allows for increased student engagement, writing improvement, and increased critical thinking skills while addressing one of the most important current issues in business and society.

Key Words: Corporate Social Responsibility, Engagement, Critical Thinking, Stockholder Theory, Stakeholder Theory

INTRODUCTION

One of the most important topics in business today is the purpose of the firm. Milton Friedman addressed this in his famous article *The Social Responsibility of Business is to Increase its Profits* (1970). However, the landscape has definitely changed over the last 50 years. In 2019, the purpose of a corporation has been redefined to “Promote An Economy That Serves All Americans” (Business Roundtable, 2019). Millennials tend to support this change, leaning toward a stakeholder approach more than a stockholder approach (Reavis, Tucci, & St. Pierre, 2017).

Issues for University Corporate Finance Classes

Like other university classes, student engagement is one key to student success. Professors have a desire to increase students’ critical thinking and students enter the classroom with limited knowledge of the subject. Although millennials tend to support a stakeholder approach, they do not understand what that means in terms of corporate governance theory. Students tend to come to the first day of Corporate Finance class with little or no knowledge of stockholder theory vs. stakeholder theory. Students have often not considered the topic at all, have not formed an opinion, and come to the first day of class without any understanding of how a firms’ entity type relates to the topic.

Corporate Finance textbooks fail to cover entity types in a way that sufficiently illuminates the topic given the movement away from profit focused behavior to more socially focused behavior. For example, several texts from well known textbook publishers were reviewed for this paper. These texts covered the topic of entity types by addressing sole proprietorships, partnerships, and corporations (Besley & Brigham, 2019) (Block, Hirt, & Danielsen, 2019) (Brigham & Houston, 2020) (Titman, Keown, & Martin, 2014). Most discuss briefly partnership types and S corporations. However, none of the texts reviewed addressed co-ops, non-profits, or benefit corporations. Also, none discussed certified B-corps.

Purposes of Assignment

Getting students to engage in a Corporate Finance class, where most of the class material is quantitative, can be challenging. Students must analyze financial statements, use time-value-of-money tools to value financial instruments, calculate the cost of capital, etc. Generally, there is much more quantitative material than qualitative material in a corporate finance class. The course material is often approached using formulas, not by discussing theory.

Because the class is generally approached using quantitative methods, the online discussion assignment presented below was initially created in 2014 as a way to get students to increase their engagement in an online corporate finance class. The assignment was designed to increase critical thinking, provide students with an opportunity to improve writing skills, and encourage peer-to-peer interaction. “Student participation, encouragement, and peer-to-

peer interaction consistently emerge(d) as being significantly and positively related to critical thinking” (Smith, 1977, p. 180). Online discussion assignments, if done well, can develop critical thinking skills (Seethamraju, 2014). Also, online discussion assignments promote writing skills and “continue the classroom community beyond school hours” (Jewell, 2005, p. 87). Use of online discussions is gaining momentum in face-to-face classes as well (Gao, Zhang, & Franklin, 2013). All of these factors are important because they lead to students’ deeper understanding of content, appreciation of others’ views, increased engagement, along with the writing and critical thinking benefits (Seethamraju, 2014).

As a result, the online discussion assignment presented in this paper been used in online Corporate Finance classes and/or face-to-face Corporate Finance classes every semester since 2014. The broad topic addressed in the online discussion is the purpose of the firm. The focus is on corporate social responsibility (CSR). After students complete the online discussion assignment, the Instructor addresses the issue in the next class period for face-to-face classes. For online classes, the Instructor posts additional information for students on the topic. The assignment, followed up by the Instructor including additional information, results in increased student engagement, increased critical thinking, a greater understanding of stockholder theory, stakeholder theory, the various forms of corporate organizations, and the purpose of the firm in modern society.

LITERATURE REVIEW

Stockholder Theory and Stakeholder Theory

Stockholder theory has its roots in Adam Smith’s *Wealth of Nations*. Stockholder theory holds that the stockholder of a business has the highest consideration in all business decisions made for that business because the stockholder is a partial owner of the business. Stockholders have given up use of their property (money) for a period of time in consideration for a portion of the wealth generated by the business (Smith & Rönnegard, 2016). Therefore, the stockholder, as partial owner of the firm, has a right to enjoy the highest consideration when managers make business decisions because they are acting as agents of the owners. Stockholder theory further contends that the individual stockholder has the right to engage in social responsibility if he/she wishes to do so. The business, on the other hand, does not have the right to engage in social responsibility because to do so would divert the profits from the rightful owner(s) to a “cause” the owner(s) may not support (Smith & Rönnegard, 2016).

Both Smith and Friedman acknowledge that a business cannot pursue profits at any cost, but must deal with “externalities” or rules. Friedman said the only social responsibility is to increase wealth “...so long as it stays within the rules of the game”; that corporations must follow rules and laws as applicable to the business (Friedman, 1970). Stockholder theory holds that investment of funds into socially desirable programs is perfectly acceptable so long as it is either at the direction of the government or it is in the company’s self-interest to do so. However, to engage in CSR beyond those two criteria would be wrong because then it turns into a social issue and the company is diverting money from its rightful owners. Stockholder theory also holds that pursuing maximization of profits will ultimately lead to greater social good because companies will do whatever is necessary to generate profit. If the market begins to demand the company address a social cause, then the company must do it to maintain market share in order to further wealth maximization.

The Stanford Research Institute came up with the word “stakeholder” and defined it as thus: the “groups without whose support the organization would cease to exist” (Freeman, 1983). Stakeholder theory has developed over time, championed by Freeman, and a stakeholder came to be defined as “an identifiable group or person who can affect the achievement of an organization’s objectives or who is affected by the achievement of an organization’s objectives” (Freeman, 1983). The term stakeholder includes employees, suppliers, vendors, customers, creditors, government entities, resource communities, etc. (Post, Preston, Sachs, 2002). While not all of these stakeholders are equal, they all are or may be affected by the business’ operations and the business is obligated to provide value to these various entities to some degree at the expense of stockholder value (Rausch, 2011).

The movement away from Stockholder Theory towards Stakeholder Theory has gained significant momentum over the past few years. ‘Corporate Social Responsibility’ is a popular topic of research for academics. The stakeholder approach of millennials has been documented (Reavis, et. al., 2017). And most recently, the Business Roundtable has published a statement redefining the purpose of the firm (Business Roundtable, 2019). This new definition focuses squarely on stakeholders over stockholders and incorporates CSR. The Business Roundtable statement posted online on August 19, 2019 states, “...we share a fundamental commitment to all of our stakeholders. We

commit to:...Delivering value to our customers...Investing in our employees...Dealing fairly and ethically with our suppliers...Supporting the communities in which we work...Generating long-term value for shareholders...Each of our stakeholders is essential”. This statement was signed by 181 CEOs of many large corporations in the United States including Amazon, American Airlines, Apple, Bank of America, Exxon Mobil, and Walmart. This statement from the Business Roundtable clearly demonstrates that many important American businesses have shifted from a stockholder approach to a stakeholder approach.

Beyond stockholder vs stakeholder theory, students need to understand that corporate law supports stockholder theory and that various forms of organization do exist to support diverse corporate purposes. The legal issue can be illustrated with an infamous court case between Henry Ford and Horace and John Dodge. Henry Ford stated that his intent was to run Ford Motor Company for the “general purpose...to benefit mankind”, but the Michigan Supreme Court stated otherwise that “a business corporation is organized and carried on primarily for the profit of the stockholders” (Copland, 2019).

The various forms of organization that exist to support diverse corporate purposes include Co-ops, non-profits, and benefit corporations and these should be discussed in the classroom. Certified B-corps should also be discussed so that students understand what avenues are available to corporations to address CSR options. Co-ops are usually incorporated businesses that sell goods and services. They are not charitable organizations, but exist to benefit their members (strongertogether.coop, 2019). There are many examples, including credit unions, electrical service providers, and insurance companies. More commonly understood are the non-profits. “These are groups that are tax-exempt under Internal Revenue Code Section 501(c)(3) as “public charities” because they are formed to provide “public benefit” (Councilofnonprofits.org, 2019).

The less commonly known entity type is a Benefit Corporation. A benefit corporation, like a C corporation, is chartered by a state. This charter type legally allows the company to operate in a manner that does not require the company to pursue maximization of stockholder wealth at the expense of public benefit (El Khatib, 2015). As of 2019, thirty-four states and the District of Columbia have enacted Benefit Corporation legislation (Benefit Corporation, 2019). Unlike traditional for-profit corporations, Benefit Corporations, which are still in the business to make a profit, cannot be held accountable for business practices by stockholders unless there is a question of the company pursuing its stated benefit goals (Hacker, 2016).

Lastly, Certified B-corps should be addressed. A Certified B-corp. is not a separate legal entity type. It is simply a certification from a private non-profit entity, B Lab (B Lab, 2019). B Lab states that certification demonstrates that a business “meets the highest standards of verified social and environmental performance, public transparency, and legal accountability to balance profit and purpose” (B Lab, 2019). However, the existence of B-corps certification is not without controversy. The existence of B-Corps certification begins to create an illusion for consumers that they are automatically more socially responsible than traditional for-profit corporations. This perspective bias could theoretically create an unfair advantage much to the detriment of a traditional company. ‘Greenwashing’ is defined as “use of a public-relations-enhancing social purpose to fritter away money without oversight” (Solomon, 2015). Hacker (2016) and El Khatib (2015) both refer to greenwashing as using the labels that convey to the consumer the company is engaged in a public benefit when in actuality it is just a complex marketing ploy and there is no substantive effort by the company or results from efforts to actually pursue the stated public benefit.

CLASS ONLINE DISCUSSION ASSIGNMENT

The online discussion used in Corporate Finance classes addresses the pedagogical concerns as well as the ‘purpose of the firm’ issues for finance/business students. Students are expected to have read chapter 1 of their corporate finance text before completing the online discussion assignment. As stated above, corporate finance texts are limited on this issue. Typically, these texts only address the basic business entity types and include only a limited discussion, if any, on social responsibility. Also, included in chapter 1 of these texts is the traditional focus on ‘maximizing shareholder wealth’ as the purpose of the firm. The online discussion assignment is typically assigned on day 1 of class. For online sections, the class is typically given about 5 days to complete the assignment. For face-to-face classes, the assignment is due in the learning management system prior to the beginning of the next class meeting. The online discussion assignment requires students to read the Milton Friedman article ‘The Social Responsibility of Business is to Increase its Profits’ and watch the 2012 Annual Shareholders Meeting of Starbucks (Friedman, 1970) (Starbucks, 2013). These two sources present the stockholder view of Milton Friedman and the

stakeholder view of Starbucks. Students are required to form an opinion on the topic, post their view, and then respond to others in the class. The online discussion assignment is presented below in Figure 1.

Figure 1: Corporate Social Responsibility Assignment Instructions

The purpose of this assignment is to examine the diversity of views associated with corporate social responsibility and challenge students to consider their own views. There are two extreme views presented in the assignment. First, Milton Friedman's view is presented in an article he wrote on the issue of corporate social responsibility and second a video link is provided that illustrates the position of Starbucks.

To complete this assignment, you must:

- Read the Milton Friedman article, 'The Social Responsibility of Business is to Increase its Profits' – the article is posted below these Discussion Instructions.
- Watch the Video of the 2012 Starbucks Annual Shareholders Meeting – a link to the video is posted below the Friedman article.
- Enter the Discussion 'Corporate Social Responsibility' and post your discussion information based on the following:
 - Your First Post – should describe how you feel about the issue. Should corporations adhere to Friedman's philosophy or follow Starbucks' example regarding corporate social responsibility? Why?
 - Your Subsequent Posts – should respond to other posts from the class (**IMPORTANT NOTE: Please put the name of the student you are responding to at the beginning of your post so that I can tell who you are responding to**).

Keep in mind that 4 Quality Posts are required for this assignment. A Quality Post demonstrates that you have read the article, watched the video, formulated an opinion, presented your opinion in a professional manner, and responded to others professionally regarding their posts.

RUBRIC: 4 Quality posts are required.

With 4+ Quality Posts, you will likely earn a grade of "A" for the assignment.

With 3 Quality Posts, you will likely earn a grade of "B" for the assignment.

With 2 Quality Posts, you will likely earn a grade of "C" for the assignment.

With 1 Quality Post, you will likely earn a grade of "F" for the assignment.

The Milton Friedman article link is: <http://umich.edu/~thecore/doc/Friedman.pdf> . The link to the 2012 Starbucks Annual Shareholders Meeting is: <https://www.youtube.com/watch?v=hOibHe0I22E&t=9s>.

CLASS LECTURE FOLLOWING DISCUSSION ASSIGNMENT

The process for the Instructor differs after the online discussion assignment is due depending on whether the class section is online or face-to-face. For online sections, the Instructor should grade the assignment and provide individual feedback where students when appropriate. In addition, feedback for the entire class through an announcement allows the Instructor to summarize students' comments and encourage continued engagement in the class.

Additional course materials should then be made available to the students regarding the various entity types. Students should be able to read/study the additional materials in the context of the online discussion assignment to gain a fuller understanding of the various entity types. This link to B Lab should be included for students, <https://bcorporation.net/certification>, along with the Instructor's comments about certification. A description of co-ops, non-profits, and benefit corporations should also be provided along with Instructor comments. It may be useful for Instructors to provide information on Benefit Corporation law in the state of the university. The Instructor

comments also provides a tool for teacher-to-student contact that can lead to increased engagement, student interest, and student success.

For face-to-face classes, the Instructor should also grade the individual student's work in the online discussion. This reinforces to the students that their opinions are valued by the Instructor. Failure to provide individual feedback may result in lesser engagement than is hoped for by the Instructor as the class progresses.

In addition to the individual feedback, the Instructor should present information to the class in the next class meeting regarding the various entity types and specifically address stockholder theory and stakeholder theory. Using the B Lab website, given above, can be very useful in teaching students about Certified B-corps. It should be noted that students tend to confuse Certified B-corps with Benefit Corporations. The distinction must be made clear to students. Some good sources of information are found at <https://benefitcorp.net/businesses/benefit-corporations-and-certified-b-corps> and <https://bcorporation.net/faq-item/whats-difference-between-certified-b-corp-and-benefit-corporation>.

SUMMARY

Professors of Corporate Finance classes are like any other professors in that they have a desire to see their students learn the course material and increase their critical thinking skills. This can be accomplished by using the online discussion assignment presented in this paper. Online discussion assignments do increase critical thinking skills (Seethamraju, 2014) (Zalpaska, Falnegin, & Rudd, 2004). But, for Corporate Finance classes, this can be challenging because these classes tend to be quantitative. The online discussion assignment presented in this paper is a qualitative assignment, allowing students to interact, participate in class, and consider others' views of one of the most important topics in the class. The topic of the purpose of the firm is not an outdated topic. It is current and dynamic even in 2019. Business leaders are addressing this topic publicly. Since textbooks have not yet included sufficient material to cover the topic, the use of this assignment allows Instructors to engage students and keep their Corporate Finance classes up to date with current events.

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Mark Ray Reavis is an Assistant Professor of Finance at the University of Central Arkansas in Conway, AR. He holds a PhD in Business Administration with a concentration in Financial Management, an MBA, and a BA in Business Administration. His areas of published research include millennials and corporate social responsibility, financial institutions efficiency, credit union industry growth, and inflation and monetary policy. His teaching at UCA focuses on corporate finance and financial institutions. He can be reached at mreavis1@uca.edu.

Design Culture, Immersion, Visuo-Spatial Learning: Re-envisioning Training

Lisa Berardino, State University of New York, Polytechnic Institute, Utica, New York, USA
Robert Edgell, State University of New York, Polytechnic Institute, Utica, New York, USA
Michael Fronmueller, University of Wisconsin River Falls, River Falls, Wisconsin, USA
Jeffrey Olney, State University of New York, Polytechnic Institute, Utica, New York, USA
David Peterson, State University of New York, Polytechnic Institute, Utica, New York, USA
Elias Zeina, State University of New York, Polytechnic Institute, Utica, New York, USA

ABSTRACT

Scholars have long identified transfer of training as an important component in the model of training and development (Cascio, 2019). This phenomenon refers to the extent to which competencies learned in training can be applied on the job (Burke & Hutchins, 2008; Machin, 2002). Researchers have identified several problems that have not yet been fully overcome (Cheng & Hampson, 2008). These include training and post-training work environments that foster weak relevance for practice and, thus, fail to stimulate motivation (Liebermann & Hoffmann, 2008) as well as environments that de-situate learning and, thus, fail to foster engagement (Cheng & Hampson, 2008).

We explore design culture as a means for embedding immersion and visuo-spatial experiences. Researchers have recently expressed interest in design culture since its collaborative, multi-constituency processes offer promising means for effectively framing and solving complex problems (Edgell & Kimmich, 2015; Kimbell, 2012; Martin, 2009; Moustafellos, 2014; Seidel & Fixson, 2013). Traditional training relies heavily on coded language. In contrast, design processes embody a robust mixture of immersion experiences, coded language, and visuo-spatial techniques which may overcome the twin problems of de-situated learning and weak relevance.

Qualitative results from a series of educational initiatives that use design culture pedagogy to teach collaborative design processes are analyzed. The results compare software analyzed text to a priori codes. We conclude by identifying particular aspects of immersion and visuo-spatial techniques which hold high promise in helping trainers to solve transfer of training problems.

Keywords: re-envisioning training, design culture, design thinking, training models, entrepreneurial self-efficacy, transformation, immersion, community

INTRODUCTION

“That is, although trainees may garner new knowledge and skills during training, they reportedly fail to apply, or transfer their learning to the work environment.” (Grossman & Burke-Smalley, 2018)

While training has been identified as an important means to address both organizational and social challenges it may not always be effective (Cascio, 2019; Grossman & Burke-Smalley, 2018). The transfer phenomenon or the degree to which individuals replicate and maintain learned competencies in post-training contexts often negatively impacts training effectiveness (Burke & Hutchins, 2008; Machin, 2002). Prior research has identified several problems that remain a challenge (Cheng & Hampson, 2008). These include training and post-training work environments that foster weak relevance for practice and, thus, fail to stimulate motivation (Liebermann & Hoffmann, 2008) as well as environments that de-situate learning and, thus, fail to foster engagement (Cheng & Hampson, 2008).

Many dominant models of training share common conceptual underpinnings of social learning. These models posit that efficacy is determined by four key variables: mastery experiences, social modeling, social persuasion, and physiology states (Bandura, 1986). Increases in self-efficacy have a positive relationship to improved individual performance. This approach to training includes behavior modeling, in which a trainee first learns a particular work performance task through a series of steps, then models and repeats those steps.

Training practices grounded in design culture which embody emergent actor network theories (ANT) may enhance transfer. Researchers have recently expressed interest in design culture since its collaborative, multi-constituency

processes offer promising means for effectively framing and solving complex problems (Edgell & Moustafellos, 2017; Kimbell, 2012; Martin, 2009; Moustafellos, 2014; Seidel & Fixson, 2013).

While traditional training relies heavily on coded language, design processes embody a robust mixture of immersion experiences, coded language, and visuo-spatial techniques. This may reduce the negative effects of de-situated learning and weak relevance. Participants who learn through collaborative design culture treatments may experience greater subject matter relevance and meaning since the process helps them transition from states of individual subjective beliefs to shared inter-subjective concepts. Accordingly, this research is guided by the overarching question, *what are the dimensions of design culture-based training that might be useful for enhancing overall learning, especially transfer?*

STATEMENT OF THE PROBLEM

Design culture-based training is an approach that differs from traditional organizational training models (Edgell, Khasawneh, Moustafellos, 2018). Besides the overarching research question above we ask additional questions such as: How can design culture (DC) methods be applied to potentially improve traditional organizational training? Does design culture potentially address known challenges of traditional training? Furthermore, how can design culture provide opportunities to resolve some of these issues faced by transfer of training? Transfer of Training refers to the extent to which competencies learned in training can be applied on the job (Burke & Hutchins, 2008; Machin, 2002). Transfer of training has been characterized and studied as the magnitude in which knowledge and skills gained in the training context are managed and generalized on the job during a period of time (Ford & Weissbein, 1997). Prior to transfer of training taking place, formal learning generally occurs in an in-person training course or an e-learning course. Transfer of training is more than the movement of learning from one place to another, it can also be investigated as the interpretation of learning into productive action that improves job performance (Matthews, 2017). Learned behaviors may not be relevant for work environment and job expectations; transfer cannot be executed properly (Kozlowski & Salas, 1997). Thus, focusing on transfer of training in post training work settings over extended time periods is clearly important (Zumrah & Stephen, 2015; Ford & Weissbein, 1997).

This paper explores design culture as a means for embedding immersion and visuo-spatial experiences. Researchers have recently expressed interest in design culture since its collaborative, multi-constituency processes offer promising means for effectively framing and solving complex problems (Edgell & Kimmich, 2015; Kimbell, 2012; Martin, 2009; Moustafellos, 2014; Seidel & Fixson, 2013). Traditional training relies heavily on coded language. In contrast, design processes embody a robust mixture of immersion experiences, coded language, and visuo-spatial techniques which may overcome the twin problems of de-situated learning and weak relevance.

LITERATURE REVIEW

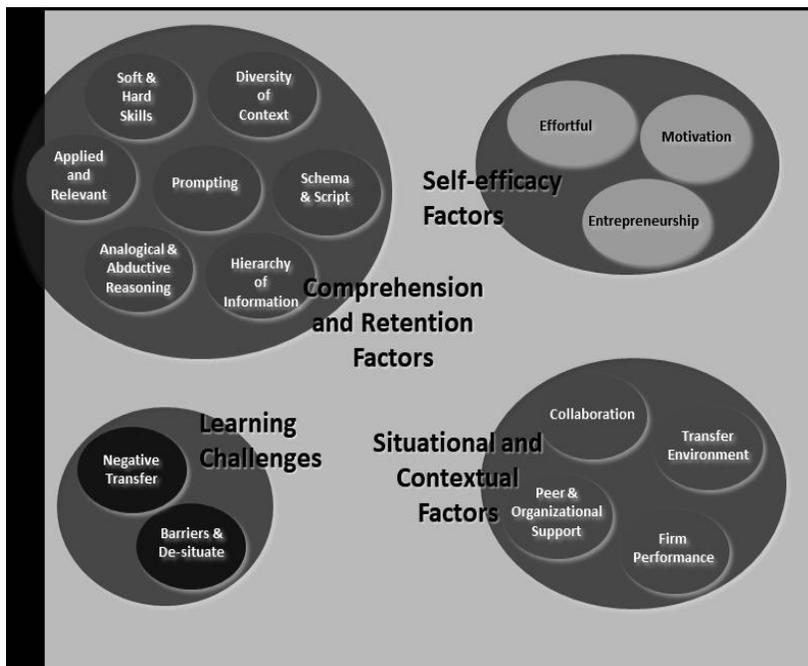
Cheng & Hampson (2008) suggest that several challenges and limitations to traditional training models. These include the role of the environments (training and post-training) that foster weak relevance for practice and, thus, fail to stimulate motivation (Liebermann & Hoffmann, 2008). As Figure 1 shows, the limitations to traditional training models can be categorized into four distinct categories; (1) comprehension and retention factors, (2) self-efficacy factors, (3) learning challenges, and (4) situational and contextual factors. An assumption of training models is that individual performance is a function of individual ability and individual motivation. Most training models have the goal to improve individual performance by teaching to the gaps in ability. For example, if motivation is the performance issue, the recommendation is to increase motivation with rewards.

Comprehension and Retention Factors

Educating individuals by beginning with general principles not only effectively teaches relevant skills, but also teaches the theoretical fundamentals of a subject matter that underlie the content (Baldwin & Ford, 1988). Utilizing the theory of “hierarchy of information” knowledge can be viewed as somewhat of a semantic tree, where basic elements (i.e. branches) of a topic are first learned before more complex ideas are studied (Simmons, 2017). The first phase of successful transfer is contingent upon the trainees’ mastery of the original subject. Without a sufficient amount of fundamental learning, transfer cannot be successful (Bransford, 2004). Knowledge that exists from a previous learning experience can assist the new learning method by connecting the newly learned material with the previously learned experiences (Shao, Zhu, & Li, 2014). Baldwin and Ford (1988) theorize that transfer is most effective when “identical stimulus and response elements” are in both the training and job context. The *application*

of the newly learned knowledge, along with its *relevance* to the job, are essential to the idea of transfer of training (Malamed, 2017).

Figure 1: Traditional Training Challenges



Trainer Motivation and Self-Efficacy

Previous research identified self-efficacy factors as a key transfer of training determinant. Self-efficacy refers to an individual’s belief that she or he is capable of successful performance in a specific situation. It is not an estimation of skills; rather, it is a judgement about what one can do with those skills (Bandura, 1986). Skills that are learned in a training context, may not be preserved in the job setting because of a trainee’s lack of motivation (Baldwin & Ford, 1988). Applying effort, willingness, or desire to an activity, course, or direction increases an individual’s propensity to learn and comprehend information. Motivation is defined as the “force influenced by internal and external factors that guide the direction, intensity, and duration of behavior over time and across situations” (Jundt, Shoss, & Huang, 2015, p.61). Furthermore, motivation to transfer has been regarded by scholars as a byproduct of satisfaction with the job. The more satisfied workers are with their job, the more motivated they will be to transfer their training to the job (Sorensen, 2017). Motivation has also been regarded as a dynamic force that fuels the idea of entrepreneurship (Gielnik, Uy, Funken, & Bischoff, 2017). The development of entrepreneurial self-efficacy is a central driving force in design culture research (Edgell & Moustafellos, 2017). Researchers have theorized that entrepreneurship is a “major engine for economic growth and job creation” (Lackeus & Middleton, 2015, p. 48).

Learning Challenges and Situational Factors

An organization’s policies and procedures may have the tendency to disrupt proper transfer from taking place. If a work environment is unsupportive of an employees’ new skill application, it is unlikely that the skills will transfer and continue during a period of reinforcement (Coates, 2007). Traditional learning models have been theorized to de-situate learning for a trainee. For example, screen-based online reading (as compared to paper) is known to dull retention over-time because it is proven to be more mentally and physically taxing (Jabr, 2013). Generally, training research shows persistent weakness of training to transfer into work settings.

Revisioning Training based on Design Culture

Design Culture (DC) differs significantly from traditional training methods (Edgell et. al, 2018). In DC, training is active and energetic compared to typical information delivery in traditional training. Participants in DC are on site actively engaged (immersing) instead of passively absorbing information through lectures or computer screens. Emphasis is on the visual and spatial experience. DC centers on creativity, including generating creative new solutions to problems. The sources of problems are explored through immersion (longer focus to spend time to see a

situation from many angles). Diverse teams are created to complete the task of presenting an idea to solve the problem. Outcomes (e.g., solutions) are unknown (to be discovered) at the start of the training workshop. In DC, the training preparation brings the problem into clear focus through investigation of relevant backgrounds.

Design Culture uses network engagement through use of technologically robust networks that provide fertile contexts or playgrounds for the development of tinkerers and experimenters. Design immersion allows for the blending of interdisciplinary scientific and engineering rigor with aesthetic sensibilities, reasoning, and visualization techniques (Edgell & Moustafellos, 2017).

DC contrasts with behavioral modeling by shifting away from step-by-step behaviors towards an environment in which teams actively compete for creative solutions and the use of visual tools. Teams, community involvement, increased self-efficacy, activity and energy, change and transformation --- all delivered by design culture events --- are factors that potentially aid traditional training challenges such as transfer of training.

Design Culture shifts from an individual employee focus towards considering the whole context and including interaction between individuals and technology. For example, DC does not train a set of behaviors --- it uses structured processes to frame “messy” problems and collectively generate solutions. Design culture research suggest that elements of community, team composition, activity types, presence of helping behaviors, and the nature of the change or transformation processes play a vital role (Edgell et. al, 2018). Design culture could be an important new approach when used judiciously in addition to or instead of traditional training.

METHOD

Qualitative feedback from a series of innovation challenge events that used design culture treatments (e.g., pedagogy) to teach collaborative design processes was analyzed. A total of 259 open-ended survey responses were analyzed to create an a priori code book for text analysis using IBM SPSS text analytics software. The open-ended survey data was evaluated through the use of this coding. The code classification (and expanded categories that were developed based on the coding process) were established progressively and collaboratively by the authors.

Seven a priori codes were used in the qualitative analysis of the data: *community, team, action, self-efficacy, design, transformation, and immersion*. Community refers to community involvement, caring about multiple and diverse stakeholders, and a sense that individuals can be part of change and can make a positive difference in communities. Team refers to and includes various aspects of being associated with a positive team experience having positive interpersonal involvement, and positive, supportive interactions with new and diverse people. Action is the feeling of excitement, fun action associated with “doing”, quick and focused pace of activities, being involved with a competition, and being incentivized by the hopes of winning and making contributions. Self-Efficacy captures the feeling of high self-confidence and “I can do it” individually and “we can do it” collaboratively with others. Design is the use of novel and different methods and real materials for addressing complex phenomena and generating multiple ideas. This includes using structured processes to both frame then solve problems, visual methods, prototyping, sticky notes, and physical materials all of which have not been traditionally associated with business education. Transformation refers to a sense of individuals communicating that they have been personally, deeply, and positively transformed by participation in ICNY (Innovation Challenge New York).

The design culture approach heavily relies on Immersion. Participants are immersed in the context of the problem by field visits to organizations in the community. Participants are directed to observe carefully and take notes to identify hidden assumptions and to understand many perspectives to complex phenomena. Rigorous immersion helps to avoid generating solutions before phenomena or situations are deeply understood and can be framed. This also refers to “bright spotting” or actively investigating situations in search of the conditions under which positive human experiences are predicted or possible.

These seven a priori codes were generated by the authors following extensive discussion and analysis of the open ended question survey responses. The next step was to compare these a priori codes to the software analysis which generated emergent categories of this text data.

Design Culture Treatments

The qualitative analysis is based on 259 participant surveys from a sequence of design culture workshops. Started in the Fall of 2014, Innovation Challenge New York (ICNY) is a bi-annual student competition that transforms novel ideas into actions and, hopefully, greater quality of life in Upstate New York State. ICNY combines business

modeling and innovation with collaborative design methodologies developed and used by architects, designers, and urban planners. Since its inception in 2014, SUNY Poly has successfully led multiple ICNY events.

Table 1: Innovation Challenge New York (ICNY) Event Participation

Iteration Name	Topic	Date	Location	ACTUAL # Student Responses
ICNY Mohawk Valley	Harnessing the DIY Spirit	Fall 2014	Utica NY	42
ICNY Cayan Library	The Future of Our Library	Spring 2015	Utica NY	36
ICNY Mohawk Valley Oneonta	Re-envisioning Oneonta	Fall 2015	Oneonta NY	46
ICNY Technology, Art, and Social Impact	Integrating Technology, Art, and Social Impact	Spring 2016	Utica NY	22
ICNY Clean Energy and Economic Vitality	Developing the Innovative Potential of Clean Energy, Smart Building Technologies, and Green Construction	Spring 2017	Utica and Rome NY	36
ICNY Reimagining Greater Old Forge	Developing sustainable economic vitality, and the community potential of Old Forge along with the Central Adirondack Region	Fall 2018	Old Forge NY	77
			TOTALS	259

Regarding age, the majority of respondents selected the range 15-24 years old. 53% were male while 47% were female. In addition to providing students with robust experiential learning experiences and generating useful ideas for improving the region, Innovation Challenge New York (ICNY) is also an ongoing research project headed by Professors Edgell (SUNY Poly) and Moustafellos (Temple University) to investigate the role of design culture in community revitalization. These research results suggests that participants in these types of events gain not only valuable skills for collectively investigating and solving complex community challenges, but also greater entrepreneurial self-confidence and likelihood of remaining in their communities.

RESULTS

The SPSS software analyzed the text data of the open ended survey questions of the respondents across a series of innovation design workshops. These strongest relationships among the a priori codes were between community, and design problem solving, teams, and immersion as displayed in Figure 2.

As shown in Figure 3, the SPSS software analysis of the qualitative survey question data resulted in the following emergent categories: Human Development, Working, Group, Organizational teams, Time, Ideas, Results, Community. The subcodes and definitions are presented in Table 2 below.

Figure 2: Analysis of A Priori Code Book utilizing IBM SPSS Modeler V18.1

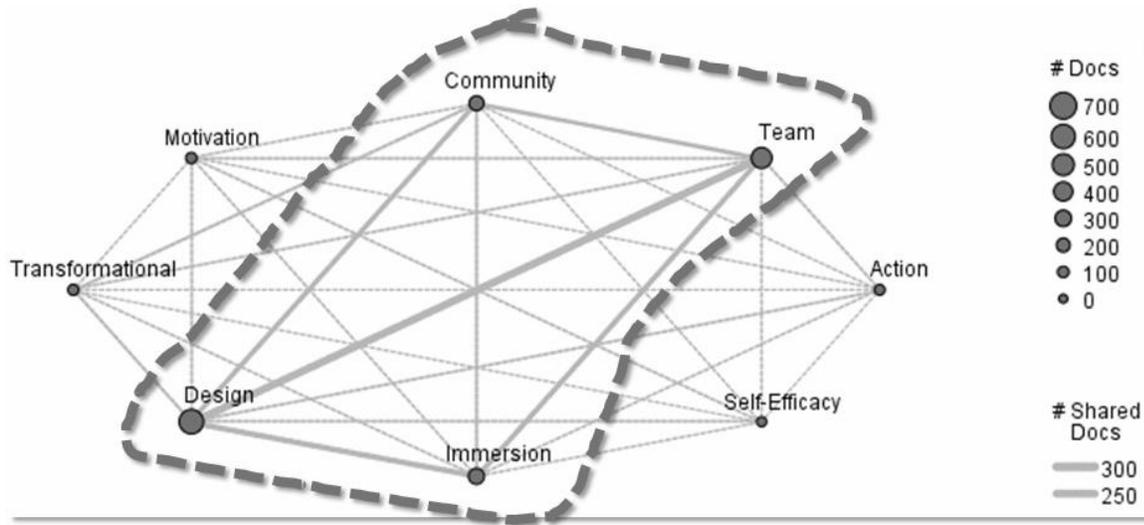


Figure 3: Analysis of subcategories utilizing IBM SPSS Modeler V18.1-Natural Language Processing-Category Extraction

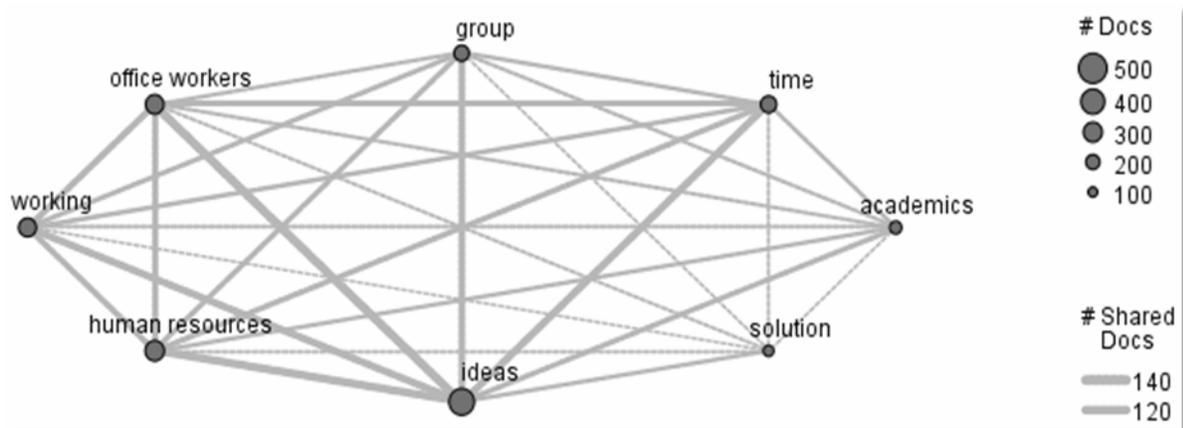


Table 2: Subcode definitions of the emergent categories presented in Figure 3

Human Resources , challenges, benefits, time management, communication	HUMAN DEVELOPMENT
Ideas , quantity, good, novel, great, useful, variety, creative	IDEAS
Working , collaboration, communication, teamwork, listening	WORKING
Time , limits, constraints, frames, hurried	TIME
Office Workers , team members, strengths, weaknesses, winning, dynamics	ORGANIZATIONAL TEAMS
Academics , students, facilities, research, group diversity, facilitation	COMMUNITY
Solution , generation, collective, creation, prototype, combined	RESULTS
Group , people, strangers, relationships, diversity	GROUP

Figure 4: Development of Interpretive Storyboard from Emergent categories

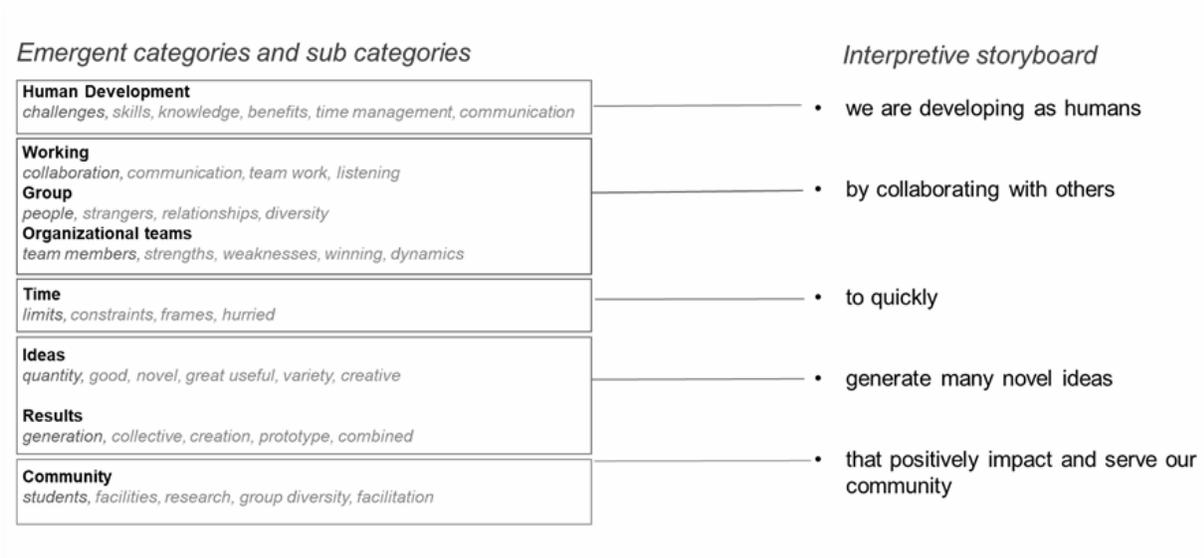


Figure 4 offers an interpretation of the emergent categories results: We are developing as humans by collaborating with others to quickly generate many novel ideas that positively impact and serve our community. In sum, both a priori and emergent codes indicate that participants respond favorably to working in teams and experiencing community in the training workshop environment. What was interpreted a priori as action was indicated in emergent codes to be time pressure. Participants respond to seeing their results in problem solving and the achievement of outcomes of the innovation workshops.

DISCUSSION

The results of the text analysis on open-ended survey data seems to lay bare a principal element of basic human behavior. That is the view that humans feel more self-realized and accomplished when they understand their individual and collective abilities to overcome difficult and uncomfortable tasks. This basic understanding might facilitate the transfer of training because being a learner, especially a beginner at something, can be hard (Bregman, 2019). Additionally, when given an objective that contributes to a greater common civic good, participants seem to ignore their initial aversions to uncomfortable situations in order to support and advance a broader moral objective.

By using difficulty as an experimental frame to view all other codes, a bottom up approach is established whereby participants recognize that proactively facing challenges under constraints and early in an event can be healthy and manageable through teamwork and design processes. Based on the coded responses participants experienced their most difficult situation early in the event.

Challenges and difficulties early in the participants experience seem to play a critical role in shaping the most surprising and rewarding experiences after the innovation challenge. The stress and difficulty brought on by meeting and working with new people on short notice (Group) and the time constraints (Time) introduced by the process surprised participants with the realization that collective power (Community) can produce positive tangible outcomes (Results). The analysis also indicates that when participants believe that their efforts have real-world practical application (Community) their self-efficacy and confidence working with others also improves.

The ability to struggle and persevere and understand one's own aptitude and to triumph over obstacles allows the learner to grow more resilient which will not only lessen the stress of learning new materials but also transfer into new settings.

CONCLUSION

As depicted in Table 3, based on the emergent categories generated from 259 participants of innovation design workshops, several dimensions of design culture are recommended for organizational training. Training can be based on framing problems with a broad environment considered. Diverse teams can generate ideas. Community awareness and a sense of helping the whole community can be brought in. Training can be a part of personal transformation, including increasing self-efficacy for solving complex problems. Training can be designed to be active (not passive absorption).

Design culture methods shift the focus of training away from delivering content and towards framing problems and opening doors for creative problem-solving. An example of this shift could be a hospital training all employees to deliver more compassionate care. Classic training would teach a set of questions to ask each patient and a set of behaviors for going the extra mile. DC methods frame the problem of more compassionate care and structure an environment where solutions can be in situ created.

Table 3: Re-envisioning Traditional Training based on Design Culture

Situational Factors	Purpose and goal of training is beyond individual behavior change, rather the focus is on teams and community.
Trainer Motivation	Motivation is generated from collaboration with others to generate novel ideas impacting community.
Comprehension Factors	Trainees learn more about the context through immersion.
Learning Challenges	Outcomes (problem solutions) are not defined at the opening of training. Awareness that the beginning of training is challenging and may feel uncomfortable. The solutions emerge from the diverse teams creatively generating solutions.

In environments with an increasing pace-of-change, acquisition of new knowledge and procedures becomes a constant part of the job. Effective training is a challenge. Design culture offers organizations a creative new approach to learning and problem solving. Based on this research, human resource professionals are encouraged to consider design culture approaches to training. A particular targeted area is for problems where an exact step-by-step set of behavior modeling cannot be created and for situations similar to community building and community problems exploration (such as an entire hospital increasing compassionate care). The design culture approach can be especially effective in complex problem solving and community challenge situations for training which are not addressable through use of behavioral modeling (presenting a set of tasks to be accomplished). For example, the design culture approach has been successfully used by an upstate New York town facing resource challenges and a small population. It led to an upsurge in urban renewal, a dramatic increase in initiatives proposed by the public and enthusiastic support by the media.

Human Resource directors and training leaders should consider elements of design culture when planning training. Training professionals who are willing to invest in learning design culture methods will have an approach that potentially transforms employees and encourages changes that transfer to work settings. Learning design culture is becoming available through certificate programs and from training management consultants. Examples exist of centers on university campuses that include design culture. Design culture is a good match with training that involves community building and complex problem solving.

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Toward Maximizing the Student Experience and Value Proposition through Precision Education

Michael S. Wilson, Metropolitan State University – Minneapolis, Minnesota, USA
Perwaiz B. Ismaili, Metropolitan State University – Minneapolis, Minnesota, USA

ABSTRACT

Personalized learning (a.k.a. precision education, mass customization of learning, next-gen learning) includes many facets. The goal of this paper is to describe precision education concepts of high touch, high choice and high tech and how they have been adopted by some forward thinking universities. The paper supports the position that higher education must change to better support education among institutions that are less selective and serve adult populations.

Keywords: Precision Education, Direct Assessment, Adult students

INTRODUCTION

The role of precision education (a.k.a. personalized learning, mass customization of learning, next-gen learning) includes many facets and has been adopted by some forward thinking institutions. The goal and challenge is to create the ultimate student experience using the latest technology, integrated student support processes, flexibility, control and the highest quality teaching. Although criticized (Dean, 2012), such a challenge is consistent with the goal of maximizing the student experience through *high touch, high tech, and high choice*. High touch requires customization based on learner's need while high tech and high choice necessitates technology improvement in delivering education and ubiquitous accessibility. Creating a learning ecosystem that meets the needs of a diverse population of learners will require the latest technology and multiple pathways to achieving each learner's goal.

This paper seeks to provide landscape of conceptual and practical steps taken by academic institutions to embrace precision learning concepts.

CHALLENGE

Barber, Donnelly and Rizvi (2013) in their publication by United Kingdom's premier progressive policy think tank, IPPR, raises a critical question. In their work titled, *An Avalanche is coming*, the fundamental question raised is whether university education is a good preparation for working life and citizenship in the 21st century or, more precisely, whether it will continue to be seen as good value, given the remorseless rise in the cost of a university education over recent decades. For students, the question is immediate and challenging given the growing anxiety around the world about youth unemployment, even among college graduates.

The national call for higher education to address rising tuition and subsequent student debt and delinquency is reaching a crescendo (Goldy-Brown, 2019). Academic institutions like any other organization are increasingly being asked to market, articulate and defend their value proposition as a strategic necessity (Payne & Frow, 2014). Similar to business models, students are viewed as customers while academic institutions like any other business, competing for their customers (Aggarwal, 2003) Particular attention has been directed toward open access and less selective institutions due to chronically low persistence, graduation, and loan default rates.

Simultaneously, technology-based delivery systems combined with free and ubiquitous content has greatly enhanced the reach of institutions with greater brand visibility. These institutions are beginning to offer lower cost alternatives to larger numbers of students. While the selectivity of traditional students has historically carried the brand reputation of many of these institutions, new and alternative pathways and resulting credentials (i.e. micro-credentials, and nanodegrees) are often less selective and are creating learner access to previously inaccessible resources. With the aid of accessible technologies, countries and people that were historically less privilege are now able to avail good quality education (Barbar, Donnelly & Rizvi, 2013).

Adult learners are the largest target population for coming decades. Yet, increased competition, new credentialing paradigms, and competitive pricing, have left many with either stagnant or declining enrollments.

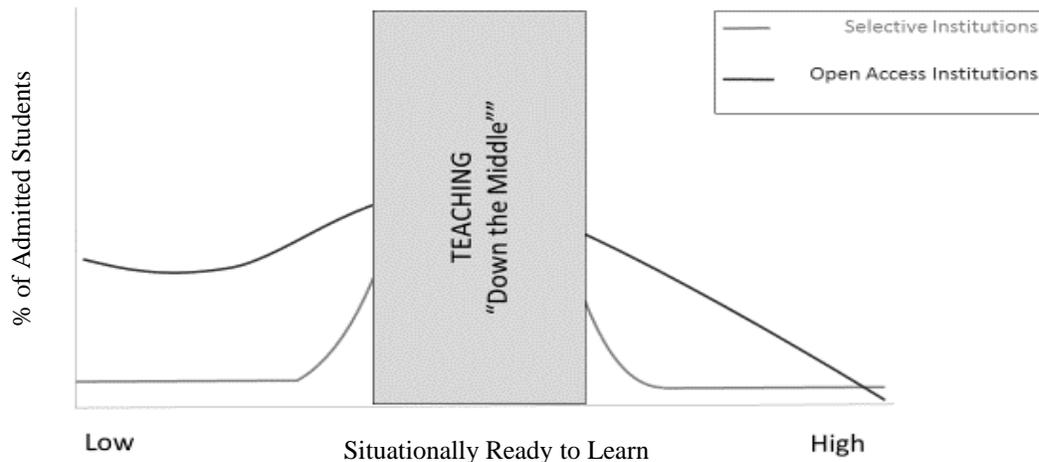
The entrance of new providers and the emergence of innovative technology-enhanced delivery systems will provide constant pressure on enrollments and revenue for the foreseeable future. These pressures will require re-imagining

the delivery system to better serve diverse students with a new paradigms, such as, Precision Education. Increased marketing and tweaks in recruitment/retention will be insufficient to reverse enrollment trends and stimulate growth.

EXTERNAL SCAN

Personalized learning successes are emerging across the country (Rawson, Sarakatsannis & Scottand, 2016)). It is important to note that these efforts all include technology enhanced innovations, but are not pure technological solutions.

Figure 1: Readiness to learn between Selective and Open Access Institutions



Consider Figure 1. Selective institutions, those who screen and select students based upon traditional academic preparedness (e.g. SAT and GRE scores), admit a population of students who are “situationally ready to learn.” That is, they are selected to succeed in a traditional model where there is little need to differentiate instruction or pay attention to the diverse needs of the student body. The student body is defined by preparational “sameness”, not difference. Consequently, traditional instructional approaches will lead to successful outcomes for the majority of students.

However, institutions with more open access and less selectivity admit students with very diverse levels of situational preparedness to learn. The open access student distribution presented in the above diagram represents the pattern most likely at the Capella, National University and Georgia State University. The range of readiness to learn is much broader than the range in selective institutions and students are distributed across that range much more evenly. Consequently, “teaching down the middle” in a non-differentiated manner will only reach a fraction of the students that are reached when students are selected to fit within an instructional paradigm.

True equity in higher education will be achieved when we recognize diversity of instructional and student support practices to meet the diverse needs and levels of preparation of our adult learners.

A nimble and lean culture, combined with the diverse backgrounds and preparation levels of student body, as well as that of faculty can position schools to lead innovation in this space. Furthermore, innovative and distinctive approaches to learning are required to continue to grow and address the rising cost of higher education. This will require creating a stronger culture of innovation.

Along these lines, this paper outlines the results of an environmental scan. This paper will describe precision education concepts by describing examples of high touch, high tech, and high choice at Georgia State University, Capella University and National University.

Georgia State University High Touch Program

Georgia State is an example of a high touch program. The innovations have attracted visitors from hundreds of colleges eager to replicate the school’s successes. They have come from the Netherlands, from South Africa, and from across town from some of the nation’s most renowned historically black colleges (Fausset, 2019).

According to Fausset (2019), for decades, Georgia State was downtown Atlanta’s rather unremarkable commuter school. Over the last ten years, the Georgia State’s academic advising department has been reimaged with data-

driven experimentation. Academic advising at Georgia State monitors the daily progress of more than 40,000 undergraduates, and uses data analysis to predict potential academic problems. The focus on retaining students instead of just enrolling them.

Georgia State's high touch programs include the following characteristics.

- A required seven-week summer session to prepare incoming students considered academically weak to the college's tutoring, advising and financial literacy programs.
- Micro grants to help with unpaid tuition and fees,
- Advisors with access to over 800 data points that could signal academic struggle.

The results include raising its graduation rate to 54 percent in 2017 from 32 percent in 2003. And for the last five years, it has awarded more bachelor's degrees to African-Americans than any other nonprofit college or university in the country.

Capella University – High Choice Program

Capella serves many of the students that are target demographics of non-traditional schools including a large percentage of the student body that are working adults. Capella invested in a direct assessment program that is competency-based program and untethered from the credit-hour standards.

According to Fain, Capella's Flex-Path program was developed as follows:

The U.S. Department of Education and Capella's regional accreditor signed off on the university's FlexPath programs six years ago. About five other colleges have subsequently followed the lead of Capella and SNHU with approved direct-assessment programs of their own. By focusing on assessed learning rather than requiring students to progress through academic content, direct assessment was seen by many as a potentially transformative (and controversial) challenge to a traditional higher education.. A big assumption about direct assessment is that it would offer students the chance to progress more rapidly through degree programs by allowing them to be assessed for material they already know or can learn quickly.

Capella says after five years of offering the so-called direct assessment program, FlexPath, students typically complete faster, spend less and have better retention rates than their peers. The report found a median time to completion for students enrolled in Capella's direct-assessment bachelor's programs was 59 percent faster than for their peers in equivalent, credit hour-based ones. The median time was 42 percent faster for students in master's programs. FlexPath students also had an overall two-year persistence rate that was 23 percent higher. And Capella said the gains for students were made without sacrificing academic quality, and that the direct-assessment program includes the same learning outcomes (or requirements) as other credit hour-based equivalents.

Freed from the credit hour, direct-assessment programs allow students to move more quickly through the competencies with which they are more familiar and slow down and take more time with concepts that are less familiar, the report said. This model allows students to fit education into their lives, at the intensity level and at times that work for them.

The median total tuition billed to FlexPath students was \$10,548, according to the report. That's 59 percent less than the tuition billed to students in equivalent credit-hour programs. Likewise, the median federal financial aid borrowed by FlexPath students (\$11,739) was 45 percent less than their peers in Capella's traditional programs borrowed.

Getting a direct-assessment program up and running isn't easy, said Jillian Klein, the report's co-author and vice president of government and regulatory affairs for Strategic Education Inc. (Capella Education Company last year merged with the larger Strayer Education Inc. to form the new Strategic Education.) "It is very resource intensive," Klein said. The credit hour is still the gold standard in higher education. So colleges typically still need to "map" direct-assessment programs to credits. And Capella gives FlexPath students both direct-assessment transcripts and conventional, grade-based ones.

Deb Bushway, who is currently president of Northwestern Health Sciences University, is a veteran of competency-based education and the former provost and interim president at Capella, where she played a key role in helping to create FlexPath. “It worked,” she said of the new report. “There are a bunch of people out there that these other programs weren’t serving.” (Paul Fain, 2019)

National University High Tech

National University’s President David Andrews (2020) believes true equity in higher education will be achieved when we diversify our instructional and student support practices to meet the diverse needs and levels of preparation of our adult learners. Andrews calls for a nimble and lean culture to position National University to lead innovation in this space through innovative and distinctive approaches to grow and address the rising cost of higher education through a stronger culture of innovation.

Technology proof points were investigated by the National University System found that:

1. There are many versions of online education, but research suggests hybrid models produce best outcomes
2. Adaptive learning, learning analytics and big data continue to attract interest and capital investment
3. Enrollment continued in various modalities (online, competency & hybrid)

National University performed an external scan of the landscape and recognized the following technological innovations are driving change in higher education. Accordingly, strategic planning at National is aimed at staying in the forefront of these trends.

Integrated Systems and Institutional Innovations

This category of innovation is defined by approaches to create integrated systems within programs or entire institutions. All of these approaches are efforts to create an ecosystem of innovation that will not just lead to one adaptation of the traditional model, they represent integrated systems approaches that are constantly adapting to new technological advancements and a maturing understanding of individual student needs.

- ***Institutional/Program Reorganization:*** Some institutions have decided that creating a culture of innovation requires restructuring programs, or in some cases entire institutions. This is being accomplished by creating new leadership roles, offices of technology/innovation, task forces and commissions to drive innovation deeper into the institution.
- ***Data Informed Decisions with Predictive Learning Analytics:*** Education and medicine are beginning to catch up with the consumer sector in terms “two-sided market match” approaches to meeting the needs of students and patients. The approach is simple, know as much as you possibly can about the needs of a given population, and create as many diverse options as you need to meet the need, apply sophisticated statistical modeling to the data about “needs” and “approaches” in order to guide future decision-making. At scale, this leads to the type of mass customization that we see with Google, Amazon, and e-Harmony, AirBNB, and Rover.com.
- ***Coalitions and Partnership:*** Many universities are aspiring to innovate by joining coalitions or creating partnerships that are explicitly focused on changing the culture within higher education. Such coalitions and partnerships create visibility for innovation, often provide outside resources to invest in innovation, and establish networks for sharing best practices. These partnerships may include financial partnerships (e.g. revenue sharing), but are not necessarily defined by the business model.

Independent Technology Enhanced Innovations

In addition to systemic and institutional level investments in integrated innovations, there are countless less integrated approaches being implemented across the country as new innovations. Research addressing the efficacy of these approaches when implemented at scale is in its infancy. Nonetheless, many of these approaches are gaining popularity and many seem to be effectively serving targeted subsets of students. This section briefly addresses four themes of activities occurring in this area of higher education.

- ***Machine Learning (Adaptive Technologies).*** Computer programs designed to automate customized approaches in education through adaptation are flourishing. The most prominent approaches are based upon smart machines that get smarter with each student interaction. The program learns about students as the students learn about the content within the program. The growth in this domain is fueled by the increased acquisition of high volumes of data and increased computing power. Machine learning is an expansion of static more static computer assisted instruction, but is only a subset of artificial intelligence.

Machine learning is not restricted to instructional practices in higher education. It is also present in student support, and recruitment.

- ***Student learning tendencies.*** There are a number of widely used mathematics courses and interventions that adapt to the students learning tendencies in instruction. These tendencies are not preprogrammed, rather they are modified based upon student performance as well as the tendencies of other students with similar historical profiles on the system. The programs currently work well in disciplines where the skills and knowledge required are readily defined and student progress can be mapped against these skills and knowledges (i.e. math, accounting). However, technology is advancing quickly and systems are emerging in the humanities and social sciences.
- ***Student support.*** Machine learning (artificial intelligence) is also being used in advising and other forms of student support. The most prominent example is IBM Watson's Project Sapphire funded with the University of Michigan this year. The MIT's pilot on student advising using Watson is a good example. The project is building on Watson's previously successful academic engagement advisory by subjecting the IBM Watson computer to high volumes of conversations related to student life and advising. The result is an automated advising and student support resource that can improve student retention and satisfaction.
- ***Real-time recruitment.*** Machine learning is being used in recruitment and admissions to provide real-time analysis and recommendations to advisors during ongoing conversations with students about attending the institution. The real time analysis of the conversation between student and admissions specialist is designed to reveal the solicitation strategies that are most likely to lead to admissions, and then prompt the advisor to use the most likely approach.

Notable Shifts

We are witnessing significant shifts in higher education and couple of them are worth discussing in this paper.

First, the overall unbundling of content and the distribution of this content for free is being practiced. Traditional higher education bundled content in standard course long segments (typically quarters or semesters), used Carnegie Unit metrics to determine how much "seat time" equated to a credit hour, and set tuition rates based upon this determination. Content resided in a combination of a text book and the professor's head.

Now, content is ubiquitous, is digitally distributed in much smaller amounts than entire textbooks, can be searched and digested in only the most relevant chunks, and is largely free. The academy, no longer owns knowledge and distributes (sells) it at its leisure. Rather, the academy vets content and sells the verification that a given student has acquired the requisite knowledge or skill to meet certification/degree requirements.

The great unbundling of content has been immediately followed by an unbundling of the assessments necessary to determine whether or not a student has gained an understanding (mastery) of the said content. This in turn has led to the realization that competency-based approaches that assess what people know and can do, are viable means to moving away from a dependence on seat time (Carnegie Units) as the primary pace setter in higher education.

As we continue to unbundle content, technology is also enabling the recognition of sets of competencies in much smaller units than full degrees and is facilitating the recognition of these competencies in smaller units. This is typically called a micro-credential or nanodegree. The digital recognition of this "credential" is often called a micro-badge and the process of awarding is called micro-badging. Emerging technologies allow the credential provider and recipient to digitally visualize the work that led to the badge. This visualization is usually achieved by linking the badge to the portfolio or work sample generated when the recipient was assessed.

Second, open access platforms for delivering instruction are rapidly emerging and are likely to further strain the traditional models. While massive open online courses (MOOCs) have not been as immediately disruptive as many expected, they currently serve over 10 million students. There are scores of entrants into this space including Coursera, Udacity, EDx, Khan Academy, and many others. Even though completion rates are notoriously low, completers who opt for credit (by paying for a certificate) number well over a million a year and are currently voluntarily paying a fee (typically between \$35 and \$75) to receive a certificate that does not translate to traditional credit in many universities. Nonetheless, many universities are developing a growing dependence on millions in revenue derived from MOOCs.

More recently, the original MOOC providers and new entrants like Google's non-profit derivatives MOOC.org and Gooru are partnering more closely with traditional university approaches to grant entire degrees. Georgia Tech's

partnership with Udacity to launch its first online Master's degree and immediately attract 7000 students is representative of the power of these partnerships

Consequently, these dynamic are pushing higher education to rethink its pricing structure. Emerging models in competency-based models employ a subscription model. That is, the faster you accumulate competencies, the sooner you complete your degree and the sooner you can cancel your "subscription". While the others are experimenting with ala cart pricing of modules and competencies and few are asking their students to pay for the assessments of their knowledge and skills, but surely not the traditional method of assuming where and how these skills were learned.

The times are certainly changing!

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Michael S. Wilson, PhD, CPA is a curious life-long learner who creates learning assignments to reach the highest levels of bloom's taxonomy. He has published papers on accounting education in leading accounting journals while being affiliated with universities across the United States. He can be reached at michael.wilson@metrostate.edu

Dr. Perwaiz Ismaili teaches for the College of Management at the Metropolitan State University in Minnesota. Given his unique blend of experience, he seeks to minimize *corporate-academic* gaps.

Teaching Simulation Methods with Google Sheets as a Gentle Introduction to Statistical Computing with Python

Justin O. Holman, Colorado State University Pueblo, Colorado, USA

ABSTRACT

As Data Science gains widespread use in contemporary organizational decision processes it becomes increasingly important for future business professionals to understand statistical computing methods. One of the most broadly applicable statistical computing methods is Monte Carlo simulation. Monte Carlo simulation is used by scores of academics and practitioners for a variety of purposes. This paper describes efforts to teach Monte Carlo simulation using Google Sheets as a gentle introduction to simulation in Python. A series of simulation assignments are first completed in Google Sheets and then the same simulation assignments are conducted in Python. An analysis of student course evaluations indicates this two-step approach may improve student attitudes toward statistical computing.

Keywords: Data Science, Statistical Computing, Monte Carlo Simulation, Google Sheets, Python

INTRODUCTION

In the author's institution, an AACSB accredited School of Business within a regional state University, two semesters of applied statistics are required for undergraduates pursuing a business degree. In an attempt to make statistics as relevant to future business careers as possible, I began teaching a statistical computing module as part of the second semester statistics course (Holman 2018). In this paper I describe my efforts to teach Monte Carlo simulation using a spreadsheet modeling approach with Google Sheets followed by a programmatic approach with Python. By introducing a spreadsheet modeling approach prior to Python programming methods for conducting Monte Carlo simulation I hoped to improve student comprehension of Monte Carlo simulation, Python programming and statistical computing in general. It's difficult to say whether student comprehension improved but this approach seemed to improve student enthusiasm for learning statistical computing methods relative to previous semesters.

LITERATURE REVIEW

In response to strong demand for programming and data analysis skills in business (Davenport and Patil, 2012; Manyika et al., 2011), AACSB-accredited Business Schools have begun teaching courses and offering programs in business analytics (Zhao and Zhao, 2016) and universities have begun offering courses in Data Science (Brunner and Kim, 2016). In parallel, statisticians have argued that computing concepts should be incorporated within undergraduate statistics curricula (Nolan and Temple Lange, 2012; Donoho, 2015).

One of the most broadly applicable methods in statistical computing is Monte Carlo simulation. The Monte Carlo method was introduced by Metropolis and Ulam (1949) and has been applied extensively in many fields including biology (Manly, 1991), physics (Strawderman, 2001), engineering (Arie, 2000), and finance (Glasserman, 2004). While Monte Carlo simulation is not typically included in a business statistics curriculum, it's pedagogical utility has been demonstrated for teaching production and operations management (Usher, 2008; Hayes, 2008), economics (Becker and Greene, 2001; Craft, 2003), finance (Carver, 2013) and more traditional business statistics topics including Sampling Distributions (Weltman, 2015) and Hypothesis Testing (Weltman, 2017). This paper builds on these pedagogical applications to business curriculum concepts generally and follows Carver (2013) in providing a set of teaching exercises specifically designed for analysis of financial data.

COURSE DESCRIPTION

Advanced Business Statistics is described in the University catalog as follows: "Development of advanced statistical techniques to support business decision-making. Topics include advanced multiple regression analysis, analysis of

variance and nonparametric techniques.” The course is the second in a required two-course sequence beginning with *Inferential Statistics and Problem Solving* as the prerequisite first semester course offered within the same department. In Spring 2019 the course was taught in a computer lab classroom with 45 Dell Personal Computers (PCs) connected to the internet, running Microsoft Windows and equipped with the Microsoft Office suite and other popular software applications for business productivity. The course runs for 15 weeks meeting 2 times per week for 80 minutes in a traditional format. Although web materials and web applications are used frequently, the course is not an officially designated “hybrid” or “online” course and students are expected to attend class in person. There are two sections of the course with the first section beginning at 11:15 a.m. and the second beginning at 1:00 p.m. each Monday and Wednesday of the semester. A total of 76 students were enrolled in both sections combined. Students are encouraged to work together on assignments but required to submit their own work. Three exams are used to assess student proficiency. A course syllabus and individual lesson plans with detailed assignments are available by contacting the author.

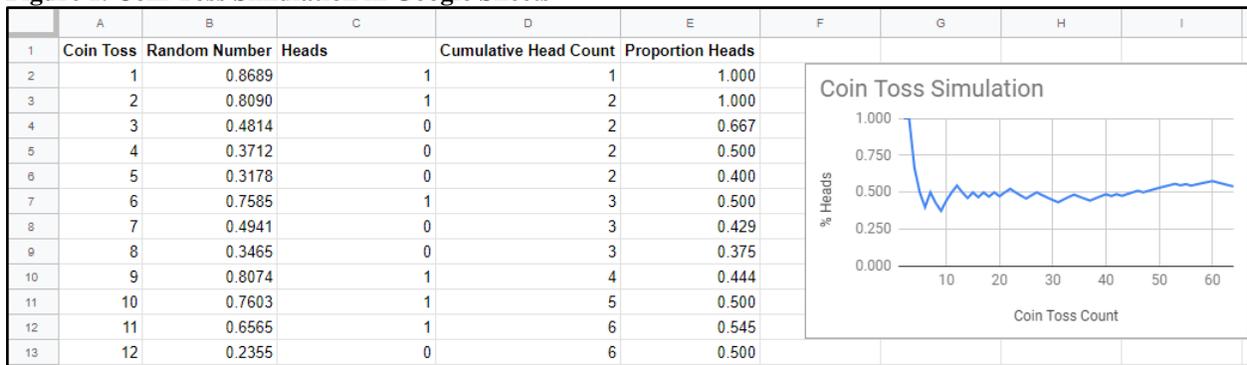
SIMULATION LESSONS

Though a detailed accounting of every aspect of the content delivered in the Advanced Statistics course during the Spring 2019 semester is beyond the scope of this paper, in this section I describe the Monte Carlo simulation module presented to students. The module presents three simulations with instructions for implementation in Google Sheets. Students are then reintroduced to the same set of simulations implemented using Python programming.

Simulation 1: Coin Toss

Initially, students are introduced to one of the simplest possible random processes, a coin toss. The pedagogical purpose of the simulation is to illustrate how random processes are sometimes difficult to forecast accurately near term but become predictable with repeated iteration. Using the “many rows” technique (Carver, 2013) a worksheet is setup with each row representing an individual trial run. There are no inputs or parameters. Rather, this simple simulation illustrates that as the number of coin tosses increases, the mean probability of coin tosses that result in “heads” converges to 0.5. See Figure 1 (spreadsheet screen capture).

Figure 1. Coin Toss Simulation in Google Sheets



In the spreadsheet above, there are five columns of data. Column A is simply a count of the number of coin tosses. Column B utilizes the RAND() function to generate a random number between 0 and 1. Column C is a binary field that uses a conditional =IF() statement to evaluate the random number in Column B so that if the number is greater than or equal to 0.5 the toss is counted as “Heads” and the number 1 is displayed. If the random number is less than 0.5 then it is counted as “Tails” and the number 0 is displayed. In Column D the cumulative number of tosses resulting in “Heads” is summed and then, in Column E, the proportion of tosses resulting in “Heads” is displayed. The chart in Figure 1 is produced by using the menu command Insert > Chart and selecting and configuring a “Line Graph”. The chart helps illustrate that as the number of coin tosses increases the proportion of “Heads” converges to 0.5. The assignment for students is to replicate this spreadsheet setup and produce their own graphic. Formulas for coin toss simulation spreadsheet are shown in Figure 2.

Figure 2. Coin Toss Simulation Formulas in Google Sheets

	A	B	C	D	E
1	Coin Toss	Random Number	Heads	Cumulative Head Count	Proportion Heads
2	1	=RAND()	=if(B2>=0.5,1,0)	=C2	=D2/A2
3	=A2+1	=RAND()	=if(B3>=0.5,1,0)	=C3+D2	=D3/A3
4	=A3+1	=RAND()	=if(B4>=0.5,1,0)	=C4+D3	=D4/A4
5	=A4+1	=RAND()	=if(B5>=0.5,1,0)	=C5+D4	=D5/A5
6	=A5+1	=RAND()	=if(B6>=0.5,1,0)	=C6+D5	=D6/A6
7	=A6+1	=RAND()	=if(B7>=0.5,1,0)	=C7+D6	=D7/A7
8	=A7+1	=RAND()	=if(B8>=0.5,1,0)	=C8+D7	=D8/A8
9	=A8+1	=RAND()	=if(B9>=0.5,1,0)	=C9+D8	=D9/A9
10	=A9+1	=RAND()	=if(B10>=0.5,1,0)	=C10+D9	=D10/A10
11	=A10+1	=RAND()	=if(B11>=0.5,1,0)	=C11+D10	=D11/A11
12	=A11+1	=RAND()	=if(B12>=0.5,1,0)	=C12+D11	=D12/A12
13	=A12+1	=RAND()	=if(B13>=0.5,1,0)	=C13+D12	=D13/A13

Simulation 2: Dice Game

For a second simulation, students are introduced to another relatively simple discrete probability distribution. This involves repeated randomization of rolling a pair of dice, evaluating the outcome, and then calculating the resulting change to a hypothetical player’s cash balance. Specifically, students are asked to simulate a simple game called “Lucky 7” in which rolling a 7 is rewarded with a relatively large payoff and all other rolls result in a losing bet. The objective for students is to run the simulation under various payoff scenarios, i.e., the payoff multiplier for a winning roll which could be 4, 5, 6 or 7 times the bet amount. The simulation is then used to decide which payoff amount will result in both profit for the casino and sufficient appeal for potential game players. A new element introduced in this simulation is a financial outcome component. An initial balance is established and the balance is updated after each roll of the dice. This enables students to analyze various payoff levels and how winnings are then distributed between the “player” and the “house” after many iterations.

Figure 3. Dice Game Simulation in Google Sheets

	A	B	C	D	E	F	G	H	I	J	K	L
1	Roll	Die 1	Die 2	Total Roll	Roll Result		Beginning Balance	Ending Balance		Bet	Payoff Odds	House Take
2	1	4	2	6	Loser		100	95		5	4	60
3	2	6	5	11	Loser		95	90				
4	3	6	6	12	Loser		90	85				
5	4	1	5	6	Loser		85	80				
6	5	2	5	7	Winner		80	100				
7	6	2	3	5	Loser		100	95				
8	7	5	2	7	Winner		95	115				
9	8	2	2	4	Loser		115	110				
10	9	2	4	6	Loser		110	105				
11	10	4	3	7	Winner		105	125				
12	11	3	6	9	Loser		125	120				
13	12	4	4	8	Loser		120	115				

Again, the “many rows” technique is applied (Carver, 2013) with each row representing a single toss of a pair of dice. Column A is a simple count of dice rolls. Columns B and C simulate individual die using the =RANDBETWEEN() function. These two randomly determined roll amounts are added together in Column D. This sum is then evaluated to determine how the winnings are modified. For example, a 4x payoff (pay 4 times the bet, so if you bet \$5 and roll a 7 you win \$20). To clarify this procedure the player’s Beginning Balance is displayed in Column G and the Ending Balance is displayed in Column H. The Bet amount, the Payoff and the resulting House take (or loss) are modifiable and displayed in Columns J, K and L, respectively. After demonstrating this spreadsheet setup students are asked to modify the rules of the game so that rolling doubles results in a win and all other rolls (including a 7) result in a loss. This requires students to modify and hopefully better understand the mechanics of the spreadsheet model and the simulation. In addition, students must decide on an appropriate payoff multiplier for a winning roll. In both the “Lucky 7” and the “Lucky Doubles” scenarios, the probability of a win is 1/6. So, a payoff multiplier of 6 is too high because the “house” will break even. As such, most students chose 5x as

the appropriate payoff multiplier to give the “house” a slight edge. Formulas for the Dice Game Simulation are shown in Figure 4.

Figure 4. Dice Game Simulation Formulas in Google Sheets

	A	B	C	D	E	F	G	H	I	J	K	L
1	Roll	Die 1	Die 2	Total Roll	Roll Result		Beginning Balance	Ending Balance		Bet	Payoff Odds	House Take
2		=RANDBETWEEN(1,6)	=RANDBETWEEN(1,6)	=B2+C2	=IF(D2=7,"Winner","Loser")		100	=IF(E2="Winner",G2+K\$2*J\$2,G2-J\$2)		5	4	=G2-H33
3	=A2+1	=RANDBETWEEN(1,6)	=RANDBETWEEN(1,6)	=B3+C3	=IF(D3=7,"Winner","Loser")	=H2		=IF(E3="Winner",G3+K\$2*J\$2,G3-J\$2)				
4	=A3+1	=RANDBETWEEN(1,6)	=RANDBETWEEN(1,6)	=B4+C4	=IF(D4=7,"Winner","Loser")	=H3		=IF(E4="Winner",G4+K\$2*J\$2,G4-J\$2)				
5	=A4+1	=RANDBETWEEN(1,6)	=RANDBETWEEN(1,6)	=B5+C5	=IF(D5=7,"Winner","Loser")	=H4		=IF(E5="Winner",G5+K\$2*J\$2,G5-J\$2)				
6	=A5+1	=RANDBETWEEN(1,6)	=RANDBETWEEN(1,6)	=B6+C6	=IF(D6=7,"Winner","Loser")	=H5		=IF(E6="Winner",G6+K\$2*J\$2,G6-J\$2)				
7	=A6+1	=RANDBETWEEN(1,6)	=RANDBETWEEN(1,6)	=B7+C7	=IF(D7=7,"Winner","Loser")	=H6		=IF(E7="Winner",G7+K\$2*J\$2,G7-J\$2)				
8	=A7+1	=RANDBETWEEN(1,6)	=RANDBETWEEN(1,6)	=B8+C8	=IF(D8=7,"Winner","Loser")	=H7		=IF(E8="Winner",G8+K\$2*J\$2,G8-J\$2)				
9	=A8+1	=RANDBETWEEN(1,6)	=RANDBETWEEN(1,6)	=B9+C9	=IF(D9=7,"Winner","Loser")	=H8		=IF(E9="Winner",G9+K\$2*J\$2,G9-J\$2)				
10	=A9+1	=RANDBETWEEN(1,6)	=RANDBETWEEN(1,6)	=B10+C10	=IF(D10=7,"Winner","Loser")	=H9		=IF(E10="Winner",G10+K\$2*J\$2,G10-J\$2)				
11	=A10+1	=RANDBETWEEN(1,6)	=RANDBETWEEN(1,6)	=B11+C11	=IF(D11=7,"Winner","Loser")	=H10		=IF(E11="Winner",G11+K\$2*J\$2,G11-J\$2)				
12	=A11+1	=RANDBETWEEN(1,6)	=RANDBETWEEN(1,6)	=B12+C12	=IF(D12=7,"Winner","Loser")	=H11		=IF(E12="Winner",G12+K\$2*J\$2,G12-J\$2)				
13	=A12+1	=RANDBETWEEN(1,6)	=RANDBETWEEN(1,6)	=B13+C13	=IF(D13=7,"Winner","Loser")	=H12		=IF(E13="Winner",G13+K\$2*J\$2,G13-J\$2)				

Simulation 3: Stock Market Returns

The stock market simulation is the most complex but students are now familiar with most of the spreadsheet elements utilized in the model. First, we look at historical stock market returns. Using the S&P 500 and going back to 1926 we can generate a frequency distribution of historical total returns and observe that the distribution is somewhat skewed but approximately normal with a mean of 11.88% and a standard deviation of 19.76% (see histogram in lower right on Figure 5).

Figure 5. Stock Market Simulation in Google Sheets.



The =NORMINV() function is introduced to demonstrate how students can simulate random results from a continuous normal distribution. The spreadsheet setup follows the same pattern with each row corresponding to one year in the stock market. Students must setup a 30-year simulation and, along the way, track gains and losses over the years for an initial \$10,000 investment. Students must run the simulation 30 times, capturing ending balances. Then students calculate the mean and standard deviation for the 30 ending balances. This semi-manual process is intentional. It wouldn't be terribly difficult to create a macro to automate the simulation but I prefer to teach programming in Python (Holman 2018). In addition, students must plot the distribution of resulting end balances on a histogram.

Figure 6. Stock Market Simulation Formulas in Google Sheets.

	A	B	C	D	E	F	G
1	Stock Market			Year	Random Return	Balance	Ending Balances
2	Mean Return	11.88		1	=norminv(rand(),\$B\$2,\$B\$3)	=\$B\$4*(1+E2/100)	\$63,604.27
3	Standard Deviation	19.76		=D2+1	=norminv(rand(),\$B\$2,\$B\$3)	=F2*(1+E3/100)	\$33,037.43
4	Beginning Balance	\$10,000.00		=D3+1	=norminv(rand(),\$B\$2,\$B\$3)	=F3*(1+E4/100)	\$496,760.03
5				=D4+1	=norminv(rand(),\$B\$2,\$B\$3)	=F4*(1+E5/100)	\$97,404.14
6				=D5+1	=norminv(rand(),\$B\$2,\$B\$3)	=F5*(1+E6/100)	\$251,039.96
7				=D6+1	=norminv(rand(),\$B\$2,\$B\$3)	=F6*(1+E7/100)	\$295,970.40
8				=D7+1	=norminv(rand(),\$B\$2,\$B\$3)	=F7*(1+E8/100)	\$24,459.21
9				=D8+1	=norminv(rand(),\$B\$2,\$B\$3)	=F8*(1+E9/100)	\$381,754.67
10				=D9+1	=norminv(rand(),\$B\$2,\$B\$3)	=F9*(1+E10/100)	\$436,448.71
11				=D10+1	=norminv(rand(),\$B\$2,\$B\$3)	=F10*(1+E11/100)	\$51,498.17
12				=D11+1	=norminv(rand(),\$B\$2,\$B\$3)	=F11*(1+E12/100)	\$134,080.02
13				=D12+1	=norminv(rand(),\$B\$2,\$B\$3)	=F12*(1+E13/100)	\$324,342.39

In Columns A and B you can see the mean stock market return for 1926 through 2018 along with the standard deviation. Column D displays the Year. In Column E a random return amount is computed using the =NORMINV() function calling the =RAND() function and then referring to the stock market return mean and standard deviation in cells B2 and B3, respectively. Column F applies the beginning balance in cell B4 and then updates the balance with the randomly generated return amount in each successive year. Students are asked to compute the ending balance for a 30-year simulation in Column F and then copy-paste the result into Column G. So, Column G contains the result of 30 separate 30-year simulation runs. These results are then visualized with a histogram to see the distribution of results.

Python Simulations

After completing each of the simulation lessons in Google Sheets students begin an introductory Python programming module followed by a series of lessons replicating each of the three simulations with Python. Introductory lessons in Python programming are provided using a combination of courseware from DataCamp (DataCamp 2019) as described in Holman (2018) and instructor-led in-class programming activities. While a complete description of the Python programming module is beyond the scope of this paper, simple versions of the three spreadsheet models along with the corresponding simulation Python programs are available by contacting the author.

STUDENT EVALUATIONS

Although a formal experimental design with control groups is beyond the scope of this paper, in this section I examine anecdotal evidence from student evaluations submitted near the conclusion of the course. Student evaluations at the author's institution are voluntary, so respondents are self-selected, not randomly determined. Students select ratings on a scale with 5 options (i.e., Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree) for 18 different categories and are then prompted to provide text responses reflecting on instructor approachability, what works well and what to improve.

Out of 76 possible respondents, 43 students completed an evaluation yielding a response rate of 57%. Of the 43 evaluations completed, 36 students provided text comments to in response to the "What works well?" prompt with the word "Python" appearing 7 times. And, 32 students provided text comments to address "What to improve?" with the word "Python" appearing 13 times. Comments submitted mentioning "Python" or referring to "Data Camp", "Code", "Coding" and "Programming" are listed below.

Figure 7. Question: What works well

I love the use of Python in this class! (Contrary to popular belief...) It is very useful!
Dr. Holman uses his own website as the structure for his class. I thought this was effective because it was able to be more customized to the class than blackboard. I also enjoyed using Data Camp to learn the python material.
I like how we practice the things we learn in class instead of for homework. It gives us the ability to ask questions. I also like how we waited to learn python until the end because that stuff stressed me out. Holman makes hard topics easy to understand.
He introduced new ways of solving problems. He introduced us to a programming language called python which is an amazing tool to use for all sorts of things.
Working together with DataCamp works better than trying to do it on our own.
I was understanding everything until we started to learn the python program.
He went about teaching google sheets first to get us used to the soft-coding on that before moving along to Python. Great approach.

Figure 8. Question: What to improve

MORE PYTHON!!!!!! :D
Take out python
Python is very difficult to get a grasp on. DataCamp helped a lot from the first method- but I still struggled. I think he is on the right track but because its tough to learn I'm sure it's even harder to teach. The good thing is, he really strives to help you out the best he can, and gives some slack if he knows you're trying.
The way that we learned Python could be improved.
I really struggled with python at the end of the semester. I think python needs more time to be successful at it or it needs to be a completely different course.
Please do not change anything about what you do. Even if people complain about the Python programming, screw them. You do a fantastic job at explaining concepts and introducing new ideas
I would possibly suggest introducing data camp a tad earlier in the section.
The python part was very challenging for me. But the rest of the class was good!
I think maybe you could have showed us examples of python stuff. I feel like we would have learned it better from you than Data Camp. Other than that the class was great.
I honestly can't code for the life of me
More class time to focus on programming.
The coding section of the class provided on DataCamp was too in depth to form a good understanding. Focusing on a fewer topics in coding will allow those to actually be understood and mastered.
Spend more time going over python in class.

Students are divided in their view of Python. While some comments specifically mention Python in a positive light, other comments mentioning Python are critical of its role in the course. These same students might also complain

about any and all challenging topics. On the other hand, there are legitimate concerns expressed by students regarding how much time is devoted to the topic, how content is delivered and how much breadth and depth is appropriate. Clearly, there is plenty of room for improvement in terms of both content and instructor delivery.

During the previous year, I taught the same class with approximately the same number of students (Holman, 2018). The table below compares ratings between the two courses. Instead of looking at the numerical rating averages I have simply provided the proportion of students indicating they “Strongly Agree”, the highest (best) rating possible, with each question about the course.

Figure 10.	2018	2019	
Question Text	Advanced Statistics	Advanced Statistics	Difference
Pace of course (is appropriate)	0.54	0.72	0.18
Grading system is fair	0.71	0.86	0.15
Prompt grading of work	0.71	0.84	0.13
Instructor made use of class time	0.74	0.91	0.17
Made difficult material understandable	0.60	0.70	0.10
Communicates ideas clearly	0.63	0.81	0.18
Responded to student questions	0.74	0.81	0.07
Available outside of class	0.69	0.84	0.15
Set and maintained high standards	0.71	0.86	0.15
Encouraged critical thinking and analysis	0.74	0.91	0.17
Instructor facilitated class participation	0.57	0.84	0.27
Treated students with respect	0.83	0.88	0.05
Communicated enthusiasm for the course	0.77	0.84	0.07
Teaching strategies enhanced learning	0.63	0.72	0.09
Text was effective	0.26	0.65	0.39
Instructor was a successful teacher	0.66	0.91	0.25
Learned from the course	0.66	0.79	0.13
Average	0.66	0.82	0.16

DISCUSSION

One of the key challenges in teaching statistical computing is overcoming the trepidation many students feel toward computer programming. For most students, this introduction to Python programming represents their very first introduction to computer programming. Fortunately, nearly all business students have some familiarity with spreadsheets, primarily using Microsoft Excel. Despite the near ubiquitous presence of Excel in the business world I chose Google Sheets for a few key reasons. First, Google Sheets is a “pure” web application so I don’t need to worry about compatibility given the vast array of mobile and desktop computing devices used by students. Second, Google Sheets has excellent collaboration capabilities facilitating troubleshooting outside the classroom. Third, since Google Sheets doesn’t require license fees students are essentially guaranteed access to Google Sheets throughout their studies and into their post-graduate careers. Finally, Google Sheets is nearly identical to Microsoft Excel so students who are comfortable using Excel generally have little problem adopting Sheets. This familiarity with a spreadsheet environment as an introductory computing platform seems to help alleviate some of the anxiety many students feel when introduced to Python programming.

CONCLUSION

Students remain divided when it comes to statistical computing and Python programming. Some students don’t think a statistics course should include any programming elements while others would prefer to spend more time on computational methods. Student evaluations provide some evidence that introducing Monte Carlo simulation methods in Google Sheets before embarking on similar work in Python is helpful and perhaps less intimidating for at least some students. In the future I plan to continue experimenting with pedagogical approaches to expose students to these important methods while trying to limit anxiety.

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Student Engagement and Fun: Evidence from the Field

Elizabeth F. Purinton, Marist College, New York, USA

Megan M. Burke, Marist College, New York, USA

ABSTRACT

How do you entice students to engage with the class, its content, and each other? Student engagement has been linked to deeper learning, making connections to topics, and improved course performance. However, engaging students can be challenging. Recent studies have linked fun in the classroom with engagement. Fun can be categorized as fun activities and fun delivery. While fun characteristics are identified, specific examples are not presented. This paper fills that gap by presenting two fun cases in business courses. The cases illustrate that fun activities can be developed for all types of courses: undergraduate or graduate courses, online or face-to-face courses, and various subject areas. The first example is a fun activity in a face-to-face undergraduate accounting class. The second example used a fun delivery method to introduce an exercise on brand relevance in an online MBA marketing class. In general, the projects increased student engagement and course performance. Implications for classroom application are provided.

Keywords: Engagement, Deep-learning, Active learning, Fun

INTRODUCTION

Faculty have the responsibility to encourage active student engagement in learning. Ideally, students will “engage in experiential and active learning designed to be inclusive for diverse students and to improve skills and the application of knowledge in practice” (AACSB International, 2017). Student engagement “typically refers to the amount, type, and intensity of investment students make in their educational experiences” (Jennings & Angelo, 2006, p. 6). Engagement is generally described as a multidimensional phenomenon with behavioral and affective components. Engagement facilitates deep learning but requires students to be connected to their courses and materials (Dennen, Aubteen Darabi, & Smith, 2007; Kehrwald, 2008; Robinson & Hullinger, 2008; Shea, Li, & Pickett, 2006; Swan, et al., 2000), with the instructor, and with each other (Connell & Wellborn, 1991; Guthrie & Anderson, 1999; Ryan, Connell, & Deci, 1985; Skinner & Belmont, 1993).

The AACSB holds engagement to be one of the fundamentals of business education, yet we still struggle with it. The AACSB’s mission is “to foster engagement, accelerate innovation, and amplify impact in business education” (AACSB International, 2017). The standards state that quality business education cannot be achieved without engagement, creating challenges for business schools and faculty.

While surface learning generally focuses on retaining facts (DeLotell, Millam, & Reinhardt, 2010; Draper, 2009; Fink, 2003), deep learning, which is attributable to the seminal work by Marton and Säljö (Marton & Säljö, 1976; Maron & Säljö, 1997), focuses on connections between topics and is associated with interest, application, and understanding. Engagement, like deep learning, has been associated with improved student outcomes like improved critical thinking, grades, and persistence (Carini, Kuh, & Klein, 2006; Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2007).

Fun makes the classroom, and learning, enjoyable and fights distraction and ennui. As stress and anxiety causes blood flow to leave the frontal lobe of the brain (flight or fight response), enjoying oneself actually provides more blood flow in the brain for learning. An enjoyable experience can generalize to enjoying the topic, the class, or learning.

Tews, Jackson, Ramsay, and Michel (2014) created and validated a scale to assess fun in the college classroom. Through this process, the identified two primary categories of fun associated with increased engagement – fun activities and fun delivery. Fun activities are generally hands-on activities that increase social interaction between students including games, friendly small group competitions, and instructors bringing in food. Fun delivery is focused on the instructor and their delivery methods including humor, storytelling, attention getters, and instructor demonstrations of course content. The study used three elements of engagement from the extant literature – cognitive, emotional, and physical engagement (Connell, 1990; Kahn, 1990; Kong, Wong, & Lam, 2003; Rich,

Lepine, & Crawford, 2010). Cognitive engagement is generally viewed as concentration or focus. Emotional engagement is the energy or positive emotional response. Physical engagement focuses on the energy or effort put forth. The Tews, et al., study (2014) found correlations between both fun activities and fun delivery with overall engagement, cognitive engagement, emotional engagement, and physical engagement. In their random coefficient model, they found a significant positive relation between fun delivery and the forms of engagement. The study relied on various components of courses (games, humor, etc.), but the authors did not provide examples of these components in college level courses.

Fun activities reflect a variety of hands-on exercises and ways to promote social involvement among students, including friendly small group competitions, playing music, field trips, games, instructor bringing in food, and hands-on activities. A hands-on approach to demonstrating a course concept is a useful strategy to increase engagement and active learning. For example, Lee and Hoffman (2015) asked students to create infomercials to teach the AIDA Model (Attention-Interest-Desire-Action). The real-world problem and hands-on nature of the assignment resulted in increased engagement and a stronger sense of community.

Fun delivery, in turn, is more instructor-focused, capturing an instructor's mode of delivery and his or her presentation skills. Fun delivery encompasses a variety of elements, including attention getters to generate student interest, instructor demonstration of course content, interactive lectures, and instructor storytelling.

FUN ACTIVITIES IN BUSINESS COURSES

Within the literature, fun is associated with increased engagement and engagement is associated with improved learning outcomes. However, the literature is light on examples of fun within business courses. Some instructors may feel it is too challenging to include fun in their course due to subject matter, course level, or delivery method. Providing a fun experience in an online course may feel like an insurmountable obstacle. Accounting may be seen as a dry subject with little opportunity for fun.

The objective of this paper is to demonstrate that fun activities and fun delivery can be infused in a variety of business courses at the undergraduate and graduate levels, in traditional or online delivery methods, and across subject areas. The first example took place in a traditional, face-to-face undergraduate accounting class using a fun activity, a board game, to walk students through the accounting cycle. The second example used fun delivery to introduce an exercise in an online MBA Marketing class. Presenting both cases demonstrates the flexibility and generalizability of fun in business education. Both exercises increased student engagement and learning outcomes.

Face-to-Face Undergraduate Activity

Undergraduate students can find themselves distracted during class by various electronic devices, lack of sleep, lack of interest in the subject, and others around them. Undergraduate accounting courses, in particular, have a reputation of being boring and dry – especially for non-accounting majors. To encourage these students to focus on accounting, a fun activity was introduced to engage the students. Monopoly® was used to provide an activity with which many students were familiar and as an interesting and unusual activity for class. Students were surprised and excited to be presented with a stack of Monopoly® boards at the start of class.

Students at a midsized, private, AACSB accredited institution in the northeast formed groups of four or five players. The rules were altered slightly to accommodate class time such as requiring students to purchase the first available property on which they landed. Students were also permitted to purchase houses and hotels for their properties once they owned the property. Further, the initial cash disbursement to players was treated as an initial offering of stock of their corporation, which was recorded on a transaction sheet. Next, students were required to spend \$M100 purchasing supplies, which was also recorded on the transaction sheet. Students recorded the events of each turn or event - including when another player paid them rent or unexpected cash inflow. For unusual transactions – paying hospital fees for example – students were told to record the item as a tax expense, medical insurance expense, or service revenue. The game continued until each player recorded 12 events. After recording the events, students were required to prepare journal entries for each transaction. Once they recorded the journal entries, students had to post the entries to the t-accounts. After posting, students prepared an unadjusted trial balance. From there, students were given information to prepare adjusting journal entries. For example, they were told that any depreciable property they purchased had a ten year useful life with no salvage value and they were to use straight-line depreciation. Additionally, only \$M40 of supplies remained on hand at the end of the period. For any borrowed funds, interest accrued at 10%. Once pretax income was calculated, students were to calculate income tax expense at a rate of 30%.

If the player had positive net income, they were instructed to declare and pay a \$M100 dividend. Students then prepared adjusting journal entries and posted to the t-accounts. After posting, students prepared an adjusted trial balance. From the adjusted trial balance, students prepared the financial statements - Income Statement, Statement of Retained Earnings, Balance Sheet, and Statement of Cash Flows. Next, students prepared closing journal entries, posted them, and prepared a post-closing trial balance. At the next class meeting, there was lively discussion about what was considered winning - having the highest net income, owning the most properties, having the most cash in hand, or some combination of the characteristics.

The game is designed to create transactions for the students to use to complete the entire accounting cycle - evaluating events to determine if there is a transaction, recording (journalizing) the transactions, posting the transactions to t-accounts, preparing an unadjusted trial balance, preparing adjusting journal entries (AJEs), posting the AJEs, preparing an adjusted trial balance, preparing the financial statements, preparing closing entries, posting the closing entries, and preparing a post-closing trial balance. As each student has a different set of transactions, it is hard to cheat. They might work together to figure out each step, but they must then do the steps independently. Additionally, there is no solution manual online for the students to use as a guide. Additionally, playing a game in class - especially accounting - captured the attention of students and got them to engage with accounting concepts.

In total, 59 students at this institution took Principles of Financial Accounting from this instructor without using the Monopoly® project and 81 students across two semesters have taken this instructor with the Monopoly® project. The students who completed the Monopoly® project were asked to take a short survey regarding the project. The questions used a 7-point Likert scale. The results of the survey are presented in Table 1. In general, the students believed the Monopoly® project helped them bring together the steps in the accounting cycle and prepare for the exam. Additionally, they believed that the project was fun and it encouraged them to have fun in the course. In open ended questions, students stated:

“I was excited to do something fun in class.”

“It was refreshing to have something different, familiar, and engaging. The Monopoly® project helped me to apply the concepts I learned in class.

“I was very intrigued and interested to start.”

“I was excited and immediately engaged.”

“I was excited that the class was able to better learn the content in a fun way”

“It was a good time.”

Overall, the use of the Monopoly® project in a traditional, face-to-face undergraduate accounting course was successful.

Table 1 Survey Results for Monopoly® Activity

Question	Mean
The Monopoly® project helped me bring together the steps of the accounting cycle.	6.02
The Monopoly® project helped me prepare for the first exam	5.74
The Monopoly® project helped me understand the concepts within the accounting cycle	6.11
The Monopoly® project was fun/enjoyable	5.52
Playing Monopoly® in class encouraged me to have fun with the material and in class.	6.27
The Monopoly® project motivated me to do well on the exam	4.84
The Monopoly® project increased my interest in accounting	5.42
The Monopoly® project encouraged me to put forth effort in the class	6.04

In addition to having fun in the course, the Monopoly® project appears to have improved learning outcomes. The use of a hands-on case where students were engaged with generating the underlying transactions resulted in students performing better on the next exam covering the accounting cycle than in previous years where the Monopoly®

game was not used. In semesters without the Monopoly® project, the exam average on the exam after the material covered by the Monopoly® project was approximately 77% and in the Monopoly® semesters the average on the same exam with similar questions was approximately 87%. Additionally, performing the entire accounting cycle from start to finish helped students find the areas where they were weakest/struggling, so they could focus their study time on those areas. The hope is that students will also retain the information better as they had the hands-on exposure rather than using just an online homework manager or doing parts of the accounting cycle independently.

Online Graduate Activity

Online courses present unique challenges with respect to engaging students. It is sometimes difficult to develop dialogue among the participants due to the asynchronous structure, distance between members, and that posts are semi-anonymous, as students may not see more than a contributor's name. These limitations can reduce the ability of online students to engage with a course. Specifically, online courses should encourage social presence, community, and meaningful interaction (Bigatel, Ragan, Kennan, May, & Redmond, 2012; Dow, 2008; Hill, Song, & West, 2009). Rosie (2000) found that overall engagement and with deep learning were highly correlated with interactions between students and teachers. But, Burch, et al. (2016) found that online sections of the same class had lower overall student engagement, emotional engagement, cognitive engagement in class, and cognitive engagement outside of class than the on-the-ground sections.

The goal of this project was to create an assignment for students that would engage the five primary senses, build suspense, and leverage novelty and surprise to captivate them during the first week of their MBA Marketing Management course. The inspiration came in the form of an article in Smithsonian magazine on the 80-year history of SPAM® (a canned meat product produced by Hormel).

The rich history and rich cultural context of SPAM® seemed appropriate to showcase a long lineage of brand management while having fun with a product. As SPAM® has been much maligned and become a cultural joke to many, its quirkiness seemed just right to spark engagement.

Before the start of the class, students were mailed a 12-ounce can of SPAM® individually wrapped in plain brown paper with a sticker that read, "Do not open until instructed to do so." The intention was to ensure delivery well in advance of the class to build suspense. This was followed by an email a few days after mailing to announce the delivery. This is the same protocol followed when mailing surveys. An accompanying letter reiterated the timing of opening the package. It also advised that if their household was Kosher, Muslim, or vegan/vegetarian, they were not to open the package but to take it to a friend or neighbor who would handle the package for them.

Within the course, a "Lesson" was built as part of the first week's lecture. The Lesson assigned the Smithsonian article, discussed the value of a strong brand, allowed the students to open their packages, and introduced the assignment. The final assignment was for the students to create their own videos similar to 3-minute Instagram cooking demos. They were given a choice of a cooking demonstration, sharing the experience of tasting SPAM® for the first time, or of developing a non-food use for the product.

To set the tone and provide an example, the first author made her own video. The goal was to show off the age of the brand in an amusing way and to provide one sample video. The video is available at: <https://www.youtube.com/embed/JZ0rNJbNp4A>. Each student made and uploaded their video to the online class assignment dropbox. The most imaginative were presented to the class as the SPAMMIE Award winners. The Award for Most Creative in fall went to a parody of Dr. Seuss' Green Eggs and Ham available at: https://www.youtube.com/watch?v=rd_PF53HpOY.

The project used SPAM for two semesters and then Ritz crackers were used in the third semester to ensure that the results were not driven by the novelty of the brand. For the Ritz project, students were mailed 11.8 ounce boxes of Ritz with similar instructions to the SPAM assignment.

Students were surveyed using an adaptation of the Online Student Engagement Scale (Dixon, 2015). The questions were scored on a 5 point Likert scale where 1 was strongly disagree and 5 was strongly agree. Seventy six percent of students surveyed agreed that the "The SPAM® assignment, compared to assignments in other MBA classes, encouraged me to have fun in online chats, discussions or via email with the instructor or other students (more than I already was)". Three quarters of the students reported that the process of making their own video encouraged them to have fun and to get to know other students in the class. Students found the exercise to increase their interaction with fellow students in the class. See Table 2.

Table 2 Responses to Fun Questions for Spam®/Ritz® Activities

	Semester 1 – SPAM®	Semester 2 – SPAM®	Semester 3 – Ritz®
Making my own video encouraged me to have fun in online chats, discussions or via email with the instructor or other students (more than I already was).	3.19	3.8	3.32
Making my own video motivated me to get to know other students in the class (more than I already was).	3.8	3.76	3.59
The SPAM®/Ritz® assignment, compared to assignments in other MBA classes, encouraged me to have fun in online chats, discussions or via email with the instructor or other students (more than I already was).	3.2	3.9	3.3
The SPAM®/Ritz® assignment, compared to assignments in other MBA classes, motivated me to get to know other students in the class (more than I already was).	2.9	3.8	3.24

The survey also revealed an increase in overall engagement. Students felt the assignment increased their interest in class and they perceived the assignment to be engaging and worthwhile. See Table 3.

Table 3 Responses to Engagement Questions on Spam®/Ritz® Activities

	Semester 1 – SPAM®	Semester 2 – SPAM®	Semester 3 – Ritz®
This exercise actually decreased my interest in marketing. (reverse coded)	1.85	2	2.33
The SPAM®/Ritz® assignment helped me feel more engaged with the professor.		3.72	
All in all, I found the assignment to be engaging and worthwhile.	3.9	3.96	3.71
This was an effective way to begin an online class and draw students into it.	3.95	3.84	3.86
The SPAM®/Ritz® assignment was unlike any I've had in other classes.	4.45	4.76	4

Over 90% of all students found value in the exercise, some citing the unusual brand, when SPAM was used, having a package mailed to their house, and the process of making their own videos.

Open ended questions captured students' opinions about the exercise:

- After the videos were posted, I felt I got to know the other students better (even students I have known for 3 semesters).
- I also think it created a great rapport amongst students and made the professor more approachable. There is a more lightheartedness to the class which is typically difficult to accomplish.
- I feel more engaged and looking forward to reading upcoming materials.

A word cloud was created of the open-ended responses that visually represents the relative ranking of each word. This is shown in Figure 1.

CONCLUSION

This paper described two tactics to introduce fun in the classroom with the purpose of enhancing students' engagement. In the undergraduate accounting class, students who participated in the Monopoly® exercise felt like the project was fun and as an added bonus, scored better on exams than did students in classes with a traditional classroom approach. In the online MBA class, the students perceived that the project increased the effort they expended on the course, made the material more relevant to their lives, and improved their sense of community

Similar activities can be utilized in other business courses to engage students and encourage them to have fun in class. Specifically, games can be used to teach strategy or operations tasks. Additionally, this paper was able to demonstrate that hands on activities can be utilized in traditional face-to-face classes as well as in an online setting. While it takes time to create these assignments, the benefits to the students are certainly worth the effort.

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Elizabeth Purinton, Ph. D. (University of Rhode Island), is an Associate Professor and Department Chair at Marist College in Poughkeepsie, New York, U.S.A. Her research programs include consumer behavior of jewelry and tattoos, student engagement and strategic alignment.

Megan Burke, Ph.D. (Virginia Polytechnic Institute), is an Assistant Professor of Accounting at Marist College. Megan's research is focused on taxation and pedagogy.

Higher Accounting Education's Responsibilities to Society

Lingyun Ma, Mississippi College – Clinton, Mississippi, USA
V. Brooks Poole, Mississippi College – Clinton, Mississippi, USA
Taylor F. Corso, Mississippi College – Clinton, Mississippi College

ABSTRACT

Accounting and finance hold critical roles in the business world because financial reports are important for both internal and external financial users. Financial accounting concepts require that financial information should be relevant, such as having timely feedback and predictive value as well as making a difference. The financial information should also be reliable in that it should be free from error and bias. It also should be verifiable, neutral, and represent faithfulness. However, in real-world situations, accounting practitioners will often face conflict between self-interest and public interest; therefore, having a moral and ethical mind is important. There are two components that influence this--a virtuous mind and an ethical education. An ethical education provides students with a virtuous mindset. Therefore, accounting professors should teach ethics and how to make decisions neutrally and realistically in higher education.

Keywords: accounting society, accounting education, ethics, auto-ethnography, case study

INTRODUCTION

The research question proposed is “What responsibilities does higher accounting education have to society?” This question can be separated into two parts. The first part addresses the requirements of higher accounting education, and the second part acknowledges the responsibilities to society. To answer the first part, higher education in accounting should include the four major divisions of accounting: financial accounting reporting, federal taxation and regulation, auditing and attestation, and business environment and concepts, with ethics emphasized throughout the four areas. When a student gains knowledge in these four areas, they gain the ability to work for society as a Certified Public Accountant, or CPA. This then addresses the responsibilities to society, as a CPA works for the general public. Because accountants handle money, mistakes or errors affect financial reports, which influences both internal or external users, such as investors, regulators, or managers.

The researcher, Ma, who is a native of China, attended a university in the United States for six years beginning with his freshmen year. He has since earned an MBA with a concentration in accounting. While he has gained his experience regarding accounting higher education in the United States, he shares his auto-ethnography as a case study. Auto-ethnography is an approach to research which seeks to describe and analyze personal experience in order to understand the culture experience. When researchers engage in an auto-ethnographic study, the cultural practices, common values and beliefs, and shared experiences help readers to deeply understand research. Ma employs an auto-ethnographic methodology in this case study in order to share his experiences of matriculating into accounting higher education, specifically focusing on his learning of accounting ethics. Ma shares his experience to illuminate how accounting higher education helped him learn accounting ethics. Based on his auto-ethnography and this case study, he makes suggestions for areas of improvement within higher education in order to instill in students a strong ethical foundation as they prepare to enter the profession. Higher education is an important way to foster ethical education for many accounting students. However, accounting higher education is limited in its capacity to teach ethics due to college curriculum constraints. Therefore, a disparity exists between society's needs and ethical teachings in the realm of higher education in the United States. Filling this gap is critical, because ethical dilemmas are present in the everyday lives of accountants. In order to protect stakeholders and society in general, accountants must be instilled with skills to make good and ethical decisions when they face such challenges.

LITERATURE REVIEW

The business itself should be considered a MacIntyrean practice. The MacIntyrean practice's virtue of ethics could be applied to accounting ethics in daily work (West, 2018). MacIntyre's virtue of ethical basis is what West (2018) quotes as “an acquired human quality the possession and exercise of which tends to enable us to achieve those good which are internal to practices and the lack of which effectively prevents us from achieving any such goods” (p. 24).

The accounting practice identifies four factors of the internal goods. First is MacIntyre's virtue of honesty. The second accounting practice is courage and justice. The third accounting practice is integrity and constancy. Last is the disclosure and objective, which are critical. These are also mentioned in the Code of Ethics for Professional Accountants. The code consists of three sections. The first section introduces five fundamental principles: "integrity," "objectivity," "professional competence and due care," "confidentiality," and "professional behaviors" (p. 26). The second section is the conceptual framework applied to professional accountants in public practice. The third section works for the same purpose of professional service. MacIntyre's ethics should be applied to the accounting practice in a number of ways. Due process should associate with each accounting professional, and is required by the AICPA (West, 2018). West (2018) claimed that accounting is moving towards greater commercialism (p. 28).

The authors researched the connection between virtues, morals, and accounting ethics. Virtue ethics may be applied to the business and the organization's environment. Also, the author discusses professional accounting ethics, which is to serve the public interest in relation to several aspects of professional accounting. Public interest will be defined as the net benefits derived and procedural rigor employed on behalf of all society in relation to any action decision or policy.

"[The] accountants play a critical role in our modern society and our capitalist economy" (Sorensen et al., 2015, p. 175). Both the auditor and financial accountant are in a position of public trust. The external and internal financial user heavily relies on information from accountants. Sometimes, accountants will betray the public trust through means of fraud, which costs investors millions or billions of dollars in the capital market. Accounting is a profession heavily mentioned by the authors, and accountants are "gatekeepers whose primary allegiance must be to the public" (Sorensen et al., 2015, p. 176). The characteristics of qualified accountant should include "a standard of conduct governing the relationship of the practitioner with clients, and colleagues and the public" and "an acceptance of social responsibility inherent in an occupation endowed with the public interest" (p.176). Keeping the public interest a priority is the social responsibility of each individual accountant, with both CPAs and non-CPAs. The conflicts between the accountant's interest and the public interest are shown in our society. In this situation, it is the accountant's duty to choose public interest over self-interest. Meanwhile, the Sarbanes-Oxley Act of 2002 was passed by the United State Congress, the purpose of which was to reduce financial reporting abuses from accounting practices. The act states that accountants cannot charge the clients large amounts of money to prepare the financial statements. The ethical failures in the accounting profession leads to a question of, "How should moral and ethical education be taught in higher education?"

Awareness of ethical issues is the foundation to keeping ethical issues from happening in the work field. The author mentioned virtue ethics, stating, "virtue ethics is concerned with identifying characteristics that are in harmony with the purpose of a human being" (Sorensen et al., 2015, p.179). The action is simply to choose the right or wrong course. However, when it relates to accounting, some students might not have a good sense of distinguishing what is right or wrong. Therefore, the professor needs to inform the students on what distinguishes an action as ethical or not. Adam Smith is the "father of the capitalistic free market economy" (Sorensen et al., 2015, p. 180). Adam's first important work was *The Theory of Moral Sentiments*. *The Theory of Moral Sentiments* is based on virtue ethics, which means the health and growth of the economy is based on morals and ethics. The author introduced accounting ethic failures which seized headlines and cost investors billions of dollars. In some situations, such as personal interest versus public interest, accountants might be unfaithful to accounting ethics and betray the public trust. This could result in major losses in the capital market and catastrophic losses for investors.

"[The] accounting profession views 'integrity' as the virtue that all members must live and breathe, and it is referenced in many places in the AICPA code of professional conduct" (Shawver & Miller, 2017, p. 587). Shawver and Miller (2017) find a correlation between moral awareness and sensitivity, judgement and intentions, and the moral decision-making process (p. 587). The moral decision-making process will be stronger after ethics are introduced. The research by Sorensen et al. (2017, p.177) addressing the factors shows that perceived moral intensity directly influences a person's moral decision-making process. The step is to positively influence students' "moral sensitivity/awareness, moral judgement, and moral intentions" (p. 177). Shawver and Miller (2017) give us a point that "ethical decisions influenced by the intensity of the moral problem extremely: the more egregious the act, the more the people view it as unethical." (p. 586) By providing an ethics-based learning environment, the student can develop the knowledge and competencies required to become ethical leaders. The profession also requires each accountant to keep the public trust and remain in the highest moral character.

In conclusion, ethics interventions are based on the premise that “ethical awareness/sensitivity, moral judgement, moral intent, and an awareness of moral intensity” can be enhanced through the education process (p. 177). The authors give us a correlation between the ethical intervention and advanced accounting courses. When the accounting courses go deeper, the ethical intervention will become more important for their future benefit. The professor will introduce more ethical issues to the class, which increases the overall level of “moral sensitivity/awareness, moral judgement, and moral intention” (p. 177). The result suggests that after the ethical intervention, moral intensity has a critical relation to “moral awareness/sensitivity, moral judgment and intention” (p. 177). For most accounting students, the first study of ethics and morals come from the accounting courses and the code of conduct pedagogy, which helps students understand and gain the ability to sense the ethical dilemma.

Harris (2017), a PCAOB board member, suggests that auditing and accounting are “vital to the integrity of our capital markets” and “given that investors depend upon accurate, informative and independent financial statements to make informed investment decisions” (para. 7). The last line of defense of fair financial reporting is a well-trained, and well-informed auditor exercising independent judgment. He also reminds us that the “P” in our future CPA stands for “Public” which means that you have a professional responsibility to serve the interests of the public as a Certified Public Accountant (Harris, 2017, para. 11). In this situation, an accountant’s duty adheres to the highest ethical standards and to conduct themselves with total independence, objectivity, and professional skepticism. The PCAOB was created to ensure that auditors of public companies, brokers, and dealers are faithfully carrying out their duty (Harris, 2017, para. 16).

Subject to the Code of Professional Conduct and Bylaws (2012), every single action the accountant takes should honor and serve the public interest (p. 2815). It requires several right and faithful actions to complete an accurate financial statement for the public. The relationship between an individual accountant and client is critical because an accountant has the opportunity to help the client’s company have a financial gain. Some client’s companies would be willing to pay more for a good-looking financial statement from the accounting firms. For this reason, maintaining objectivity and independence is critical. According to the AICPA Code of Professional Conduct and Bylaws (2012), CPAs must be independent in both fact and appearance when providing auditing and other attestation services (p. 2819), which requires self-control from a CPA when the potential conflict happens in the field. Due care is that the CPAs “expected and obligated to practice accounting and provide professional services to the best of their abilities” (Blada, 2013, para. 10). Through professional teaching, CPA’s should have the ability to plan and perform quality practice in work.

The AICPA Code of Professional Conduct and Bylaws (2012) was issued by AICPA and is updated yearly. The code is important to each accountant, CPA or non-CPA, and it mentions the responsibilities to the public interest, integrity, objectivity and independence, due care, scope, and nature of services, which every accountant should follow and apply to their work (AICPA, 2012). The responsibilities principle indicates that “members should exercise sensitive professional and moral judgments in all their activities” (AICPA, p. 2813). AICPA Code of Professional Conduct and Bylaws (2012) stated the following about responsibility:

Members also have a continuing responsibility to cooperate with each other to improve the art of accounting, maintain the public's confidence, and carry out the profession's special responsibilities for self-governance. The collective efforts of all members are required to maintain and enhance the traditions of the profession (p. 2813).

The public interest principle says that “members should accept the obligation to act in a way that will serve the public interest, honor the public trust and demonstrate a commitment to professionalism” (AICPA, 2012, p. 2815). Integrity principle is about “[...] maintaining and broadening public confidence[.] [Members] should perform all professional responsibilities with the highest sense of integrity” (AICPA, 2012, p. 2817). Objectivity and independence are “[...] [maintaining] objectivity and [being] free of conflicts of interest in discharging professional responsibilities [and should be] independent in fact and appearance when providing auditing and other attestation services” (AICPA, 2012, p. 2819). The due care principle demonstrates that “a member should observe the profession’s technical and ethical standards, strive continually to improve competence and the quality of services, and discharge professional responsibility to the best of the member’s ability” (AICPA, 2012, p. 2821).

Toshiba is one of the biggest firms in Japan and faced an accounting scandal recently. In 2014, Toshiba overstated its profit by more than 1.2 billion dollars, which was about one-third of the total profit (Mele et al., 2017, p. 609). This scandal illustrates that misbehaving in management did not have to do with one manager, but with the whole report and reward system. The company acknowledged it’s inappropriate accounting, but it was done through the measurement and reward system. The accounting scandal damaged the whole company by its unethical practices

(Mele et al., 2017, p. 611). Meanwhile, Lail et al. (2015) mentions that if the company could have a good and professional management, unethical decisions could be avoided in most situations. This would involve professional competence, such as a strong sense of mission and behavior in the accounting practices. "Virtuous professionalism" is needed to rebuild the public-servant in the accounting work field (Lail et al., p. 687).

Mele (2005) stated that ethical education in accounting has seen an increased interest in the last decade (p. 97). Nowadays, ethics education has been introduced in accounting education to improve student's ethical understanding. Mele (2005) asked a question about whether ethics for professional accountants are "only a set of standards for moral behavior" (p. 98). The code of conduct is useful in a few ways. First, the code is a motivation to have appropriate conduct. Second, it is a permanent and standard guide to show what is right and wrong. Third, it gives guidance in different situations and directs the behavior of the accountant and controls the accountant's power. Fourth, it specifies the social responsibility of business. Fifth, it contributes to businesses who do not police their own ethics (Mele, 2005, p. 98). However, in some situations, the code of conduct shows the suggestion to the accountants in practice, but the risks still exist (p. 98). The person might get lost or confused in the ethical decision with a set of rules, legal standard, or other regulations. The author showed a survey among CPAs that "showed that a substantial percentage (between 30% and 47%) thought that the best ethical behavior would be not following the rules of the code for these specific cases" (p. 98). Also, the author mentioned the fact that, "[the] textbooks in accounting ethics usually include some relevant codes of conduct, or significant excerpts, with the corresponding rules and principles, but generally they agree that ethical education in accounting should be more than just knowing and applying rules" (p. 99). That would be the truth if all CPAs and non-CPAs just applied rules and principles to the work without considering the situation, even though falsified numbers could still exist in the business transaction records. Consideration of the situation and application of the rules and principles should work together during accounting work. In today's accounting society, people often ask the question "what is the right thing to do" (Mele, 2005, p. 98). But it is often confused with "what is legal?" The researcher points out, "the focus of codes of ethics has been to progressively replace the true and fair view requirement by compliance with accounting standards" (p. 98). As a result, the codes have moved from attention on moral responsibilities to the public good.

Accounting scandals have a strong relationship with accounting education (Blanthorne et al., 2007, p. 355). Higher education of accountancy should teach accounting ethics in the class to fulfill the requirement. This article is a survey about teaching ethics in accounting higher education. The authors asked about ethical teaching in accounting classes and analyzed the responses. Most people gave a positive answer on "should ethics be taught," and the majority of people think that ethics should be taught at the beginning of accounting education (p. 363). Also, the authors discussed what should be taught about ethics. Blanthorne et al. (2007) supports that teaching the AICPA Code of Professional Conduct (2012) and ethical standards and professional commitment are critical (p. 365). The way ethics should be taught is also important. In college, most professors teach ethics during accounting courses, and some are in stand-alone accounting ethics courses. By using lectures, cases, and guest speakers, the student receives ethics teaching more effectively (p. 366). Also, the accounting professor takes a significant role during the class time. Most professors preferred including ethics in the class because the professors are responsible for teaching these topics (p. 376).

The three key groups involved in accounting ethics learning are "scholars," "accounting professionals," and "students." (Tormo-Carbo et al., 2016, p. 163) In the role of professional ethical education, students' future ethical behavior can be enhanced during the class by increasing their "awareness of the consequences" of their decision making (p. 163). The ethical course provides the necessary skills and abilities to enhance future accountants' intentions for "ethically-driven behaviors" (p. 163). "Ethics education provides language and conceptual tools appropriate to define ethical actions, evaluate alternatives and enhance reflection" (p. 163). The student can easily inform and lean on business ethics. In recent years, accounting scandals and malpractice in accounting has become more and more frequent. In higher education, it is important to teach business ethics and treat it as a major course for degree completion. One of the most used frameworks was proposed by the Tormo-Carbo et al. (2016); it is a multi-stage model. The model is composed of four elements: "moral awareness," "moral judgment," "moral intention," and "moral behavior" (p. 163). "Moral awareness" will lead to "moral judgement, which lead to intention, in turn leading to behavior" (p. 163). The behavior will influence future ethical decision-making. In the school of business, the ethical courses provide the necessary skills and abilities to build-up individual moral ethics. Ethics education provides "language" and "conceptual tools" to define "ethical actions," "evaluation," and "reflection" appropriately (p. 163).

METHODOLOGY

The general methodology for this research paper is to gather information from accounting professionals and to analyze the information and data to find a result to the following research question: “What should accountants do to perform ethical work to the public based on the code of conduct?” The way to analyze this information is to compare what the code of conduct requires and what accounting professionals say. Connections between the literature reviewed and the AICPA code of conduct were made; the connections are based on the commonalities which were mentioned by both published academic and professional literature and the code of conduct. The commonalities are significant, as these represent responsibilities of accountants for the public sector’s safety.

Three key steps were used to complete the research. The first step is gathering literature from EBSCO database. During the research process, a few keywords were used to explore the literature, such as “accountant’s responsibilities,” “accounting ethics,” “ethical decision making,” “ethical in higher education,” “accounting education,” and “moral judgement.” Those keywords brought the current business ethical journals to light. Several of the articles were discovered from the reference sections of other articles found from the keywords search. Most of the articles were published in the *Journal of Business Ethics*, *Journal of Accounting Education*, and the *CPA Journal*. Data and information were gathered and collected from these articles. Those are business academic journals talking about ethical situations in various business environments faced every day in the business field such as the ethical dilemma in management and accounting. For the topic, articles discussing accounting ethical dilemmas in our society were filtered, as well as higher accounting education today.

During the process of gathering information, there were three filters used. The first filter was based on the author’s educational background and credibility of the publisher. The sources were all from the business academic journal. The journals are credible for academic research purposes. The second filter is the time frame of the literature being issued. The articles were written within ten years of this research, so it is related to current events. For example, today most accounting work requires a computer to be done. This is different from 30 years ago when accountants used books and pens to finish the accounting work. However, some of the old literature discussing the ethics in awareness and judgement are also qualified because the way ethical decisions are made will never change. The third filter is about the data and results from the articles. The results are critical for the research. We used their data and results to develop the consideration.

For the second step, the researchers studied the literature found chronologically. The general method of the study is to compare and to contrast among the literature found, trying to find different opinions from different authors. The opinions of the authors and the points of view from each author were different but they all pointed to the same destination, which is accounting ethics. The authors of those articles are accounting professionals or scholars in accounting with long-time experiences in accounting. The researchers highlighted what accounting professionals said about the responsibility of an accountant, such as CPA, non-CPA, and the accounting professional at FASB who makes the accounting policy. This step showed a view of what the perfect and most ethical accounting work should be and the responsibilities of an accountant.

Exploring the literature is critical because different articles show different perspectives from the various academic and professional authors. The first method is to compare the AICPA code of professional conduct and bylaws and explore what the accountants should do in their daily work. Those are the standards which are required by AICPA that each individual CPA, non-CPA, and accounting practitioner should follow in the working field. This prescription represents the most ethical way to conduct a professional accounting practice, which could also be treated as law requirement. When each accountant conducts himself or herself how the code requires, the economic society should be healthier and stronger compared to today.

The second method compares the literature and explores the common conscious of scene from the literature. For example, two articles – “Accounting ethics in unfriendly environments” by Tormo-Carbo et al. (2016), and “Virtuous professionalism in accountants to avoid fraud and to restore financial reporting” by Lail et al. (2015), both talk about the “moral awareness” and “moral judgement,” which accounting students should know before they graduate from higher education. Those could help the accounting students become aware of various unethical dilemmas they may expect and how to handle the situation when they are in the work field. If the students know what they can expect, they can make an ethical decision and avoid unethical behavior.

Step three generated personal considerations by asking the following “why” and “what” questions: “Why do accountants not want to make ethical decisions in the work field?”; “Why do accountants want to put self-interest first by risking public economic safety and accountant’s personal reputation?”; “What is going to happen when accountants do not make ethical decision?”; and “What could higher education do to better prepared accounting graduates as they enter the professional area?” By answering those questions, the research gained the big picture of the reason that accountants have a willingness to make unethical decisions.

The third methodology explores how current higher accounting education teaches students to be ethically prepared as they enter the accounting profession. In other words, what efforts are higher accounting education taking to instill students and its graduates with an ethical foundation? Specifically, the literature is explored to see if teaching ethics throughout the curriculum prepares students to practice ethical behavior once becoming a practitioner. Also, the third methodology includes the auto-ethnography which explores a Chinese graduate’s experience in accounting higher education while studying in the United States. The auto-ethnography describes Ma’s personal experience in accounting higher education in the U.S., such as what materials were heavily covered during lectures and then discusses ethical topics that he feels needs more in-depth coverage. Ma is an international accounting student, who is a native of Beijing, China, and he has studied in the southern part of the United States for six years beginning his freshman year. He moved to the United States after he graduated from high school in China to continue pursuing a degree in accounting. The case study is his own experience regarding his higher accounting education experience in the United States. He seeks to compare and uncover major differences between higher education in the United States and China. He corroborates his positions by conducting a follow-up ethnography by interviewing two of his high school classmates who studied accounting in China under the Chinese higher education system. The interview questioned the students’ experiences regarding their mandatory year of practical experience prior to their graduation and the advantages and disadvantages of mandating a year of practical experience as a requirement of degree completion.

FINDINGS

The research explored the question of what responsibilities accounting higher education has to society. One of the responsibilities higher accounting education has is to educate accounting students who can make moral and ethical decisions and honor and protect society. The AICPA Code of Conduct and Bylaws is the guidebook for individual CPAs or non-CPAs to follow in professional situations. In some special cases, the code of conduct cannot be applied. In these situations, the accounting practitioners should make the decision based on their own moral and ethical judgment to protect our society. Lail et al. (2015) claims that no matter what situation accountants face, CPAs or non-CPAs should make their own independent decisions based on their moral judgement for the public interest. The only way CPAs or non-CPAs get moral judgement is from accounting higher education. If the CPAs or non-CPAs did not get the knowledge from higher education or do not hold any higher education degree, they may have more opportunities to make unethical decisions. Also, the code of conduct shows that the public interest is what each accountant should serve. Instructors need to instill that the public accounting professionals should hold an idea that their job is to serve the public interest, such as credit grantors, government, investors, employers, clients, and the business and financial community, not just working for one client.

The Ideal Economic Society

The findings from the first methodology of comparing the AICPA Code of Conduct with examples of accountants’ practices illustrated in the literature is as follows: if accountants follow the code of conduct in their practice and make the ethical decisions throughout their daily engagements, financial statements they prepare and review should be accurate and faithful, which in turn would protect the users of financial information from fraud and misrepresented information. Ethical reporting and disclosure of financial information is the ideal economic society that people want to achieve and live in. The Code of Professional Conduct from American Institute of Certified Public Accountant demonstrates the most appropriate way to conduct accounting work, which all CPAs or non-CPAs should follow. The code shows that each accountant should work for the public interest. The public interest should include credit grantors, government, investors, employers, clients, and the business and financial community, not just working for a single client. This is the responsibility of each accountant. But how many accountants would be willing to follow the code? Every accounting professional should have the ability and the willingness to make ethical decisions during accounting work. Also, an accountant’s purpose is to provide a faithful and accurate financial statement to the public. The public financial users heavily rely on the financial statements from CPA firms to make decisions during financial events.

If every accountant could complete what the code of conduct required, our economic society would be protected from fraud and cheating. That economic society is our goal. Public accountants should play the role of police officer to keep our economic society safe and sound. To disclose and terminate fraud or cheating is our goal and job to serve the public. By doing that, we could have a better and healthier economic society. As public accountant, public interest and public economic safety is our priority no matter what, because our job is to serve and honor the public.

An At-Risk Economic Society

The second methodology yielded commonalities throughout the academic and practitioner literature. Those commonalities state that the economic society right now is at-risk because some accountants or accounting firms do not practice ethical decision-making in their work. There are multiple reasons that accountants do not make ethical and moral decisions. For example, a client may financially motivate an accountant who is willing to manipulate the disclosed information in a manner that projects the client into a better position than his reality. While the accountant is compensated for his work, he should not be negligent of remembering his obligation to society. His personal financial gain from his unethical behavior may yield detrimental results to members of society who rely on such disclosed financial data. These points were reiterated numerous times throughout the reviewed literature. To continue, the literature repeatedly stated that the motivation behind unethical behaviors of accountants is the conflict between self-interest and public interest. Self-interest is not only the accountant's personal interest, but also the CPA firms' and the current stockholders' interest. The CPA firm may think about their profit when the firm takes the accounting services contract. The stockholders may think about their own profit and make fraudulent choices on the financial statement. As a result, when accountants unethically falsify financial statements, the fraudulent financial statements will harm the public economic society and will bring risks to the public.

A problem facing society today is that more and more public accountants do not want to follow the code of conduct because of self-interest. By nature, people choose self-interest over public interest when faced with temptations. Lail et al. (2015) states that most of the people who work in the accounting field could realize the importance of ethical and moral decision making, but they have the motivation to make unethical decisions in their daily engagements, which also hurts our economic society (p. 687). When the company cannot provide an accurate and reliable annual financial report to the public because of the accountant's self-interest, the external investor cannot have a correct decision based on it. This would make both the internal and external parties suffer a huge loss or deficit, and the risk from fraudulent financial statements have bad influence on our society. Toshiba is a good example of using an accounting scandal to make a good financial statement showing to the public because Toshiba put their own self-interest in front of public interest (Mele et al., 2017). No person wants to invest money into a company with a high risk of bankruptcy. If the CPA firms could not provide an accurate and faithful financial document to the public financial users, the financial users cannot make correct decisions for the company.

Accounting in Higher Education

From the methodology explored, the literature discusses that higher accounting education needs to instill its accounting graduates with skills to be ethically prepared as they enter the profession. However, the finding is that there is a lack of teaching ethics and morals in accounting higher education curriculums. Accounting higher education is a natural and logical way to teach the accounting graduates how to make ethical decisions because higher education is neutral from demands within the profession and society. Higher accounting education should train accounting student to be able to make moral and ethical accounting decision as they begin their practice of accountancy. If accounting higher education is teaching accounting graduates to make ethical and moral decisions sufficiently, our economic society would be closer to the ideal society as mentioned in the first finding. From the second finding, some accounting practitioners who graduated from accounting higher education are failing to make ethical decisions. Arguably, the reason for this unethical behavior is that accounting higher education has not trained accounting students to reach high-level ethical decision making.

During step three on the methodology, the research found that higher education in China puts substantial attention and effort on practical training before students receive a degree. To corroborate his personal experiences, Ma conducted a follow-up ethnography to validate the finds of his case study. Before their senior year, students in the Chinese higher education system spend credit hours learning the fundamental materials, such as the elementary accounting, intermediate accounting, advanced accounting, taxation, auditing, etc., like the U.S. universities' curricula. Those arrays of curriculums are the same required by accounting higher education in the U.S., but a major area of difference is a lack of practical experience such as mandatory internships within the profession in the United States prior to fulfilling requirements for degree attainment. Upon completion of studying the fundamentals in Chinese accounting higher education, students are required by the university to have at least one year of practical

internship related to their major in a real company in order to satisfy degree requirements. The university provides legal documentation and recommendation letters for students to obtain internships. The Department of Education in China requires that the internship companies be responsible for teaching and giving students real-life working experiences. Students spend their whole senior year interning with a company, and the company pays the salary based on their work hours. After the year of practical experience, the internship company validates the student's work and informs the university of successful internship completion. When the college receives such documentation, the student satisfies his requirements for degree completion. It is not until an internship is successfully completed that a student in Chinese higher education is eligible for earning a degree. A normative practice of many Chinese universities is to provide a list of companies which seek interns. To be eligible to accept interns, companies must be legally qualified business, as defined by Chinese law.

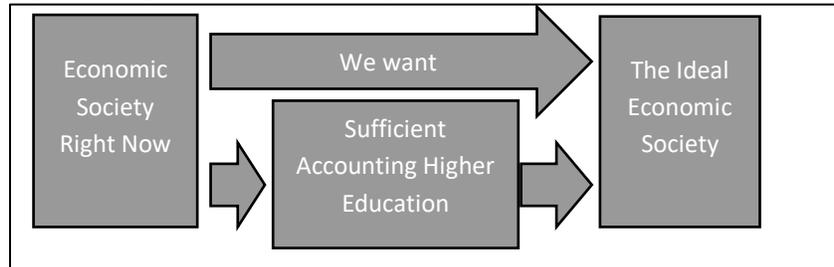
The practical training is the main difference between higher education in the US and China. In China, higher education focuses more on practical training than higher education in the United States. The accounting fundamental teachings are quite similar in China and the United States. Subject to the requirement for graduation of Higher Education in China, no matter which university the student is in, to fulfill the curriculum requirement, all students are required to have at least one-year practical training to receive their degree. The practical training is part of the curriculum requirement. During the year of practical training, students must connect with their instructor or advisor regularly to update them about the practical experiences and feedback. Specifically, for the accounting student, due to the characteristic of the accounting profession, the mandatory year of experience prior to graduation is required of all the accounting students. The one-year practical training is helpful and critical for the students to fully understand how the accounting field operates. At the beginning, the student would suffer a little bit about the accounting fundamental objectives, because of the lack of experience in the real world. After a few months of working, the student can work as a real accountant in the CPA firm. Students could use the one-year practical training time to gain a deeper understanding of the accounting fundamentals and objectives, also they could understand why being an ethical and moral accountant is so important for the economic society. The one-year practical training time prior to graduation is not very long, but it is enough for the purpose of practice. The practice is the link between the knowledge on the textbook and the real-world situation. Students could have a chance to get more practice before they depart higher education. Additionally, the one-year practical training not only helps the student review the accounting fundamental materials, such as a credit or debit balance, but also brings the real-world accounting ethical dilemma into the students' lives. Before the practical training, the students only learn ethical dilemma from the lectures and textbooks during class. Students will not truly understand the meaning of making ethical decisions and the importance of being a moral and ethical accountant. Those are only the theory of ethics. However, by applying one year of practical training after the fundamental materials study, the student could learn how to make ethical and moral decisions during the field work and learn how to apply the accounting code of conduct and ethical standards into their daily field work. "Learning by doing" strongly helps students to deeply understand the ethical dilemmas and accountants' duty, which is to bring out the true value of the business objectively and faithfully to the public without the agendas of the company. By learning from real-world situations, senior accountants could teach students how to get those truthful and accurate numbers and students could learn why they should apply the concept of being ethical into their future life work field.

For the research purpose, Ma interviewed two students who studied accounting as their major at a university in China. The two students had similar responses for the questions about how they feel about the mandatory year of experience prior to graduation. Their responses indicate the practical training helped them review accounting fundamental materials they learned in the university. Additionally, during the one-year internship, they also learned a lot of field work, specifically when they faced ethical dilemmas, for example validating subjective inventories or fixed assets values. Without the experience of dealing with ethical dilemmas, students do not understand how to overcome those issues. The purpose is to teach students in the real-world how to get the most accurate number based on the company's value objectively and remove subjectivity or agendas of a company. When students know the consequence of those ethical dilemmas, they can avoid it in the future work.

Ma has taken an array of undergraduate and graduate-level accounting courses such as tax accounting, financial accounting, and auditing. Almost all the courses focused on instilling students with the skills they will need to successfully enter the profession of accountancy. Due to the curriculums being time limited, professors put more attention and more time on teaching accounting fundamentals and course objectives. Little time is available to devote to teaching accounting ethics to the students. While the professors focus more on the textbook materials and questions such as assets or liabilities, they have only limited time to mention the ethics problem during class. Those limited times of ethics conversation are not enough for the students to gain a proficient understanding of ethics. The

methodology employed to prepare students with the knowledge and skills needed in practice was primarily through lectures and exams. The lectures and exam questions were structured in such a way to prepare students with skills and knowledge they would need to successfully prepare for and pass the CPA exam. Those higher education practices focus almost exclusively on conveying knowledge needed to correctly and accurately practice accounting. For example, a professor would put much effort on teaching the debit and credit account during lecture. This is a necessary skill for the accounting graduate, but the lecture lacked teaching on developing ethical awareness and skill sets which will be needed for ethical decision making. Ethical teaching is what higher education should mention in the curriculum as a requirement for each accounting student. As an accounting practitioner, in addition to being a skilled subject-matter expert, being faithful and moral are important for society. After they graduate, the accounting students will serve and protect our economic society. Thus, professors should put additional effort into integrating ethical decision making into the curriculum as well as teaching the accurate accounting skills.

Figure 1: Gap between Ideal Society and Current Society



DISCUSSION

Based on the findings, there is a need in accounting higher education to produce more ethically aware and ethically skilled graduates. Accounting higher education could act as a bridge between the ideal economic society and the at-risk society we have now. This bridge helps us teach more accounting students and bring them into the society. They can build up our society to achieve the goal. However, nowadays the bridge is not sufficient to teaching students and bringing them into the society. During higher education, the professors put plenty of time on teaching how to make accounting work more accurate, such as teaching skills of making credit and debit accurate. Accurate work is so important because accounting work requiring accuracy and prudence; however, it is also important to teach ethical awareness and ethical judgement in class, such as using examples or cases. Higher education is the only neutral place for students to learn moral and ethical decisions. By teaching those, the student can have an education in how to make moral decisions before they graduate. After the students learn what ethical actions they should take from higher education, the students could know how to face those situations in their job.

Higher accounting education should teach both accounting knowledge and ethics in conjunction with one another. To educate accounting students to make ethical decisions in their daily engagement is one of the responsibilities of higher education. It could satisfy the individual accountant's responsibilities of serving and protecting the economic society. If higher education could teach the responsibilities of being accountant and accounting field work ethical decision-making during lecture, the student can apply the responsibilities in their work after graduation. Our economic society could be much healthier and stronger with graduates instilled with ethical education. Currently, ethics is lacking in higher accounting education because higher education is not providing the qualified accounting graduate with an ethics education. Higher accounting education right now only focuses on teaching accuracy to the student and teaches them how to pass the CPA exam. Passing the CPA exam is important, but it is equally important to teach a CPA to be willing to put the public interest over self-interest. If higher education could teach both accounting ethics and accuracy at the same time in a curriculum, also helping the students to create ethical awareness, the public economic society safety should be increased incrementally. The following key points should be mentioned during the ethics course:

Code of Conduct by AICPA.

Virtue ethics means being honest and integrity (West, 2018). Both the literature and AICPA Code of Conduct tell us what accountants should do in their daily lives, and it is to keep honesty and integrity. While every accountant followed what the AICPA requires us to do in our economic society, our economic society should become healthy and strong without fraud and cheating. Accountants should hold the role of "police" in an economic society to protect people from losing money by fraudulent financial reports. Also, having a strong mind and ethical awareness

are important. Dellaportas (2006) emphasizes that having the ability to make ethical decisions requires both the student's moral judgement and what the student learned from higher education. No matter how much unethical people influence the environment, accountants should be able to do what has been taught from higher education or the Code of Conduct.

Ethical awareness and judgement

Behn et al. (2012) mention that right now there is a lack of accounting professionals in society. During college, students need to learn accounting theory and how to practice it in the work field. Beyond the theory study, ethical awareness and judgement should be taught by higher education as well. When an accountant holds a higher education background, he or she can have a strong ethical awareness and judgement. Compared to the accounting practitioner who does not have a higher education background, the accounting practitioner who holds it could make more ethical decisions in their job field. Continuing to train accounting students to become accounting professionals is a great opportunity for our society to build a strong protection for our economic world.

Blanthorne et al. (2007) suggest that the majority of people think that ethics should be taught at the beginning of an accounting education. Also, the professors play an important role when they are teaching the accounting lesson during class (p. 363). The reason is that accounting professors are neutral in teaching. The good way to teach how to be an ethical accountant is to teach what is the right thing as an accountant. It would be helpful to show the students what the most correct thing should do in the work field. In a similar situation, the students would be able to tell their client how something should be done and what should not be done in accounting daily work.

Serve and honor our society

As mentioned by Behn et al. (2012), higher education teaches students what ethics are, and this gives the students a strong mind to be aware of the ethical issues and make an ethical decision about it. So, making higher education more efficient and bringing out more well-trained accounting professionals is what we should work on. Higher education helps us teach more and more accounting students become accounting professional and bring them into our society, and the accounting professionals can build our economic society to healthier and stronger. Also, it is important to mention that the public economic society is what accountants serve and put the public interest as the priority by professor. This could train the student as a "soldier." We are not fighting for battles, but we should fight against economic frauds and reduce risks. As an accountant, we serve our public economic security, as a soldier serve our nation's security. By teaching honor, it could give students a strong mind of what we are doing and what we are doing it for.

PROPOSAL

From the findings, an accounting student learns accounting theory exclusively from the textbook in higher education. It limits the accounting student to gain experience or expectation before graduation. The only way to see and gain practical accounting experience is from internship after graduation. However, the accounting internship cannot provide the most ethical and moral methods to teaching those graduate students because of the conflict between self-interest and public interest. The ethical and moral method could only be taught by higher education. There are two proposals worth consideration, as follows:

The first proposal is collaborative learning. To create collaborative learning, the accounting students, accounting professors, and accounting practitioners from the work field could work together to explore what is the most important material that should be taught in accounting classes based on the different responsibilities. Nowadays, there is a huge gap between the accounting textbook and the accounting practice in the real world. This gap is a challenge for most accounting students. The CPA firm will think about the profitability when they take the contract. It is hard to balance the profitability and responsibilities of the accounting work. The way to balance this will not be found in an accounting textbook. The students can only learn those from internships or practice. Those are also related to the accounting ethic; which students should know before they graduated. For this reason, the accounting practitioner, such as people from CPA firm, should work with the accounting professors at the same time to let the professor know what should be introduced in the accounting ethical courses based on life experience. During the course, the students could know how real-world accounting looks like and get an awareness of both ethical and unethical behaviors before they start to work in society. When accounting students have moral awareness and know what they should do in immoral or unethical dilemmas, they can do the right things to protect the public economic society.

A second proposal is creating awareness of ethics for the students by having extra accounting ethics courses. In most cases, the students do not understand the unethical and immoral challenges, giving the accounting graduates a chance to make unethical decisions in their future work. The accounting students should have more awareness of ethics before they graduate. Introducing the ethics cases during lecture could give the student this awareness. Also, teaching the code of conduct could demonstrate the responsibilities of being an accountant. The professor should highlight to the students in the accounting courses what an unethical decision is and when the unethical behaviors will happen. The student could have an expectation about the future work field. When they have expectations, the student can know how to avoid or how to fix the unethical behaviors. Also, the professors need to introduce the ethical methods to solve those problems. If the students do not know the ethical way to resolve an unethical problem, the students potentially will follow what the client wants during work.

CONCLUSION

Three key points were discovered by conducting this research: first, by fully following the AICPA guidelines, the ideal economic society will become a reality. Second, due to the unethical decision-making on disclosures of financial statements, economic society nowadays is at-risk. Third, higher accounting education right now is not sufficiently teaching accounting students to become accounting professionals. The findings regarding teaching ethics could be completed by real-world practical training and are fully supported by the auto-ethnography and follow-up interview ethnographies. The connection between the three key points is that higher accounting education could serve as the link between the ideal economic society and the at-risk society, as illustrated in Figure 1. The auto-ethnography corroborates the findings from the literature review. Higher education could provide accounting students a solid ethical foundation before they serve the society in their careers. Moreover, sufficient higher accounting education incorporating ethics into their curriculums could prepare more accounting students to becoming ethically aware accounting professionals, and those accounting professionals could build-up our society.

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Lingyun Ma, MBA, a native of Beijing, China, earned his Bachelor of Science in Business Administration with a concentration in accounting and his MBA with a concentration in accounting from Mississippi College in Clinton, MS. In the fall, he plans to further his education by enrolling in a Ph.D. program in Accountancy, focusing his research on accounting ethics and higher accounting education.

V. Brooks Poole, CPA, CIA, MTAX, is an instructor of financial accounting and taxation at Mississippi College in Clinton, MS. His research focus is practitioner-gear topics in taxation and international financial accounting. Specific areas of research interest include estate taxation and planning, federal and state income tax planning, international convergence, ethics in financial accounting, and equity and social justice in higher education.

Taylor F. Corso, CPA, JD, is an assistant professor of financial accounting and business law at Mississippi College in Clinton, MS. Her research focus is practitioner-gear topics in financial accounting, governmental accounting, taxation, and ethics.

Problem-Solving and Critical Thought Learning Differences Between Online and Instructor Led Database Students

George Garman, Metropolitan State University of Denver - Denver, Colorado, USA

Mark Segall, Metropolitan State University of Denver - Denver, Colorado, USA

ABSTRACT

This paper presents a statistical analysis of the performance of students in university database management courses for problem-solving learning versus critical thinking learning. The authors hypothesize that while classroom instruction is important for the development of problem-solving skills, it is not essential. Even though they benefit from classroom instruction, students generally possess the ability to perform problem-solving activities on their own assisted by self-learning documents and trial and error. However, critical thought ability is more complex. It is much more difficult for students to grasp the intricacies of critical thought than it is to demonstrate problem-solving abilities. This paper examines the performance of students in instructor-led versus online database management courses on assessments that can be classified as problem-solving or critical thought type activities. A two-factor analysis of variance design is employed to test the hypothesis. The first factor is the delivery method with levels of instructor-led or online. The second factor is the levels for the assignments or questions that are classified as problem-solving and critical thought respectively. Although online learners were provided with extensive resources to help them succeed in the course, learners in the instructor-led sections performed significantly better than online learners on both the problem-solving and critical thought assessments. However, the differential for problem-solving was only four percentage points while the differential for critical thought was almost ten percentage points. There was a significant interaction effect between instructor-led learners and online learner on the critical thought assessments but there was not a significant interaction effect between instructor-led learners and online learner on the problem-solving assessments.

Keywords: Problem-solving measurement, Critical thought measurement, Online courses, Instructor-led courses

INTRODUCTION

Metropolitan State University of Denver supports a very large undergraduate program as well as a graduate program in several different areas including an MBA. MSU Denver offers a wide range of courses through its College of Business. Many of these courses are taught in an instructor-led conventional classroom format and/or as an online course. In the Computer Information Systems and Business Analytics (CISBA) Department, the Database Management Systems (DMS) course is taught in both the instructor-led and online formats almost every semester except for the summer session. The courses have identical objectives and expected student outcomes.

Even though the online and instructor led versions have the same objectives and expected student-learning outcomes, the delivery method for the two versions must differ. The online version of the course relies on slides developed by the instructor as well as links to focused videos. Although online students are encouraged to interact with one another on an online multithreaded discussion board, they are not allowed to discuss solving the problems that are to be submitted for a grade. The instructor is always available to the online students through email, phone, and live office hours. The College of Business' Tutoring Center generally provides a tutor dedicated to the DMS course five days per week. Instructor-led students are offered several live demonstrations conducted by the instructor and the instructor is available for in class individual help. Peer interactions are highly common and available in the instructor-led courses.

One important course objective is the ability to respond to user inquiries and create queries run against a database to accurately respond to the inquiries. The creation of these queries is sometimes relatively simple but more commonly they are highly complex requiring the use of highly developed problem-solving skills. A large percentage of the DMS course is devoted to instruction into how to approach, analyze, and construct these queries. Complex queries can be constructed in a variety of different formats and more than one alternative construct often will produce a correct result. However, some constructs are generally regarded as more "professional" or efficient than others. Learning how to properly approach and write these queries is an art that requires the development of high-level problem-solving techniques.

The problem-solving (query building) aspects of the online and instructor-led courses are both assessed by three assignments. The assignments for the instructor-led and online versions are identical for each semester. However, the assignments are modified from semester to semester with the assignments being of comparable length, time required to complete, and difficulty level. The assignments from both the online and instructor-led courses were graded according to an identical rubric. Therefore, the assignment scores of online students would be comparable to the scores of the instructor-led students. Student scores received on these assignments will be the measure of attainment of mastery with respect to the problem-solving objective. Scores earned by the online students will be compared with the scores of the instructor-led students to measure differences in the problem-solving achievement between the two groups.

All courses included in this study used to develop the data set were taught by the same instructor who also graded all assignments. This paper examines the significant differences between the problem-solving performance of students in online sections with the performance of students in the instructor-led sections of the DMS course for the time period beginning in the fall of 2011 through the spring of 2019. There were fifteen semesters in which both the online and instructor-led versions were both taught concurrently.

BACKGROUND AND ANALYSIS

The DMS course is taught at the junior level and provides the student with a broad background in an important area of the information systems' discipline. It is a required course for all students who major or minor in information systems at MSU Denver. It is also required of students in the College of Professional Studies who are majoring in health care management and can also be substituted for another required database course by students majoring in geographic information systems.

The DMS course requires "learning" at many levels. Some modules require only basic cognitive skills such as working memory and verbal reasoning. Students must understand the various types of databases and the terminology that is required in describing each. The DMS course also requires the student to develop much higher level, complex skills. Normalizing a set of data from a set of independent user views of the data requires an application of prior knowledge, judgment, evaluation, and conceptualizing the information. Students are required to follow a process and make informed judgments at critical points in the process. Reasonable people may produce different results, any of which may be "correct" in the context of the process. The normalization process should be regarded as an example of a critical thought process. Finally, students must master the ability to respond efficiently to inquiries received from almost anyone. These inquiries can be quite involved and require highly complex problem-solving skills. The DMS course contains a several weeks long module that is designed to teach students how to respond to user inquiries and to learn these complex skills.

Problem-solving has been a goal of educators for a long time. Some have argued that problem-solving is the single, most important goal of education (Ruscio and Amabile, 1999). Problem-solving can be defined in many ways. Anderson suggests that problem-solving is "any goal-directed sequence of cognitive operations" (Anderson 1980, p. 257). Mayer and Wittrock indicate that problem-solving should include a cognitive process, be goal directed, and the difficulty level should depend upon the person's knowledge and skills (Mayer and Wittrock, 1996). On point is the analysis from Shute and Wang that "Complex problems usually combine a mixture of basic rules and rules that require cognitive flexibility—the ability to adjust prior thoughts or beliefs and explore alternative strategies in response to changes in the environment" (Shute and Wang 2015, p.13). Considering the above definitions of problem-solving, the measurement used in this paper are the scores that students receive on a set of three assignments all related to the creation, retrieval and manipulation of the data in the tables of the database and the students' ability to respond to an extensive variety of inquiries.

A large share of our educational system involves the process of transmitting knowledge to students who acquire and repeat that knowledge. Critical thinking occurs at a higher level. It involves the ability to apply prior knowledge and learning to a specific set of facts. Clearly critical thinking is regarded as a higher-level skill than problem-solving. Lipman (1987, p. 5) states that "Critical thinking encompasses analyzing, judging, hypothesizing, explaining and many other cognitive activities besides deciding and problem-solving." Thus, problem-solving is regarded as only a part or even an outcome of critical thought. Critical thinking is defined by Scriven and Paul as "the intellectually disciplined process of actively and skillfully conceptualizing, applying, analysing [sic], synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection,

reasoning, or communication, as a guide to belief and action” (Scriven & Paul, 2007, p. 1). A normalization problem in a DMS course presents a situational set of facts and data. Generally, the set of facts contain specific requirements that must be applied to the design of the database.

DATA FOR THE STUDY

The data for this study were collected from students in the DMS courses over the time period from fall 2011 through spring 2019. The problem-solving data were collected from student projects. While the projects differed from semester to semester, the projects were identical for both instructor-led and online courses during any given semester. The students were required to complete three assignments which were submitted for grading. First, students were required to implement two separate fully functional databases on the University’s pedagogical Oracle database system. Each student was given a description of the structure of the tables along with the data that needed to be entered. Each student database consisted of either five or six fully normalized tables. The implementation required the students to ensure integrity in primary and foreign keys. Students were responsible for deciding on a methodology for implementing the structure of the database and populating all the tables with the data.

Once the structures of the tables were created and the tables populated with data, students were required to manipulate the data in two additional assignments. For the second assignment, students were provided with an extensive list of questions that someone may ask of the data in the database. The students were required to write and debug *ad hoc queries* that successfully answered the questions. Many of the questions required a significant degree of creativity and did not have a unique solution. Different students might take quite different approaches to writing a valid query and successfully finding a solution. The final assignment required the students to conduct a variety of activities on the databases including creating views, modifying data, altering table structure, evaluating performance, and implementing security on their tables.

All assignments were scored on a 100-point maximum scale with an identical rubric being used for both the online and instructor-led sections. If a student did not complete an assignment, that student was eliminated from the study so there should be no bias for incomplete assignments. Also, in a few situations, a student would complete all the assignments and then drop the course later. Students who did not complete the course were also eliminated from the study even if they had completed all three of the assignments.

Table 1: Descriptive Statistics for the Three Problem-Solving Assignments by Delivery Method

Delivery	Assignment	Mean	Std. Dev.	Min. Value	First Quart	Median	Third Quart	Max. Value	N
Instructor led	A1	86.3	22.9	0	85.0	95.0	100	100	337
	A2	94.0	15.4	10	100.0	100	100	100	298
	A3	97.2	11.1	0	100.0	100	100	100	305
Online	A1	81.1	27.1	0	58.3	95.8	100	100	315
	A2	89.9	23.4	0	91.7	100	100	100	256
	A3	95.5	15.7	0	100.0	100	100	100	252
Instructor-led Mean		92.3	18.0	0	95.0	100	100	100	940
Online Mean		88.3	23.7	0	91.7	100	100	100	823
Difference In Means		-4.0							

Table 1 presents the summary of the descriptive statistics developed from the problem-solving assignments shown by the delivery method for all fifteen semesters under study. Both instructor-led and online students scored higher on each progressive assignment. The instructor-led students always performed slightly better than the online students on each of the three assignments. The mean of the three assignments for instructor-led students is 92.3 which is four points higher than the mean of the online students (88.3). Also, for all three assignments, the standard deviation is higher for the online students than for the instructor-led students. The median, third quartile, and maximum values for the two groups are all 100, indicating that most students understood the problem-solving

material. The minimum value of zero for both groups is an indication that some students failed to understand the material. The values of N associated with the mean of the three assignments represents the total observations on the three assignments of 940 and 823 for the instructor-led and online assignments, respectively.

The data for the critical thinking questions come from two questions that were given on the DMS examinations of both the instructor-led and online sections. The questions changed from one semester to the next. However, the questions were always identical for a given semester. The first question presented a set of facts that contain text, data, business rules, and other issues associated with a hypothetical business enterprise. Students were required to undertake a complete and comprehensive analysis of the text and supporting documents. Using tools and analytical skills demonstrated in class, the student was given the responsibility of creating a fully normalized design for a database that takes into consideration the data and issues contained in the question. Solutions were not unique. However, normalization techniques resulting in a valid design must be followed. The second critical thought question also contains textual passage describing an enterprise, data, and issues specific to the enterprise. The student must provide a complete analysis of the factual situation established in the text along with the data given to provide a comprehensive diagram of the solution to the problem. The diagram must be completed in such a way as to be easily understood by other information technology professionals.

Table 2: Descriptive Statistics for the Two Critical Thought Questions by Delivery Method

Delivery	Question	Mean	Std. Dev.	Min. Value	First Quart	Median	Third Quart	Max. Value	N
Instructor led	Q1	74.1	16.5	0	66.7	75.0	83.3	100	328
	Q2	75.8	22.1	0	62.5	75.0	100.0	100	328
Online	Q1	61.6	23.3	0	44.4	63.9	77.8	100	336
	Q2	68.9	25.1	0	53.3	73.3	86.7	100	336
Instructor-led Mean		75.0	19.5	0	62.5	75.0	87.5	100	656
Online Mean		65.2	24.5	0	50.0	66.7	83.3	100	672
Difference In Means		-9.8							

Table 2 presents the summary of the descriptive statistics developed from the two critical thought questions shown by the delivery method for all fifteen semesters under study. Each question was scored on a one-hundred-point basis and both instructor-led and online students were graded by an identical rubric. The instructor-led students performed at a level of about ten points higher than the online students for both questions. The value of the mean computed from both questions was 9.8 points higher for the instructor-led students. Also, for both questions, the standard deviation is higher for the online students than for the instructor-led students. The mean and median values for the two groups are the same or similar, indicating that scores for both groups have a symmetrical distribution. The maximum values of 100 for both groups shows that students in both the instructor led and online groups were able to master the material.

The values of N associated with the mean of the two questions represents the total observations on the two questions of 656 and 672 for the instructor-led and online questions, respectively.

Subjectively, the scores for the two questions were rather low. The instructor-led mean was seventy-five percent which translates to a middle C while the online mean was sixty-five percent which would be considered a middle D. The scores on these two questions were always the lowest scores of all the questions on the examination. This likely illustrates that the learning of critical thought skills is among the most difficult skills to master.

METHODOLOGY

Both the instructor-led and online versions of the DMS course must adhere to an identical set of course objectives and outcomes. However, the two versions of the course are not the same. The instructor-led sections physically meet in the classroom twice per week. An instructor meets with the class and delivers a lecture, demonstration, or some other pedagogy. Students actively interact with the faculty member and are allowed to express opinions and ask questions. Students also interact with each other during class discussions and group activities. Some students

are highly active learners who participate regularly while others are passive learners who absorb knowledge from others. Online students must become far more active learners than their classroom counterparts. All the course requirements are centralized on an extensive Blackboard Learn web site. Students are provided with a wide variety of resources to help them succeed. Online students are provided with detailed slides, videos, extensive reading material, and other linked resources. Blackboard Learn provides a multithreaded discussion page that facilitates interactions among online students. Online students are encouraged to interact with the course instructor through text messages, email, and phone. Online students are also encouraged to visit their instructor during office hours and at other mutually agreed upon times.

The two-factor ANOVA design is divided into two separate models. The first model examines the effects of the average scores of the problem-solving assignments on instructor-led and online course sections. The first factor is the delivery method with two levels, instructor-led (il) and online (ol). The second factor is the three assessments partitioned into the three levels Assignment 1 (A1), Assignment 2 (A2), and Assignment 3 (A3). The second model examines the effects of the average scores received by students on the two critical thought questions separated by instructor-led and online sections. As defined in the first model, the first factor is the delivery method with two levels, instructor-led (il) and online (ol). The second factor is the two assessments partitioned into the two levels Question 1 (Q1) and Question 2 (Q2).

For each of the models (problem-solving and critical thought), three statistical hypothesis tests are performed. The first two tests are regarded as the main effects and the third test is the interaction effect. The first test will examine the significance of the Delivery method on the average score of all assessments. For the problem-solving model, the average score of all three assignments are tested for significant differences based upon instructor-led versus online delivery. For the critical thought model, the average scores on both test questions are tested for differences based upon the instructor-led versus online delivery.

- (1) H_o : the overall mean score of the assessments are equal for each delivery method
 H_a : the overall mean score of the assessments differ by delivery method

The second test will examine if the means of the assessments differ from one another regardless of the Delivery method. For the problem-solving model, this would test if there is a significant difference in the test scores among the three assignments and for the critical thought model this would test if there is a significant difference in the scores between the two test questions.

- (2) H_o : the means of all of the assessments are equal
 H_a : the mean of at least one assessment is different from the others

The third test examines the dependence of the test scores on the delivery method.

- (3) H_o : differences in assessment scores are independent of the differences in delivery method
 H_a : differences in assessment scores depend upon differences in delivery method

RESULTS

Each of the three assignments scores are evaluated without respect to the delivery method. The main effect of the assignment scores was also significant producing an F-ratio of $F(2,1757) = 62.25, p < .01$. There is strong evidence that students become better at solving problems as they progress from one assignment to the next. The first assignment yielded ($M = 83.8, SD = 25.1$), the second assignment yielded ($M = 92.1, SD = 19.6$), and the third assignment yielded ($M = 96.5, SD = 13.4$).

The interaction result between the delivery method and the assignment scores yielded a F-ratio of $F(1,1757) = 1.14, p = .32$. There is no conclusive statistical evidence that the assignment scores are dependent upon the delivery method.

Table 3: Factorial ANOVA Results for the Delivery Method and Problem-Solving Assignments

Source	df	Sum of Squares	Mean Square	F-Value	P-Value
Delivery	1	5,867	5,867.4	14.44*	0.00*
Assignment	2	50,598	25,298.8	62.25*	0.00*
Interaction	2	925	462.7	1.14	0.32
Error	1,757	714,056	406.4		
Total	1,762	771,446			

* represents values significant at the alpha = 0.05 level.

A factorial ANOVA was conducted to compare the main effects of the course delivery methods and course test questions on the scores students earned on the questions. Table 4 presents the statistical results of delivery method and critical thought model. The main effect of the course delivery method produced a significant F-ratio of $F(1,1324) = 65.13$, $p < .01$. The mean of the two questions was ($M = 75.0$, $SD = 19.5$) for students enrolled in the instructor-led sections compare to a mean of ($M = 65.2$, $SD = 24.5$) for students who enrolled in the online sections. The difference between the instructor-led and online means for the critical thought questions is ($75.0 - 65.2 = 9.8$) points which represents an entire letter grade. Learners who develop their critical thought skills without the support of a classroom environment are expected to perform significantly lower than their classroom counterparts.

Table 4: Factorial ANOVA Results for the Delivery Method and Critical Thought Questions

Source	df	Sum of Squares	Mean Square	F-Value	P-Value
Delivery	1	31,541	31,540.7	65.13*	0.00*
Question	1	6,798	6,797.6	14.04*	0.00*
Interaction	1	2,636	2,635.9	5.44*	0.02*
Error	1,324	641,141	484.2		
Total	1,327	682,219			

* represents values significant at the alpha = 0.05 level.

The main effect of the question scores was also significant producing an F-ratio of $F(1,1324) = 14.04$, $p < .01$. Students scored significantly higher on the second test question ($M = 72.3$, $SD = 23.9$) than on the first ($M = 67.8$, $SD = 21.2$) irrespective of the delivery method. Unlike the problem-solving assignments in the first model above which were completed over at least a three-week interval, the test questions were both part of the same examination. The first critical thought examination question was also somewhat more involved and complicated than the second question. The second test question ultimately required students to create a visual display which might be somewhat more intuitive than creating the textual narrative required for the first critical thinking question.

There was a significant interaction between the effects of the delivery method on the scores of the critical thought questions as shown by the interaction F-ratio of $F(1,1324) = 5.44$, $p = .02$. The interaction effect can be seen in Figure 1. The instructor-led students did equally well on the critical thought question one ($M = 74.1$, $SD = 16.5$) and question two ($M = 75.8$, $SD = 22.1$). The difference of 1.7 between the two questions is not statistically significant ($t(605) = -1.12$, $p = 0.265$). While the online students did worse overall than the instructor-led students, their performance on the two critical thought questions were different. The mean for question one was 61.6 ($SD = 23.3$) and the mean for question two was 68.9. The difference of 7.3 for the online students was statistically significant ($t(666) = -3.91$, $p < 0.001$). The interaction indicates that instructor-led students were equally prepared for the two different critical thinking questions, while in comparison the online students did worse with both critical thinking questions, but struggled even more with the complex and demanding critical thinking question one.

Figure 1: Interactive Plot for the Data Means of the Critical Value Scores by Delivery Method



CONCLUSIONS

Problem-solving and critical thought are difficult skills for students to master under the best of circumstances. Attempting to master these skills in an online environment, even with access to the best of resources, will not produce the same results as those who chose to learn in a classroom environment. Even when the best efforts are made to provide online learners with overwhelming quantities of resources, live, face-to-face interaction with instructors is superior.

All student do better with the problem solving assignments than the critical thinking questions as evident by the higher scores. In addition, the drop in scores for the online students in the problem solving assignments is only four percentage points, a drop from about an A- to a B+. Thus, problem solving skills are only mildly affected by taking an online course. When the higher level critical thought skills were tested, the difference in the assessment scores between online and instructor-led learners was almost ten percentage points, dropping from a C to a D. Also, for the online students, harder critical thinking questions, result in even lower scores, compared to the instructor-led students. Critical thinking skills appear to be more sensitive than problem solving skills to the benefits of instructor-led versus online course delivery methods.

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Structured Internships: Bridging the Education to Business Gap

Joseph M. Tracy, Florida Southern College, Lakeland, FL USA

ABSTRACT

Internships are increasingly important in the world of business education. Colleges and employers seek a strong link in assuring students are properly prepared in the application of academic learning in a business setting. In addition, students, schools & employers benefit from the internship perspective derived from this transitional learning experience. A 360-degree feedback approach from student intern field experience provides insight into the effectiveness of the internship experience in developing key business skills. Utilizing input from students, faculty, staff and employers, the author compiled and analyzed internship data at Florida Southern College (FSC) in the Barney Barnett School of Business and Free Enterprise (BBSOBFE) over five academic years (2011 - 2015). Student scores on Key Performance Indicators (KPIs), text analysis of survey responses by employers & students and qualitative data indicate internships positively impact student skill sets and self-confidence. Thus, providing a bridge between education and a job setting. Educators can gain insight into building an effectively structured internship program and evaluation methodology through this discussion.

Keywords: internships, professional development, business students

INTRODUCTION

Internships are a major focus in business education. This paper analyzes the impact of internships from the specific to the generic. Author examined the impact of internships at Florida Southern College in the Barney Barnett School of Business and Free Enterprise (BBSOBFE) for five academic years (2011-2015) utilizing input from employers, students, faculty, staff and other sources. At BBSOBFE, the data on internships illustrates the positive impact on student skill sets and self-confidence. Results indicate internship provides an important bridge between education and a job setting.

Recent studies point to a significant gap between job skills and education. Recent college graduates believe they are prepared to enter the real world, but, surveys of management in organizations reveal a much less optimistic answer. “When it comes to the skills most needed by employers, job candidates are lacking most in written and oral communication skills, adaptability and managing multiple priorities, and making decisions and problem solving” (The Chronicle of Higher Education [The Chronicle], 2012, p. 12). The gap between new graduate perception and employers is sizable, for example “while 59% of students said they were well prepared to analyze and solve complex problems, just 24% percent of employers said they had found that to be true of recent college graduates (Association of American Colleges and Universities, 2015, p. 12). Faced with this large perceptual gap, business schools need strategies to prepare students for the real world. What are employers looking for to help close the gap between college and business ready new graduates? Internships are the number one item employers are seeking when they review candidate resumes. “Employers place more weight on experience, particularly internships and employment during school vs. academic credentials including GPA and college major when evaluating a recent graduate for employment” (The Chronicle, 2012, p. 11).

RESEARCH DESIGN

The analytic approach to examining internships at BBSOBFE

Examined key dimensions of internship performance as indicated on our statistical base of data from employer evaluations of student interns as well as student survey data. Examination of the data seeks to draw statistical and qualitative inferences on key questions:

- How do students perform across key performance indicators (KPIs)?
- Are there statistical differences in KPI performance among students?
- What does the evaluation data indicate about hard skills (functional/technical) and soft skills (behavioral/emotional intelligence)?
- Do employer comments on evaluations offer further insight on the internship bridge to employment?
- What do students conclude about the impact of internship in post-evaluations?

- Are students and employers agreed in the value of the experience?
- Can we infer a connection between the strong performance of BBSOBFE interns and our experiential learning pedagogical approach?

Beyond the specific answers, this BBSOBFE internship examination discusses outcomes in the broader context. A review a recent national internship surveys illuminates how BBSOBFE fits in the national internship picture. Does BBSOBFE experience align with the national trends?

The study of BBSOBFE internship data and consideration of the broader questions, points to the positive, bridge building value of the internship experience in higher education. The experience complements the classroom and campus experience of today's college business student. Internships provide an opportunity for both students and employers to benefit from a rich experience, explore capabilities and interests, build relationships/networking and gain important perspective on issues of culture and fit. The internship perspective is invaluable as students take their first steps into the business world beyond college.

Situation

BBSOBFE at Florida Southern College is an AACSB accredited program located in Lakeland, FL. BBSOBFE has a long history of business education in Accounting, Business and Economics. In the past ten years Florida Southern College (FSC) leadership has strategically increased the focus on BBSOBFE as a premier program of the college, through investment in faculty, staff, curriculum, physical plant, resources and AACSB accreditation. In addition, as part of an award winning college for experiential education and engaged learning ("Past Winners_Burke," n.d.), BBSOBFE has increased focused on internships. In 2010, FSC began a "guaranteed internship" program for all students with good academic standing. BBSOBFE faculty and staff heartily subscribed to the program and began a push to build a stronger culture of internship in the business program. Number of interns in the business program increased dramatically in the 2011-2015 period. This is notable in light of significant course requirements (66 credit hours) for the business administration major. As an outcome of the increased focus and participation among business students, BBSOBFE has assembled a data set of internship evaluations. Also, focus on the three "Ps" of internship (Preparation, Promotion and Perspective) has benefited students and employers. Each student works with the FSC Career Center and Internship Coordinator on the important elements of preparation (resume, cover letter, interview skills, research et al) in advance of actively promoting internship interests among employers. The self-promotion skills (research, networking, applications, interviewing, follow up & closing) are critical for the long term. Finally, the perspective gained in the internship experience is the payoff for our students. They fulfill a 'field tested' experience, gain self-awareness and learn how their interests align with the reality of the job. BBSOBFE gets overwhelmingly positive response among students and employers. Also, the program seeks opportunities for continuous improvement through our formal and informal feedback mechanisms.

BBSOBFE has Business & Accounting Interns and they predominantly (over 90%) are of Junior/Senior status. The program achieves a broad sample of internship assignments across industry groups and job functions as well as global geography. Firms & job functions encompass accounting firms, financial services, marketing & advertising organizations, NGOs, healthcare, manufacturing, distribution, retail & agricultural businesses. Examples of firm intern placements include Publix, Price Waterhouse Coopers (PWC), Lockheed-Martin & GEICO. Minimum work requirement for students to earn four academic credits at BBSOBFE is 160 hours. Students have reporting/feedback requirements to coordinators in addition to evaluations. Summer session interns generally have significantly more hours of experience than fall/spring interns due to availability & geographic flexibility. Coordinators encourage a summer internship experience and have a large number of students in the field across the US and Continents in the summer months.

Feedback/Evaluation Methods

Employers file midterm and final evaluations for each intern. Employer midterm and final evaluations offer us valuable quantitative, statistically valid feedback on our student interns. The evaluation tools are consistently applied and required for each intern as part of the grading process. Also, faculty and staff regularly communicate with both employers and students on the internships. Finally, students have post internship survey input, journaling and final oral presentations where they reflect on the experience and provide feedback to instructors.

Evaluation Measures offer a 360-degree view of the internship experience:

- Employer intern evaluation ratings across 10 KPIs
- Employer Survey comments & qualitative feedback.
- Student surveys, final orals, journals, coordinator meetings
- Qualitative input from Faculty, Coordinators & Career Center Staff

RESULTS

Evaluation Results Indicate Positive Outcomes

Employer evaluations demonstrated extremely positive results. The evaluation instrument has four performance choices for employers to rate students: superior, very good, average and low. Instructors provide guidelines for employers for each rating. For example, superior is equivalent to employee performance at a high level deserving of promotion and/or merit increase. The scores are on a sliding point scale for grading purposes. Superior is 10, very good is 9, average is 7 and low is 6. The scalar point approach is easy to apply and readily converts to a letter grade. Overall, intern midterm and final evaluation scores were high. Superior rating by employers across key measures was the most frequent rating. Statistical analysis allows us to tier the key evaluation measures at a 95% confidence level due to the benefit of our sample size (n= 215). Table 1 illustrates the statistically different tiers of performance on the KPIs seen in employer evaluations. Scores were determined based on the average rating for each KPI.

Table 1: Employer Evaluation Student Scores on KPIs by tier

Employer Evaluation score by statistical tier	Key Performance Indicator (KPI) dimensions
Tier 1	Ability to accept supervision, Organization & planning, Reliability and dependability
Tier 2	Progress toward goals, Quality & quantity of work, Evidence of self-confidence
Tier 3	Oral & written communication, Skill level

Tier 3 level skills retain positive ratings, but, were the statistically lowest average dimensions. These scores may indicate a need for further academic development. Or, it may take more time for students to acquire skill in business vernacular and business communications style & methods.

Differences in Behavioral versus Technical KPIs

The strongest evaluation scores were behavioral measures (accepting supervision, on time/reliability/dependability, organization, goal orientation). Technical/functional scores were statistically lower (albeit at a positive performance level). Oral and written business communications, skill level, Quality and Quantity of work were all a notch lower than the higher attitudinal/behavioral scores. Lower scores can be reasonably expected in a new work environment as a natural function of the learning curve. Technical KPIs more closely relate to learned/acquired job skills as opposed to attitudinal KPIs which are “bring to the party” behavioral skills. Evidence of self-confidence is the one behavioral dimension in the tier with the weaker technical measures. This is possibly attributed to the experience reaching beyond the student’s comfort zone into a new professional work environment. There is only directional improvement midterm to final, but, qualitative verbatim feedback indicates these measures will rise in line with the learning curve. Midterm to final scores exhibit directional progress on all 10 key evaluation measures. Two measures stand out as statistically valid improvements from midterm to final at the 95% confidence level: Organization & Planning and Oral Communication. These two measures may indicate increased familiarity with work flow and the business vernacular/communication style and culture of the workplace. From the positive directional trend of the midterm to final evaluation, students were encouraged and engaged with the experience. There is no evidence of a turn-off or shut-down due to a less than ideal experience. A few students return from the experience with a new perspective that the firm or the industry type is “not for me” and would like to try a different job experience, yet, they still function at a high level, exhibiting professional behavior and results.

Employer comments

Review of employer comments in evaluations point to strong performance and relationship building. Employer comments on evaluations (n=209) were input into a text analysis tool to generate a word cloud

Pleasure to Work Great Worker Skills Tremendous Help
 Great Help Easy to Work Improved Dedication
 Asset Clear Excellent Outstanding Intern
 Tasks Quick Learner Job Student Learn
 Operations Team Work Ethic Reliable Good Worker
 Projects Exceptional Young Needed Hard Worker

Student feedback

Student feedback is consistent and points to the critical confidence-building impact of the internship experience. The FSC Office of the Provost began administering post internship student surveys across the college in 2012. Our conclusions reflect the results of Business and Accounting students (n=93) surveyed over the 2012 to 2014 period. Preparing for the internship and the internship experience itself built confidence and esteem among students. Students came away feeling very or somewhat confident on all the key preparation elements of the job search. The positive impact was felt across the board. Both “on the job” skills and job search skills for future employment were all perceived as improved by the students. Importantly, underlying student confidence in the ability to successfully execute a full time job search was extremely positive. Students perceived the internship experience to be a confidence builder across key job search preparation skills, including conducting information employment research. Other preparation elements scored high confidence by student interns: networking, resume & cover letter writing, communicating effectively with potential employers & completing a job application.

Responses to assessment of eighteen functional and soft skills gained during the internship were highly positive. Ninety percent of the responses were positive and only ten percent were negative or neutral. Three dimensions had modestly higher non-positive scores (“very little”, “none” or “na”): using equipment not found at FSC (75%), importance of ethical conduct (80%), utilizing different computer software (81%). Technical scores were reasonable given the range of internship assignments, for example sales and non-technical support positions may not utilize firm software as part of the experience, hence “na”. Our experience indicates the ethics score may relate to a lack of confronting ethical dilemmas during the internship. On the upside, several dimensions scored extremely high for positive impact: time management (95%), defining and solving problems (96%), working independently (95%), able to integrate other's feedback to improve work (94%). These critical thinking & self-management skills are a tremendous perceived benefit to students emerging from an internship and are closely aligned with employer evaluation feedback.

Table 2: Student response to functional & soft skills gained from internship (n=93)

Highest Positive responses	Lowest Positive responses
Problem Solving (96%)	Utilizing different computer software (81%)
Time Management (95%)	Importance of ethical conduct (80%)
Working Independently (95%)	Using equipment not found at FSC (75%)

The balance of the dimensions queried all had ratings approaching 90% positive. Here are the other skills surveyed: Leadership, Written communication, Oral Communication, Innovative Thinking, Working as Part of a Group, Ability to Analyze Data, Self-confidence, Clarification of my Career Path, Tolerance for Obstacles, Ability to

Evaluate & Give Constructive Feedback, and Becoming Familiar with New Ideas and Developments in my field of interest. Two thirds of the negative/neutral comments (across the 18 queried dimensions) were driven by only 16% of the students surveyed. The vast majority of students had little or no negatives to report about the intern experience. Only two of ninety-three (2%) respondents would not recommend their internship to another.

In line with our results, Gallup research among recent college graduates indicates internships are useful for improving chances of full time employment and workplace engagement. The 2014 Gallup study found that 71% of internship participants were employed full time versus 56% without the intern experience. In addition, the Gallup study found much higher workplace engagement among recent grads with internship experience. 56% of those with internships were engaged at work versus 33% of non-interns (Seymour & Ray, 2014).

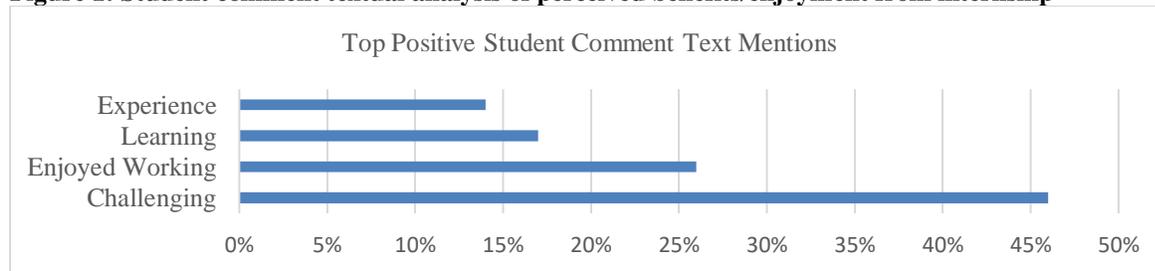
Text analysis of the elements of the internship

Sample textual comments illustrate the positive effect of the learning curve. Challenging (46%) and learning (17%) are the most common mentions in student feedback. Some sample comments about the challenges met by interns: *“Working under a lot of pressure, and learning how to negotiate with clients...selling strategies”, “Understanding all the contracts was challenging at first, but I soon got more comfortable with them the more I worked”, “I found the oral communication and presentations were challenging”, “internship was very fast paced. At first I found that a little difficult to get used to but then I got the hang of it and enjoyed it”, “software used to prepare tax returns presented a huge learning curve.”*

Students acquired new job skills over the term of the internship. The following student comments are illustrative of the skills acquired during their internship: *“This internship helped me to realize that I really want to study finance, I like the negotiation with clients and be active every moment. It helped on my communication skills, I’m more confident in myself and my choices”, “I learned to understand content better through real-world dynamic applications. Unlike book scenarios, the real world can be unpredictable and give you a broader way of learning”, “I believe I gained a better understanding on how to manage time and organize events...”*

Comments indicate that students find fulfillment and satisfaction in their internship (Figure 1.). When queried on what they enjoyed from the internship experience, the highest student mentions were for Enjoyed Working (26%), Learning (16%), Business (14%) and Experience (14%). Student intern survey feedback reflects a high degree of enthusiasm for hard and soft skill development. The net effect of intern skill development and practice in preparation for the job search paints a picture of a confident and motivated student emerging from the experience. Further, the student perspectives align with the positive evaluation scores reported by employers. The confidence reported by student interns is likely aided by the positive, developmental feedback loop in the employer evaluation process.

Figure 1: Student comment textual analysis of perceived benefits/enjoyment from internship



Faculty & Staff qualitative feedback

FSC professionals indicate the internship experience creates critical teaching moments. Both Faculty & Career Center staff witness the positive student impact in the search process through to the conclusion of internship. In Final Oral Presentations - the concluding element of the academic intern experience – faculty see students in a new light. The same students that were hesitant and unsure in other course oral presentations emerge from internships with a positive energy charge. Students speak confidently and enthusiastically to their professors and peers about the intern experience. They see clearly advantages and gains, as well as weaknesses and developmental needs. Occasionally, we see a major shift in perspective, when a student concludes from the experience that their dream career was not what they imagined and they need to pursue a new direction. Career Center staff view the internship

search process as an invaluable teaching moment. Students come to the Center with a clear goal in mind versus an 'assignment'. Successful internship placement outcomes are in large part a result of the partnership of student and Career Center professionals. Center staff witness a wide difference between the internship experienced student and the late-comers to the professional job search process when students move into full time job search mode.

BBSOBFE results align with national internship research studies

2014 National Association of Colleges and Employees (NACE) Internship and Co-op Survey results show employers continue to prefer 'high touch' methods for recruiting interns reflecting the value of direct contact and engagement at a personal level (National Association of Colleges and Employers [NACE], 2014, p. 3). Nationally, interns recruited convert and retain at a high level with employers making job offers to 65% of interns and 51% converting to employment (National Association of Colleges and Employers [NACE], 2014, p. 4). Internship is clearly seen as the way 'in the door' to successful employment. Thus, emerging from a successful internship experience is clearly advantageous to students seeking full time employment. In the NACE Job Outlook 2014 leading attributes employers seek on a candidate's resume include: communication skills (written and verbal), leadership & initiative, analytic/technical skills, strong work ethic, ability to work in a team, detail orientation and adaptability (National Association of Colleges and Employers [NACE], 2013, p. 30). The desired attributes list closely parallels the skill building witnessed in the internship experience we have documented at BBSOBFE. Further, the high value BBSOBFE places on engaged learning in small classes with many team based projects, may pay dividends when students put behavioral skills to work in an internship.

From the student perspective, most recent 2018 NACE Student Survey results show that nearly four-fifths of student respondents who had an internship/co-op said their professionalism and work ethic were 'very' or 'extremely' improved by the experience. "Likewise, nearly three-quarters of students felt their internship and/or co-op had a significantly positive impact on their teamwork/collaboration and oral and written communication skills". (NACE, 2018, Exhibit 1).

A literature review of internship outcomes by McHugh (2017) points to the developmental value of internships, and intern satisfaction. Students in internship cohorts were found to have greater career focus and better employment opportunities as well as higher employment satisfaction (McHugh, 2017). Further, in a *Business Education Innovation Journal* article on extracurricular activity impact on student employability, results of a survey among recruiters showed internship/coop/major related work as the highest rated factor to influence a recruiter to interview the student candidate (Ward & Yates, 2013). The survey supports our findings related to employer positive perception of internships.

DISCUSSION

From a 360-degree view (employers, interns, faculty & staff) Internships contribute to an important bridge from the educational setting to the workplace. Student interns gain valuable experience, acquire/develop applicable job skills, build self-esteem and contribute to an effective transition to full time employment. Through both our quantitative and qualitative analysis, specific strengths are observed: job performance, positive attitudinal & behavioral measures, technical/functional skill development, hiring potential & desirability among employers, and increased self confidence in preparing for full time job search.

GOING FORWARD

From our study of the data on both evaluative and projective dimensions we see a beneficial impact of the internship experience for the students and the businesses served. Our BBSOBFE internship experiences may be especially strong on non-technical, relationship building dimensions due to our engaged learning methods and practices. We continue build on our culture of internship among BBSOBFE students and business community partners. The 360-degree view indicates all the players in the internship loop value the experience, benefit from KPI assessment and development. Students and employers emerge from the experience with strong relationships. Student gain great confidence as they cross-over the bridge to employment and bright career prospects. We have initiated graduate survey tools to gain insight into workplace outcomes. Also, this will enable us to delineate outcomes among interns and non-interns in future analysis. A recent article in *Business Education Innovation Journal* points to the benefit of Salesforce.com as a highly effective tool for internship administration and outcome research (Eason, Kirkpatrick, & Cartledge, 2019). As a result, BBSOBFE will explore the potential of Salesforce.com to aid in internship management & research. Ongoing monitoring, preparation and refinement of the internship program will lead to

continued student success across KPIs and favorable employment outcomes. Educators may benefit from our insights in considering their approach to internship program design and evaluation.

Table 3: Summary of findings. Questions, sources and conclusions

<u>Question</u>	<u>Sources</u>	<u>Impact/conclusion</u>
How do students perform across KPIs?	Employer Evaluations 2011-2015 (n=215)	Positive results seen on all KPIs
Are there differences in KPI performance?	Evaluations	Yes, study identified statistical tiers (Table 1.). Behavior measures were stronger than technical/function.
Do internships develop hard/soft skills?	Evaluations, Student Survey (n=93), Faculty/staff & others cited	Yes, two with statistical improvement: Organization/planning & Oral communication
Employer insights into the internship bridge to employment?	Evaluations & others cited	Word cloud (p points to strong student performance & relationship building)
What do students conclude about impact of internship?	Student Survey	Survey points to increased confidence, skills & work fulfillment
Do students and employers agree on the value of internships?	Evaluations, Student Survey, Faculty/staff & others cited	Yes, employers and students generally concurred
Does the experiential learning approach benefit intern outcomes?	Student Survey, Faculty/staff	Possibly, positive indications, but, needs further study
Does BBSOBFE experience align with national trends?	Evaluations, Student Survey, Gallup, NACE & others cited	Yes, major national studies & others aligned on most findings

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Joseph M. Tracy, M.B.A., is Executive in Residence at Florida Southern College, Lakeland, FL. His research interests include Internships, Mentoring and Leadership.

Integrating the Capital IQ® Platform into Retail Education

Michelle Bednarz Beauchamp, Ph.D., Mississippi College, Mississippi, United States
Katerina H. Hill, Ph.D., Arkansas State University, Arkansas, United States
Charles F. Beauchamp, Ph.D., CTP, FP&A, Mississippi College, Mississippi, United States
John M. Brandon, MBA, Mississippi College, Mississippi, United States

ABSTRACT

Marketing educators are challenged with creating learning experiences that allow students to make real-world decisions using the most up-to-date data and technology. This manuscript introduces the use of S&P Global Market Intelligence's Capital IQ® platform in the undergraduate retailing course as a tool for meeting this challenge. Compared to other business databases, the Capital IQ® platform is more accessible, easier to use, and offers superior information versatility. These benefits save faculty time and effort. Students gain valuable experience extracting, analyzing, and making recommendations based on current, real-world data from a retailer of their choosing.

Keywords: Marketing pedagogy, Retail pedagogy, Capital IQ, Experiential learning

INTRODUCTION

The retail industry is characterized by rapid change. As such, retailing educators are challenged with updating course content to prepare graduates for successful retailing careers. Grewal, Motyka, and Levy (2018) discuss several ideas for incorporating change, including the importance of building “relevant experiential exercises” focused on strengthening analytical skills. They also stress the importance of incorporating up-to-date content and new technologies. These ideas for change are consistent with Standard 9 of AACSB International's (2018) *Eligibility Procedures and Accreditation Standards for Business Accreditation*, which identifies “[a]nalytical thinking (able to analyze and frame problems),” “[a]pplication of knowledge (able to translate knowledge of business into practice),” and “[i]ntegration of real-world business experiences” as fundamental general skill areas for bachelor's degree programs (and beyond). AACSB also encourages the incorporation of “[E]vidence-based decision making that integrates current and emerging technologies...throughout the curriculum as appropriate.” This manuscript introduces S&P Global Market Intelligence's Capital IQ® platform (Cap IQ hereafter)¹ as one tool for accomplishing these aims. The manuscript begins with an overview of databases in business education, introduces the Cap IQ platform, and provides examples of using Cap IQ to facilitate experiential learning.

THE USE OF DATABASES IN BUSINESS EDUCATION

Databases have been used in business education for decades. These databases have advanced, with the most sophisticated offering up-to-the minute business and financial data. Examples include Cap IQ, Bloomberg Professional Service, Eikon by Refinitiv (formerly Thomson Reuters), and FactSet (among others). Benefits of incorporating databases into business education include instant access to up-to-date information, time efficiency, improved student engagement, deeper conceptual learning, greater knowledge retention, and improved workplace readiness (Duggal, 2006; Kazemi, 2013; Taylor and Ross, 1992). Disadvantages often include time/effort spent learning how to use the database, limited access (i.e., database access-to-student ratio), and cost (Taylor and Ross, 1992). Details on how Cap IQ can alleviate some of these challenges are now provided.

THE CAPITAL IQ® PLATFORM

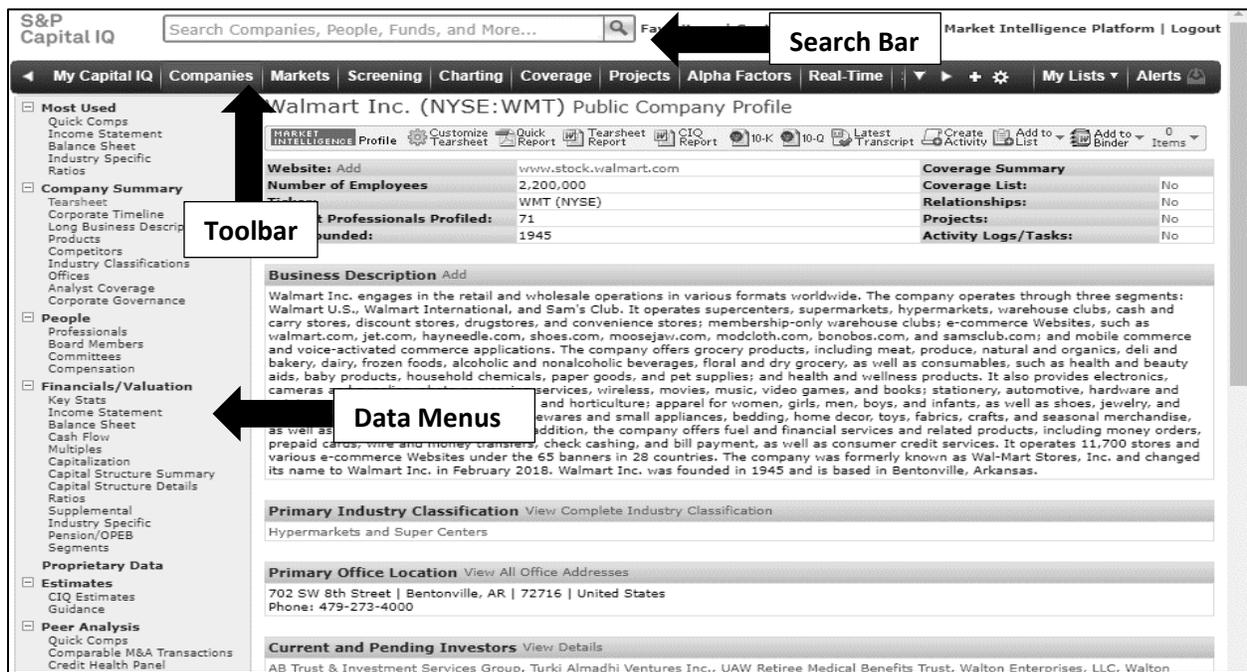
Currently subscribed to by over 1,000 universities, Cap IQ is a subscription-based platform providing data and news on business and economic conditions, financial conditions of firms, and business transactions world-wide. Cap IQ offers several unique benefits. These benefits can be categorized as accessibility, user-friendliness, and information versatility.

¹ S&P Global Market Intelligence is a division of S&P Global a publicly traded firm based in New York offering a wide variety of business and financial information and analytic solutions.

First, Cap IQ differs in its accessibility. Unlike other providers, Cap IQ uses a web-based interface, making it accessible from any computer. This is an important benefit of Cap IQ (Phillips, 2012). To access Cap IQ, a user visits the Cap IQ website, enters login credentials, and begins working in the system. As such the platform is easily incorporated into traditional classrooms, business labs, faculty offices, etc. Cap IQ can also be incorporated into online classes, depending on the number of licenses purchased. To do so, Cap IQ assigns individual accounts to online students. The accounts can then be changed each semester.

A second collection of Cap IQ benefits centers around its user-friendly interface. Cap IQ is primarily driven by a general search bar, a toolbar, and data menus (see Figure 1). These functions greatly reduce the learning curve associated with using the system. According to Ottaviano (2014), Bloomberg has a “significant learning curve,” is a “source of frustration,” and often requires significant time investments for new users. Because of Cap IQ’s point-and-click, menu-driven system, faculty and students can use the system with little to no training or experience. This allows for improved focus on the analysis, interpretation, and use of data, rather than the search for data.

Figure 1*: Capital IQ® Platform Web Interface



*-Adapted from S&P Global Market Intelligence’s Capital IQ® Platform and illustrates Cap IQ’s user-friendly interface

Cap IQ’s web interface is dynamic in several ways. First, the interface is mostly customizable allowing for the simple addition and deletion of data items. Also, most of the data are downloadable into Microsoft Excel (Excel hereafter) by clicking an Excel button on the interface pages. Cap IQ also offers an Excel add-in, which can bring data directly into Excel using Cap IQ specific functions or through one of over 200 prebuilt Excel templates. Both Excel features can be used to model retail-based questions or to enhance existing models. Both the web interface and the Excel add-in increase the ease with which individuals can use the system. It is also easy to transition between the web interface and Excel components.

A third set of benefits associated with using Cap IQ for instructional purposes is its high-quality, in-depth, and wide-ranging data. Cap IQ saves faculty and students time and effort as a one-source stop of information, instead of having to piece together data from annual reports, 10Ks, etc. Cap IQ’s drill-down capability for each data point (provided as a hyperlink) offers transparency by linking to the data’s source document (e.g. 10K, 10Q, 8K, etc.). This provides a unique instructional and learning opportunity, allowing for the illustration of company practices in reporting data and/or insight into a metric’s calculation from data in company reports.

Most of the data in Cap IQ can be reported for historical and current periods, while numerous forecasted or forward-looking data are also available. This is a major benefit for faculty working to maintain current examples and to illustrate the dynamic nature of retail conditions over time. Cap IQ also allows users to download historical data by date, which aids in comparing companies with different fiscal years.

Finally, Cap IQ has a powerful Peer Group function. System-generated or customizable peer groups using the system's advanced screening function allow faculty and students to conduct comparative analyses of retail firms. These Cap IQ functions can reduce student stress surrounding the use of "real world" data upon graduation. Insight into two exercises using the Cap IQ platform in the undergraduate retailing course are now provided.

CAP IQ AND THE UNDERGRADUATE RETAILING COURSE

Strategic profit model exercise

The Strategic Profit Model (SPM) exercise found as Exercise 1 in Figure 2 is designed to immerse students into the application of the SPM, including the experience of extracting and organizing the data required for analysis. After selecting their retailer and peer group, students reflect and report upon the characteristics used to develop the peer firms (e.g. similar profit strategies). This allows faculty to assess whether students grasp profit strategy differences among types of retailers. After modeling the profit and asset management metrics in Item 4, students provide a statement interpreting each of the metrics and evaluate the quality of the retailer's profits and inventory/asset management over time. They then compare the findings for their retailer to the same metrics for the peer group. As instructed, it is imperative that students connect their findings to theory, focusing on maximizing profit and minimizing costs. Finally, students make retailer recommendations for improving its strategic profit moving forward. Items 4 through 6 allow faculty to assess the analytical, conceptualization, and application performance of each student related to the SPM.

Retail productivity exercise

The retail productivity exercise presented as Exercise 2 in Figure 2 is designed to increase understanding of retailer profitability objectives, a topic often covered at the conceptual level, but seldom experienced by students. Similar to the SPM exercise, students must extract and organize the data required to conduct the analysis. After modeling the productivity metrics, students reflect upon their findings and relate them back to productivity theory of maximizing output per unit of input. Similar to the SPM exercise, Items 3 and 4 allow faculty to assess the analytical, conceptualization, and application performance of each student related to retail productivity.

Beyond these two exercises, Table 1 includes four broad categories of data available in Cap IQ: firm-specific retail data, consumer sentiment data, macroeconomic data, and pre-built Cap IQ Excel templates. Specific data points are provided in Table 1 by category.

DISCUSSION AND CONCLUSION

Cap IQ is a valuable tool for experiential learning—"the process whereby knowledge is created through the transformation of experience" (Kolb, 1984, p. 41). With four modes of experiential learning identified (Kolb, 1984), experiential learning should follow "an idealized learning cycle...where the learner 'touches all the bases'—experiencing, reflecting, thinking, and acting" (Kolb and Kolb, 2005, p. 194). Based on the learning cycle, students should first engage in Concrete Experience (CE) (i.e., "sensory and emotional engagement in some activity" (Petkus, 2000, p. 64)); then Reflective Observation (RO) (i.e., thinking about the CE (Akella, 2010; Petkus, 2000)); then Abstract Conceptualization (AC) (i.e., making connections between what was experienced during the RO stage (Akella, 2010)); and finally Active Experimentation (AE) (i.e., putting the newly-acquired knowledge to use). Table 2 provides relevant experiential learning information relating to how Cap IQ can facilitate experiential learning via the SPM exercise (Exercise 1). The process would be similar for other experiential exercises utilizing Cap IQ.

Figure 2: Student Handouts for Strategic Profit Model Exercise and Productivity Analysis

Exercise 1: Strategic Profit Model Handout

You are tasked with conducting a Strategic Profit Analysis from the perspective of an internal analyst for the retailer of your choice. In conducting this analysis, you should rely on your notes from course discussions and your readings covering the Strategic Profit Model. All data and factual information regarding your chosen retailer should be extracted from the Capital IQ database as demonstrated in class during our {insert date} session. Complete the steps below in Microsoft Excel and address each, including your findings and conclusions, in a report in a Microsoft Word document.

- 1) Select a well-known, publicly traded retailer based in the United States. Identify its ticker symbol and industry classification(s).
- 2) Develop a peer set of retailers using Capital IQ's *Equity Screening* or *Quick Comps* features. At a minimum, you should base your screen on the retailer's size (measured by net sales), primary industry classification(s), and type of retailer. Feel free to choose additional screening criteria. The minimum number of peer firms is 5 and there is no maximum. Include in the report your reasoning for including these retailers and excluding others. Be specific.
- 3) Extract the following historical data points for your retailer and peer group on an annual basis over a 5-year period beginning {insert date}: net sales, net income, total assets, total equity, average inventory costs, cost of goods sold, and fixed assets.
- 4) Calculate the individual ratios of the SPM, i.e. profit margin, asset turnover, and equity multiplier plus the ROA and RONW for your retailer and peers over each of the five years. Additionally, calculate the inventory turnover and gross margin return on inventory (GMROI) for each year.
- 5) Reflect and report upon your findings. Specifically include an interpretation for each metric and use this information to discuss the quality of your retailer's profitability and asset management currently and over time. Compare these findings to the same metrics for the peer group. It is important to relate your comments to the theory of strategic profit, i.e. maximizing profit and minimizing costs.
- 6) Conclude your analysis with recommendations for your retailer related to improving its strategic profit position identified in your analysis.

Exercise 2: Productivity Analysis Handout

Reassume your analyst role from the Strategic Profit Model exercise from earlier this term. Conduct a Productivity Analysis of the same retailer and peer group. Again, you should rely on your notes from course discussions and your readings covering Productivity Analysis. All data and factual information should be extracted from Capital IQ. Complete the steps below in Microsoft Excel and address each, including your findings and conclusions, in a report in a Microsoft Word document.

- 1) Extract the following historical data points for your retailer and peer group on an annual basis over a 5-year period beginning {insert date}: net sales, same-store-sales, total retail square feet, total employees, and average inventory investment.
 - 2) Calculate sales per square foot, change in same-store-sales, sales per employee, and the sales-to-stock ratio for your retailer and peers over each of the five years.
 - 3) Reflect and report upon your findings. Specifically include an interpretation for each metric and use this information to discuss the quality and evolution of your retailer's productivity currently and over time, i.e. whether current productivity be partially explained by prior productivity. For example, a reduction in workforce due to prior weakness in workforce productivity. Compare these findings to the same metrics for the peer group. It is important to relate your comments to the theory of productivity, i.e. maximizing output per unit of input.
 - 4) Conclude your analysis with recommendations for your retailer related to improving its productivity.
-

Table 1: Capital IQ® Platform Data & Functions Specifically Related to Retailing Instruction

Data Item	Description
Category 1: Firm-Specific Retail Data	
<i>Location Activity</i>	Total number of Stores; Number of Stores at the beginning, opened, acquired, closed, sold during
<i>Location Demographics</i>	Total Retail Square Footage; Average Retail Square Footage; Sales per Square Foot
<i>Location Performance</i>	Average weekly sales per store; Same Store Sales; Same Store Sales Growth
<i>Margin Analysis</i>	Gross, Operating, Merchandise Margins
<i>Profit Driver Analysis</i>	Data for Strategic Profits Analysis or Modeling (i.e. Net Profit after Taxes, Sales, Total Assets or Net Profit Margin & Asset Turnover ratios)
<i>Transaction Analysis</i>	Average Value per Transaction; Growth in Average Value per Transaction
<i>Financial Statements</i>	Income Statement, Balance Sheet, & Statement of Cash Flows (Some forecasts available including sales growth forecasts)
<i>Financial Ratios</i>	Standard Financial Ratios (e.g. Liquidity, Asset Management, Debt Management, Cash Flow, etc.)
Category 2: Consumer Sentiment Data	
<i>Consumer Confidence Index</i>	<i>The Conference Board</i> Consumer Confidence Index
<i>Chicago PMI Business Barometer</i>	<i>Institute for Supply Management</i> Survey
<i>Business Condition Index</i>	U.S. Surveys of Business Outlook
Category 3: Macroeconomic Data	
<i>Retail Sales – Total</i>	Retail Sales for Total U.S. and for 11 business sectors (Forecasts)
<i>Retail Sales Growth</i>	Year-over-Year Retail Sales Growth for Total U.S. and for 11 business sectors
<i>Inventories – Total</i>	Inventory level for Total U.S.
<i>Inventory-to-Sales Ratio</i>	Inventory to Sales Ratio for Total U.S.
<i>Exports</i>	Total Exports for countries worldwide
<i>Gross Domestic Product</i>	Real & Nominal GDP for countries worldwide
<i>Consumer Price Index</i>	Consumer Price Index for countries worldwide
Category 4: Capital IQ® Excel Templates	
<i>Supply Chain Analytics</i>	Provides data on a firm’s Suppliers and Customers (Partially Customizable)
<i>Dupont Analysis</i>	Provides in-depth analysis of the firm’s profit drivers
<i>Country Credit Risk Analysis</i>	Provides an overview of credit, political, operational, security & terrorism risks by country

Source: S&P Global Market Intelligence’s Capital IQ® Platform

Table 2: The Experiential Learning Cycle Applied to the Strategic Profit Analysis Exercise

Stage in Experiential Learning Cycle	Focus is on...	Student Involvement
Concrete Experience (CE)	Experiencing	Locating, extracting, and organizing the data Developing a retailer peer group Modeling profit and asset management metrics in Excel
Reflective Observation (RO)	Reflecting	Writing an interpretation of metrics Comparing to peer group results Reflecting on initial findings
Abstract Conceptualization (AC)	Thinking	Making connections between their findings and the theory of maximizing profits and minimizing costs
Active Experimentation (AE)	Acting	Craft specific strategy recommendations for their retailer moving forward (e.g., the retailer should do X, Y, and Z to improve Return on Assets)

Benefits of experiential learning include active learning (Ganesh and Sun, 2009), improved student engagement, deeper levels of learning (Ardley and Taylor, 2010), and the development of employable skills (Barker, 2014). Cap IQ reduces the time/effort necessary to combine classroom concepts with hands-on experience. It also benefits students as they focus less on learning how to use the system and more on the goals of experiencing, reflecting, thinking, and applying the knowledge gained to a current retailing problem.

Because of the versatility and quality of data available in Cap IQ, it can easily be incorporated into additional marketing courses. For supply chain management courses, Cap IQ facilitates margin analysis and offers a prebuilt Excel supply chain analytics template. The template displays a publicly traded company's top-ten or bottom-ten suppliers and customers according to different metrics (e.g., total revenue, gross profit, etc.). In the marketing research course, students can use Cap IQ as a source of secondary data (e.g., exploring Cap IQ's consumer sentiment data (Table 1, Category 2)). Cap IQ can also facilitate live case analyses (Hopkins, Raymond, and Carlson, 2011) in the marketing strategy course. The GDP, export, and Consumer Price Index data, along with the Country Credit Risk Analysis Excel template can also be incorporated into international courses. With so many institutions subscribing to Cap IQ and the variety of ways in which it can be used, it can serve as a valuable tool for faculty aiming to incorporate real-world experiential exercises using up-to-date technology and data.

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Author Biographies

Dr. Michelle Beauchamp is an associate professor of Marketing at Mississippi College. Dr. Beauchamp teaches courses in Retailing, Professional Selling, and Digital Marketing. Dr. Beauchamp's research focuses on retailing, services marketing, marketing communications, and marketing pedagogy.

Dr. Katie Hill is director of the R.M. 'Bob' Wood Sales Leadership Center at Arkansas State University. Dr. Hill teaches courses on Professional Selling, Sales Planning and Management, and Advanced Sales. Dr. Hill's research focuses on business-to-business sales, improvisation, emotional intelligence, and buyer-seller interactions. She earned a Ph.D. in Marketing from the University of Mississippi and is a Sheth Foundation Fellow

Dr. Charles Beauchamp is an associate professor of Finance at Mississippi College. Dr. Beauchamp teaches courses in financial modeling, working capital management, and financial institutions management. Dr. Beauchamp's research focuses on working capital management, finance and business pedagogy, and financial strategy. He earned a Ph.D. in Finance from Mississippi State University and holds the Certified Treasury Professional® and the Certified Corporate Financial Planner and Analysis Professional® designations.

John Brandon, MBA is an instructor of entrepreneurship and director of Entrepreneurial Development at Mississippi College. Mr. Brandon teaches courses in entrepreneurship, new venture creation, and personal finance. He is a star performer with the National Association of Small Business Development Centers.

Peer-to-Peer Training for Student Empowerment in Service Learning

Alan Davis – Truman State University, Kirksville, Missouri, USA

Kelsey Lohmeyer (Alumna) – Truman State University, Kirksville, Missouri, USA

Trevor Shonhiwa – Truman State University, Kirksville, Missouri, USA

ABSTRACT

The objective of this paper is to highlight student empowerment opportunities in peer-to-peer service learning. Service learning gives students the experiential learning opportunities that could translate to success in the workplace. A key example of peer-to-peer service learning is the Volunteer Income Tax Assistance (VITA) program in which students work together in various ways to file income tax returns for low income community members. Selected students work on committees to promote the program and train the general volunteers, therefore providing benefits to both the students teaching and the students learning. Other examples of peer-to-peer learning can include a student managed investment club, operating university concessions, and tutoring. While universities typically have many student organizations, faculty advisors often lead these organizations, rather than students. This paper serves as a guide to universities interested in further empowering students through peer-to-peer training.

Keywords: Peer-to-peer Training, Volunteer Income Tax Assistance (VITA), Experiential Learning, Service Learning, Student Empowerment

INTRODUCTION

Young professionals face many challenges when they enter the workforce due to the high-pressured, team-centered, professional environments. Traditional lecture-based teaching styles often fail to expose students to real world situations that require teamwork and professional judgment skills. Entwistle 1992 expressed concern that traditional curricula promote a surface approach to learning rather than a deep approach. While the real-world situations can be simulated through classroom cases and group projects, students could find themselves unprepared for the real-world, critical thinking situations. Arguably, a more effective method to prepare students for work-like situations is to incorporate peer-to-peer training in experiential learning activities. In this paper, we first explain the impact of peer-to-peer learning on various collegiate level business organization programs. We then discuss how it can be implemented into various experiential learning situations. Lastly we discuss how universities can utilize these strategies to empower students through experiential learning programs.

LITERATURE REVIEW

Empowerment

Traditional teaching methods at universities often reward passive behavior such as following teachers' instructions and doing homework (Broom 2015). "Empowerment is closely related to self-efficacy, among other factors. Self-efficacy, similarly to the concept of agency, is the belief that one controls one's life and that one can make positive changes in one's surrounding environment" (Broom 2015 p.80). One way to empower students is by allowing them to teach and learn from each other, both in and outside the classroom (peer-to-peer). In this paper, we focus on ways to empower students outside the classroom through student-led service learning programs.

Peer-to-Peer Learning

Peer-to-peer learning is defined as a two-way, reciprocal learning activity involving the sharing of knowledge, ideas, and experience between the participants (Boud, Cohen, and Sampson 2001). A peer-to-peer learning process gives the teaching students the opportunity to develop and enhance a professional skill that will be useful in conveying ideas to others. The students teaching will be more aware of their own knowledge of the topics and understand the critical thinking skills necessary to lead a group of people. The students on the receiving side of the peer-to-peer learning process could benefit receiving a more relatable teaching style, adding a different perspective than what professors usually demonstrate in the classroom. Moust and Schmidt (1994a) found that students felt peer tutors were better than staff tutors at understanding their problems, were more interested in their lives and personalities, and were less authoritarian, yet more focused on assessment.

Goodlad and Hurst (1989) and Topping and Ehly (1998) note that academic peer tutoring at the college level takes many different forms;

- Surrogate teaching, common at larger universities, involves giving older students, often graduates or advanced undergraduates, some or all of the teaching responsibility for undergraduate courses.
- Proctoring programs involve one-on-one tutoring by students who are slightly ahead of other students, or who have successfully demonstrated proficiency with the material in the recent past.
- Cooperative learning divides classmates into small groups, with each person in the group responsible for teaching others, and with each contributing a unique piece to the group's overall performance on a task.
- Reciprocal peer tutoring (RPT), a more specific version of cooperative learning, divides classmates into pairs to tutor each other.

Many of these peer learning methods involve only classroom type learning. It is common for institutions of higher education to provide peer tutoring opportunities for struggling students, such as teaching assistant positions for advanced students. Past research has found that peer tutoring is highly cost-effective and usually results in substantial gains for participants, both academically and socially. Levine, Glass and Meister (1987) conducted a cost-effectiveness analysis of four different methods: computer assisted learning, reducing class size, lengthening the school day, and cross-age peer tutoring. Peer tutoring was the most effective, four times more cost-effective than reducing class size. Sharpley and Sharpley (1981) conducted a meta-analysis of 82 studies in schools, reporting substantial cognitive gains for both tutees and tutors. Overall, peer learning can lead to positive results in a variety of academic settings that will lead to more professional employees post-graduation.

Experiential/Service Learning

Loschert (2001) discussed the benefits of service learning, showing the benefits to both the students providing the service and the impact on the community. While the benefit to the community is the focus on service learning, the benefits to the students can, in some circumstances, be greater.

Kim, Aldrich and Keister (2006) identified three categories of resources that are essential to pursuing start-up ventures: financial, human, and cultural. They found that within the United States, neither financial nor cultural capital resources are a singularly necessary condition for a successful startup. However, human capital, especially in the forms of education and managerial experience, can provide entrepreneurs with a significant competitive advantage.

EXAMPLES OF EXPERIENTIAL LEARNING OPPORTUNITIES IN A COLLEGIATE ENVIRONMENT

The School of Business at our small liberal arts university coordinates four real-world, professional opportunities for peer-to-peer learning;

- Volunteer Income Tax Assistance Program (VITA)
- A Student Investment Fund
- A Student Fraternity Concession Business
- Tutoring

Peer-to-Peer Learning and VITA

A key example of peer learning in our School of Business is the Volunteer Income Tax Assistance (VITA) program. This program provides free income tax preparation to local, low income community members and students. While there is a faculty advisor, the program is student-led. Many universities throughout the United States have VITA programs as experiential learning opportunities. Through VITA, many students gain experience interacting with actual clients and real data. Involvement at this level allows many students the chance to apply what they learn in a classroom in a professional situation. We require that every VITA volunteer be IRS certified by going through a training program. Our VITA program is unique by its empowerment of students through extensive use of peer-to-peer training which increases the pedagogical benefits and efficacy of the program.

Our Process

The VITA program at our university filed more than 1,000 tax returns in the past two tax seasons and generated almost \$600,000 of refunds for the local economy. BAP sponsors the VITA program and requires more than 100

student volunteers for the process to run smoothly. There is a single faculty supervisor who oversees the program and a team of students whom each lead a specific part of the program.

VITA uses peer-to-peer learning through a small group of five students who teach, review, organize, and supervise the work of all the other student volunteers. The faculty advisor meets with this group of students once a week to discuss the progress and ensure all aspects of the program are on track. The advisor also attends each of the filing days in case of any clarifying questions or problems with a client. However, the goal is for VITA to be a completely student-run program, expanding the benefits of experiential learning to include peer-to-peer training.

The team of students running the VITA program includes two graduate assistants who commit to ten hours a week, two undergraduate students who are contracted to work four hours a week (Group of Four). The fifth student is the Vice President of VITA who serves as a member of the BAP executive committee. The VP of VITA serves a primarily logistical role; scheduling clients and volunteers. The students spend the fall semester learning the tax software and working together to develop examples of more complex scenarios that are likely to happen at our VITA site. They will then each become an expert on a few of the more complex issues such as the underpayment penalty, cancellation of debt, energy credits, state topics, and other issues. If a scenario related to these special topics arises during the filing process, one of the designated experts will be able to address it. The advantage of this method is that the general volunteers will not need to be trained on the tax issues that may come up but are rare occurrences at our VITA site. The designated experts help reduce the training of the general volunteers as the only need to know the basic and most commonly seen issues, while the graduate team handles any complicated factors.

The VP-VITA oversees four committees that each have a student committee chair to introduce more peer learning and leadership opportunities. The four committees are: training, on-campus promotion, off-campus promotion, and creative. The creative committee designs the posters and promotional materials for the program. The two promotional committees handle the distribution of all of the promotion from posters to TV and radio advertisements and social media presence. Lastly, the training committee guides the volunteers through the self-paced training returns by answering questions and checking the results. The VP-VITA meets with the four committee chairs regularly to ensure the progress of the committees is on schedule.

The benefits of having students coordinate, train, and review the work of the volunteers for the VITA team include; learning more about the tax system, gaining closer relationships with their peers, and developing crucial professional, time-management, and critical thinking skills. The benefits to the general volunteers as a result of peer-to-peer learning include feeling more confident about their ability to prepare returns as they are receiving advice from students who were in their place not long ago. The volunteers may pay more attention to the graduate assistants as they are much closer to their age than a professor member would be, and they know how to explain the process in ways they can all understand. The graduate assistants are less intimidating than a professor in the training and filing process of VITA. In an attempt to lessen the faculty involvement in the VITA program, one of the graduate assistants taught a general training session historically taught by the VITA faculty advisor. There was a significant increase in clarifying questions asked at the training session as the graduate assistant appeared more approachable and understanding of the student's position. The change to student trainers decreased faculty involvement while providing volunteers with better training.

The group of four leads the training process for the general volunteers. The training process begins with "newbie training" for those who haven't taken a tax class or participated in VITA before. Every volunteer is then required to attend a subsequent presentation going over some of the issues they are most likely see during filing days, such as scholarships, Earned Income Credit, state issues, education credits, and client interaction responsibilities. During the final step in the training process, each student volunteer goes through a tax software demonstration followed by a self-paced training session to get familiar with the software. We believe that the student volunteers are not able to learn how to use the software by just watching someone else do it. Therefore, the last step in the training process involves five complete, self-paced returns completed by each volunteer. The graduate students create the practice returns to include the most commonly seen issues for our VITA clients.

The group of four, in consultation with the faculty advisor, selects students to serve on the training committee based on their confidence level, not their tax knowledge. The group of four teaches the training committee the week before we train the general volunteers; this serves as a trial run to eliminate errors. The training committee oversees the general volunteers in completing the self-paced returns. A member of the training committee checks each volunteer's return for accuracy before they are permitted to move on to the next return. The committee is hand-

picked to include competent, confident students who will make a positive impact on the nervous volunteers in the training session. The final step of the training process is passing the IRS certification test and completing a confidentiality form.

Feedback received from students and community members

The peer-to-peer training and review process is effective as the students feel well prepared, and the graduate assistants and other reviewers gain more teaching and tax skills. Every student VITA volunteer and client fills out surveys to reflect on their experiences throughout the tax filing process. Feedback from students include: “Thanks for the service learning opportunity; I was very prepared; I thought the training was really good. I understand most of what was going on after the software training.” Overall, the feedback from students is positive and they leave the VITA experience feeling more comfortable about their tax accounting skills. At the end of every tax season, we conduct a survey of the volunteers. On a 5 point scale, the responses range from 4.27 on a training video about what to do and what not to do; 4.45 for the classroom lectures; 4.8 for the self-paced training where the volunteers do practice returns.

The benefits of the VITA program introducing peer-to-peer learning around campus do not stop with the students, the clients are also overwhelmingly satisfied with our process. VITA is primarily a community service project that reaches hundreds of members of the community where our campus is located. Some of the feedback received from clients include: “My experience with VITA was perfect,” “It was a great service,” Overall a great and very helpful experience,” and “Great service, very professional, and more organized from last year with less wait time, great job!” The peer learning experience implemented in VITA helps both the volunteers and community get more out of the service, and helps the students learn more from each other. On a recent survey; clients gave student volunteers (out of a 5 point scale) - 4.77 for overall quality; 4.88 for being courteous; 4.82 for being attentive; and 4.85 for being professional

Student Investment Fund

A second example of peer-to-peer training for student empowerment is the school’s student investment club. A junior finance major founded the Bulldog Student Investment Fund on our campus in 2012. It was designed primarily as a student-led organization that gives students real world investment experience. The university and generous alumni donated money to the investment fund to start the program. Currently, students in the organization research stocks, develop pitches, and present their findings to the group for potential investments. The student members then deliberate and make all trading decisions for the organization’s funds. The student leaders of the organization put on classes to teach the newer members the financial background needed to make investment decisions. The training allows students from all educational backgrounds and levels of personal investment experience to participate. The investment fund’s portfolio consistently outperforms the Russell 1000 Index. The investment fund uses their investment returns to create scholarships for future students while empowering the members of the organization through peer learning.

A Student Fraternity Concession Business

Our third example is the professional business fraternity, Delta Sigma Pi, which provides experiential learning opportunities and utilizes peer-to-peer learning methods in operating all university concessions for campus sporting events. The organization holds the concessions contract granted by the university, which is renewed every two years. A student committee makes all business decisions required for the concessions operations contract. The students are responsible for all inventory, customer service, cash flow, and staffing decisions. All members of the organization are required to work shifts to cover all the sporting events. Students train members to work the shifts and supervise each shift which fosters peer-to-peer learning in concessions operations. The concessions committee is entirely comprised of students who work together to make all business decisions and keep track of all the transactions in the concessions account. The concessions operation is vital to the overall chapter success, as the profits from concessions help fund the events held by the chapter.

Tutoring

The final and most obvious example of peer to peer learning is tutoring. The accounting department along with Beta Alpha Psi (BAP), the professional financial information organization, assists sophomore and junior level accounting students through daily accounting tutoring. BAP matches skill levels of members to ensure at least one upper-class student is available for each tutoring session. Peer tutoring is a more approachable method for struggling, beginner level accounting students when compared to visiting a professor for help. It is also beneficial to the tutors as they

are able to refresh themselves on material from years before in their accounting education. Other benefits of peer teaching include;

- Direct interaction between students promotes active learning
- Peer teachers reinforce their own learning by instructing others
- Students feel more comfortable and open while interacting with a peer
- Peers and students share a similar discourse, allowing for greater understanding

Often the tutor benefits as much or more than the students being tutored. The following is a quote from one of our recent graduates, now in public accounting.

“Tutoring will give you invaluable teaching skills and there is nothing better than reviewing basic accounting concepts for 6 hours a week for an entire year! I recently passed all of my CPA tests and I truly think that tutoring played a large part in the high scores I received. Take this experience for all it is worth! Tutoring sparked something in me and now I’m even thinking about going back for my Ph.D. so I can continue to teach accounting because I really fell in love with it! You have the opportunity to create some great relationships, watch students grow, and get some great review for yourself. This job is a win-win-win.”

HOW YOU CAN DO IT

Volunteer Income Tax Assistance (VITA)

If your school already has a functioning VITA program and would like to introduce more peer-to-peer learning, start with selecting a few key students with high involvement with the program. The faculty advisor should start delegating more responsibilities to them and create a more specific role for each of the students in areas where it is possible to introduce more student leadership options. To ensure the continuity of the peer leadership, identify student talent early. By selecting students with potential during their freshman/sophomore years, they can ease their way into the program and create a smoother transition when they eventually become the leaders. The faculty advisor should encourage students to run for specific positions where their skills are most applicable. To ensure accurate student teaching, handpick students that are competent and confident to lead committees and have direct communication with volunteers who may need additional instruction. Selecting students with potential early on is beneficial because the prospective leaders can talk to the student currently holding the position and shadow their role in VITA before taking on the job.

If your school does not already have a current VITA program, reach out to other schools or local agencies who sponsor a VITA site. Begin by encouraging students to volunteer to participate in existing local programs. Gradually grow this to the point where you are able to generate your own VITA site.

Investment fund

A faculty member can organize a group of students who are interested in the stock market or perhaps start with a Finance class. The instructor can conduct some training classes about investing. Students can begin doing hypothetical trades on paper. More students can be added to the group, gradually the responsibility of the training can be shifted to more senior members of the group. Once the students have a satisfactory track record on paper, the faculty member can approach alumni to solicit a donor for seed money so that the group can begin making real investments. Initially, all profits should be reinvested back into the group. Over time, the students can choose charities that will receive donations from the group.

Concessions

The interested faculty member can go to the appropriate person within the university to ask who holds the rights to the concessions. At the same time, the faculty member can solicit either existing student groups to manage the concessions or to solicit students who would be interested in forming a student group. For the first year, the group should develop a business plan to include an organizational chart. Using this material the group can make a bid to the University to be given charge of the concession.

Tutoring

This is the easiest of the peer-to-peer training opportunities. All that is needed is to find a room, determine the courses, and solicit volunteers. This could be run either by a student organization, or an academic department.

CONCLUSION

Peer-to-peer learning has become more important in higher education as the workforce becomes increasingly team centered. Students need to expand their skills outside of the classroom and develop critical thinking skills that benefit themselves as well as their peers. This can be achieved by implementing peer-to-peer learning aspects in experiential learning opportunities, such as VITA. Outside of VITA, schools can create more peer-to-peer learning through other real world professional experiences. For example, look into who holds the university concessions contract, if you have a business organization big enough to staff the shifts necessary. Our professional organization chapter has held the concessions contract for more than thirty years and has to prove the ability to keep it running smoothly every five years. Another way to implement these specialized experiences into business student's college careers is to look at the potential to start a student managed investment portfolio. The investment fund at our university was started by an eager student, a willing faculty advisor, and a generous alumnus. In only seven years, the investment fund has almost thirty members and more than twenty equity holdings in a profitable portfolio.

Empowering students through peer-to-peer training opportunities is not without disadvantages. Establishing these programs could consume significant faculty time up front in designing and monitoring costs. However, the implementation of peer-to-peer learning in service activities has the advantage of not taking away from class time. Empowering students in service learning environments provides additional opportunities for students to be more engaged in their communities.

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Alan Davis, JD, is an Associate Professor of Accounting at Truman State University

Kelsey Lohmeyer, CPA graduated from Truman State University with a Masters of Accountancy in 2015. She is currently a Senior Accountant at Fossil Group, Inc. in Dallas, Texas. Previously, She was a Tax Senior Associate at PwC in St. Louis, Missouri.

Trevor Shonhiwa, Ph.D., is an Assistant Professor of Accounting at Truman State University

College Disruptions and Effect on Academic Experiences of College Students Across Demographics

Kevin Wynne, Pace University - Pleasantville, NY, USA
Jay Sholes, New York University - New York, NY, USA
Jouahn Nam, Pace University - Pleasantville, NY, USA
Douglas Leary, St. John's University - Queens, NY, USA

ABSTRACT

This paper examines the impact of Hurricane Sandy and a series of snowstorms on two universities in the northeast. A survey instrument of 953 observations was used to assess the educational impact that these storms had on college students at two AACSB business schools located in the New York City area. The paper examines the student responses based on GPA, gender, major, and year of study. The paper conducts univariate t – statistics for mean differences, principal component analysis determining eigenvalues, and ordinary least squares (OLS). The empirical results illustrate that the two natural disasters had different impacts upon the students. The empirical results are robust to multiple specifications, and the authors are able to identify the predominant factors that affected the students during the two natural disasters. The paper demonstrates that college students are affected differently, based on year of study, major, GPA, and gender, depending upon if it was Hurricane Sandy or a series of snowstorms. The findings of the paper have significant implications for college administrators.

Keywords: higher education, business schools, policy, natural disasters, student impacts

INTRODUCTION

This paper exams the effect of Hurricane Sandy in 2012 and a series of snowstorms in the spring semester of 2015 using 7 survey questions varied based upon year of study, major, GPA, and gender. The two universities experienced approximately the same length of closures related to Hurricane Sandy and a series of snow storms. The universities are both AACSB accredited business schools in the New York metropolitan area, and they can be viewed as peer equivalents. A survey was administered that anonymously asked the students a series of questions related to how the natural disasters affected their collegiate experience. There are 953 total observations in the dataset for Hurricane Sandy and the series of snowstorms. The paper uses t-tests for mean differences, as well as principal component analysis for eigenvalues, and a binary choice logit model to demonstrate the robustness of these results.

This paper is based on the work of Wynne, Leary, and Sholes (2018) that illustrated the difference between suburban and urban campuses and commuters and dorm residents. This paper provides insights into how year of study, major, GPA, and gender affect the overall college experience, as it relates to financial, educational and career factors. The paper contributes to the academic literature by demonstrating that juniors and seniors responded differently as compared to freshmen and sophomore students. Accounting and finance majors responded differently than the marketing and management majors. The lower GPA students responded differently than the higher GPA students. Gender differences do not appear to be a factor affecting the collegiate academic experience. The students also responded differently, dependent upon whether it was a continuous disruption like Hurricane Sandy, or a series of nonconsecutive closures that were experienced during the snowstorms.

REVIEW OF THE LITERATURE

Research on how natural disasters impact students' learning is somewhat limited in scope. Piotrowski and Vodanovich (2008) used Hurricane Ivan as a case study in crisis management, but focused on university faculty members. They surveyed 117 faculty members and found that faculty members perceived moderate impact on their teaching responsibilities, but a significant impact on the course modifications. Watson, Loffredo, and McKee (2011) studied Hurricane Ike's effect on students at the University of Texas Medical branch by using a Hurricane Needs Survey. Five hundred fifteen students participated in the survey which found students experienced a small financial impact and minimal physical or mental health issues, but almost half felt there was a significant negative impact on their academic performance. L'Orange (2010) focused on the impact of Hurricane Katrina and flooding of the Iowa River on university students in the New Orleans area and at the University of Iowa, respectively. The

research suggested that current students are impacted at a greater level than incoming students, but these generalizations need further research to better understand student enrollment after major events. Goodman (2014) studied the impact of student absences due to snow days in the Massachusetts school system. The author concluded that school closures had a smaller impact on student achievement than absences from the school.

This paper is related to a series of similar papers published in the field of higher education pertaining to GPA, gender, major, and level of study. With the goal of predicting a student's course grade, Park and Kerr (1990) used a logit model to determine the factors that would have a major impact. By evaluating 97 students, they were able to develop variables that measured "intelligence, preparation, attitude, effort, and demographic characteristics" (p. 104). The authors found that the major predictors were the students' cumulative GPAs and their rank on the American College Test (ACT). Essentially, the students' effort and intelligence had the largest impact on their final grades, while attendance and the students' perceived value of the course had little impact. Kuh, Cruce, Shoup, Kinzie, and Gonyea (2008) use the logit model to determine what factors impacted first-year students' GPA and their progression into the second year of college. They wanted to identify student behaviors, institutional practices, and environmental conditions that would lead to student success. The results showed that students' demographics, pre-college experience, and high school GPAs accounted for almost 30% of the variance in first-year college GPAs. Institutional engagement accounted for an additional 13% variance. Additionally, there was a positive correlation between the amount of time students spent studying, and their ACT scores and their first-year cumulative GPAs. By using this quantitative approach, the researchers were able to conclude that students' first-year cumulative GPA directly impacted student engagement with academically related activities and can lead to a greater level of retention transitioning into their second year of study.

The price increase of a college education, along with the reduced amount of financial aid offered to students, led Ehrenberg and Sherman (1987) to study the impact of hours worked by students on their GPA and persistence to graduation. They found in their sample of male students that most students who worked less than 25 hours a week showed little adverse impact on their GPA. This was not true for freshmen year students who did show a small adverse effect to this level of employment. Additionally, there was an adverse effect on retention for working students on campus while off-campus employment added to this effect. Their research suggested that longer work weeks would have a negative effect on both GPA and student persistence throughout their college experience.

Kokkelenberg, Dillon, and Christy (2008) researched how class sizes impacted students' grades to determine if the economies of scale were a justification for larger enrollments. They found that class size had a negative relationship to students' grades across the university, despite the different academic departments or student subsets. These results suggest a diseconomy of scale and could imply a loss of revenue due to reduced student persistence through graduation. The fact that the research focused on factors influencing students' cumulative grade point averages suggests that there are many things students face which have a direct impact on their academic performance. Factors such as their high school academic performance, study time and hours worked outside of campus can somewhat be controlled by the students. However, factors such as demographics, class size, and tuition cost are beyond their control. There is an absence of research that focuses on significant weather events that result in school closures and the impact perceived by students with differing GPA levels.

The differences between genders have been a popular area of study, especially in higher education. These differences can have a direct impact on how higher education professionals and professors develop policy and curriculum. Chai and Hong (2009) evaluated the effect of gender on how undergraduate business students sought information related to tutorials, assignments, research projects and theses in Malaysian universities. They found that female students more often sought additional information related to tutorials and assignments, but not research projects and theses. The authors suggest that student confidence with computer technology and independent research may impact the difference between genders. It also implies that curriculum design and student support should be adjusted in order to increase female confidence with technology and independent research.

Newman-Ford, Lloyd, and Thomas (2009) studied how gender affected first-year undergraduate educational achievement at a university in Wales. Through an evaluation of 748 students across multiple disciplines, they found that gender had only a minor impact on student performance. There was a statistically insignificant level of variability between genders in their assessment results and while a greater number of females received "good" marks, there was also a greater number of females that received failing marks. The non-significant difference between genders in academic performance suggest that no changes need to be made with gender as a consideration. This concurs with the empirical findings in this paper related to gender.

In an attempt to clarify the research differences between gender performance in higher education, Pirmohamed, Debowska, and Boduszek (2017) quantitatively evaluated multiple academic motivators, self-efficacy and active learning strategies differences between genders. They evaluated 323 students in the upperclassmen years of undergraduate studies. They found that females scored significantly higher in achievement goals and amount of study time. The intrinsic motivation of females suggests that they find value in the satisfaction they receive from increasing their knowledge and skill set more than what the course adds to their lives.

Scholars have studied college majors from multiple perspectives. Montmarquette, Cannings, and Mahseredjian (2002) attempted to identify how students choose their majors by introducing the predicted earnings factor for each major compared to their expected earnings without a college degree. After a thorough evaluation that included 1) evaluating chances of success in a particular major, 2) identifying predicted earnings for all successful majors, 3) predicting estimated earnings of unsuccessful majors, and 4) using logit and probit models to explain choice of major, the researchers concluded the expected earnings' variable is a significant factor for college major. The model did find that there are significant differences between gender and race, where women are less affected by potential earnings and non-white students are more heavily influenced by potential earnings.

St. John, Hu, Simmons, Carter, and Weber (2004) conducted a study that focused on how a student's major influenced their persistence during freshmen and sophomore years, specifically among African American and white students. The authors used enrollment data from the Indiana Commission for Higher Education for all students enrolled in the state's public higher education system. They found that persistence for white student sophomores was not influenced by major, but African American students in high-demand fields had a significantly higher persistence rate. There was no statistically significant difference between majors for freshmen African American students, but there was a lower rate of persistence among white students in social science majors or undecided.

Kiser and Price (2008) evaluated persistence of study from freshman year to sophomore year. They surveyed full-time students who had achieved at least a freshman year cumulative grade point average of 2.0 at Texas State University-San Marcos. Using a logistic regression, they evaluated factors only related directly to the students. For example, high school grades, on or off campus residency, freshman year GPA, cumulative hours earned, and gender. The only factor that was found to be statistically significant was the number of hours earned during the freshmen year. This was true for all students, specifically white and Hispanic students. Interestingly, students with a higher number of cumulative hours persisted more than students with less hours. Neumann and Finaly-Neumann (1989) evaluated persistence of older students in their junior and senior years. They used a logistic regression model along with discriminant analysis to evaluate the quality of learning experience, which is based on the student's perception of both direct and indirect input from the school. Direct factors included course content and academic resources, while indirect factors were identified as student-faculty interactions and involvement in academic programs. The authors found that two indirect factors, student-faculty contact and involvement in academic programs, and one direct factor, course content, played a significant role in student persistence.

Watson, Loffredo, and McKee (2011) surveyed 515 students after a major hurricane in 2008. The authors concluded that the experience had negative effects on stress and academic performance. L'Orange (2010) analyzed the connection between homeland security incidents as well as natural disasters and the effect on students at colleges and universities. The author concluded that incidents on campuses appeared to have limited effect on the long-term behavior of students. Piotrowski and Vodanovich (2008) did a case study on the effects of Hurricane Ivan on the University of West Florida. The authors felt that there were minimal effects on instructional delivery by faculty.

Stratton, O'Toole, and Wetzel (2008) used a multinomial approach to test the dropout rates of college students. Liu, et.al. (2007) used a logistic regression to model the stress and depression related to college students in China. Studies using the logit model have focused on student retention, financial literacy (Chen & Volpe, 1998), factors that impact course grades (Park & Kerr, 1990), how student aid influences retention (St. John, et.al., 1994) as well as grade point average, gender roles, undergraduate majors and students' level of study. An evaluation of three statistical models (logit, probit analysis, and linear regression) found little difference in their abilities to predict student retention levels from a national sample of higher education institutions (Dey & Astin, 1993). These results suggested that despite the theoretical benefits in the more robust statistical analysis, there is little difference in their predictive outcomes. However, it was conceded that for research with more nuanced variables, the more robust statistical analysis was preferred.

SURVEY INSTRUMENT, METHODOLOGY AND DATA COLLECTION

The survey instrument is presented in Appendix A. All the questions were the same for the two universities related to Hurricane Sandy and the snowstorms. It was first tested on a sample group of students to make sure that all the questions were clear. The survey instrument was then administered in person in hard copies by faculty members in the business schools. The faculty were allowed to remain in the classroom since the responses were anonymous and unrelated to their student evaluations. Overall, there were 953 observations for both Hurricane Sandy and for the series of snowstorms. Some of the empirical tests had fewer observations because lack of complete information in the survey.

The survey was comprised of seven questions that used a five-point Likert scale to determine the level of impact on the student. Question 1 asked about the financial hardships experienced by the students. This was interpreted as any additional cost incurred by the students outside of typical expenses associated with the student tuition, room, and board. Question 2 asked about the level of overall negative impact of student's educational experience. Question 3 inquired about any additional hours students need to dedicate outside of the classroom to catch up on course work. Question 4 asked students what level of concern they had about the natural disasters having a negative impact on their remaining courses. Question 5 inquired about the level of concern students had about the natural disaster impacting their preparation for the job market. Question 6 asked students if they perceived a change in the professor's level of rigor in the course. Question 7 inquired about the additional class time or assignments students were expected to complete as make up work for classroom time missed.

The authors tested to see if there were significant differences between the two universities based on GPA, gender, major, and level of study. They found that there was not a statistically significant difference between the students at both universities. Therefore, the authors combined the data samples to increase the number of observations based on GPA, gender, major and level of study. There were 855 observations for the GPA empirical tests, with 50% of the sample with high GPAs and 50% of the sample with low GPA's. For the gender tests there were 953 observations, with 42.50% of the sample being female and 57.50% being male. For majors, there were 773 observations with 56.40% of the respondents accounting or finance majors and 43.60% were management or marketing majors. The year of study sample had 932 observations, where 46.35% were freshman and sophomores and 53.65% were juniors and seniors. The slight difference in number of observations for the four different samples is attributed to the fact that students sometimes left out GPA and year of study. For the majors, some were listed as other and dropped for this particular test.

There were numerous tests to determine the significance of the variation in the student survey responses. We first started with a univariate approach to test t-statistics for mean differences. Henderson, Lyons, and Grace (2018) used a similar approach to test the difference between online MBA students and traditional students by dividing their sample. Using t-statistics and p-values they found no significant difference between the their sample. To test the robustness of the model in this paper, the authors used principal component analysis (PCA) to determine the eigenvalues. This approach is similar to Beatty and Albert (2016) that used principal component analysis from a student survey to determine the students' perception of a flipped classroom. The eigenvalues were used to test the interdependence of the explanatory variables. If all seven questions were completely orthogonal to each other, each factor would have an eigenvalue of 1. Although tests only exist for exact multicollinearity or orthogonality, Vinod and Ullah (1981) developed a conditional number K which is equal to:

$$K = \lambda_1^{1/2} / \lambda_p^{-1/2} \quad (1)$$

Where λ_1 is the first eigenvalue and λ_p is the last eigenvalue. K being equal to 1 implies orthogonality, as K approaches infinity it implies exact multicollinearity. A parallel test is to determine if the last eigenvalue of the series exceeds $1 / r$, where r is the number of regressors. These tests are important for this paper to determine that the categories attributed to each question were appropriate. The authors want to insure that the students interpreted the questions differently and the categories assigned were appropriate.

The first of equations that are run are a single variate approach using an OLS approach. The equation 2 can be written as:

$$\text{Question } (t=1-7) = \alpha + \beta_1 (\text{Year of Study}) + \epsilon_t \quad (2)$$

Where Question ($t_{=1-7}$) is the dependent variable run as 7 separate equations using each of the 7 questions using OLS. β_1 (Year of Study) is the independent variable and the first set of 7 separate equations that will be run. This is followed by major, GPA, and gender. ϵ_t is the expected value of the error term.

To further test the robustness of the model we ran a multivariate approach using OLS. This can be written as:
Question ($t_{=1-7}$) = $\alpha + \beta_1$ (Year of Study) + β_2 (Major) + β_3 (GPA) + β_4 (Gender) + ϵ_t (3)

Where Question ($t_{=1-7}$) is again the dependent variable regressed on year of study, major, GPA, and gender run as the independent variables in a multivariate approach. ϵ_t is again the expected value of the error term.

EMPIRICAL RESULTS

To make the analysis easier to interpret, the authors clustered the tables for the t- statistics on mean differences, eigenvalues, the conditional K, and the OLS empirical results. The results of these tests support the robustness of the model. The authors first test for collinearity by estimating the eigenvalues for the conditional number K and $1/r$ from Vinod and Allah (1981). The results are reported in the tables for the eigenvalues. The value of K ranged from a low 2.757 to a high of 2.868. Although the data does not signify complete orthogonally, it suggests the students answered the questions independently of each other and the authors' classification seemed appropriate. In addition, all of the equations exceed the other test of $1/r$. These empirical results suggest that the authors were able to identify uncorrelated stresses that were placed on the students during the natural disasters.

For simplicity, the paper will discuss the results of the multivariate approach of the logit model as opposed to the univariate approach of the t – statistics related to mean differences from the survey. The signs of the significant coefficients in the multivariate tests were consistent with the univariate approach. The empirical results were interesting in many ways. Students were affected differently by whether it was Hurricane Sandy or a series of snowstorms. In addition, students responded significantly differently to the questions on the survey. There were varying levels of significance depending upon the empirical approach.

Table I reports the findings related to the difference between upper level year of study and lower level year of study. The authors combined freshmen and sophomores and then juniors and seniors. During Hurricane Sandy, the upper level students were much more concerned about financial hardship, educational experience, and additional study hours where all mean difference t – statistics were significant at the .01 level. Educational concern and career concern were also significant at the .05 level. The mean difference t – statistics for the snowstorms were very similar to those for Hurricane Sandy. Regarding the series of snowstorms, the upper level students for financial hardship, educational experience, additional study hours, and career concerns were all significant at the .05 level. The mean difference t – statistic for coefficient for educational concern was significant at the .10 level. In both models, course rigor and additional class time were insignificant.

The OLS empirical results in Table I for upper and lower level students is consistent with the mean difference t- statistics. For Hurricane Sandy, financial hardship, educational experience, additional study hours, educational concern, and career concern were all of the same sign and statistically significant at the .01 level. For the series of snowstorms, financial hardship and educational experience (.01), additional study hours and career concern (.05), and educational concern (.10) were all of the same sign and statistically significant. Again, course rigor and additional class time were both insignificant for Hurricane Sandy and the series of snowstorms. Administrators need to be cognizant that natural disasters affect the student populous differently. Obviously, the upper level college students are much more concerned about many academic issues than the undergraduate students.

Table II reports the findings based upon majors. The authors clustered accounting and finance majors together and then clustered management and marketing majors. The accounting and finance majors have similar training and they also tend to enroll in similar courses. The findings for Hurricane Sandy were very interesting. With the mean difference t – statistic accounting and finance majors were much more concerned about educational experience and course rigor than the management and marketing majors. Both t- statistics were significant at the .05 level. This could be related to preparation for the CPA and CFA of the accounting and finance students, respectively. In relation to the snowstorms, the management and marketing majors were more affected related to additional study hours. The t – statistic was significant at the .10 level. Obviously, Hurricane Sandy affected the accounting and

Table I: Year of Study Lower vs Upper							
<i>Panel A</i>							
Hurricane Sandy							
	Upper Mean (n = 250)	Lower Mean (n = 263)	Mean Differences	T Stat			
Financial Hardship	1.87	1.51	0.36	4.10***			
Educational Experience	2.87	2.54	0.33	2.86***			
Additional Study Hours	3.39	3.05	0.34	2.62***			
Educational Concern	2.63	2.34	0.29	2.43**			
Career Concern	1.96	1.73	0.23	2.30**			
Course Rigor	3.11	3.17	-0.06	-0.48			
Additional Class Time	3.15	3.17	-0.02	-0.22			
Snowstorms							
	Upper Mean (n = 250)	Lower Mean (n = 169)	Mean Differences	T Stat			
Financial Hardship	1.87	1.62	0.25	2.39**			
Educational Experience	2.86	2.59	0.27	2.10**			
Additional Study Hours	3.11	2.85	0.26	1.96**			
Educational Concern	2.65	2.43	0.22	1.65*			
Career Concern	1.98	1.76	0.22	1.97**			
Course Rigor	3.10	3.02	0.08	0.63			
Additional Class Time	2.90	3.06	-0.16	-1.22			
<i>Panel B</i>							
Eigenvalues							
	Hurricane Sandy (n = 513)			Snowstorms (n = 419)			
	Value	Cum Proportion	Value	Cum Proportion			
1	2.854	0.408	2.782	0.397			
2	1.196	0.579	1.221	0.572			
3	0.771	0.689	0.793	0.685			
4	0.688	0.787	0.718	0.788			
5	0.659	0.881	0.622	0.876			
6	0.473	0.949	0.518	0.950			
7	0.358	1.000	0.348	1.000			
<i>Panel C</i>							
Hurricane Sandy							
	Financial Hardship	Educational Experience	Additional Study Hours	Educational Concern	Career Concern	Course Rigor	Additional Class Time
Alpha	1.30	2.30	2.75	2.09	1.57	3.13	3.05
Year of Study	0.16	0.17	0.19	0.16	0.11	0.00	0.05
T Stat	4.21***	3.36***	3.47***	3.17***	2.68***	0.08	0.88
P-Value	0.01	0.01	0.01	0.01	0.01	0.94	0.38
F-Test	17.74	11.29	12.04	10.07	7.19	0.01	0.77
Observations	513	513	513	512	513	513	513
R Square	0.03	0.02	0.02	0.02	0.01	0.00	0.00
Snowstorms							
	Financial Hardship	Educational Experience	Additional Study Hours	Educational Concern	Career Concern	Course Rigor	Additional Class Time
Alpha	1.39	2.33	2.65	2.25	1.61	2.98	3.20
Year of Study	0.14	0.16	0.13	0.12	0.11	0.03	-0.09
T Stat	2.85***	2.54***	2.10**	1.82*	1.97**	0.52	-1.40
P-Value	0.01	0.01	0.04	0.07	0.05	0.61	0.16
F-Test	8.15	6.43	4.40	3.32	3.89	0.27	1.97
Observations	419	419	419	419	419	419	419
R Square	0.02	0.02	0.01	0.01	0.01	0.00	0.00
Notes: p-value results: *, **, *** Significant at 0.10, 0.05, and 0.01 levels, respectively							

Table II: Majors Management/Marketing vs Accounting/Finance							
<i>Panel A</i>							
	Hurricane Sandy						
	Management/ Marketing Mean	Accounting/ Finance Mean	Mean				
	(n = 195)	(n = 220)	Differences	T Stat			
Financial Hardship	1.74	1.68	0.06	0.62			
Educational Experience	2.57	2.86	-0.29	-2.23**			
Additional Study Hours	3.33	3.24	0.09	0.67			
Educational Concern	2.43	2.58	-0.15	-1.12			
Career Concern	1.83	1.94	-0.11	-0.95			
Course Rigor	3.02	3.33	-0.31	-2.35**			
Additional Class Time	3.16	3.33	-0.17	-1.24			
	Snowstorms						
	Management/ Marketing Mean	Accounting/ Finance Mean	Mean				
	(n = 141)	(n = 216)	Differences	T Stat			
Financial Hardship	1.81	1.82	-0.01	-0.09			
Educational Experience	2.82	2.85	-0.03	-0.17			
Additional Study Hours	3.21	2.94	0.27	1.81*			
Educational Concern	2.72	2.58	0.14	0.93			
Career Concern	1.85	2.05	-0.20	-1.58			
Course Rigor	3.09	3.06	0.03	0.14			
Additional Class Time	3.01	2.86	0.15	0.99			
<i>Panel B</i>							
	Eigenvalues						
	Hurricane Sandy (n = 415)		Snowstorms (n = 358)				
	Value	Cum Proportion	Value	Cum Proportion			
1	2.779	0.397	2.757	0.394			
2	1.171	0.564	1.174	0.562			
3	0.803	0.679	0.836	0.681			
4	0.707	0.780	0.710	0.783			
5	0.681	0.878	0.609	0.870			
6	0.513	0.951	0.544	0.947			
7	0.344	1.000	0.369	1.000			
<i>Panel C</i>							
	Hurricane Sandy						
	Financial Hardship	Educational Experience	Additional Study Hrs	Educational Concern	Career Concern	Course Rigor	Additional Class Time
Alpha	1.67	2.99	3.27	2.75	2.04	3.47	3.43
Year of Study	0.02	-0.11	0.01	-0.10	-0.06	-0.12	-0.07
T Stat	0.37	-1.93**	0.10	-1.76*	-1.30	-2.03**	-1.28
P-Value	0.71	0.05	0.92	0.08	0.19	0.04	0.20
F-Test	0.14	3.74	0.01	3.09	1.70	4.12	1.65
Observations	415	415	415	414	415	415	415
R Square	0.00	0.01	0.00	0.01	0.00	0.01	0.00
	Snowstorms						
	Financial Hardship	Educational Experience	Additional Study Hrs	Educational Concern	Career Concern	Course Rigor	Additional Class Time
Alpha	1.87	2.78	2.96	2.41	2.09	3.00	2.76
Year of Study	-0.03	0.03	0.04	0.10	-0.06	0.03	0.07
T Stat	-0.49	0.45	0.64	1.61	-0.99	0.51	1.14
P-Value	0.63	0.65	0.52	0.11	0.32	0.61	0.25
F-Test	0.24	0.20	0.41	2.58	0.99	0.27	1.30
Observations	358	358	358	358	358	358	358
R Square	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Notes: p-value results: *, **, *** Significant at 0.10, 0.05, and 0.01 levels, respectively							

finance majors differently than the management and marketing majors. Interestingly, the educational experience and course rigor were not significant during the series of snowstorms for the accounting and finance majors.

The OLS results for the separation of majors were again robust related to the mean difference t – statistics. For Hurricane Sandy, the educational experience and course rigor coefficients were significant at the .05 level and education concern was significant at the .10 level for accounting and finance majors. None of the coefficients were significant in the OLS model for the series of snowstorms. It is obvious that administrators need to be cognizant of the fact that storms effect students differently depending upon whether it is a hurricane or a series of snowstorms.

In Table III, we again report the mean difference t – statistics and the p - values for student bi-furcated between high GPA and low GPAs for Hurricane Sandy and the series of snowstorms. The empirical results are again robust and supported by both tests. In essence, lower GPA students were much more concerned about everything related to the higher GPA students. In the mean difference t – statistics for Hurricane Sandy, educational experience and educational concern were significant at the .05 level and for the series of snowstorms financial hardship, educational experience, educational concern, and career concern were significant at the .01 level. Both Hurricane Sandy and the snowstorms, were also significant at the .10 level for additional study hours.

The OLS results were also completely consistent with the mean difference t – statistics. For Hurricane Sandy, the educational concern coefficient was significant at the .05 level and for career concern at the .10 level for the lower GPA students. The lower GPA students were also more concerned about the series of snowstorms for financial hardship, educational experience, educational concern, and career concern at the .01 level. For additional study hours, it was significant at the .10 level for the lower GPA students. Obviously, administrators need to be more diligent in dealing with lower GPA students when there is an interruption in their collegiate experience due to random storms and closures.

In Table IV, the authors report the findings related to gender. The empirical results are again robust and consistent for the mean difference t – statistics and for the OLS p values. None of the coefficients were significant in any of the models. This again supports the modeling approach of the research design of the paper. This has an important implication for college education administrators. There appears that there is no need to treat the respondents differently based upon gender during natural disasters. Although there is a great deal of financial and economic behavioral literature related to gender issues, it appears in this study that it was not of any significance.

It also has broader implications for all women and male colleges. There are approximately 40 all-female colleges and approximately 5 all-male colleges, excluding any religiously affiliated colleges in the United States. Of course, this number would be higher when we view it on a global scale. Administrators appear not to worry about gender issues when these random storms occur.

Table V reports the final empirical test which was to regress the individual questions with all of the independent variables. This final multi-variate test confirms the robustness of the modeling in the paper. All of the statistically significant coefficients were all of the correct signs compared to the other empirical tests. This also confirms as demonstrated by the eigenvalues, and k – tests that multi-collinearity is not an issue in this study. For Hurricane Sandy, the year of study, financial hardship, educational concern, and career concern were all significant at the .01 level. Educational experience and additional study hours were significant at the .05 level. This is consistent with all of the other empirical tests in this paper. For the majors, accounting and finance students were more concerned about educational concern, career concern, and additional class time at the .01 level, course rigor was significant at the .05 level, and educational experience at the .10 level. For GPA, the lower GPA students were more concerned about educational experience at the .05 level and career concern at the .10 level for Hurricane Sandy. None of the multi-variate coefficients for gender were statistically significant.

Table III: Grade Point Average High vs Low							
<i>Panel A</i>							
	Hurricane Sandy		Mean				
	High GPA	Low GPA	Differences	T Stat			
	Mean (n = 219)	Mean (n = 220)					
Financial Hardship	1.65	1.77	-0.12	-1.22			
Educational Experience	2.61	2.90	-0.30	-2.35**			
Additional Study Hours	3.13	3.39	-0.26	-1.81*			
Educational Concern	2.37	2.65	-0.28	-2.17**			
Career Concern	1.80	1.95	-0.14	-1.30			
Course Rigor	3.19	3.10	0.10	0.72			
Additional Class Time	3.21	3.21	0.00	-0.03			
	Snowstorms		Mean				
	High GPA	Low GPA	Differences	T Stat			
	Mean (n = 208)	Mean (n = 208)					
Financial Hardship	1.56	1.92	-0.36	-3.62***			
Educational Experience	2.55	2.92	-0.37	-2.85***			
Additional Study Hours	2.88	3.11	-0.23	-1.76*			
Educational Concern	2.25	2.86	-0.61	-4.71***			
Career Concern	1.67	2.08	-0.41	-3.76***			
Course Rigor	3.03	3.12	-0.09	-0.70			
Additional Class Time	3.02	2.90	0.12	0.94			
<i>Panel B</i>							
	Eigenvalues						
	Hurricane Sandy (n = 439)		Snowstorms (n = 416)				
	Value	Cum Proportion	Value	Cum Proportion			
1	2.868	0.410	2.808	0.397			
2	1.187	0.579	1.177	0.572			
3	0.721	0.682	0.811	0.685			
4	0.717	0.785	0.731	0.788			
5	0.695	0.884	0.609	0.876			
6	0.464	0.950	0.515	0.950			
7	0.347	1.000	0.348	1.000			
<i>Panel C</i>							
	Hurricane Sandy						
	Financial Hardship	Educational Experience	Additional Study Hours	Educational Concern	Career Concern	Course Rigor	Additional Class Time
Alpha Grade Point	2.11	3.46	3.59	3.79	2.67	2.64	3.29
Average	-0.12	-0.21	-0.10	-0.38	-0.24	0.15	-0.03
T Stat	-0.93	-1.27	-0.53	-2.27**	-1.68*	0.87	-0.18
P-Value	0.35	0.20	0.60	0.02	0.09	0.39	0.88
F-Test	0.86	1.62	0.28	5.13	2.84	0.75	0.02
Observations	439	439	439	438	439	439	439
R Square	0.00	0.00	0.00	0.01	0.01	0.00	0.00
	Snowstorms						
	Financial Hardship	Educational Experience	Additional Study Hours	Educational Concern	Career Concern	Course Rigor	Additional Class Time
Alpha Grade Point	3.11	4.35	4.05	5.44	3.99	3.38	2.23
Average	-0.40	-0.47	-0.31	-0.85	-0.62	-0.09	0.21
T Stat	-3.08***	-2.84***	-1.82*	-5.11***	-4.43***	-0.53	1.24
P-Value	0.01	0.01	0.07	0.01	0.01	0.60	0.21
F-Test	9.49	8.06	3.30	26.10	19.63	0.28	1.55
Observations	416	416	416	416	416	416	416
R Square	0.02	0.02	0.01	0.06	0.05	0.00	0.00
Notes: p-value results: *, **, *** Significant at 0.10, 0.05, and 0.01 levels, respectively							

**Table IV:
Gender Female
vs Male**

<i>Panel A</i>							
Hurricane Sandy							
	Female Mean (n = 215)	Male Mean (n = 303)	Mean Differences	T Stat			
Financial Hardship	1.64	1.71	-0.07	-0.76			
Educational Experience	2.69	2.72	-0.03	-0.19			
Additional Study Hours	3.30	3.17	0.13	0.99			
Educational Concern	2.50	2.49	0.01	0.13			
Career Concern	1.84	1.87	-0.03	-0.31			
Course Rigor	3.09	3.17	-0.08	-0.60			
Additional Class Time	3.24	3.10	0.14	1.17			
Snowstorms							
	Female Mean (n = 190)	Male Mean (n = 245)	Mean Differences	T Stat			
Financial Hardship	1.74	1.78	-0.04	-0.46			
Educational Experience	2.77	2.74	0.03	0.23			
Additional Study Hours	3.11	2.91	0.20	1.58			
Educational Concern	2.55	2.55	0.00	0.04			
Career Concern	1.92	1.89	0.03	0.32			
Course Rigor	3.07	3.01	0.06	0.48			
Additional Class Time	2.97	2.89	0.08	0.63			
<i>Panel B</i>							
Eigenvalues							
	Hurricane Sandy (n = 518)			Snowstorms (n = 435)			
	Value	Cum Proportion	Value	Cum Proportion			
1	2.845	0.406	2.837	0.405			
2	1.194	0.577	1.188	0.575			
3	0.764	0.686	0.783	0.687			
4	0.703	0.787	0.714	0.789			
5	0.664	0.881	0.627	0.878			
6	0.476	0.949	0.509	0.951			
7	0.354	1.000	0.343	1.000			
<i>Panel C</i>							
Hurricane Sandy							
	Financial Hardship	Educational Experience	Additional Study Hours	Educational Concern	Career Concern	Course Rigor	Additional Class Time
Alpha	1.57	2.67	3.43	2.52	1.81	3.02	3.38
Gender	0.07	0.02	-0.13	-0.02	0.03	0.08	-0.14
T Stat	0.76	0.19	-0.98	-0.13	0.30	0.61	-1.17
P-Value	0.45	0.85	0.33	0.89	0.76	0.54	0.24
F-Test	0.57	0.04	0.97	0.02	0.09	0.37	1.37
Observations	518	518	518	517	518	518	518
R Square	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Snowstorms							
	Financial Hardship	Educational Experience	Additional Study Hours	Educational Concern	Career Concern	Course Rigor	Additional Class Time
Alpha	1.69	2.80	3.31	2.56	1.96	3.14	3.06
Gender	0.05	-0.03	-0.20	-0.01	-0.04	-0.06	-0.08
T Stat	0.46	-0.23	-1.58	-0.04	-0.32	-0.48	-0.64
P-Value	0.65	0.82	0.11	0.97	0.75	0.63	0.52
F-Test	0.21	0.05	2.50	0.00	0.10	0.23	0.41
Observations	435	435	435	435	435	435	435
R Square	0.00	0.00	0.01	0.00	0.00	0.00	0.00

Notes: p-value results: *, **, ***Significant at 0.10, 0.05, and 0.01 levels, respectively

In the series of snowstorms, upper level students were more anxious about the impact on career concerns at the .10 level. For the year of study, financial hardship and education experience were significant at the .05 level. The lower GPA students were more concerned about financial hardship, educational experience, educational concern, and career concern at the .01 level. The authors did find for the first time a significant coefficient using the multivariate test for additional hours at the .05 level related to males. Due to the other tests finding zero significance in relation to

gender along with only one question in the multivariate tests, the authors find this to be ultimately an insignificant result.

Table V: Multi-Variate Results							
	Hurricane Sandy						
	Financial Hardship	Educational Experience	Additional Study Hours	Educational Concern	Career Concern	Course Rigor	Additional Class Time
Alpha	1.44 [2.87***]	3.46 [5.31***]	4.05 [5.52***]	3.93 [5.89***]	2.68 [4.82***]	312 [4.52***]	4.08 [6.05***]
Major	-0.02 [-0.60]	-0.10 [-2.40*]	-0.10 [-2.14]	-0.12 [-2.63***]	-0.10 [-2.64***]	-0.10 [-2.15**]	-0.13 [-2.92***]
Gender	0.12 [1.25]	-0.01 [-0.04]	-0.22 [-1.54]	-0.08 [-0.58]	-0.01 [-0.07]	0.00 [-0.03]	-0.16 [-1.17]
Year of Study	0.17 [4.06***]	0.12 [2.19**]	0.13 [2.17**]	0.14 [2.60***]	0.12 [2.58***]	-0.06 [-1.13]	-0.02 [-0.35]
Grade Point Average	-0.09 [-0.68]	-0.21 [-1.26]	-0.14 [-0.75]	-0.39 [-2.34**]	-0.24 [-1.73*]	0.14 [0.83]	-0.06 [-0.34]
F-Test	4.68	2.99	3.00	4.75	4.10	1.69	2.50
Observations	438	438	438	438	438	438	438
R Square	0.04	0.03	0.03	0.04	0.04	0.02	0.02
	Snowstorms						
	Financial Hardship	Educational Experience	Additional Study Hours	Educational Concern	Career Concern	Course Rigor	Additional Class Time
Alpha	2.85 [6.05***]	4.20 [6.05***]	4.54 [6.40***]	5.64 [8.11***]	4.04 [6.91***]	3.87 [5.45***]	2.78 [3.86***]
Major	-0.04 [1.29]	-0.04 [-0.95]	-0.04 [-0.86]	-0.02 [-0.40]	-0.07 [-1.94*]	-0.04 [-0.98]	0.03 [0.63]
Gender	-0.00 [-0.03]	-0.08 [-0.59]	-0.27 [-1.98**]	-0.17 [-1.26]	-0.05 [-0.48]	-0.14 [-1.06]	-0.09 [-0.68]
Year of Study	0.10 [2.17**]	0.12 [2.00**]	0.06 [1.06]	0.07 [1.17]	0.06 [1.24]	-0.02 [-0.28]	-0.11 [-1.76*]
Grade Point Average	-0.37 [-2.77***]	-0.45 [-2.67***]	-0.35 [-2.02**]	-0.87 [-5.11***]	-0.60 [-4.21***]	-0.12 [-0.68]	0.16 [0.91]
F-Test	4.17	3.45	2.29	7.32	6.46	0.57	1.46
Observations	416	416	416	416	416	416	416
R Square	0.04	0.03	0.02	0.07	0.06	0.01	0.01

Notes: p-value results: *, **, *** Significant at 0.10, 0.05, and 0.01 levels, respectively

CONCLUSION

This research reveals that certain disasters affect college students differently based on the questions that were asked at the two separate universities in various ways. The overall conclusions of the paper are completely consistent. Upper level students were more concerned with educational factors than lower grade level students. Accounting and finance students were more concerned about their educational experience than the management and marketing majors. The students with the lower GPAs were more concerned about their educational experience than higher GPA students. There were no differences in gender related to the students' responses for either Hurricane Sandy or for the series of snowstorms. Although there are many applications of gender differences in recent research studies, there was no significant difference in gender for this research paper. The authors feel that this is an important finding of the paper for college administrators. Administrators must be cognizant of the fact that there cannot be just one approach to all natural disasters.

As far as additional research, the authors have created a new survey with the same list of 7 questions. The authors did add 2 significant questions. The first was a question on ethnicity, and the second asks whether the student is 1st or 2nd generation or more college student. The data is presently being coded in a similar format. A minor finding of the new research is to explore whether the students response based upon level of study, major, GPA, or gender have changed over time.

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Survey Instrument

This is a survey about how natural disasters affect the educational process. The following questions are related to your experience during the recent snow storms that interrupted your spring 2015 semester. The responses should be based on your overall college experience and not to one particular faculty member. Please only complete one survey. Thank you for your assistance.

Major: Accounting Finance Management Marketing Other

Status: Commuter or Off Campus Resident Dorm Resident

Sex: Female Male

Year of Study: Freshman Sophomore Junior Senior Other

Approximate GPA: _____ Number of class hour missed _____

1. Did you experience any financial hardship related to the snow storms?
No Financial Hardship 1 2 3 4 5 Extensive Financial Hardship
2. In terms of your overall educational experience, do you feel that you were negatively impacted because of the snow storms?
Not Affected 1 2 3 4 5 Very Affected
3. Did you put in additional hours after the snow storms to catch up on your course work?
Not Really 1 2 3 4 5 Definitely
4. Are you concerned that the snow storms disruption has negatively impacted your preparation for the remaining courses in your college experience?
Not Concerned 1 2 3 4 5 Very Concerned
5. Are you concerned that the snow storms disruption has negatively impacted your preparation for the job market?
Not Concerned 1 2 3 4 5 Very Concerned
6. Do you feel that your faculty members overall changed the rigor and approach to the course because of the snow storms?
Not Really 1 2 3 4 5 Definitely
7. Did your faculty members attempt to add additional hours or written assignments to make up for the loss of class time?
Not Really 1 2 3 4 5 Definitely

Perceptions of Safety and Fear Among University Faculty and Staff

Karen L. Fowler, Colorado State University—Pueblo
Bruce C. Raymond, Colorado State University—Pueblo

ABSTRACT

The purpose of this empirical research was to examine the perception of safety versus fear at a public university campus following active shooter training for faculty, staff, and administrators. Our method provided the opportunity to survey all university employees who had and had not received the active shooter training since the training did not occur at all colleges at once. The population for the survey consisted of employees located at a public regional university. Prior research suggests that training of personnel would have some impact on perceptions of those who attended training and those employees would feel safer at work. This study extends the limited empirical research currently emerging on perceptions of safety and fear on university campuses with respect to active shooter training. Specifically, perceptions of safety and fear were compared between trained and untrained employees. Our findings indicated mixed results based on gender and other variables.

Key Words: crisis planning, active shooter training, incident management.

INTRODUCTION

While crisis and disaster preparedness planning has long been discussed in the emergency management literature, the catastrophic events of 9/11, among numerous others, catapulted this area of research into many diverse disciplines beyond its original scope. The mid 2000s saw a proliferation of new books and journal articles that addressed a multitude of aspects related to organizational planning for responses to cope with potentially devastating events. The ability of modern media technology ensures that the public not only learns of the event, but the graphic visual recordings are now part of today's reality. In response, practitioners and academics alike have answered the call for better and more advanced crisis and disaster preparedness planning in an effort to improve responses when a critical event occurs. Open access to schools and universities creates a unique challenge to protect students and educators from potentially deadly events. Schools have been considered safe havens for teaching and learning and this is no longer the case. This exploratory research investigates perceived crisis and disaster preparedness and resulting feelings of safety and/or fear of faculty and staff at a small regional public institution in the United States.

BACKGROUND AND LITERATURE REVIEW

Crisis and Disaster Preparedness

Intellectual foundations of crisis and disaster management evolved in the late 1990s and early into the 2000s (Pearson & Clair, 1998), Pearson, Roux-Dufort, & Clair (2007) and Barton (2008). Fowler, Kling, and Larson (2007) indicate that employees may not feel adequately prepared to cope with a disaster or crisis in their work environment. While crisis events have been described as low-probability, high consequence events attention has been drawn to the consequences of a new reality. Examples have been primarily industry specific. Ritchie, Bentley, Koruth and Wang (2011) examined proactive crisis planning in the accommodation industry. Their findings indicate support for organizational type and size having an impact on perceived level of crisis preparedness. Jin (2010) also examined the interplay of organizational type and size in a sample of public relations practitioners in the United States. Results were mixed, but organization type was found to be effective when it interplayed with practitioner role or organization size. Patten, Thomas, and Wada (2013) surveyed college students and faculty opinions on their attitudes towards private citizens carrying concealed guns on campus. Their findings indicate over 70% of respondents oppose the option of carrying concealed guns on campus, indicating that the idea of more guns on campus makes students and faculty feel less safe. In a related opinion, Nykodym, Patrick, and Mendoza (2011) argue that more firearms are being purchased by members of the community while layoffs of police impact college and university communities who rely on them for security challenges.

Safety and Fear

Theory implies that employees may experience strong negative cognitions and emotions, such as fear, confusion, and anxiety, when contemplating the possibility of a crisis or disaster (Clair & Waddock, 2007). These researchers suggest that methods to counteract these responses need to be implemented in the planning stage. Additionally, these authors report evidence that the psychological and physical safety of employees who could be involved in a crisis needs to be demonstrated. Attention to these human concerns might increase the probability that employees would be able to respond appropriately to a crisis or disaster event. Limited training in how to respond to a crisis might not be adequate. These researchers argue that employees may experience strong negative cognitions such as fear, confusion, and/or anxiety when faced with the possibility of a crisis and methods must be implemented in advance of employees actually encountering a crisis.

Other researchers recognize the psychological response to safety/fear cognitions with respect to implementing crisis and disaster preparedness. While the sample population consisted of students, instead of employees, the constructs of safety and fear may be analogous to university faculty and staff populations. The relationship between the visible presence of security measures and the resulting impact on student perceptions of safety or fear of school crime has been examined (Perumean-Chaney & Sutton, 2013). The underlying logic of their research is, the more visible the security measures in a school the conclusion is that the school is unsafe—otherwise, why would we need these security measures? Their research indicates that the use of metal detectors and at least two other physical security measures are associated with a significant decrease in students' feeling of being safe while at school.

Another study using student focus groups examines student perceptions of disaster risk, fear, preparedness, and reflections on Union University—which was harshly struck by a tornado (Lovekamp & McMahon, 2011). The student focus groups' comments were gathered before the students viewed a CNN video depicting the tornado's impact. The pre-video comments were decidedly different from the post video comments. Perhaps one of the most striking student comments came from a student who gave campus tours to prospective students and their parents. The student reported that parents frequently asked what the campus had in place to prevent an incident like Virginia Tech. The student commented that academic buildings are “so vulnerable anybody could walk in almost any hour of the day, even late into the night. Anybody can walk into any classroom in this building right now” (p. 139). This study also controlled for gender differences. For example, initially (pre-video) females were more likely to express fear than their male counterparts. However, after viewing the CNN video of the tornado-impacted university campus, males retracted some of their initial brave statements of not being afraid or not taking proactive planning seriously. Liu, Blankson, and Brooks (2015) found women were more knowledgeable than men on crisis response and that staff members reported higher levels of knowledge than faculty.

Holland (2019) found significant differences between males and females in research that examined university employees' perceptions, knowledge, and preparedness of an active shooter on campus and how gender influences these factors. Significant differences existed with respect to ability to respond to an active shooter, perceived likelihood and a greater fearfulness of an active shooter. The author states that these data suggest that employees on campus could benefit from increased availability of information and targeted training. Popular press articles are abundant with respect to the urgent need for more training. *US News Online*, New sheriff calls for better training after school shooting (2019). *AP Regional State Report, South Dakota*: Schools prep for shootings with first-aid training (2018). *AP Regional State Report, Georgia*, Atlanta schools to teach its students what to do in gunfire (2018).

Others have commented on the challenges of open-access campuses indicating that a college campus is a quintessential example of this security challenge (Managing violence risk, 2010). With respect to the open-access issue of schools and universities, a student was recently killed by two teenage students near Denver, Colorado. The arrested students told police they knew which entrances to use because they would not be stopped (Foody, 2019).

HYPOTHESES

Previous research conducted by Fowler, Kling, and Larson (2007) indicated that employees do not feel prepared for coping with a major crisis or disaster. However, because their results were reported in aggregate, at the organizational level, it is not possible to ascertain in what areas employees might feel more prepared than in others (e.g., evacuation plans, communication, workplace security, possibility of a crisis occurring at their workplace, and so on.) It is possible employees might feel prepared for evacuation but feel unsafe with respect to workplace

security. Our research delves deeper into these areas of workplace security and employees' perception of feeling prepared.

On our campus, safety and security are administered by our county sheriff's department. The sheriff's department maintains a full-time staff on campus 24/7 and their patrol cars are seen regularly patrolling the campus. Our campus has emergency call stations located across campus for a caller to be able to reach the sheriff's department 24 hours a day. Classrooms have posters near each door indicating instructions of what to do in the event of an emergency, along with an evacuation map.

The sheriff's department provided voluntary training to faculty and staff on what to do in the event of a crisis or disaster on campus. The officers described the need to be aware of our surroundings and alert to any persons who appear suspicious. As part of this training, faculty and staff were shown a video on what to do if an active shooter was present on campus and faculty and staff discussion and questions followed. In line with Pearson and Clair's conceptual foundation, our research is designed to test the construct that pre-event crisis and disaster planning should result in higher levels of perceived preparedness (1998). Of note, some of the topics addressed by our survey of faculty and staff were not addressed in the training consequently we might conclude that there would be no discernible differences between those attending the training and those who did not attend the training. However, the research literature is emerging and it is also possible that safety training may provide halo effects that impact behaviors, beliefs and perceptions in areas not directly included as part of the training.

Our hypotheses are based on the fragmented literature available. The topics not addressed in the training will be highlighted in the results and analysis section. Therefore the following hypotheses are offered:

Compared to individuals who did not take the county sheriff's training, individuals who attended the training would be

- *Hypothesis Ia: more informed about exits, evacuation plans, location of fire extinguishers and so on.*
- *Hypothesis Ib: more informed about campus crisis and emergency policies and procedures.*
- *Hypothesis Ic: no more informed about contingency plans for data recovery.*
- *Hypothesis Id: no more informed about communication plans following a crisis or disaster.*
- *Hypothesis Ie: more confident that the workplace is secure.*
- *Hypothesis If: more likely to consider a crisis or disaster a real possibility.*
- *Hypothesis Ig: more likely to volunteer for or accept obligations to make the campus more secure.*

Having taken the county sheriff's training, university employees will feel

- *Hypothesis IIa: safer at work.*
- *Hypothesis IIb: more competent to respond to a crisis or disaster on campus.*

METHODS

To test the hypotheses listed above a faculty/staff survey instrument was adapted from the survey used by Fowler, et al., (2007). The adaptations of the survey included wording changes to situate the questions in the university setting, along with additional changes to make the survey applicable to the job and duties of university faculty and staff. The survey addressed a number of themes as noted in the hypotheses previously stated. For most of the hypotheses, multiple items addressed various facets of the construct examined.

The survey was administered using an electronic online software vendor with individual survey links sent to each individual. Two follow-up email prompts were sent to encourage participation. Survey links were sent to 558 individuals and 275 employees participated in the survey for a 49.28% response rate; two respondents did not complete most survey items giving 273 useable surveys (48.92%). The population of potential respondents included all administrators, faculty and staff (not including student staff) of a small regional public institution in the US.

The survey included five demographic/respondent questions on gender, position, age and time at the institution as well as CPR certification followed by items related to individual perceptions and attitudes regarding the potential for a campus crisis or disaster, campus-wide preparation for a crisis or disaster and individual level preparation for a crisis or disaster. At the end of the survey, a few questions were answered only by the respondents who were present for the safety training. These items evaluated perceptions of the effectiveness and impacts of the training.

A number of the research items were measured using response categories, Strongly Disagree, Disagree, Agree, Strongly Disagree. These categories were not converted to numerical values, rather hypotheses testing was conducted using the Chi Squared Goodness of Fit Test (Preacher, 2001). The strongly agree and agree cells were collapsed into a single agree outcome, while the strongly disagree and disagree outcomes were combined into a single disagree cell.

RESULTS AND ANALYSIS

Demographic results are summarized in the table below. The sample demographics closely resemble the population. Some demographic results totals do not match the overall survey total due to non-response. Faculty and staff (professional and classified) represent 94.87 percent of respondents.

Gender	Responses	% of Tot
Male	118	43.22%
Female	155	56.78%
Position	Responses	% of Tot
Administration	7	2.56%
Faculty	86	31.50%
Professional Staff	102	37.36%
Classified Staff	71	26.01%
Other	7	2.56%
Age	Responses	% of Tot
<=29	27	10.04%
30-39	45	16.73%
40-49	54	20.07%
50-59	90	33.46%
>=60	53	19.70%
Years at Campus	Responses	% of Tot
5 or Less	89	32.60%
6-10	66	24.18%
11-20	61	22.34%
21 or more	57	20.88%
CPR Certified	Responses	% of Tot
Yes	76	27.94%
No	196	72.06%
Attended Training	Responses	% of Tot
Yes	181	66.30%
No	92	33.70%

The research results and discussion are presented in connection with the stated hypotheses. The item responses will be presented in connection with the relevant hypotheses tests. Regarding the alternative hypotheses,

p_t = proportion of the trained respondents who agree

p_u = proportion of the untrained respondents who agree

ChiSqr = the calculated Chi Squared Value

$p(\text{ChiSqr})$ = the probability of the value of the Chi-Squared Test comparing the outcomes for the trained versus the untrained respondents.

The null hypothesis for each item is that the proportion of trained respondents who agree is equal to the proportion

of untrained respondents who agree. The alternative hypotheses for each item are presented in the sections that follow.

Hypothesis 1a: Compared to individuals who did not take the county sheriff's training, individuals who attended the training would be more informed about exits, evacuation plans, location of fire extinguishers and so on.

Questions testing this hypothesis	pt	pu	Alternate Hypothesis	p(ChiSq)
Q5. I am very familiar with the evacuation plan for my building.	0.7293	0.5532	$p_t > p_u$	*0.0031
Q7. I know where the red fire alarm boxes are located in my building.	0.5138	0.5426	$p_t > p_u$	0.3254
Q8. I know where the main shutoffs are located (e.g. electrical, gas, water) in my building.	0.0442	0.0851	$p_t > p_u$	0.0847
Q9. I know where the fire extinguishers are near my work area, classrooms, labs, etc.	0.5525	0.5000	$p_t > p_u$	0.2040
Q11. I know where the first aid kit is located in my building.	0.5746	0.5106	$p_t > p_u$	0.1559
Q13. I know who is CPR certified in my immediate workplace.				
Q19. I know the location of the AED defibrillator box in my building.	0.2044	0.3085	$p_t > p_u$	0.0552
Q21. Campus employees are familiar with the campus security and crisis/disaster plan.	0.4310	0.4255	$p_t > p_u$	0.4667
Q22. I am familiar with the emergency alert system on campus.	0.3315	0.2872	$p_t > p_u$	0.2272
Q31. I know the location of the outdoor emergency call box closest to my building.	0.9006	0.7553	$p_t > p_u$	*0.0007
Q32. I know where the nearest emergency exits are to my desk/office and classrooms.	0.6409	0.5106	$p_t > p_u$	*0.0184
	0.9392	0.8617	$p_t > p_u$	*0.0154

* Significant at $\alpha = 0.05$

Scanning the table above and comparing the proportion of agreement for trained (t) and untrained (u) respondents Hypotheses H1a was supported in four cases. Trained respondents were more likely

- to be aware of the building evacuation plan,
- to be familiar with the emergency alert system,
- to know the location of the closest outdoor emergency call box and
- to know where the emergency exits are in relation to their desk/office and classrooms as compared to the untrained respondents.

Across all respondents there was little familiarity with the location of the main shutoffs (electricity, water and gas) and to a lesser degree the location of the AED defibrillator box and the campus crisis/disaster plan(s). The location of the shutoffs and the AED defibrillator box was not included in the disaster training, while the existence of the campus disaster plan was included in the training.

For the remainder of the hypotheses tests reported in the following sections we will include only the statistically significant results ($p \leq .05$) and the tables will be streamlined.

Gender Results. As noted in the literature review (Lovekamp & McMahon, 2011; Holland 2019) perceptions of, and responses to, safety training are impacted by gender. The following section reports the results for H1a by gender.

Table 2.2: Significant Results and Hypothesis Tests for Hypothesis H1a by Gender

Question	Female				Male			
	P _t	P _u	Chi-Sqr	p(ChiSqr)	P _t	P _u	Chi-Sqr	p(ChiSqr)
5. EvacPlan	0.7064	0.4667	7.9120	*0.0025	0.7857	0.6170	3.9520	*0.0234
9. Fire Ext	0.5093	0.3333	3.9610	*0.0233	0.6429	0.6739	0.1190	0.3651
11. FirstAid	0.5825	0.3333	7.7800	*0.0027	0.6143	0.6596	0.2480	0.3093
13. KnowCPR	0.2315	0.2667	0.2140	0.6437	0.1714	0.3617	5.4610	*0.0194
22. EmrgAlert	0.8899	0.7556	4.5250	*0.0334	0.8889	0.7609	3.4050	*0.0325
31. CallBox	0.5780	0.4222	3.1040	*0.0391	0.7286	0.6087	1.8360	0.0877
32. Emrg Exits	0.9174	0.8222	2.9400	*0.0432	0.9855	0.9565	0.9130	0.1697

* Significant at $\alpha = 0.05$

A review of the gender results above comparing the proportion of agreement for trained (t) and untrained (u) respondents indicates that hypotheses H1a was supported in six cases for female respondents and three cases for male respondents. Trained female respondents were more likely

- to be aware of the building evacuation plan
- to know the location of the fire extinguisher
- to know the location of the first aid kit
- to be familiar with the campus emergency alert system
- to know the location of the nearest emergency call box, and
- to know the location of the nearest emergency exit

as compared to the untrained female respondents.

Male respondents on the other hand who were trained were more likely

- to be aware of the building evacuation plan
- to know who was CPR certified in the immediate workplace and
- to be familiar with the campus emergency alert system

as compared to the untrained male respondents.

Position Results. Of interest is the impact of training on faculty members versus non-faculty members. The group of non-faculty respondents was comprised of administration, classified staff and administrative/professional staff. A review of the position results comparing the proportion of agreement for trained (t) and untrained (u) respondents indicates that hypotheses H1a was supported in two cases for faculty respondents and two cases for non-faculty respondents. Trained faculty respondents were more likely

- to be aware of the building evacuation plan ($p_t = 0.7241$, $p_u = 0.4815$, Chi-Sqr = 4.7500, $p(\text{ChiSqr}) = 0.0147$) and
- to be familiar with the campus emergency alert system ($p_t = 0.9310$, $p_u = 0.7407$, Chi-Sqr = 5.9220, $p(\text{ChiSqr}) = 0.0075$)

as compared to the untrained faculty respondents.

Non-faculty respondents had similar results as faculty respondents. Trained non-faculty respondents were more likely

- to be aware of the building evacuation plan ($p_t = 0.7317$, $p_u = 0.5692$, Chi-Sqr = 5.1220, $p(\text{ChiSqr}) = 0.0118$) and
- to be familiar with the campus emergency alert system ($p_t = 0.8862$, $p_u = 0.7656$, Chi-Sqr = 4.6690, $p(\text{ChiSqr}) = 0.01535$)

as compared to the untrained non-faculty respondents.

Hypothesis 1b: Compared to individuals who did not take the county sheriff's training, individuals who attended the training would be more informed about campus crisis and emergency policies and procedures.

Survey items relating to this hypothesis included the following:

- Q6. If the fire alarm sounds building evacuation is required. ($p_t = 0.9277$, $p_u = 0.9043$)
- Q14. All campus employees are required to rehearse portions of our security and crisis plan. ($p_t = 0.6685$, $p_u = 0.5745$)
- Q16. If I suspect a fire in a building, I should evacuate the building immediately and leave the doors unlocked. ($p_t = 0.9282$, $p_u = 0.8723$)
- Q17. If I encounter a suspicious person or event on campus I should not confront that person and should immediately call 911. ($p_t = 0.8840$, $p_u = 0.9362$)
- Q18. If I receive a bomb threat on campus through telephone, text, email or other correspondence, I should remain calm and try to get as much information as possible. ($p_t = 0.8785$, $p_u = 0.8723$)
- Q26. It is primarily the responsibility of the university to provide a plan for surviving a crisis. ($p_t = 0.8232$, $p_u = 0.8723$)
- Q28. If an organization has not done sufficient crisis planning and preparation, administration and faculty could be held personally liable for any serious injuries or deaths to employees or students resulting from a crisis or a disaster. ($p_t = 0.6575$, $p_u = 0.6489$)
- Q30. If an active shooter is discovered to be on campus, the recommended action sequence is hide, run, fight. ($p_t = 0.7072$, $p_u = 0.6596$)

Regarding knowledge of campus safety/crisis policies and procedures it was hypothesized that trained individuals would have greater familiarity with these policies and procedures, however, the results of the survey did not support this hypothesis. Across the entire sample we found no significant differences between trained and untrained respondents, however, we did find one significant difference between trained and untrained male respondents as well as one significant result for trained versus untrained non-faculty respondents as reported below.

Gender Results. Trained males were shown to be more familiar with the campus policy regarding suspicious persons on campus as compared to untrained males ($p_t = 0.8551$, $p_u = 0.9565$, Chi-Sqr = 8.2370, $p(\text{ChiSqr}) = 0.0021$).

Position Results. Trained non-faculty employees were found to be more familiar with the campus fire evacuation policy as compared to untrained non-faculty employees ($p_t = 0.9268$, $p_u = 0.8462$, Chi-Sqr = 3.0470, $p(\text{ChiSqr}) = 0.04045$).

Hypothesis Ic: Compared to individuals who did not take the county sheriff's training, individuals who attended the training would be no more informed about contingency plans for data recovery.

Only one survey item related to this hypothesis: Q27. If the university suffered a crisis/disaster, the data I need to do my job would be backed up. ($p_t = 0.6354$, $p_u = 0.6489$)

A comparison of the proportion in agreement between the trained and untrained groups indicates no differences between the groups. The responses suggest that a majority of the campus employees believe that the campus does have a data recovery plan in place.

Gender results. When analyzed by gender there was no evidence of training impacts regarding hypothesis H1c.

Position results. Similarly, there were no significant differences between trained and untrained individuals found by the position analysis.

Hypothesis Id: Compared to individuals who did not take the county sheriff's training, individuals who attended the training would be no more informed about communication plans following a crisis or disaster.

Two survey items tested this hypothesis, including:

- Q20. If a crisis and evacuation occurred at the university, I know how to communicate with my fellow employees (such as cell phone numbers, calling trees, websites or email lists). ($p_t = 0.6409$, $p_u = 0.7128$)
- Q 24. As part of our emergency plan family members and the press, along with business and community partners, would be able to contact the university for information. ($p_t = 0.7072$, $p_u = 0.7021$)

A comparison of the proportion in agreement between the trained and untrained groups indicated no statistically significant differences between the groups.

Gender results. A comparison of the proportion in agreement between the trained and untrained respondents by gender indicated no statistically significant differences between the groups for Hypothesis H1d.

Position results. A comparison of the proportion in agreement between the trained and untrained respondents by position indicated no statistically significant differences between the groups for Hypothesis H1d.

Hypothesis 1e: Compared to individuals who did not take the county sheriff's training, individuals who attended the training would be more confident that the workplace is secure.

Survey items testing this hypothesis included:

Q10. The security at my workplace is adequate. ($p_t = 0.7127$, $p_u = 0.6383$)

Q25. The campus classroom security is adequate to protect instructors and students while in class. ($p_t = 0.4199$, $p_u = 0.4468$)

For all survey respondents a comparison of the proportion in agreement between the trained and untrained groups indicated no apparent differences between the groups, however, significant differences in responses were found by gender and by position.

Gender results. A comparison of the proportion in agreement between the trained and untrained respondents by gender indicated that trained male respondents were more likely to agree that workplace security was adequate as compared to untrained males ($p_t = 0.7971$, $p_u = 0.6170$, Chi-Sqr = 4.5380, $p(\text{ChiSqr}) = 0.0166$). Trained females on the other hand were more likely to disagree that classroom security was adequate to protect instructors and students when compared to untrained females ($p_t = 0.3592$, $p_u = 0.5476$, Chi-Sqr = 4.3650, $p(\text{ChiSqr}) = 0.0367$).

Position results. A comparison of the proportion in agreement between the trained and untrained respondents by position indicated that trained faculty were significantly more likely to agree that workplace security was adequate as compared to untrained faculty ($p_t = 0.7895$, $p_u = 0.5185$, Chi-Sqr = 6.4350, $p(\text{ChiSqr}) = .0056$). Trained faculty were also more likely than their untrained counterparts to agree that classroom security was adequate ($p_t = 0.4561$, $p_u = 0.1852$, Chi-Sqr = 5.7770, $p(\text{ChiSqr}) = .0081$) while trained non-faculty were more likely to disagree that classroom security was adequate ($p_t = 0.4386$, $p_u = 0.6167$, Chi-Sqr = 4.9860, $p(\text{ChiSqr}) = 0.0256$).

Hypothesis 1f: Compared to individuals who did not take the county sheriff's training, individuals who attended the training would be more likely to consider a crisis or disaster a real possibility.

Related survey items included the following:

Q15. An active shooter incident at the university is a possibility. ($p_t = 0.1.000$, $p_u = 0.9894$)

Q29. A security threat, crisis or disaster at the university is a possibility. ($p_t = 0.9834$, $p_u = 0.9574$)

A comparison of the proportion in agreement between the trained and untrained groups indicated no apparent differences between the groups.

We hypothesized that the trained faculty and staff would be significantly more aware of the potential for crisis when compared to the untrained group, but the differences in awareness between the two groups were insignificant. Consistently, the faculty and staff reported that they believed an active shooter on campus or a campus crisis/disaster is a real possibility. These responses were uniform for both trained and untrained respondents.

Gender results. A comparison of the proportion in agreement between the trained and untrained respondents by gender indicated no statistically significant differences between the groups for Hypothesis H1f.

Position results. A comparison of the proportion in agreement between the trained and untrained respondents by position also indicated no statistically significant differences between the groups for Hypothesis H1f.

A large majority of all respondents, nearly 100%, agree that an active shooter incident or other security threat/disaster is a possibility.

Hypothesis Ig: Compared to individuals who did not take the county sheriff's training, individuals who attended the training would be more likely to volunteer for or accept obligations to make the campus more secure.

Only one survey item tested this hypothesis: Q23. I would volunteer to be a disaster coordinator or disaster recovery team leader for my unit. ($p_t = 0.4420$, $p_u = 0.5000$)

The premise of this hypothesis was that having attended the training an individual would be more likely to take an active role in improving campus preparedness. In reality, results for all respondents indicated that trained individuals were not more likely to be willing to volunteer. However, gender and faculty differences were interesting.

Gender results. No significant results were reported by gender, but it was interesting that trained male respondents were less likely than untrained respondents to express willingness to be an emergency training volunteer at near significant probability.

($p_t = 0.4344$, $p_u = 0.6087$, $\text{ChiSqr} = 3.339$, $p(\text{ChiSqr}) = 0.0677$).

Position results. Similarly, untrained faculty were more likely to express willingness to be a volunteer when compared to trained faculty, but the ChiSqr value was outside the significance region ($p_t = 0.3860$, $p_u = 0.5769$, $\text{ChiSqr} = 2.6350$, $p(\text{ChiSqr}) = 0.1045$).

Survey Items Regarding Training Impacts

The last two hypotheses were associated with questions directed only to the 181 respondents who completed the training. About 92% of respondents who completed the training agreed that the training was effective. The table presentation of the impacts of the training, while similar to the previous tables, will use a little different nomenclature as follows.

- p_{tA} = proportion of the trained respondents who agree
- p_{tD} = proportion of the trained respondents who disagree

Hypothesis IIIa: Having taken the county sheriff's training campus employees will feel safer at work.

Table 3: Results and Hypothesis Tests for Hypothesis IIIa						
Questions testing this hypothesis	p_{tA}	Alternate Hypothesis	* 95% CI, P_{tA}			
Q36. Having attended the emergency training I feel safer while in my office or at my work station.	0.6851	$p_{tA} > p_{tD}$	LBound: 0.6142 UBound: 0.7483			
Q37. Having attended the emergency training I feel safer at other campus locations including classrooms.	0.6243	$p_{tA} > p_{tD}$	LBound: 0.5519 UBound: 0.6916			
Gender Results						
	Male p_{tA}	LBound	UBound	Female p_{tA}	LBound	UBound
Q36. Safer	0.7429	0.6298	0.8307	0.6697	0.5770	0.7509
Q37. SafeRoom	0.7000	0.5846	0.7946	0.6055	0.5117	0.6922
Position Results						
	Faculty p_{tA}	LBound	UBound	NonFac p_{tA}	LBound	UBound
Q36. Safer	0.6897	0.5620	0.7938	0.6748	0.5878	0.7512
Q37. SafeRoom	0.6724	0.5442	0.7792	0.6098	0.5215	0.6914

* 95% confidence interval calculated using Newcombes Method (Newcombe,1998)

The hypothesis that training would increase the respondents' perception of safety on campus was supported by these results for all trained respondents including by gender and by position.

Hypothesis IIb: Having taken the county sheriff's training campus employees will feel more competent to respond to a crisis or disaster on campus.

Table 4: Results and Hypothesis Tests for Hypothesis IIIb						
Questions testing this hypothesis	P_{tA}	Alternate Hypothesis		* 95% CI, P_{tA}		
Q35. Having attended the emergency training I feel better prepared to respond appropriately to security, crisis or disaster events should one occur on campus.	0.8895	$P_{tA} > P_{tD}$		LBound: 0.8355 UBound: 0.9273		
Gender Results						
	Male p_{tA}	LBound	UBound	Female p_{tA}	LBound	UBound
Q35. Prepared	0.8571	0.7566	0.9205	0.9266	0.8618	0.9623
Position Results						
	Faculty p_{tA}	LBound	UBound	NonFac p_{tA}	LBound	UBound
Q35. Prepared	0.9138	0.8136	0.9626	0.8862	0.8180	0.9310

* 95% confidence interval calculated using Newcombes Method (Newcombe, 1998)

The hypothesis that the training would increase the respondents' perception of competence in responding to an emergency was supported by these results. About 90% of trained respondents indicated that they felt better prepared to respond appropriately in an emergency.

DISCUSSION AND CONCLUSIONS

As an exploratory study much was learned from this survey about faculty and staff perceptions of the state of crisis preparedness and perceptions about campus training, emergency plans and the level of campus security. Note that these results are not generalizable, but are applicable only to the specific school, faculty and staff surveyed.

However we validated a number of constructs found in the research literature regarding safety training, including differences by gender and position. A few themes emerged from this survey regarding faculty and staff perceptions about preparedness including the following.

In general the respondents, both trained and untrained, were not very familiar with the safety policies and procedures of the campus including little awareness of utility shutoffs, contingency plans, locations of fire alarms and details of the campus disaster plan including the emergency communication plan. The one area where there was general familiarity was the location of exits. Trained respondents had superior knowledge of the evacuation plan and the emergency alert system, both of which were discussed at the training.

The respondents, trained and untrained, were confident that the ongoing operations of the campus would not be impeded by a crisis or disaster. This confidence was not based on information provided at the training session.

With some exceptions, faculty and staff, both trained and untrained, expressed the belief that both workspaces (offices) and classrooms were not secure. In addition they expressed consensus that an active shooter on campus or other crisis was a future possibility. The fact that training sessions were being held to develop respondent capabilities to respond successfully in an emergency situation supported the belief that a campus crisis was a possibility. In the training sessions participants expressed questions about possible scenarios, many of which, were

not addressed by current campus policies. The ambiguous nature of future emergency scenarios left many unanswered questions, i.e. an incident was likely but it was unclear what the incident characteristics were likely to be.

The significant differences between trained and untrained responses related to factual information. Significant differences between trained and untrained respondents included,

- awareness of the building evacuation plan,
- familiarity with the emergency alert system,
- knowledge about the location of the closest emergency call box and
- knowledge of where the emergency exits were in relation to their desk/office and classrooms.

The training content that related to these topics was concise and easy to understand. However, a number of other training topics relating to processes with serial steps, dependent logic and multiple alternative responses were not as impactful for trained respondents. Examples where training did not have a desirable impact were policy responses for bomb threats or an active shooter. Perhaps future training sessions that relate to campus policy or procedures could be accompanied by graphical handouts, with flow-charts or other memory supports.

Differences were found by gender and by position as predicted in the emergency preparedness literature suggesting that training sessions should be constructed with potential differences in mind. Specific differentiated training content and delivery by gender or position is beyond the intent and scope of this study. Evidence is provided that differences of response, understanding and impact by gender and position do exist. Females were much more likely to recall factual training content than trained male respondents.

One interesting result for females and non-faculty respondents was that trained individuals were likely to disagree that classroom security was adequate. This contradictory finding indicated that for some populations safety training leads to greater feelings of fear and anxiety regarding safety and security preparations.

Another interesting counter result was that untrained males were more likely to agree with statements indicating a willingness to volunteer in disaster preparedness. We hypothesized that trained individuals, including males, would be motivated by the preparedness presentation to take a more active role in campus preparedness, when in reality perhaps many trained male respondents were less willing to volunteer as compared to untrained males. Additional inquiry would help to understand this result.

Finally, the hypothesis that the training would boost the level of confidence and sense of security for faculty and staff participating in the training was supported since trained faculty reported that they did feel safer in their offices and reported feeling significantly safer in their classrooms after attending the training. Similarly, trained individuals indicated that the training resulted in their feeling better prepared to respond appropriately in an emergency.

Future research into this topic would include larger sample sizes, more generalizable populations of study and careful refinement of the survey instrument based on lessons learned from this study.

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Designing a Graduate MBA Course Using an Accelerated Hybrid Format- Lessons Learned

Barbara Lamberton, University of Hartford, West Hartford, CT, USA

ABSTRACT

Technology, demographics and financial considerations are changing the landscape of higher education. In this context, online, hybrid and accelerated learning approaches have been suggested as alternatives to traditional semester long face-to-face course delivery. The purpose of this paper is to describe a case study of the redesign and implementation of a required MBA course to an accelerated hybrid course delivery format. The description includes lessons learned, feedback from students and an illustration of backwards design, an outcome-based approach to course redesign. This paper provides valuable information for anyone contemplating a transition to an accelerated and/or hybrid format.

Keywords: Hybrid courses, Hybrid learning, Blended courses, Blended learning, Accelerated learning, Intensive courses, Course redesign, Backwards design.

INTRODUCTION

Rising tuitions and the escalating student loan burden make it incumbent on colleges and universities to critically evaluate the relevance and cost effectiveness of the programs and courses they deliver. Although a college education continues to be valued worldwide (OECD, 2019), the landscape of higher education is changing. Facing demographic and financial challenges, educators and administrators have been exploring alternatives to the traditional face-to-face (FTF) setting for college courses. Technology is allowing institutions of higher learning to look beyond their local and regional markets while providing the flexibility valued by tech savvy students and adult learners. In this context, online, hybrid and accelerated learning approaches have been suggested as alternatives to traditional semester long FTF course delivery. The purpose of this paper is to describe a case study of the transition from an accelerated FTF to an accelerated hybrid course delivery method for an accounting course required in the Masters in Business Administration (MBA).

BACKGROUND

The setting for this case is a medium sized private school that has offers a Masters in Business Administration (MBA) degree. The business school has several other graduate programs and an undergraduate program in business.

For a number of years MBA students at this school have had the option to take courses FTF or online. Traditionally, during the academic year, both formats spanned a fifteen-week semester with the FTF courses taught at night and the online course conducted asynchronously. The FTF courses were held in one of two time slots of one-hundred forty minutes each with a ten-minute break between the two sessions. Students who wanted to complete two MBA courses in a semester had the option to take the two courses on different nights or to take one course in the first session and the second one immediately afterwards.

Starting in January 2018, the business school began to offer the MBA classes in a seven-week accelerated format with students given the option of the FTF or online format. Students with full time jobs who wanted to take two courses a semester were encouraged to take one course at a time because of the accelerated pace of the seven-week courses. For the most part student reaction to the accelerated format was positive with students new to the program slightly more positive than those used to the semester long FTF format.

In planning and developing the accelerated format, faculty expected students to attend all seven-nights for the entire class period. Attendance was considered critical because each class was designed to cover over twice as much material as that covered in the fifteen-week format. Students were given advance notice of the attendance expectations via posting of the syllabus at least one week ahead of the start of the course. The attendance policy was reinforced by the academic advising staff. The posted syllabus stated that attendance was expected and students were expected to come to class prepared having read the assigned materials and completed any assigned homework.

The syllabus also clearly stated that since exam dates were known at the start of the class students were expected to arrange their schedules to be in class on those assigned dates. When the accelerated courses were first offered some leeway was given if a student knew at the start of the course that one class would be missed.

Several issues with the accelerated format became apparent, almost immediately. Some students interpreted the wording in the syllabus to mean that attendance was not really required. Giving students the flexibility to miss one class was interpreted by several students to mean that missing multiple classes was fine. These issues ran across more than the accounting course so faculty agreed to a policy requiring attendance for all seven-week FTF classes. Although exceptions were made for extraordinary circumstances, a student missing even one class would be subject to administrative withdrawal from the course. Students who knew upfront that they would need to miss a class were advised to take the online version or wait to take the FTF course at a later time. This solution worked for most students but it was soon found that there were a number of students who strongly preferred FTF and were reluctant to take online courses. In some cases, the reluctance reflected uneasiness about reliance on technology. For others, including a few tech savvy students, the FTF format was preferred because of the ability to have spontaneous questions answered immediately during the class period. For students who wanted to ask questions in person, other options such as emails, video conferencing, posting of frequently asked questions were not enough. For that reason, the decision was made to conduct a pilot study of the MBA accounting course using an accelerated hybrid format.

PREVIOUS LITERATURE ON ACCELERATED LEARNING

Interest in helping people learn faster has been around for decades. Some authors (Boyd, 2004; McKeon, 1995) credit George Lozanov for bringing the concept of accelerated learning to the forefront. In the early 1960s, Lozanov, a Bulgarian psychiatrist, used his knowledge of the human brain to help people learn foreign languages faster (McKeon, 1995). In the 1970s, corporate trainers began looking to accelerated learning methods to improve the outcomes and cost effectiveness of their training programs (McKeon, 1995). Adult education also played a role in promoting accelerated learning. Wlodkowski & Kasworm (2003) state that "... adult education ...has had an enormous influence on the shape and trajectory of accelerated learning" (p.95) with an increasing number of working adults seeking accelerated courses (Wlodkowski & Ginsberg, 2010).

Research indicates that both educators and students face challenges and opportunities when classes are transitioned from semester long to a shorter time frame (Scott, 2003; Scott & Conrad, 1992 ; Serdyukov & Serdyukova, 2004; Wlodkowski, 2003). Scott (2003) provides one of the broadest descriptions of this issue defining "... classes offered in compressed, accelerated, or condensed formats" (p.29) as intensive classes. While Scott views accelerated courses as a subset of intensive courses, other researchers see accelerated courses and intensive courses as having somewhat different characteristics (Brookfield, 2003; Serdyukov, 2008; Serdyukov & Serdyukova, 2004; Wlodkowski, 2003).

Some authors (Brookfield, 2003; Wlodkowski, 2003) have suggested that contact hours, as a metric, is one way to describe accelerated courses. Referring to in person classes, Wlodkowski indicates that accelerated courses will have less contact with the instructor than traditional courses. Serdyukov (2008), on the other hand, defines accelerated courses as having "... the same number of class hours as in a traditional course but delivered in a shorter course duration" (p.45). Both descriptions, however, deal with the task of compressing learning objectives into a short time frame.

Since the literature seems to lack a consistent definition of accelerated versus intensive learning, the literature review focused on both terms, accelerated and intensive learning. For purposes of this paper the terms, accelerated and intensive learning, will be used interchangeably to discuss the various issues involved in covering semester long learning objectives in a smaller time period.

The research suggests that students are interested in accelerated courses for several reasons not the least of which is the ability to quickly complete coursework (Serdyukov, 2008; Wlodkowski & Ginsberg, 2010). Accelerated learning is also thought to be more flexible than the conventional semester long format (Harwood, McDonald, Butler, Drago, & Schlumpf, 2018; Serdyukov, 2008; Wlodkowski & Ginsberg, 2010) allowing students to pursue higher education in spite of work and personal obligations.

Based on an in-depth qualitative analysis, Scott (2003) suggests that "... instructor enthusiasm and experience, active learning, classroom interaction, good course organization, student input, collegial classroom atmosphere, and a relaxed learning environment were essential..." to successful transition to accelerated formats. Having a plan or

strategy for dealing with student absences is also critical. For example, in a seven-week accelerated course, missing two weeks is the equivalent of missing nearly 29% of the class. Wlodkowski & Ginsberg (2010) suggest consulting other members of the faculty to determine the best way to deal with the issue. The authors further suggest that a clear attendance policy is especially important for accelerated courses. Maintaining motivation and momentum is also crucial for short term courses. Students in accelerated classes, especially adult learners, need to see the relevance and application of the course material to “real life” situations (Boyd, 2004; McKeon, 1995; Wlodkowski & Ginsberg, 2010).

THE PILOT STUDY

The MBA director asked the author to design and pilot a hybrid version of the MBA program’s required accounting class. The hybrid course was scheduled for seven weekly evening FTF sessions of 160 minutes with online content expected to approximate the equivalent of 120 minutes of the in-person class. Given a two-month deadline, the author delved into the literature to guide the transition. The literature review had two major goals. The first goal was to obtain a working knowledge of terminology and the second goal was to accumulate information about certain best practices.

The review of the literature demonstrated that the terms, hybrid learning and blended learning, are often used interchangeably (Allen & Seaman, 2010; O’Byrne & Pytash, 2015; Powell et al., 2015; Singh, 2017). On the other hand, there was no universally accepted definition of the underlying concept of blended/hybrid learning. A search of the literature, however, did reveal three somewhat similar definitions of the concept (Allen & Seaman, 2010; Garrison & Kanuka, 2004; Graham, 2006). The most heavily cited of the three definitions is the one proposed by Garrison and Kanuka (2004) (3,571 citations source: Google Scholar, September 29, 2019). Garrison and Kanuka (2004) describe blended learning as “... the thoughtful integration of classroom face-to-face learning experiences with online learning experiences” (p.96). Graham (2006) takes a slightly different perspective stating that “Blended learning systems combine face-to-face-instruction with computer-mediated instruction” (p.5) (2373 citations source: Google Scholar, September 29, 2019). The most recent of the definitions (Allen & Seaman, 2010) describes a blended/hybrid course as one “... that blends online and face-to-face delivery” (p.5) (1045 citations source: Google Scholar, September 29, 2019). Allen & Seaman (2010) present blended/hybrid courses on a continuum between the traditional course and an online format and suggest that blended/hybrid courses have 30 to 79% of the content delivered online. The piloted course had approximately 43% delivered online.

The literature on blended/hybrid learning was massive so the decision was made to reduce the scope to best practices. With that perspective in mind, the literature review focused on best practices in two areas: (1) how to handle lectures and (2) how to design learning experience for hybrid courses. Ultimately, several books supplemented with select articles provided the most useful sources of best practices.

Lectures Several authors have suggested that, if done well, in person lectures can be quite effective (Bowen, 2012; Nilson, 2010). The implication was that, with some forethought and careful planning, lectures can effectively engage students in a hybrid setting. Rather than eliminating lectures, Nilson (2010) suggests that instructors make lectures interactive by inserting “...two- to fifteen- minute breaks for student activities” (p106). Based on this advice, in the FTF portion of the hybrid pilot, lectures were limited to one learning objective at a time immediately followed by an active learning exercise. The active learning exercises were designed to reinforce the material covered in the lecture.

Designing effective learning experiences The authors of a book on course design (Wiggins & McTighe, 2005) suggest we think backwards from the expected results when planning our learning activities. According to the authors “...our courses should be logically inferred from the results, not derived from the methods, books, and activities with which we are most comfortable” (p.14). In their book, Wiggins & McTighe present a three-step template for course design that starts with expected results and ends with a learning plan. The authors also suggest that course designers carefully match content to the best teaching approach. Direct instruction is advised for content that is “... discrete, unproblematic and enabling” (p.244) while the delivery of other content needs a different approach. Wiggins & McTighe argue that constructivist facilitation, sometimes called guided inquiry (Kuhlthau & Maniotes, 2010), may be needed for content that is “... subtle, prone to misunderstanding, and in need of personal testing and verification”(p.244).

Table 1 illustrates application of the Wiggins & McTighe template to an expected learning outcome in the hybrid accounting class. Based on the template, the expected outcome is a reasoned recommendation based on an analysis

that requires basic cost estimation skill. Success or failure at achieving that outcome is assessed via a case study. The resulting learning plan, the third step, includes both individual and group activities, some online and some in class. The use of the template was especially helpful in designing a learning plan for the pilot course.

Table 1: Backwards Design Illustration

Step One Results

Students are expected to know how cost behavior patterns influence decision making. Specifically, students need to correctly extract and analyze information from accounting reports and make a reasoned recommendation based on their analysis.

Step Two Assessment

The students demonstrate the achievement of the results through successful completion of a case study.

Step Three Activities and assignments

Targeted activities and assignments give students experiences applying cost estimation techniques and synthesizing information from various sources. Some students need to practice more than others when learning cost estimation techniques. Since the content involves acquisition of a discrete skill, a direct instruction method can be effective for this type of content. For example, the posting of an online tutorial with practice problems helps students learn the basics of cost estimation at their own pace while receiving online feedback through the practice exercise. Once the basic cost estimation skill is attained, completion of the case study requires students to reflect on the other facts of the case in order to successfully complete the assignment. This aspect of the assignment involves guided inquiry where facilitation and periodical feedback becomes important. Timely feedback, assistance through virtual office hours, posted FAQs and encouraging students to help each other can keep students engaged. Students are encouraged to collaborate on a solution and present their recommendations to the class. Follow-up to in class work is facilitated through group discussion boards and wikis.

Source: This table illustrates application of the Wiggins & McTighe (2005) template for developing a learning plan for a hybrid accounting course (p.22).

Linder (2017) presents a helpful multiple step method for determining which learning activities should be FTF and which should be online or both. She suggests starting with learning activities that have worked well in the past for FTF course and then evaluate each of them for suitability for FTF or online delivery. Linder provides a checklist to guide this process. The checklist includes nine question such as “Will moving this learning activity online save additional class time for other important activities” (p.68). Each of the activities is then categorized as FTF, online or both. For example, an online tutorial on cost estimation would save class time while giving students who need more practice the resources to self-pace acquisition of that particular skill.

In transitioning to a hybrid course, the effect of that change on students also needs to be carefully considered (Christensen, 2003; Linder, 2017). In a best practice tip, Linder (2017) suggests that instructors need to “... remember that online components in blended learning environments are meant to replace *face-to-face* time” (p.13) not add unreasonable burden on the students. In discussing the challenges involved in transitioning to a blended format Christensen (2003) observes that the course design process is iterative and warns that “... finding the right blend of online and face-to-face instruction is a balancing act for both instructors and students” (p.242).

Participants The students in both groups, FTF and hybrid, were working full time and had previously taken three courses in the accelerated MBA program. Both groups were part of cohorts from the same industry. There were 23 students in the FTF class and 20 in the hybrid version.

OBSERVATIONS

A concerted effort was made to obtain feedback from students about both the FTF and hybrid class formats. Students knew the accounting course was a pilot and were encouraged to be candid in expressing their opinions about the course format. This feedback is summarized below:

Hybrid format comments On the positive side, most students in the hybrid class liked the mix of in class and online work and found the real-world examples helpful in understanding the material. In addition, these students felt that the pace of the class was acceptable, expectations were made clear at the start of the class and the materials were well-organized. The easing of the attendance policy was praised by several students who needed to miss a class. These students liked the flexibility of the hybrid format for scheduling business and/or personal obligations and the original policy requiring full attendance was difficult to follow. Several students remarked that they liked the group work. Groups were setup on the learning management system to facilitate collaboration among the group members outside of class.

The positive opinions were not universally held, however. Several students suggested that there should be more time allocated to the FTF class and less to online. There were also some concerns about the layout of the online material. Several students felt that it was sometimes difficult to navigate through the posting of online material. One student felt the hybrid format required too much online work.

Control group versus Hybrid group In an anonymous, online survey, students from both the control group (FTF) and hybrid group were asked eight questions about their experiences with the class. In both classes all but one student in each class responded for a total of forty-one completed surveys. The survey asked about the usefulness of the material. Previous research indicates that adult learners needs to see the relevance of the course material to their own lives, its usefulness (Boyd, 2004; McKeon, 1995; Pallof & Pratt, 2007; Wlodkowski & Ginsberg, 2010). The survey also asked about instructor enthusiasm. Scott (2003) observed "...that instructor enthusiasm was infectious and motivated them [students] to commit more energy to learning" (p.30). The research of Pallof & and Pratt (2007) highlights that students need to feel respected and respect is shown by adequate feedback and clear performance expectations. Encouraging participation can also be viewed as form of respect. By encouraging students to take part in the class it signals that the instructor values their opinions and contributions to the class.

As shown on Table 2, with the exception of one question dealing with overall instructor effectiveness, the hybrid group responses were slightly less positive about the course but none of the differences were statistically significant. The slightly lower ratings for the hybrid course compared to the FTF course are not surprising given that this was the students' first experience with the hybrid format in the program. In addition, research on student satisfaction with hybrid courses suggests that some students feel that the hybrid approach places too much responsibility on their shoulders (Albrecht, 2006; Elkins, 2015). One implication for future changes to the course is that students new to the hybrid format may need more encouragement and guidance.

Table 2: Evaluations of FTF versus Hybrid Course Format

Usefulness- The course provided useful information and/or skills.		
	FTF	Hybrid
Strongly agree	63.6%	52.6%
Agree	31.8%	42.1%
Neutral	4.5%	5.3%
Chi-Square = .571 $\alpha = .772$		
Understandable -The instructor presented the subject material in a manner I could understand.		
	FTF	Hybrid
Strongly agree	81.8%	73.7%
Agree	18.2%	21.1%
Neutral	0.0%	5.3%
Chi-Square = 1.287 $\alpha = .525$		
Table 2 continued on the next page		

Table 2: Evaluations of FTF versus Hybrid Course Format - continued		
-The instructor was enthusiastic about the subject.		
	FTF	Hybrid
Strongly agree	68.2%	47.4%
Agree	31.8%	47.4%
Neutral	0.0%	5.3%
Chi-Square = 2.544 $\alpha = .280$		
Responsiveness -The instructor was responsive to student needs.		
	FTF	Hybrid
Strongly agree	77.3%	57.9%
Agree	22.7%	42.1%
Neutral	0.0%	0.0%
Chi-Square = 1.768 $\alpha = .184$		
Participation- The instructor encouraged students to participate.		
	FTF	Hybrid
Strongly agree	68.2%	52.6%
Agree	22.7%	42.1%
Neutral	9.1%	5.3%
Chi-Square = 1.816 $\alpha = .403$		
Communication- The instructor clearly communicated performance expectations.		
	FTF	Hybrid
Strongly agree	77.3%	52.6%
Agree	22.7%	47.4%
Neutral	0.0%	0.0%
Chi-Square = 2.753 $\alpha = .097$		
Feedback -The instructor provided helpful feedback		
	FTF	Hybrid
Strongly agree	68.2%	52.6%
Agree	31.8%	42.1%
Neutral	0.00%	5.3%
Chi-Square = 1.857 $\alpha = .395$		
Effectiveness- Overall, the instructor was effective.		
	FTF	Hybrid
Strongly agree	68.2%	73.7%
Agree	31.8%	21.1%
Neutral	0.00%	5.3%
Chi-Square = 1.642 $\alpha = .440$		

CONCLUSIONS

Both students and administrators are demanding that more options be available for those wanting to continue their education. Yet, there are real challenges associated with transitioning to less traditional formats because of the need to adapt learning experiences and teaching methods to less FTF time. Designing and resigning courses can be time consuming and, at times, overwhelming and student expectations and reactions also need to be considered. The purpose of this paper is to describe experiences redesigning a graduate accounting class to accommodate both an accelerated and hybrid format. The case describes the backward design framework, a useful tool for planning effective learning experiences. Generalizability is always an issue with case studies. Nevertheless, the paper provides valuable information for anyone contemplating a transition to an accelerated and/or hybrid format.

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Our Personal Landfill: Using the Campus as a Living Laboratory to Teach about Sustainable Waste Management

Katlyn Bradshaw, Hannah Baldizon, Jesse Morris, Susana Velez-Castrillon,
University of West Georgia, Carrollton, Georgia, United States.

ABSTRACT

Educational institutions can be used as places to learn about sustainability without major investments of time and money. Because campuses have their own environmental footprints, they can be used as learning labs to teach students about how their actions impact the sustainability of their schools. We present an exercise for business students based on auditing a dumpster to reveal the most common types of recyclables and waste generated by a major university's student body, providing a glimpse into waste generation at other universities. We present the findings of our exercise, the students' response to participating in the audit, and surveys and classroom assignments that can be used to implement a waste audit in other campuses.

Keywords: Sustainability, Campus as a Living Laboratory, Waste Audit, Corporate Social Responsibility

INTRODUCTION

One of the stated goals of higher education is to develop students' critical thinking skills. Management educators seek to apply those skills in the study of motivation, leadership and change. Integrating sustainability and Triple Bottom Line thinking (Elkington, 1994), as accomplished in the waste audit process, provides an ideal mechanism for fostering critical thinking. The auditing process can be rewarding and challenging, especially if faculty work with university staff to use the campus as a case study for investigating issues such as energy and water conservation, reduction of waste, and closed loop supply chains as recommended by the Association for the Advancement of Sustainability in Higher Education (AASHE, 2017).

Tracking solid waste and recycling are some of the first ways in which organizations engage in sustainability efforts, because they are easy to justify in economic terms (Meyer, 2000). Therefore, a waste management audit can be one of the simplest and first steps to quantify the waste generated by an organization and identify potential areas for waste reduction and management.

We used a dumpster audit during our university's Earth Week as an experiential exercise to teach environmental sustainability and transform our campus into a learning lab. Through a collaboration with university facilities, the Sustainability Council, and professors in Geosciences, English, and Business, we were able to examine the contents of a general dumpster - not dedicated to recycling or to medical waste - as a means to track the following amounts:

- Recyclable materials present in the general dumpster
- Non-recyclable materials and materials which cannot be recycled by the university or its waste management provider (such as Styrofoam, glass, and electronic waste)
- Reusable items (textbooks, stationery, office supplies, etc.)

This type of experiential exercise can also be used to teach business topics such as the effect of tariffs on the trade of scrap and commodities, the influence of legislation such as bans of single-use plastics like straws in some cities around the world, and the characteristics of the waste management industry.

IMPLEMENTATION, ASSIGNMENTS, AND RESULTS

We present the implementation and results of the waste audit, along with the questionnaire assigned to students in the Corporate Social Responsibility classes within the College of Business.

Logistics

The dumpster audit took place in a grassy area on campus during Earth Week. To conduct the audit, Facilities arranged the following:

1. The dumpster audit area was covered with a tarp to protect the ground and maintain control of the waste upon unloading the dumpster.
2. Disposable gloves and face masks were available for all participants.
3. Four signs marked different areas in the tarp where each one of the recyclables was to be placed: paper, cardboard, aluminum, and plastic. These signs can change if your school recycles other materials like glass. *[Instructor Note: The first time we carried the waste audit, students were surprised at the amount of Styrofoam generated in our campus, so in 2018 we decided to add a fifth sign for Styrofoam to have a visual aid to convince on-campus vendors using Styrofoam of the need to switch to a more readily recyclable material.]*
4. A representative from a local organization that educates the public about recycling (Keep Carroll Beautiful) gave a brief overview of how to classify recyclable and non-recyclable materials. For example, paper cups with plastic linings cannot be recycled. Plastic bags should not be mixed with other plastic. Cardboard that is dirty with food (pizza boxes, for instance) cannot be recycled either. *[Instructor note: Instructors can explain this themselves, and explain the role that dirty loads of recyclables have had in the trade of scraps between the US and China. Giffey (2019) presents a simple explanation of the problems created by contaminating recyclables with materials that cannot be recycled.]*
5. After the bagged trash was dumped on the tarp, students opened the bags and classified materials by placing them in the designated areas (paper, plastic, aluminum separately).
6. The contents at each area were bagged together and weighed throughout the day to complete a calculation of total weight at the end of the audit.
7. The waste audit was conducted between 8:00 a.m. and 3:00 p.m. During this time, students were able to help on their own or attend with one of their classes. Some professors offered extra credit, so we arranged for sign-in sheets. We also asked students to take pictures for their assignments.
8. At 3:00 pm, Facilities did the final clean-up removing the tarp and putting all bags of general scraps in the dumpster.

Post-audit homework

Assigning a questionnaire like the one we developed helps students understand the practical application of this experiential exercise. We present a list of questions and their answers. Note that many of the answers would be particular to your institution, and that some answers might change every time you conduct this exercise as the amount of recyclables recovered varies, and the prices of the commodities recovered fluctuate.

1. Define a waste audit

A waste audit can be defined as an analysis of a facility or organization's waste system. During the audit, you identify the different types and amounts of recyclable materials found in your waste containers. You can then identify how much waste your facility generates and how much of that waste could have been recycled.

2. What could be three (3) objectives of conducting waste audit? These can come from research, or from your own experience after taking part in the waste audit.

Organizations may carry out waste audits with many different purposes. For instance:

- to determine composition and quantities of waste being generated
- to measure effectiveness of existing waste management systems
- to identify opportunities for improving waste management systems and strategies
- to collect baseline data for measuring the effectiveness of waste minimization strategies.

3. What is the source (location) of the dumpster being audited?

In 2017, we audited the School of Nursing's dumpster. For the 2018 audit, facilities mixed trash from all academic buildings to have a more representative sample.

[Instructor note: This would be specific to each school, but we recommend a sampling of different buildings that do not include mostly clean waste. It could also be interesting for business students to audit the dumpster of their own college building]

4. What materials were in the dumpster? Describe in general terms what you observed during the dumpster audit. Was there anything surprising?

During the two waste audits at UWG some materials such as plastic, paper, aluminum and cardboard were separated and recycled, but others were not. These materials that *could* be recycled, but were not able to be recycled (for safety

or logistical reasons) are Styrofoam and glass. We were unable to recycle the glass due to safety concerns. Also, we were unable to recycle Styrofoam due to the lack of recycling facilities nearby that recycle this material. Other materials included library books, keyboards, food still in the wrapper, and coffee pods, among others.

[Instructor note: The content of the dumpster would vary according to the school and the dumpster chosen. For example, the trash in a dumpster from one of the cafeterias would be very different from the trash coming from an administrative building.]

5. Please complete this table about the materials that were separated for recycling.

The instructor provides this complete table for the students to be able to do other calculations in the assignment. The amounts will change every time a new waste audit is conducted. Table 1 shows the amount of recyclables recovered in each one of the waste audits. UWG facilities weighed all these and provided the amounts to the instructors.

In 2017, facilities weighed each material separately. In 2018, facilities didn't record the individual commodities during the dumpster dive just the total weight. The total weight of mixed recyclables was 344.25 pounds. We assumed that the percentages from 2017 do not change much because no new programs related to waste and recycling were launched between 2017 and 2018.

Note that in 2018 we recovered 176.38 pounds less than in 2017. This might be due to better recycling, leading to less material being mixed up with the general waste. It can also be due to using a sampling of dumpsters from the academic buildings in 2018 vs. a dumpster from the School of Nursing in 2017.

A perspicacious reviewer noted that because we do not have the total weight of the dumpsters (recyclables plus everything else), we cannot calculate how much recyclables are collected as a percentage of the total weight. If we had data about the dumpsters' total weights, it might be possible to discover that in any given year, even if less trash is in the dumpster, more recyclables can be recovered as a percentage of the total weight. Thus, for future waste audits, the total weight of all scraps should be recorded in order to track year-to-year changes in the amount of recyclables as a percentage of total scraps.

Table 1: Amount of Recyclable Materials Recovered from the General Trash

Material	Actual Weight 2017 (lb)	Percentage of the Recyclables Recovered	Estimated Weight 2018 (lb) (Based on 2017 %)
Plastic	127.90	24.57	84.57
Paper	323.50	62.14	213.92
Aluminum	10.30	1.98	6.81
Cardboard	58.90	11.31	38.95
Total	520.60	100.00	344.25
Difference			-176.35

[Instructor note: although we wanted to have separate weights for each material every year, a change in Facilities led to the 'mistake' of all recyclables being weighted together. Having exact weights (like in 2017) gives more confidence in the rest of calculations. Having a total weight (such as in 2018) helps in two ways: it expedites the weighing process as no one has to keep track of each material separately, and it gives more work to students as they will need to calculate the weights.]

6. What is the value of those materials? Which material is more valuable per pound?

In 2017, UWG Facilities obtained the price of each commodity from the vendor that buys the recyclables from the university. This makes this answer and the answer to question 7 very straightforward. In 2018, we obtained information from a recycling markets research company to get a range of prices, thus allowing to estimate ranges rather than single values.

The most valuable material is Aluminum.

Table 2: Price per Pound of the Recyclable Materials

Material	Price 2017 USD/lb. As quoted by the vendor	Price Range 2018 USD/lb. Source: RecyclingMarkets.Net	Price Trend (2017-2018)
Plastic	\$0.12	\$0.13 to \$0.16	Up
Paper	\$0.10	\$0.015 to \$0.045	Down
Aluminum	\$0.44	\$0.60 to \$0.70	Up
Cardboard	\$0.08	\$0.05 to \$0.09	Stable

[Instructor note: two or more years of price data allow to show changes in the prices of these commodities. An additional assignment could be to propose explanations for price fluctuations. For example, tariff wars between the US and China have negatively affected the price that China pays to recycle plastic and paper. In an article in the New York Times, Corkery (2019) discusses several issues in the scrap markets, including the trade wars and the effect of these changes in recycling on waste management companies.

Aluminum was the most valuable recyclable in both years, and this should be considered when students make recommendations as one of the most efficient ways to make money by recycling is to have more aluminum and less plastic in the waste stream. For example, Delta Airlines has raised over \$ 1 Million USD by recycling waste from food and beverage, including enough aluminum to make five Airbus 350. The funds raised helped to build 11 homes for Habitat for Humanity (Habitat for Humanity, 2018). Also, because paper is the less valuable material recycling efforts can raise more income if focused on plastic and aluminum.]

7. Based on your answers to questions 5 and 6, what is the total value of the materials in the dumpster?

Table 3 presents the value of the recyclables that were recovered in the two waste audits. It is difficult to make comparisons because we recovered 176.35 less pounds of material in 2018 than in 2017.

Table 3: Total Value of the Recyclable Materials Mixed Up with the General Waste in One Dumpster

Material	USD 2017	USD ESTIMATE 2018	
		<i>Low end</i>	<i>High end</i>
Plastic	\$15.35	\$6.71	\$8.26
Paper	\$32.35	\$2.84	\$8.52
Aluminum	\$4.53	\$20.66	\$24.1
Cardboard	\$4.71	\$3.44	\$6.2
Total Value (USD)	\$56.94	\$33.65	\$47.08

[Instructor note: Students complete this table multiplying the amount of each material (from Table 1) recovered in the audit by its price (Table 2)]

8. How many similar dumpsters are at UWG? Based on the number of dumpster, and assuming they all contain a similar amount of recyclables, calculate the value of the recyclables that end up in the general waste stream.

At UWG there is a total of 9 dumpsters of this size on campus. Thus, we can extrapolate these to the other dumpsters:

Table 4: Total Value of the Recyclable Materials Mixed Up with the General Waste in All Dumpsters

	USD 2017	USD ESTIMATE 2018	
		Low end	High end
Value per dumpster	\$56.94	\$33.65	\$47.08
x 9 dumpsters	\$512.46	\$302.85	\$423.72

9. How often is each dumpster picked up?

All dumpsters are picked up daily regardless of how full they are.

10. Based in table 4 and a weekly collection schedule, estimate the potential value of the recyclables.

During the waste audit we used a full dumpster and based on the trash collection schedule we assume that 9 similar dumpsters are picked up daily.

Table 5: Total Annualized Value of the Recyclable Materials Mixed Up with the General Waste in All Dumpsters

	USD 2017	USD ESTIMATE 2018	
		Low end	High end
Value of 9 dumpsters (from Table 4)	\$512.46	\$302.85	\$423.72
x 275 days (365 days – 90 days of vacation)	\$140,926.50	\$83,283.75	\$116,523.00
x 140 days (14 weeks/term x 5 days/week x 2 terms)	\$71,744.40	\$42,399.00	\$59,320.80

[Instructor note: We present two different estimates: one using 275 days (all work days minus 3 months of vacation), and another one based on 14 weeks of classes per two terms including only weekdays for a more conservative estimate.]

11. How much do we pay per dumpster?

The University spends \$500 a week to pick up all of the dumpsters. Therefore, in one week, we pay approximately \$55.56 per dumpster. These dumpsters are picked up approximately 50 weeks out of the year.

Table 5: Total Annualized Cost of Trash Pick Up

Year	One Dumpster Per Day	One Dumpster Per Year	All Dumpsters Per Week	All Dumpsters (9) Per Year
2017	\$55.56	\$2,777.78	\$500.00	\$25,000.00

[Instructor note: this information was provided by UWG Facilities. We use this calculation to show the amount of money that the university spends on trash collection. It is important to explain that more recycling could reduce the number of dumpster on campus and lead to a reduction of the waste management bill.]

12. Using the 3R framework (Reduce, reuse, recycle), choose one of the materials on question 6 and recommend at least 2 ways in which it could be reduced or reused.

We present here some of the answers students have provided to this question, and which we presented to the committee that organized EarthWeek during the debriefing about the waste audit.

- Reduce the number of recyclables that are mixed with the general waste by increasing the number of recycling bins around campus.
- To avoid the problem of dirty recycling loads, the recycling bins should have explanations and pictures of the materials that go in each receptacle.

- Old textbooks can be donated to a local library or to organizations like Books for Africa that focus on taking used textbooks from the USA to developing countries.
- Paper can be reused as animal bedding for local pet shelters.
- Increase the number of water fountains to refill water bottles.
- Change vending machines from plastic bottles to aluminum cans or aluminum bottles.
- Reduce the availability of single use items like plastic straws and Styrofoam containers.

13. Which type of organizations could benefit from a waste audit?

In general, organizations that have a large number of people in attendance/ employed by the organization will have an increased amount of consumer products being brought into their facility. Zimberoff (2019) explains how Google sends its food waste to farms that can use it as pig feed, and Citi Field -the NY Mets stadium- is trying to achieve zero landfill waste by 2020 using different methods such as more recycling sorting containers all over the stadium and compostable food packaging. Hospitals, universities, large corporations, and athletic fields have a lot of waste but also large capacity for recycling. A waste audit may provide them critical information that will allow them to operate in a more sustainable manner.

Evidence of teaching effectiveness

Table 6 presents the survey questions and answer choices we asked to students who participated in the 2018 waste audit.

Table 6: Survey Questions and Results

Question	Answer choices	Responses (n=32)
Were you surprised by the amount of trash UWG generates?	Yes/No	50% Yes
Were you surprised by the amount of recyclable materials that were thrown away instead of recycled?	Yes/No	90% Yes
In reference to the amount collected, which recyclable material surprised you the most?	<ul style="list-style-type: none"> • The amount of paper • The amount of cardboard • The amount of aluminum • The amount of plastic • The amount of Styrofoam 	<ul style="list-style-type: none"> • 43% the amount of plastic • 18.8% the amount of paper • 18.8% the amount of aluminum • 18.8% the amount of Styrofoam
Which recyclable material do you think would be easiest to eradicate from the dumpsters (100% recycled or re-purposed/ eradicated from campus altogether)?	<ul style="list-style-type: none"> • Paper • Cardboard • Aluminum • Styrofoam • Plastic • Plastic straws • Single plastic use bottles 	<ul style="list-style-type: none"> • 33.3% Plastic • 26.7% Paper • 20% Single use plastic bottle • 13.3% Aluminum • 6.7% Cardboard
The dumpster audit has inspired me to	<ul style="list-style-type: none"> • Recycle more often • Research ways to reduce the amount of waste UWG generates • It has not inspired me to do anything differently 	<ul style="list-style-type: none"> • 81.3% Recycle more often • 18.8% Research ways to reduce the amount of waste UWG generates

DISCUSSION AND CONCLUSION

Our experience shows that although students might be initially shocked by the idea of conducting a waste audit, they find this exercise to be a good tool to learn more about recycling and waste management. It is also a helpful way to connect teaching and learning to employer needs and global trends. For example:

- It is a form to practice a systematic review of an organization's trash, a useful way for any organization to learn about their waste sources, and potential ways to reduce them. With little modification, students can apply this according to their employers' needs.
- It encourages critical thinking about waste, the opportunity cost of not recycling, and the implications of seemingly small choices by the organization (for example, using Styrofoam cups instead of plastic cups).
- It stimulates creative problem solving, by asking the students to come up with ideas to reduce the trash that they audited, find more sustainable substitutes for items thrown away in large quantities, and ways to divert items with potential value away from the dumpster.
- It creates opportunities for students to take the lead in solving environmental issues. For example, one student in a geosciences class was surprised about the amount of coffee grounds in the dumpster, and took the initiative to work with one of the coffee shops on campus to identify people interested in composting the coffee grounds.
- It provides students with skills that can be used to conduct sustainability or ethics audits in organizations.
- It can be used to introduce important concepts in trade negotiations, and the global markets for trash and scrap, and how government policies can affect these markets.

Keeping in mind that universities are organizations too, waste audits on campus can serve as a way to help reduce the trash they generate. In 2017, our dumpster audit of a medium-sized campus (12,000 students) found that one dumpster contained 520.6 pounds of recyclable materials worth \$56.94. There are 9 dumpsters like the one audited, and they are picked up daily. Assuming they have similar contents, this one campus throws away more thousands of pounds of recyclable materials every day, with a potential market value of between \$70K and \$140K per year. An important outcome of the campus waste audit is that it starts a conversation about how the university itself can become more sustainable - not just how does it teaches sustainability.

Students who participated in the dumpster audit have expressed how surprised and transformed they are by this exercise. Some have started to bring reusable cups, and stopped using straws. Thus, for many students this is a transformational experience which may have a long-lasting effect on their behavior.

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Katlyn Bradshaw, MBA, is the manager of a business incubator program at the Burson Center located in Carrollton, Ga. Her research interests include sustainable business development, environmental impacts through sustainability initiatives, and entrepreneurship development.

Susana Velez-Castrillon, PhD is Associate professor of Management at the Richards College of Business at the University of West Georgia. She is interested in research in corporate reputation and sustainability.

Analysis Of The Revenue Cycle At A Medical Device Manufacturer

Robert N. West, Villanova University, Villanova, PA (USA)

ABSTRACT

This case deals with information system, internal control, and technical accounting issues at a medical device maker. Due to explosive growth, management changes, product changes, multiple sales channels, unintegrated software packages, technical accounting complexities, and more, the company has a myriad of interesting systems, controls, and accounting issues to analyze. This case first provides an overall description of the entity and then proceeds to describe the information systems issues experienced over a period of time so students can see how systems and controls must evolve as the company evolves.

Keywords: Internal control, information systems, revenue recognition

COMPANY BACKGROUND

MDM makes a variety of medical devices. The parent company is based in New York (NY). It acquired a New Jersey (NJ) company and a related Pennsylvania (PA) company at roughly the same time. A few years later it acquired a French (FRA) supplier company. These three entities were related and had a fair amount of intercompany transactions. PA was the ultimate seller to the end-user hospitals and other healthcare providers as well as dealers. NJ made the most critical component in the devices sold by MDM. NJ primarily sold its products to PA, but also sold some of its products to other equipment makers. FRA performed a critical subprocess for NJ. (Note: the entire company is not described in this case. The other divisions of the company sell different types of products to healthcare providers.)

Around the year 2000, MDM purchased an ERP system. This was a major yearlong undertaking. Since that time, MDM has made several acquisitions, including FRA. For information processing, financial reporting, and consolidation purposes it is preferable to have all entities using the same software. Each acquired entity was converted to the SAP ERP system, typically within one or two years. The VP of Finance of MDM-Devices is a CPA and had been Controller prior to this promotion.

MDM is a mid-size (less than \$10 billion in revenue) company that competes against very large Fortune 100 players. MDM was the dominant player in this device space and retained and expanded its dominance over the years. It did this primarily with two major technological breakthroughs. The first breakthrough, called CROSSOVER, was quite significant, but it had major manufacturing glitches which took years to resolve. The second breakthrough, called NEW, opened a path to significant new sales growth. These two engineering breakthroughs primarily came from the small NJ subsidiary.

Changes to the product and the manufacturing process occur every single year, but the change for NEW was major and it necessitated the phasing out of previous versions of the company's devices. The company often had to deal with trade-ins of old equipment to sell the NEW devices which added a bit of complexity to the sales process. Also, regulatory oversight and approval was very important. This NEW more expensive, superior device would be even more desirable to hospital customers if they could receive higher reimbursements from the insurance providers such as Medicare, Blue Cross, etc. for the superior medical test results from this device. Regulatory change in Washington often comes slowly, so MDM expended much effort to make that happen. These devices are subject to FDA approval. One of the plants, early in its history, received an FDA warning letter. MDM hired "FDA-compliance" consultants, which is a very common remedial action, and MDM changed processes to continue in business. No other problems with the FDA have occurred since.

Growth in international markets became increasingly important. MDM set up sales offices in Europe and China. Breaking into the Chinese market was especially challenging. International sales added some complexities in organizational structure, exposure to currency swings, and dealing with different cultures and differences in spending on healthcare. Organizationally, International (INTL) was a separate group and was managed separately. While NEW and OLD devices were sold abroad, those device sales, and related expenses, were on a separate internal P&L--but domestic VP of finance still had to report on international results monthly to top management.

The French plant was run quite differently from the US plants. A US team travelled to France to bring them up to speed on Sarbanes-Oxley (SOX) rules and regulations and to help integrate information systems (FRA used a different ERP). After several years, MDM shut down FRA and the critical manufacturing sub-process it performed was brought to NJ. This change made managing the business easier both logistically and information-wise.

A few years ago, new management was brought in and the organization structure changed. Most notably, the company became more decentralized. A new leadership team was formed for each half of the company. The device leadership team met every month for two days. The 18-member DEVICE leadership team included key people from every function.

The new top management team was highly incentivized to obtain strong results. The focus of the previous management team was on the quarter. There was always some level of pressure to “make your numbers each quarter.” With the new management team, there was clearly increased pressure to hit the numbers each and every month. And, as will be described later in this case, a daily revenue report was later required. On a daily basis, top management closely monitored revenue. These were new managers and therefore existing employees had to develop new relationships. In addition, there were new reporting structures and different monthly reports with more detailed information to be communicated. The new managers were bright and motivated, but there was much about this particular device business that they still had to learn. MDM’s monthly reports were not in the form that the managers preferred. They asked the heads of Accounting and IT to provide different monthly reports and, eventually, a daily revenue report. The new management team thought they were relatively benign changes, but those changes took a good deal of time and effort to be completed. Try to appreciate the pressure Accounting and IT were under to make those reporting changes quickly. These two department managers were highly respected by previous top management, but now they had to impress the new managers to keep their jobs and their reputation.

REVENUE CYCLE FOR DEVICE SALES

The revenue cycle involves obtaining a sales quote, preparing sales orders, manufacturing product, sales administration coordination and review, distribution and shipping, installation, training, customer service, tech support, and warranty; MDM also has service (maintenance) contracts that most customers purchase. The details of the Service Contract revenue cycle are not included in this case. The product revenue cycle involves many departments, and timely communication of information is critical for a well-run organization. Integrated ERP systems greatly facilitate the sharing of sales information across all departments within the entity.

MDM has three sales channels: direct to customers (typically hospitals), sales to hospitals that are members of a buying group, and sales to dealers, also known as distributors. MDM signs master agreements with its dealers which govern most of the terms of the sale. MDM negotiates terms and pricing with many buying groups which govern sales to those hospital customers.

Sales Quote

A customer makes an inquiry to the MDM sales team about purchasing one or more devices. The inquiry typically leads to MDM providing the customer with a Sales Quote. The primary focus of the quote is to provide the prospective customer with a price and to establish the contract terms & conditions (T’s & C’s). MDM sells expensive equipment, so a negotiation almost always ensues with offers and counteroffers. Sales of most big-ticket items (automobiles, homes, etc.) go through a similar negotiation process. The real focus of the negotiation is on the price and sometimes on the shipping terms, either FOB shipping point or FOB destination. Other important T’s & C’s are provided on the back of the Sales Quote form (the “fine print” so to speak). When a customer signs a sales quote, technically they are agreeing to those T’s & C’s.

Common T's & C's include:

1. Credit terms
2. Shipping terms (FOB shipping point vs. destination, e.g.)
3. Stipulating who pays for insurance while the product is in transit.
4. Determination of what jurisdiction will hear a legal dispute if one arises. MDM's sales quote showed its corporate headquarters' state as the jurisdiction. The customer sometimes requested its home state.
5. Warranty terms
6. Shipping dates and installation dates are typically NOT established at this phase of the negotiations.

For many years, MDM's sales quote software did not interface with its ERP system, so the quote information had to be manually re-entered into the ERP system. The lack of interface slowed down the sales quote approval process and opened the door for clerical errors. Now, the pricing approval process is automated for internal salespeople, but for sales to dealers it remains manual. For many years MDM provided suggested prices, but the final price could deviate from those prices. Pricing became inconsistent across the company. MDM recently created a pricing policy in which differing levels of authority were required to approve various discounts from list price. Small discounts could be approved at lower levels of management while large discounts might eventually have to go before the pricing committee. The sales quote software prevented the sales quote from being printed unless the proposed price was digitally approved by the appropriate manager. Eventually MDM set "floor" price limits which one could not go below. MDM's separate Sales Analytics group was established in order to ensure that pricing across all customers made sense.

Another complication with the Sales Quote and negotiation process for MDM is that its primary product, NEW, was sold as a "bundled" Multiple Element Arrangement (MEA) written such that the customer agrees to pay one amount, \$500,000 for example, for everything—the device, installation, training, warranty, and perhaps an extended warranty. A one-year warranty is standard with most sales. Extended warranty is an extra.

Various Sales Arrangements

The sales quote process described above reflects the process for selling directly to a hospital. MDM also sells to hospitals that are members of buying groups, to dealers, and to leasing companies that lease the device to the hospital customer.

Individual hospitals often join a buying group to increase their leverage with various vendors. Buying groups negotiate 3-year to 5-year contracts with MDM. As part of the contract negotiation a price is set for the devices as well as the T's & C's. The various buying groups' T's & C's often differ from MDM's T's & C's, so those are negotiated as well. The final, signed buying group contract will govern most arrangements, however, some hospital buying group members negotiated additional terms. In most cases, a buying group hospital would not sign MDM's Sales Quote with MDM's T's & C's. These hospitals would send a signed PO to MDM which must reference the buying group contract, rather than a sales quote. Note: Legal, Accounting, and Sales each reviewed the final T's & C's if they varied from MDM's own (normal) T's & C's.

Some hospitals didn't identify that they were affiliated with a buying group up front, so a price and other sales terms (e.g., shipping terms) were negotiated directly with them. Other hospitals failed to mention that they had changed buying groups. Well after the fact, from an audit of MDM performed by one buying group, it discovered MDM had not paid the proper buying group commission because MDM did not identify the hospital was part of that group. As a result of this, MDM changed its policies: All customers must now identify whether they are affiliated with a buying group at the time of obtaining a quote or that buying group's price will not be honored and the buying group commission is not due and payable.

Sales arrangements with dealers differed from arrangements with buying groups. Dealers sign a master agreement with MDM, which includes their T's & C's and gives them exclusive sales rights over a specific geographic territory. These master agreements did not have prices or guaranteed minimum quantities. Dealers might order ten NEW devices at once, for example, and a price would be determined/negotiated based on that order size. MDM would send a sales quote for the dealer to sign. The dealer would then send a PO to MDM which referenced the master agreement and the sales quote.

Some customers lease equipment. This is done through a leasing company. MDM sells the equipment to the leasing company and they then lease it to the hospital (minor system tidbit: in the AR setup screen the leasing company would be listed in the “bill-to address” and the hospital customer would be listed in the “ship-to address”; occasionally the corporate holding company is listed as the “sold-to address”). MDM is the responsible party for warranty repairs. After the warranty period expires, if they buy a service contract, it would work just like it would for any other hospital- customer. The leasing company prefers to defer payment to MDM until either the customer accepts the equipment upon installation, often 7 to 10 days later, or when they receive their first lease payment from the hospital. Some lease contracts are structured such that the hospital might get the first month (or two or three) for “free.”

MDM has sales offices in Europe and Asia, but this case will not deal with international sales in any depth. Many international sales are made through dealers (distributors). Medical care is more expensive in the US and devices command a higher price with higher gross margins in the US versus Europe and Asia. Some contracts are in USD, but many are in the local currency such as the Euro. International customers are often slower payers than US customers. International dealers often offered extended warranties to customers for various reasons. Sometimes the dealers failed to supply that information to MDM, but MDM also had some breakdowns whereby the correct information was not always being captured.

Another complication is that customers often trade in their OLD device for some credit when they purchase the superior, recently developed, NEW technology. Sometimes MDM keeps the OLD device and uses it for repair jobs. If the device returned is quite old, the OLD device is valued at zero and it is scrapped. The credit given to the customer for the trade-in is based on the age of the OLD device. If the OLD device is still under lease, the swap must be arranged and agreed upon with the leasing company. MDM might sell the OLD technology to certain customers at no risk of cannibalizing MDM’s NEW sales. If MDM does not accept the OLD trade-in, used equipment companies or dealers can buy the equipment cheaply from the existing dealer or customer and try to sell it to some of MDM’s other customers. So oftentimes MDM has incentive to buy back these OLD devices.

Sales Orders

A sales order is created when MDM receives a signed customer PO. Note that MDM accepts digital signatures if customers use electronic PO’s. The sales order is put on “Sales Admin Hold” until the sales admin team checks and approves all of the sales terms. MDM cannot ship devices that are on any type of “hold.” Customers must send a signed PO to document the items they want to purchase, and the amounts that were agreed upon. A problem can arise because all PO documents contain the customer hospital’s T’s & C’s in “fine print” on the back side of the PO. If their terms are different from MDM’s T’s & C’s, which T’s & C’s govern the arrangement? MDM’s Sales Admin team must follow up and resolve the issue. This often requires multiple phone calls and emails. Ultimately, some signed document must be obtained. MDM will accept a signed and dated fax copy of the revised PO or a definitive email from an authorized hospital representative as evidence of the arrangement. The emails are printed and filed with the rest of the sales order packet.

Some salespeople nail down a firm installation date with the customer during negotiations, but many others do not. As a result, most Sales Orders include a preliminary ship date, which is subject to change. Sales Admin must follow up with customers via phone or email to finalize shipment and installation dates.

Once Sales Admin releases its “hold”, it goes on “Accounting Review hold.” Accounting performs a credit check. If the transaction is within the company’s credit limit, Accounting will then review the paperwork and terms and it will be tagged with the proper accounting treatment in SAP. Once both procedures are completed, Accounting releases its “Accounting Review Hold” for further transactions to be posted against it (picking, packing, and shipping). The order may still need an official ship date and install date to assist Manufacturing on the timeline of any final assembly that is needed, but the order has moved through Accounting review.

Distribution/Order Fulfillment (Shipping, Installation, Training, Billing, and Warranty)

The Sales Administration department coordinates the delivery and installation date with the Installation Customer Service Team that contacts the customer, schedules the installation, and enters the installation date into SAP. A Service Request is opened, and an FE is assigned to the installation on the date indicated. Distribution staff releases the SAP orders based upon the installation date. Manufacturing and Traffic departments work closely to coordinate

order releases/shipments to ensure customers receive goods when desired. The Distribution Manager, Distribution Supervisor and the Distribution Coordinators, (all members of the Traffic Department) have authorization in SAP to release system sales orders for shipment and allocate units by serial number from Finished Goods according to Manufacturing's unit allocation shipping schedule as assigned by Quality Control. The Traffic Department will then record shipment with specific serial number units against the sales order in SAP. SAP will not allow shipment of quantities in excess of existing and open quantities on the sales orders.

Distribution prepares documentation (Straight Form Bill of Lading, Airway Bill of Lading and/or export documentation), which allows the product to be transported from the facility to the customer. The Distribution staff enters the tracking number, the carrier name, and the weight of the shipment into SAP and it then ships the product against the sales order which generates the packing slip. The freight carrier signs the manual Bill of Lading upon pickup and transports the unit to the customer. An electronic copy of the Bill of Lading, signed by the carrier, is attached to the sales order in SAP. MDM runs the "ship confirm" process nightly which generates invoices. The invoices are reviewed the following morning and then mailed. Invoices contain date, amount, items shipped, and a reference to the PO number and SO number.

Some of the products sold are rather uncomplicated from a shipping, installation, and training perspective. The NEW device, however, is a bit more complicated. The MAIN unit was not just one completely assembled piece of equipment. The NEW device required two separate shipments. The MAIN part of the device is shipped initially and then a second shipment of the SPEC device occurs days later. The bill is generated and mailed to the customer upon the shipment of SPEC. SPEC needs special handling, so it ships separately, and it needs to be installed inside the NEW device soon after its arrival. In the past, SPEC was shipped about 16 days after the MAIN unit was shipped. Over the years, this process was improved the timing was reduced to five days. It was made up of several key components. Even if the shipping terms are FOB shipping point, MDM arranges and pays for the shipping because it is complicated. MDM just bills the customer for the shipping cost in those cases.

Each key component is broken down on the sales orders because there could be a variety of SKU's. Also, depending upon how negotiations went, warranty periods sometimes differed slightly on the various components.

Installation occurs soon after the SPEC component arrives at the hospital. Upon completion of the unit's installation, the Field Engineer signs the controlled FDA form XXX, signifying installation is completed, and attaches the form to the Service Request job in SAP. Note that not all MDM devices require an FDA form. It then closes the service job in SAP. Approximately three days of customer training are also required and are done immediately after the installation is complete. MDM used to do the training live at the hospital, but now it is done online with videos it created. Doctors and staff must watch all of the training videos to get certified. Certification is required by the FDA. The product comes with a warranty period covering any defects. MDM's field engineers perform the maintenance and repair work.

Some customers buy an extended warranty at the time of equipment purchase. Virtually all customers buy a maintenance plan when the warranty expires. Service contracts typically range from one to four years. Initially, every customer made one annual payment in advance, but over time many changed to quarterly or even monthly payments. The service contract invoice is sent after the contract is signed and payment is due in 30 days. Virtually all customers renew the service contract when the current one expires.

MDM manufactures to forecast, not to order. Many orders are received late in the quarter so if MDM had built to order, it would have had difficulty making the quarter-end shipping deadlines. Manufacturing maintained a huge Excel spreadsheet with its manufacturing data, forecasts, shipping requirements, etc. until MDM adopted SAP. Even then, the department was reluctant to change from its time-intensive, Excel-based system because they understood that system and were concerned that SAP could not provide the information they were used to. In addition, the information maintained in Excel was for "their eyes only." Once the data was entered into SAP it was visible to all. SAP greatly improved MDM's manufacturing information accessibility and information reporting.

If a customer, distributor, or sales representative determines that they need to cancel an order (very rare occurrence), they notify the salesperson or the install coordinator who notifies the Director of Sales Administration or a designated department who then cancels it in SAP. Finance, Manufacturing, Installation, and Training must also be notified and react accordingly. Note that within SAP you can only cancel lines/products that are still open.

Backlog

When sales orders are shipped, the SO is closed, and that SO is removed from the backlog list. If part of the order is shipped, that part (those product line items) are closed and the remaining items remain on backorder. Quarterly, Accounting reviews old orders with Sales Administration to determine their status and whether they are still properly included on the backlog list. The Financial Planning & Analysis (FP&A) team analyzes the data in many ways (e.g., backlog by sales channel--direct vs distributor, backlog of each major product group, geographical region, etc.). Backlog, as allowed by the SEC, can include orders as old as one year. This listing is reviewed by finance for reasonableness and accuracy. Is this information included in the financial statements?

A question that interested the VP of Finance was “why are there orders over six months old still on the backlog list.” Who is responsible for investigating old, unshipped orders? The answer was vague, but it seemed like Sales should follow up and resolve them. At MDM, salespeople receive 50% of their commission upon obtaining an order, and the other 50% is paid upon shipment. The VP of Finance said “someone has to scrub the data.” Accounting ended up with the task. Two examples of their findings are included. One order had items that were never shipped. It appeared that this order was never going to result in a sale due to inactivity. A second order was for five units. If a customer, often a dealer, orders multiple devices, it gets a better price per unit. Two devices were delivered, but no subsequent activity had occurred in the past several months and no one appeared to be following up on the remainder of this order. What are your thoughts on this process?

Credit Terms

The shipping terms are either FOB shipping point or FOB destination and payment is often due in 30 days. Credit terms of net/30 were very common at MDM, but MDM offered between five and ten different credit terms. Company-wide there were about 15 different credit terms. The typical terms for each customer would be entered at customer setup. These terms may be overridden on an order-by-order basis, but overrides are rare. A few customers are slow payers. One large customer, a for-profit hospital conglomerate, is quite slow and can take up to a year to pay its bills. Oftentimes, it sends a large check (e.g., \$1 million) with no detailed remittance advice included. Deals with a couple customers have been structured with extended payment plans, but less than one year. One of those customers is in Mexico. Government customers (e.g., a VA hospital) also paid differently than typical hospital customers. It has an “80/20 payment rule.” It wants internal acceptance before it pays the full 100%. It holds back 20% of the payment until the device is tested by a government inspector to ensure it works properly. Those credit terms were “80-20, net/30” or sometimes net/45 or net/60. Eighty percent is paid 30 days after shipment and 20 percent is paid 30 days after acceptance.

Post Contract Customer Support (PCS) Issues

Basic warranty includes free equipment repairs and it provides bug fixes and software upgrades for the software within the device (often once or twice per year). This is a generous warranty. Warranties generally do not include free software upgrades. The customer service group wanted to continue offering upgrades as part of future service contracts as demonstration of the value that comes from purchasing the service contract, but the product managers wanted to charge for the upgrades. This issue was controversial within the company. If a customer decides against buying the service contract, then it has to pay for the upgrades as well as having to pay for any service calls and replacement parts.

Software has become an increasingly important component of technical medical devices. Eventually, a group within the company encouraged MDM to charge for upgrades and other valuable enhancements—but MDM is still evolving on this issue. MDM recently modified its policy as some features and functionality became new software products which were sold separately, while other software enhancements were still included with the service contract offering. Some of the software enhancements that MDM provides in its service contract have never sold as a separate service contract product. Does that have any accounting or information system implications?

Credit Memos

Credit memos occurred every quarter, but they were not material. Returned devices were extremely rare. Some smaller finished parts were sometimes returned because it was the wrong item (the A version versus the B version). The credit memo was often followed by an immediate rebill for the replacement item. Pricing errors were

also extremely rare. Billing adjustments occurred when customers, after the fact, decided to finance the unit with an independent third-party finance company. In that case MDM had to credit the invoice to the hospital and rebill to the finance company. This did not happen frequently, but it happened more often than seldomly. Sometimes there were small freight charge adjustments. There were also sales tax adjustments, but those were handled by corporate. Sales tax can be a little complicated when customers are located in all fifty states and in foreign countries.

The number one reason for credit memos is service contracts. Hospitals buy devices when they need them throughout any given year. Warranty will cover the first year of repairs. Service contracts begin one year after purchase when the warranty expires. So, a hospital could have multiple service contracts for devices bought at various times during the current year. Some hospitals find it confusing to receive multiple bills from one company and would like to consolidate the service contracts to be on the same 12-month schedule. A further complication is that the healthcare industry is undergoing significant consolidation currently, as well as in the recent past. An acquisition almost always results in a consolidation of MDM's numerous service contracts to one date (sometimes with a new entity name). The credit memo for the old service contract is immediately followed by a rebill for the new one. However, the rebill is sometimes for an amount less than the credit memo. MDM sometimes ended up giving away "free months" in an effort to sync up the dates of the various service contracts.

Three Other Situations MDM Encountered

All companies evolve over time. Products change over time. Processes change over time due to technology and other changes. Listed below are three distinct changes that MDM encountered throughout its history. Would these changes have any impact on MDM's accounting, internal controls, and/or information systems?

MDM is highly decentralized. MDM has other smaller device divisions and plants. The devices Sales team sells all devices made by MDM, regardless of which plant manufactures them. On one sales order, a customer could order a device made by the NY division and one made by the PA division. These devices would ship from two different warehouses, often on different days. In SAP, an invoice is generated for each shipment. Customers complained to Sales about receiving too many invoices, so management wanted to only send one invoice for arrangements such as the one above. How would this accommodation affect systems, controls, and/or accounting treatment?

Approximately ten years ago, a major technological breakthrough, we'll call it CROSSOVER, occurred. CROSSOVER was new and advanced and as a result, installation was more complicated and time consuming for MDM's field service engineers. Training was also critical, and it took a little more time than it had in the past. Now, ten years later, CROSSOVER is "old hat" and is no longer complicated. Training, like installation, is also easier for this aspect of the device today. Would this change have any accounting or system implications?

Some areas of the country had no sales representatives, so the sale had to go through a distributor. Distributors handled all of the transaction details typically. However, several hospitals preferred to deal directly with MDM personnel and the sale was negotiated directly by MDM. Nonetheless, a commission payment to the distributor was still required. Would there be accounting or system implications for the differences in these two arrangements?

Required:

1. List each of the departments involved in the revenue cycle at MDM.
2. Analyze each stage of the revenue cycle beginning with the Sales Quote. Prepare a grid with three columns. For each section of the case:
 - a. List the risks (what can go wrong).
 - b. List the controls in place at MDM to minimize those risks.
 - c. List any control weaknesses. (note: in some cases, weaknesses that existed in previous years have recently been rectified by MDM. Some risks may have been mitigated by the controls now in place.)
3. At each stage of the revenue process, record the JOURNAL ENTRIES, if any, and the timing of those entries (i.e. what triggered the journal entry) that MDM would make in SAP.
4. What challenges, if any, does MDM face at quarter close and year-end close with respect to the revenue cycle?
5. The case mentions backlog. What is backlog? What internal controls are needed to provide reliable backlog information? Is backlog disclosed in the 10-K? Whose responsibility within MDM is it to ensure that the backlog list is complete and accurate?

The Teaching Note is available from the author at Robert.west@villanova.edu

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
 - Description and use of new cases or material
 - Lecture notes, particularly new and emerging topics not covered effectively in textbooks
 - 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:
 - Accept as is.
 - Accept with minor revisions.
 - 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 provided following these instructions.

This style guide represents style guidelines in effect for future issues, but always check for updates online.

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, 1 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

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...

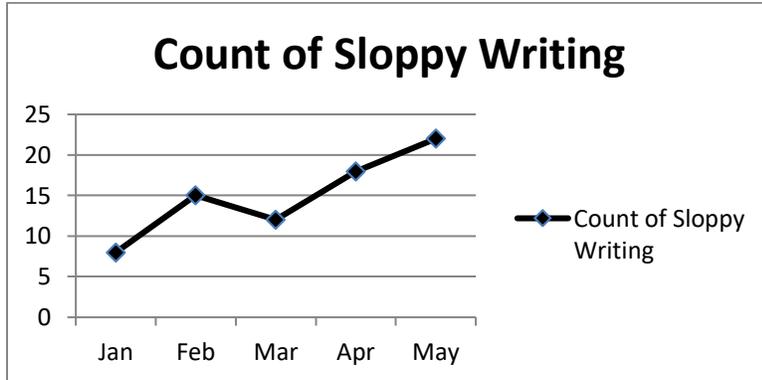
Data Analysis(Sub-heading, bold but not all caps, 10 point, aligned left, bold, no line after to paragraph)

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 (title 10 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 include lean six sigma and 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.

Endnote: (do not use word footnote or endnote formatting to accomplish this; see comments above)