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# Examine the Impact of Lecture Video Policy to Study Indirect-Cost Variances in an Online Cost Accounting Course

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## ABSTRACT

This paper makes a contribution to extend accounting education literature by examining the impact of lecture video policy to study indirect-cost variances in an online undergraduate-level cost accounting course. This study finds that the use of lecture video policy has a positive impact on students' participation in watching indirect-cost variance lecture videos. The research reports more students repeat watching indirect-cost variance lecture videos because indirect-cost variance analysis is the most challenging and difficult topic in this online cost accounting course. In general, the adoption of lecture video policy has a favorable impact on students' perceptions about their progress. The results clearly demonstrate that students favor lecture-video-watching policy in this online cost accounting course. The implication of this study is that instructors may consider adopting lecture video policy in online upper-level accounting classes, where students may feel more motivated to watch lecture videos to help their learning activities.

**Keywords:** Accounting Education, Online Course, Cost Accounting, Course Development.

## INTRODUCTION

This paper makes a contribution to extend accounting education literature by examining the impact of lecture video policy to study indirect-cost variances in an online cost accounting course. It provides a new perspective to investigate students' perceptions with the adoption of lecture video policy within the online environment. How to enhance course experience and learning effectiveness at online accounting courses needs to be investigated more. This is why this paper investigates the students experiences related to lecture video policy in an online undergraduate-level cost accounting course.

## APPLICATIONS OF LECTURE VIDEO POLICY

One main issue related to online accounting education is to assess the learning quality and outcome of the online education experience in an accounting course (Bryant et al., 2005). Chen et al. (2012) compares the learning effectiveness of online accounting education to traditional in-class face-to-face teaching delivery. Their results suggest that the traditional classroom environments could generate more favorable learning effectiveness and outcome in advanced accounting courses than online delivery mode. Uniform Certified Public Accountant (CPA) Examination Blueprints describe CPA exam contents and skill levels required for accounting professionals. The new CPA exam requirements are approved by the Board of Examiners at American Institute of CPAs on May 31, 2018 and the effective date is January 1, 2019 (AICPA, 2018). The old CPA exam emphasizes more in exam-takers' fundamental skills, such as remembering and understanding, application of knowledge or theories or techniques. The new CPA exam emphasize more in exam-takers' analysis skill, which means "a higher level of analysis and interpretation." (AICPA, 2018). How to help students learn higher level skills in online accounting courses is very important.

By surveying 288 college accounting students in China, Wen et al. (2015) examine the factors to influence the decisions of accounting students to pursue CPA. Based on the theory of planned behavior (Ajzen, 1991), Wen et al. (2015) find that genuine interest in accounting positively affects students' intentions to pursue the CPA credential. Wen et al. (2018) use the theory of planned behavior to investigate some factors to affect accounting students' intention to decide on career choices. By exploring the factors to influence accounting students' interests in pursuing public accounting instead of private accounting, accounting educators could revitalize accounting curriculum and class policies (Wen et al., 2018). Different class policies and practices could have different effect on student engagement, experience and satisfaction. Wen (2017) finds that the use of cooperative learning at face-to-face Intermediate Accounting II course does not have a favorable impact on students' satisfaction. The problem is how to transform cooperative learning method into a more active learning environment. How to improve student genuine interest in online accounting courses is the key to enhance students' engagement, experience and satisfaction. Zhong



(2017) finds that the use of instructor-made videos is an effective learning method for the online economics courses. There are strong correlations between online student satisfaction and their perceptions about instructor's teaching effectiveness (Zhong, 2017). Wen (2016) finds that students have a better perception about teacher's teaching effectiveness for the course after integrating lecture videos into the learning process in an online Intermediate Accounting II course.

Zhong (2018) discusses online course design and course communication, two key elements, in teaching large online classes. The adoption of student-centered learning approach to deliver the course contents and materials is very effective for a successful online course (Zhong, 2018). Online lecture videos could fill the bill by increasing the flexibility for students to have a better time management. Students can decide when and which part of lecture videos they want to watch more or less. The implementation of active learning tool in online courses, such as lecture videos, increases student engagement and then student satisfaction. Irving (2011) integrates active learning research into an undergraduate accounting course. Accounting students can substantially improve their level of knowledge, skills, and abilities to finish a research study by learning from accounting journal articles related to class topics (Irving, 2011). An integrated approach proposed by Dzurainin et al. (2018) could be applied in cost accounting courses to maximize undergraduate students' genuine interest and engagement in experiential learning (Zhan et al., 2018). Zhan et al., (2018) find that this data-driven approach, the incorporation of Big Data and analytic contents in their teaching practice, help undergraduate students better understand complicated topics in cost accounting courses. To integrate lecture videos into online advanced accounting course definitely helps students feel more confident about the challenging class materials because students can repeat watching instructor's lecture videos as many times as possible in online Intermediate Accounting II course (Wen, 2016).

The integration of lecture videos in online accounting courses could also enhance undergraduate students' genuine interest and engagement. Therefore, this practice could help undergraduate students better understand complicated topics in online accounting courses. Sargent et al. (2013) find that the use of ultra-short 3-minute online videos, a learning innovation, could help students with poor academic performances in principles of accounting courses. These students are reported to have a better class grades and become more confident in passing the class (Sargent et al., 2013). Porter and Tiaht (2016) report that there are four methods to create lecture videos for a course. Method one is "using videos from another source", such as YouTube™ and videos provided by the publishers. Method two is "recording your classes". Method three is "recording studio-style lectures". Method four is "recording lecture segments". All four methods have their own pros and cons (Porter and Tiaht, 2016). By surveying 29 students in an online Intermediate Accounting II course, Wen (2016) finds that 46% of respondents prefer to have 50-minute lecture videos. 21% of students prefer to have 40-minute lecture videos. 29% of students prefer to have 30-minute lecture videos. Only 1 student prefers to have 20-minute lecture videos. Wen (2016) also finds that students have a positive view about this online course and the instructor because method two (recording your classes) is used in this online Intermediate Accounting II course.

## **RESEARCH METHOD**

Cost accounting course is an important accounting course. It covers a variety of very comprehensive and advanced managerial accounting topics, such as cost accumulation systems, cost allocation, budgeting, cost-volume-profit analysis, process costing and direct-cost variances. (Datar and Rajan, 2017; Garrison et al., 2017; Lanen et al., 2016; Zimmerman, 2016). These important topics are also included into the Business Environment and Concepts (BEC) section, one of four sections of CPA examination (AICPA, 2018; Whittington, 2015). The book of Datar and Rajan (2017) is used as a required textbook for this online undergraduate-level cost accounting course. Chapter 8 in the textbook is titled as "Flexible Budgets, Overhead Cost Variances, and Management Control". This chapter is related to indirect-cost variances, which is the most challenging and difficult topic in this class. Canvas, an online learning course management system, is used at the author's university. In this study, course learning objectives, content and designing structures are similar at both classes in different two semesters, including the course syllabus, end-of-chapter homework exercise assignments, and quiz. Canvas also provides data of how each student watches all lecture videos. The author chooses the method two, described in the study of Porter and Tiaht (2016), to record the whole class period because the author teaches a face-to-face classroom-based cost accounting class at the same public university. For this study, both classes are offered via online teaching delivery method. Most of students are non-traditional students. The author's institution is an AACSB-accredited business school at a public university. At the end of semester, the IDEA Survey, an institution-level course evaluation tool, is conducted for this online cost

accounting course. The assessment of course objectives, student learning outcomes and student satisfaction are based on the IDEA Survey, which is used to measure the course learning effectiveness at the author's university.

The instructor records around fifty-minute lecture videos and post them on Canvas. The total class participation points related to lecture videos are 30 points, which is about 5% of total grade. One lecture video in each chapter will be randomly selected to grade 3 class participation points. To earn class participation points in each chapter, students must watch all lecture videos in that chapter. Students must watch at least 80% of one lecture video. For example, if a video is 50 minutes, students must watch at least 40 minutes. If data show a student only watches 39 minutes, she/he would still not earn 3 points. The above criteria of earning class participation points for watching lecture videos in also provided in class syllabus. In order to discourage a student to get around the lecture video policy by simply just turning on a lecture video but not watching it, instructor points out the benefits of watching lecture videos in class syllabus. Fall 2017 class is used as a control group (without lecture video policy). Fall 2018 class is designed as a special treatment group with the adoption of lecture video policy. All following data and results are from the IDEA Survey.

## RESULTS

In Fall 2017, 15 out of 18 students respond to all questions on the IDEA Survey. The response rate is 83%. In Fall 2018, 11 out of 18 students respond to all questions on the IDEA Survey. The response rate is 61%. The use of lecture video policy to increase student engagement was well-received. Some evidence of learning effectiveness can be noticed through the descriptive statistics report of some selected data from IDEA survey in table one.

**Table 1: Descriptive Statistics of Some Selected Data Related to Lecture Video Policy**

<b>Fall 2017 (Without Lecture Video Policy)</b>					
	# of Student who watched	# of Student	Participation Rate	Total Minutes Watched	Average Minutes Watched per Student
Ch. 8 Video 1	9	18	50%	367	41
Ch. 8 Video 2	9	18	50%	333	37
Ch. 8 Video 3	9	18	50%	280	31
Ch. 8 Video 4	8	18	44%	380	48
Mean	9	18	49%	340	39
Standard Deviation			2%	39	6
<b>Fall 2018 (With Lecture Video Policy)</b>					
Ch. 8 Video 1	16	18	89%	915	57
Ch. 8 Video 2	16	18	89%	901	56
Ch. 8 Video 3	15	18	83%	978	65
Ch. 8 Video 4	15	18	83%	1117	74
Mean	16	18	86%	978	63
Standard Deviation			3%	85	7

Table one shows that the mean value of students' participation rate to watch indirect-cost variance lecture videos is 49% in Fall 2017, only half of student body. Table one shows that the mean value of students' participation rate to watch indirect-cost variance lecture videos is 86% in Fall 2018. The students' participation rate improves a lot after the adoption of watching lecture videos to earn class participation points. The student responses are consistent with the research designing because Fall 2017 class is used as a control group (without lecture video policy). Fall 2018 class is designed as a special treatment group with the use of lecture video policy.

On average, each lecture video is about fifty minutes, similar to a typical face-to-face on campus class time. The mean value of average minutes watched per video by each student is 39 minutes in Fall 2017. The mean value of average minutes watched per video by each student is 63 minutes in Fall 2018. It demonstrates more students repeat watching indirect-cost variance lecture videos for several times because indirect-cost variance analysis is the most challenging and difficult topic in this online class.

**Table 2: Descriptive Statistics of Some Selected Data Related to Student Performance in Chapter Eight Quiz**

<b>Fall 2017 (Without Lecture Video Policy)</b>				
	Topic	# of Student with right answer	# of Student who take quiz	Correct Rate
Ch. 8 Quiz prob 1	Variable overhead spending variance	15	15	100%
Ch. 8 Quiz prob 2	Variable manufacturing overhead efficiency variance	15	15	100%
Ch. 8 Quiz prob 3	Fixed manufacturing overhead spending variance	15	15	100%
Ch. 8 Quiz prob 4	Fixed overhead production-volume variance	15	15	100%
Ch. 8 Quiz prob 5	Flexible-budget variance	9	15	60%
Mean		14	15	92%
Standard Deviation				16%
<b>Fall 2018 (With Lecture Video Policy)</b>				
Ch. 8 Quiz prob 1	Variable overhead spending variance	15	16	94%
Ch. 8 Quiz prob 2	Variable manufacturing overhead efficiency variance	16	16	100%
Ch. 8 Quiz prob 3	Fixed manufacturing overhead spending variance	16	16	100%
Ch. 8 Quiz prob 4	Fixed overhead production-volume variance	16	16	100%
Ch. 8 Quiz prob 5	Flexible-budget variance	12	16	75%
Mean		15	16	94%
Standard Deviation				10%

Table two shows that the mean value of students' performances in chapter eight quiz is 92% in Fall 2017. The mean value of students' performances in chapter eight quiz is 94% in Fall 2018 after most students watch indirect-cost variance lecture videos in Fall 2018. The students' performances in chapter eight quiz improves a little bit after the adoption of lecture video policy to earn class participation points.

**Table 3: Descriptive Statistics of Some Selected Data Related to Students' Description of Their Progress**

	Mean	Standard Deviation	Total Responses
<b>Fall 2017 (Without Lecture Video Policy)</b>			
Gaining a basic understanding of the subject (e.g., factual knowledge, methods, principles, generalizations, theories)	4.27	0.68	15
Learning to apply course material (to improve thinking, problem solving, and decisions)	4	0.97	
Developing specific skills, competencies, and points of view needed by professionals in the field most closely related to this course	4.07	1.06	
Learning appropriate methods for collecting, analyzing, and interpreting numerical information	4.33	0.94	
Average	4.17	0.91	
<b>Fall 2018 (With Lecture Video Policy)</b>			
Gaining a basic understanding of the subject (e.g., factual knowledge, methods, principles, generalizations, theories)	4.55	0.5	11
Learning to apply course material (to improve thinking, problem solving, and decisions)	4.45	0.66	
Developing specific skills, competencies, and points of view needed by professionals in the field most closely related to this course	4.45	0.66	
Learning appropriate methods for collecting, analyzing, and interpreting numerical information	4.18	1.11	
Average	4.41	0.73	

In general, table three demonstrates that students in Fall 2018 have a very positive description about their progress at this online cost accounting course. In Fall 2017, the average value of student response to "gaining a basic understanding of the subject (e.g., factual knowledge, methods, principles, generalizations, theories)" is 4.27, and the standard deviation is 0.67. In Fall 2018, the average value of the same question is 4.55, and the standard deviation is 0.5. In Fall 2017, the average value of student response to "learning to apply course material (to improve thinking, problem solving, and decisions)" is 4, and the standard deviation is 0.97. In Fall 2018, the average value of the same question is 4.45, and the standard deviation is 0.66. In Fall 2017, the average value of the four mean values related to these four course objectives is 4.17. In Fall 2018, the average value of the four mean values

related to these four course objectives is 4.41. In a conclusion, students have a more positive perceptions about their progress, which is aligned with four course objectives.

**Table 4: Descriptive Statistics of Some Selected Data Related to Students' Perception of the Course**

	Mean	Standard Deviation	Total Responses
<b>Fall 2017 (Without Lecture Video Policy)</b>			
Difficulty of subject matter	3.47	0.72	15
When this course began I believed I could master its content.	4.13	0.81	
Overall, I rate this instructor an excellent teacher.	4.2	0.75	
Overall, I rate this course as excellent.	4.07	0.77	
<b>Fall 2018 ( With Lecture Video Policy)</b>			
Difficulty of subject matter	4.18	0.72	11
When this course began I believed I could master its content.	4.18	0.83	
Overall, I rate this instructor an excellent teacher.	4.91	0.29	
Overall, I rate this course as excellent.	4.82	0.39	

Table four indicates that most students feel very confident about this very difficult upper-level accounting course at the beginning of the class period. The mean score for the statement that “when this course began, I believed I could master its content” is 4.13 in Fall 2017 and 4.18 in Fall 2018. It is measured on a 5-point Likert scale with a score of 5 indicating strong agreement with the statement. In Fall 2017, the average value of student response to “overall, I rate this instructor an excellent teacher” is 4.2, and the standard deviation is 0.75. In Fall 2018, the average value of the same question is 4.91, and the standard deviation is 0.29. In Fall 2017, the average value of student response to “overall, I rate this course as excellent” is 4.07, and the standard deviation is 0.77. In Fall 2018, the average value of the same question is 4.82, and the standard deviation is 0.39. This study makes a comparison between a control group (without lecture video policy) and a special treatment group (with lecture video policy) in an online undergraduate-level cost accounting course. Students with lecture video policy outperform their peers in control group on a quiz for indirect-cost variance a little bit. Students with lecture video policy also have a better perceptions about teacher’s teaching effectiveness for the course. One of possible attributes about significant improvement in students’ perceptions toward the instructor and course could be that students enjoy using lecture-video approach at this upper-level accounting course. Since cost accounting course is very challenging and difficult, students could repeat watching lecture videos to have a better understanding of class materials in a more active learning environment.

**Table 5: Descriptive Statistics of Some Selected Data Related to Students' Perception of Lecture-Video-Watching Policy**

	Mean	Total Responses
<b>Fall 2017 (Without Lecture Video Policy)</b>		
If this class has a mandatory class policy to review lecture videos and earn class participation credits, it will improve my learning effectiveness.	3.27	15
<b>Fall 2018 ( With Lecture Video Policy)</b>		
The lecture-video-watching policy improves my engagement.	4	11
The lecture-video-watching policy has a positive impact on my academic performance.	4.55	
The lecture-video-watching policy increases my class satisfaction.	4	
Average	4.18	

Table five shows the one surprising finding in this paper that most of students have a very positive perception about lecture video policy in Fall 2018. Among 11 respondents, 64% of student respond to “The lecture-video-watching policy has a positive impact on my academic performance” as “Strongly Agree”, the highest rank in 5-level scales. 27% of students describe it as “Agree”, the second-highest rank in 5-level scales. Only 9% of students is neutral about this survey question. Overall, the average value is 4.55. The results clearly demonstrate that students favor lecture-video-watching policy in this online accounting class.

## CONCLUSION

One major problem for this research is that IDEA survey is a university-controlled assessment tool. As an instructor, the author only gets a summary report instead of a more detailed dataset, which really restricts the author from doing further basic and comprehensive statistical analysis. Another major problem for this research is sample size. Due to the class size, the author cannot increase sample size for this research. Using a larger sample from more than one institution would give the study results much stronger support. The study finds that the use of lecture-video-watching policy in an online upper-level cost accounting course could be one of factors attributing a favorable impact on students’ overall rating of an instructor and a course evaluation. One possible explanation is that students enjoy using lecture videos to repeat watching some challenging and difficult part in this online accounting class. For example, most of students repeat watching indirect-cost variance lecture videos for several times because indirect-cost variance analysis is the most challenging and difficult topic in this class. It is helpful for students to use lecture videos to review the class material, such as homework and quiz problems, with detailed step-by-step instructions. The class content is taught and delivered through the reviewing of lecture videos, rather than making students figure it out on their own in an online class setting. Students could benefit from a great use of lecture videos to understand class content. Coupled with the textbook and homework problems, the lecture videos help students learn actively. Future research might be done in other advanced accounting courses within the online environment to examine the impact related to the use of lecture video policy.

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# Factors Leading to Online Learner Satisfaction

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## ABSTRACT

This paper explores little-examined factors that potentially affect student perceptions of online learning satisfaction by focusing on (1) the use of concrete methods such as online submissions and videoconferencing, (2) student perceptions of educational integrity, and (3) student perceptions of instructor training. Drawing from 21 other empirical studies, an exploratory factor analysis identified five factors related to student impressions of satisfaction of online learning focusing on these less explored aspects using a survey of 397 business students. The regression analysis indicates that basic online functionality, experience with online classes, technology reliability, and students' communication preferences are significant predictors of student satisfaction. Interactive methods, student perceptions of instructor training, and control of cheating were not significant predictors.

## INTRODUCTION

The study of student perspectives with traditional teaching has tended to focus primarily on satisfaction with instructional factors (organization, teaching methods, instructor enthusiasm, etc.), and curricular factors (texts, transferability, readability, etc.) (e.g., Green, Hood, & Neumann, 2015). However, student perspectives on their satisfaction with their own perceived learning achievement can constitute a second element or a different approach (e.g., Palmer and Holt, 2009; Paechter, Maier, and Macher, 2010). A third type of student satisfaction about their education—one generally more peripheral in many studies focusing on the instructional elements—takes account of student perspectives about institutional or non-teaching factors (e.g., quality of class space, price, class size, etc.). Issues related to technology were generally considered negligible. This is not the case today with the study of students' perceptions of online course satisfaction in terms of teaching quality, learning achievement, and institutional support. Technology mediates the entire academic endeavor in online education, making the interplay of factors dramatically different from traditional education (Song et al., 2004; Young & Duncan, 2014). Students' perceptions are affected by various types of online rather than face-to-face lectures, technology-mediated rather than intimate group discussions, electronic rather than physical interactions with instructors, etc. Indirectly but as importantly, online teaching also introduces substantial challenges to instructors because of the new techniques and strategies they must master to maintain educational integrity and provide quality in an online mode (Sun et al., 2008; Asoodor, Vaezi, & Izanloo, 2014). This increases the importance of instructor training, self-study, and trial-and-error experience, as well as institutional support (Brinkely-Etz Korn, 2018).

However, while there has been a significant amount of research about the factors leading to student perceptions of satisfaction with online courses in online, higher education environments, it still has numerous gaps (Bates, 2017). Such studies have tended to use items and concepts based on traditional student evaluations, and have often overlooked the actual practices and specific concerns that are involved in contemporary online education. Three examples are highlighted here.

First, previous empirical studies of student satisfaction have not looked at the effects of specific instructional methods, such as online lectures, online grading, online submissions, and videoconferencing. That is, do specific methods, such as the competent use of gradebook, make a significant difference in the determination of satisfaction? Neither has there been an examination of the importance of educational integrity (aka cheating) from students' perspective (Wilkinson, 2009). This is a major concern for faculty, institutions, and accrediting bodies, but is it a factor of significance for students as well? Finally, there has been little examination of the effects of students' perceptions of instructor training on satisfaction (Young & Duncan, 2014; Brinkely-Etz Korn, 2018). That is, do students perceive the training of an instructor as significant, apart from the quality of teaching provided by the instructor, and is it a significant factor in their overall satisfaction? These are significant gaps in our understanding of student satisfaction.

The overall purpose of this article is to study unexamined factors that may or may not affect student perceptions of online learning quality, and integrate it with the literature where appropriate. Specifically, we want to find out:

1. What do students say is important or concerning to them related to teaching methods, educational integrity, and instructor training?
2. Do logical constructs emerge when specific items regarding online teaching methods, educational integrity, and perceptions about instructor training are incorporated in an exploratory factor analysis?
3. Which identified factors and control variables are found to be significant in regression analysis with regard to student satisfaction in online classes?

The article first reviews the literature on student satisfaction factors via a taxonomic survey of pertinent literature. This is followed by the methods, results, and discussion sections which provide the basis for the descriptive, factor, and regression analyses.

## LITERATURE REVIEW

There are hundreds, if not thousands, of studies that discuss student satisfaction with online education, or reference it tangentially. However, there are relatively few studies that focus on specific student satisfaction factors using an empirical protocol. The review began with a standard Google Scholar search using over a dozen terms such as student perceptions of online learning, student satisfaction, student evaluations, online teaching quality, online learning achievement, etc. with numerous cognates and other aspects of particular interest to our study having to do with student cheating, the impact of student opinions of various methods, etc. This review of 500+ titles and abstracts yielded approximately 100 articles to review in depth. After reviewing approximately 100 articles that mention student satisfaction, 60 were eliminated as being insufficiently empirical (qualitative only). As a cross-check, in this phase we also reviewed the literature citing these articles, initially by abstracts, and where appropriate, reviewing the articles in depth for inclusion in our taxonomy. Forty empirical studies were fully reviewed, but only 21 were considered sufficiently focused on student satisfaction and perceptions of quality (as opposed to other constructs) and methodologically robust for inclusion in a comparative analysis. The types of study varied greatly from those with eclectic factors related to student satisfaction (instructional, technology, support, student characteristics, etc.) constituting the majority, some using the Community of Inquiry rubric of three types of instructor-facilitated presence related to teaching, cognitive, and social aspects (Arbaugh et al., 2008), and some using or including the Technology Acceptance Model elements with factors related to ease of use, utility, others' perceptions, facilitating conditions, and experience (Venkatesh et al., 2003). There is also one study included here that uses a communication framework (specifically focusing on media richness and channel expansion theories), and one that uses a cultural comparison approach.

Not surprisingly given the variety of approaches, there is a large overlap in the factor constructs, and a large heterogeneity in the findings of the various studies. Through a qualitative analysis, nine commonly-used, but overlapping, fundamental constructs are identified. These constructs are: teaching presence, cognitive presence, social presence, experience online and/or sense of efficacy, ease of use and/or comfort with technology, instructional quality, instructor training, student characteristics, and technology reliability. They are briefly defined below.

Teaching presence includes the overall design of classes, the organization of material, facilitation of the class and related rehearsal activities, and "direct instruction" which includes feedback (Arbaugh et al., 2008; Bray, Aoki, & Dlugosh, 2008).

Cognitive presence refers to those aspects of a class or teaching that facilitate deep learning by piquing curiosity, providing a variety of perspectives, integrating different types of materials and activities that spur reflection, debate, and insight, and encouraging immediate transference of learning to work or applications pertinent to students' future plans. For the purpose of this taxonomy, we include course usefulness in this construct (Arbaugh et al., 2008). The utility of learning for students refers to immediate transfer of knowledge and skills to life situations or work settings, or acquisition of knowledge, skills, and abilities for future professional needs; it is enhanced by demonstrations, simulations, exercises and practice, and feedback for improvement (Van Wart, 2004).

Social presence refers to those elements of a class that encourage students to interact with others, encourage a learning-community approach, and foster open discussions that are more student-to-student based than instructor led (Arbaugh, et al., 2008; Bray, Aoki, & Dlugosh, 2008).

Experience with online courses and sense of efficacy are related constructs that emerge from the technology acceptance literature. As users of technology become more familiar with a technology, they become more adept at using it (increasing their sense of efficacy), more accepting of its weaknesses as well as its strengths, and less likely

reject a technology or technological approach because of their increased confidence (Artino, 2010; Al-Gahtani, 2016).

Ease-of-use and/or comfort-with-technology are related constructs that are also derived from the technology acceptance literature (Song et al., 2004; Al-Gahtani, 2016). Ease-of-use simply implies that as the technology is more intuitive and has fewer challenges, complexities, glitches, weaknesses, etc., the more likely people will want to use it (Bray, Aoki, and Dlugosh, 2008). The comfort-with-technology construct is the psychological side of ease-of-use; as users experience greater ease-of-use, they feel greater comfort and less anxiety about technology (Sun et al., 2008).

Instructional quality is a very broad, but rather vague, construct that is sometimes used in student satisfaction research. It generally refers to all types of teaching functions, such teaching presence, cognitive presence, and social presence, and therefore overlaps with them (Sun et al., 2008; Jung, 2011; Asoodor, Vaezi, & Izanloo, 2014).

Instructor training distinguishes courses based on the assumption that instructor training affects and improves instructional quality which in turn affects student satisfaction (e.g., Paechter, Maier, & Macher, 2010). While finding an effect of instructor training on instructional quality is relatively direct, finding significance of instructor training on student satisfaction is more challenging (and one we want to investigate).

Student characteristics refer to those personality features that may affect satisfaction such as learning style, maturity, achievement orientation, etc. (e.g., Hong, 2002; Bolliger & Martindale, 2004; Eom, Wen, & Ashill, 2006).

Technology reliability refers to confidence in the learning management system, internet service delivery, a variety support services such as hotlines, self-help videos, as well as the instructor's ability to avoid technology issues such as improper date settings and data loss accidents (Sun et al., 2008; Asoodor, Vaezi, & Izanloo, 2014; Bolliger & Martindale, 2004).

In sum, the taxonomy identifies nine constructs in all. Seven of those constructs are relatively distinct, but one (instructional quality) overlaps extensively with at least three others, and another can be considered either an antecedent factor or a factor that is mediated by instructional quality. Table 1 provides the taxonomy which identifies these factor constructs.

**Table 1: Empirical Studies Examining Student Satisfaction Factors in Higher Education Settings\***

Study Authors	Teaching presence:	Cognitive presence:	Social presence:	Experience, Self-efficacy	Ease of use, comfort with technology	Other factors**
Asoodar, Vaezi, and Izanloo, 2016	Instructor presence, University support and services	Diversity in assessment, Perceived usefulness	Interaction with others	<i>Not self-efficacy</i>	<i>Not ease of use, not anxiety,</i>	<i>Not instructional quality, Instructor ability, Not attitude toward e-learning (learning style), Technology quality</i>
Al-Gahtani, 2016		Usefulness		Self-efficacy experience	Anxiety	Enjoyment (Instructional quality)
Artino, 2010		Task value		Self-efficacy		Instructional quality
Bray, Aoki, and Dlugosh, 2008	Found it easy to interact with instructors			Could persevere in the face of challenges	Found computers easy to use,	Did not prefer social interaction with others when learning (student learning style)
Bolliger and Martindale, 2004	Instructor		Interactivity			Technology <i>Not student characteristics</i>
Clayton, Blumberg, and Anthony, 2018		Interactive	Engaging			Online perceived as lower instructional quality
Cole, 2016	Instructor communication, satisfaction	Interaction as most important				<i>F2F interaction preference does NOT predict online learning satisfaction (student characteristics)</i>
Eom, Wen, and Ashill, 2006	Course structure, Instructor feedback	Instructor facilitation	Interaction			Student learning style
Hong, 2002			<i>Not interactivity</i>	Experience		



Study Authors	Teaching presence:	Cognitive presence:	Social presence:	Experience, Self-efficacy	Ease of use, comfort with technology	Other factors**
Joo, Lim, and Kim, 2011	Teaching presence	Cognitive presence, Perceived usefulness	<i>Not interactivity</i>		Ease of use	
Kuo, Walker, Belland, and Schroder, 2009	Learner-instructor interaction	Learner-content interaction (1 <sup>st</sup> )	<i>Not interaction among students</i>	Self-efficacy <i>But not self-regulated learning</i>		
Lee and Rha, 2009	Structure		Personal interaction			Satisfaction was dependent (between these two factors) on what was emphasized
Liaw and Huang 2013		Interactive learning environments		Self-efficacy	anxiety	
Mohammadi, 2015	System quality Service quality				<i>Not perceived ease of use</i>	Education (instructional) quality
Otter, et al. 2013	Students do more than instructors		Feel more disconnected than professors perceive			Quality comparisons
Paechter, Maier, and Macher, 2010	Instructor counseling and support					Instructor's expertise in e-teaching Student's achievement goals (student learning style)
Palmer and Holt, 2009	Understanding of what was expected			Confidence		How well they thought that they were performing (student learning style)
Richardson, Maeda, Lv, and Caskurlu, 2017			Social presence			
So and Brush, 2008	Course structure, Emotional support		<i>Not social presence</i>			
Sun, Tsai, Finger, Chen, and Yeh, 2008	Course quality Instructor attitude toward e-learning <i>Not timeliness</i>	diversity in assessments perceived usefulness	<i>Not social presence</i>	<i>Not attitude toward computers</i>	Computer anxiety ease of use	<i>Not technology</i>
Zhu, 2012			Collaborative in both US and Chinese context			Student (culture) learning styles: Chinese want more instructor-led, low ambiguity teaching

\*Factor, in *Italic*, indicates that it was "Not" found were actively measured and did not find significance in the study. Studies in which a factor was not examined are blank or eliminated in a factor analysis are left blank.

\*\*Other factors include instructional quality, instructor training, student learning style, and technology reliability

Teaching presence is by far the most identified and supported element affecting student satisfaction. Twelve of the studies identify it, and all that do find it significant. Cognitive presence is identified by nine studies and found significant in all of them. It should be noted, however, that some of the studies were focused on cognitive and social presence, so their findings may be somewhat exaggerated. Twelve studies identified social presence. However, five of those studies did not find social presence a predictor of student satisfaction. Of the nine studies that identified experience and self-efficacy as a construct, six found the construct significant, two did not, and one had mixed findings. Ease-of-use and comfort-with-technology were supported in five studies and not supported in two. Instructional quality was identified in three studies and found significant in two. Instructor training was identified in two studies, and found significant in both. Various aspects of student learning styles and characteristics predicting student satisfaction were identified in six cases, but only found significant in three studies. For the purpose of this taxonomy, cultural characteristics were classified with student learning styles. Technology reliability was identified in two studies, but only found to be significant in one.

With this examination of the types of constructs that have been identified and sometimes found significant, we have a basis on which to compare online teaching methods, educational integrity, and perceptions about instructor

training relative to contemporary student perceptions which likely shift over time as students experiences expand, technologies improve, and expectations rise. This is further illuminated by a factor and regression analysis related to student satisfaction.

## RESEARCH METHODS

An instrument was created to measure both students' sense of "good learning experience" as well as their "satisfaction of online classes." To measure the relative importance of student preferences for online or face-to-face classes in comparison to logistical factors, two questions compared factors allowing for an all-that-apply response. A third item asked about the types of classes most appropriate for an online modality (e.g., introductory versus technical classes). To measure students' perception of quality online classes related to specific techniques, survey items were devised to include seven specific teaching methods and three items related to instructor training and skill. Other items included technology reliability, instructional integrity, and student satisfaction. Demographic information was gathered to determine their effects on students' levels of acceptance of online classes based on age, year in program, major, distance from university, number of online classes taken, high school experience with online classes, and communication preferences.

This paper draws evidence from a convenience sample of students enrolled in the educational programs of Jack H. Brown College of Business and Public Administration (JHBC) at California State University San Bernardino (CSUSB). The JHBC offers a wide range of online courses for both undergraduate and graduate programs. Students sometimes have the option to choose between both face-to-face and online modes of learning. Both online and face-to-face classes generally have a maximum enrollment of 60 for undergraduate programs and 30 for graduate programs respectively.

A Qualtrics survey link was sent out by nine instructors at the College to students enrolled in their classes during the 2017-18 academic year. In all, approximately 1100 students were contacted, 397 of them responded, representing a 36.1% response rate. Although the sample was drawn from a single business school, it is a relatively broad sample, representing students from several disciplines—management, accounting and finance, marketing, information decision sciences, and public administration.

To increase the reliability of the evaluation scores, composite evaluation variables are formed after an exploratory factor analysis of the individual evaluation items. A principal component method with direct oblique rotation was applied to explore the factor construct of student perceptions of online teaching. The item correlations for student perceptions of quality coefficients were greater than .30 which indicates acceptable use of factor analysis.

A simple least square regression analysis was applied to examine the relationship between various factors and student online learning satisfaction.

## RESULTS

Respondent demographic information is presented in Table 2. A majority, or 81%, of the respondents are in the age range of 21 to 29. About 92% of them are either juniors or seniors in college. Over 64% of them live more than 10 miles away from campus. Less than 10% of them have never taken online classes and about 80% of them have taken at least two online courses. Only about 10% of them have had one or more online experiences in high school. Only 5% of them report that they never communicate to others in face-to-face classes, whereas over 27% of the students who had online experiences reported that they never communicate with others in online classes.

Students were asked to respond to a list of evaluation questions about online course experiences (see Table 3). The descriptive data indicate that for students in the sample, based on a five-point Likert scale, the best rated functions are the most basic ones, such as online submissions (Mean=4.30), gradebook (Mean=4.06), quizzes (Mean=4.15) and online grading (Mean=3.99). Satisfaction as noted by enjoyment and general impression are moderate (both Means=3.46). Students overall are quite comfortable with technology (Mean=3.94). Perceptions of the quality of interactive features are rated substantially lower when examining the use of video lectures (Mean=3.40), small groups (Mean=3.32), and videoconferencing (Mean=3.17). Students are relatively neutral on instructor training and impact, when considering the students' perception of the impact of online training (Mean=3.23), students' perception of the impact in general teaching skills (Mean=3.17), and instructor impact on student enjoyment (Mean=2.94). Students were asked: assuming that you had a full array of hybrid/online classes available, and that they were well taught (based on your best experiences), how much would online education make up your entire course selections going forward? Overall, 18% students said less than 10%, 39% said from 10 to 50%, 32% said 50 to 90%, and 10% said 90 to 100%. According to university statistics, business and public administration students

currently take 19.6% of their classes online (hybrid or fully online in 2018). So, if both availability and quality were increased, the increase in online instruction would be substantial.

**Table 2: Demographic Information of the Participants (n=397)**

	Freq.	Valid %*		Freq.	Valid %*
Age			Number of HD/OL classes have taken		
Under 20	29	7%	None	34	9%
21 to 29	320	81%	Only one	48	12%
31 to 39	32	8%	2 to 4	224	57%
40 or older	16	4%	5 to 7	67	17%
Year in Program					
Freshman	5	1%	8 to 10	11	3%
Sophomore	8	2%	More than 10	11	3%
Junior	137	35%	Had HD/OL classes in high school		
Senior	224	57%	Yes	38	10%
Graduate	18	5%	No	357	90%
Major					
Finance	38	10%	Communicate to others in HD/OL classes		
Accounting	84	21%	Almost never	55	27%
Management	71	18%	Infrequently	44	21%
Marketing	60	15%	Sometimes	63	31%
Public Administration	33	8%	Quite frequently	29	14%
Information Decision Sciences	52	13%	Very frequently	15	7%
Other	59	15%			
Distance to University			Communicate to others in F2F classes		
Less than 1 mile	31	8%	Almost never	10	5%
1 to 5 miles	50	13%	Infrequently	19	9%
6 to 10 miles	61	15%	Sometimes	68	32%
11 to 25 miles	158	40%	Quite frequently	70	33%
More than 25 miles	97	24%	Very frequently	46	22%

\*Percent eliminating missing values

**Table 3: Survey Items of Student Perception of Online Classes**

Item	Question					
		n	Min	Max	Mean	Std Dev
Online Grading	Online grading of assignments by instructors (from very poor to very good)	361	1	5	3.99	1.03
Online Submission	(Same as above): Allowing students to make online submissions	358	1	5	4.30	0.85
Online Gradebook	(Same as above): Online gradebook	359	1	5	4.06	0.99
Online Quizzes	(Same as above): Online quizzes	352	1	5	4.15	0.92
Video Conference	(Same as above): Zoom or other videoconference methods	316	1	5	3.17	1.29
Group Discussion	(Same as above): Small groups discussions (chat rooms)	342	1	5	3.32	1.22
Video Lecture	(Same as above): Video lectures	330	1	5	3.40	1.16
Instructor's Training	How much difference do you think that the instructor's training in online teaching makes in their teaching online classes?	392	1	5	3.23	1.15
Instructor's Teaching Skill	How much difference do you think that the instructor's general teaching skills make in terms of their teaching online classes?	392	1	5	3.17	1.23
Instructor Making a Difference	How much difference does your instructor make in your enjoyment of an online class?	391	1	5	2.94	1.25
Technology Reliability	To what degree is the reliability of the technology itself (e.g., outages, glitches, etc.) a concern? (from very import to not important)	391	1	5	3.57	1.18
Control of Cheating	If you have taken hybrid/online classes, to what degree can instructors reduce and catch cheating? (from no effect to an enormous effect)	359	1	5	2.72	1.12
Enjoyment of Online Class	My enjoyment of online learning is (from very low to very high)	380	1	5	3.46	1.13
Impression of Online Class	What is your general impression of online learning? (from very bad to very good)	393	1	5	3.46	0.99
Choice of Online Class	Assuming that you had a full array of hybrid/online classes available, and that they were well taught (based on your best experiences), how much would online education make up your entire course selections going forward? (1=Less than 10%, 2=10-50%, 3=50-90%, 4=100%)	391	1	4	2.35	0.89
Comfort with Technology	In general, my comfort level with online learning in terms of the technology is (from very low to very high)	391	1	5	3.94	0.92

Five factors were identified with Eigen values greater than one (see Table 4). The first, labeled Basic Online Modality Functions, had high loadings (above 0.60) in Online Grading, Online Submission, Online Gradebook, and Online Quizzes. The second, labeled Student Satisfaction With Online Learning (what then functions as our operational definition and dependent variable), had high loadings on Enjoyment of Online Classes, Impressions of Online Class, Comfort with Technology, and Choice of Future Online Classes. These items touch on the three aspects of student perspectives defined at the beginning of the paper related to teaching quality, perceptions of learning achievement, and course quality not related to teaching (e.g., Comfort with Technology). The third, labeled Interactive Methods, had high loadings on Video Conferences, Video Lectures, and Group Discussions. The fourth, labeled Instructor Capability, had high loadings on Instructor’s Training, Instructor’s Teaching Skills, and Instructors Making a Difference. And the fifth, labeled System Trust, had high loadings on Technology Reliability and Control of Cheating.

**Table 4: Factor Loading**

	<b>Factor 1 Online Modality</b>	<b>Factor 2 Student Satisfaction</b>	<b>Factor 3 Interactive Methods</b>	<b>Factor 4 Instructor Capability</b>	<b>Factor 5 System Trust</b>
Online Submission	0.8622				
Online Grading	0.8380				
Online Gradebook	0.8333				
Online Quiz	0.6314				
Enjoyment of Online Class		0.8420			
Impression of Online Class		0.7959			
Comfort with Technology		0.7032			
Choice of Online Class		0.6878			
Video Conference			0.8851		
Video Lecture			0.8301		
Group Discussion			0.7272		
Instructor's Training				0.8887	
Instructor's Teaching Skill				0.8487	
Instructor Making a Difference				0.6222	
Technology Reliability					0.7269
Control of Cheating					0.7260

Note: Five factors explain 66% of the variance. Decimal places and loadings less than .30 omitted

To ensure the reliability of the composite variables, the Average Variance Extracted (AVE), the Composite Reliability (CR), and the Cronbach’s  $\alpha$  are reported (see Table 5). A CR and Cronbach’s  $\alpha$  values of 0.7 or greater are considered acceptable. As reported in Table 5, the CR values for four composite variables—Online Modality, Student Satisfaction, Interactive Methods, and Instructor Capability—are greater than or equal to 0.84 and Cronbach’s  $\alpha$  values are greater than or equal to 0.71, demonstrating that these composite variables have adequate reliability scores. However, the fifth factor—System Trust has relatively low CR (=0.69), AVE (=0.53), and Cronbach’s  $\alpha$  (=0.20). Therefore, the fifth factor as derived from the exploratory factor analysis is not included; instead the two variables—Technology Reliability and Control of Cheating are treated as separate variables. The Partial Correlation values, partialled with respect to all other variables, are also reported in the table.

**Table 5 Reliability and Variance among Factors**

	<b>Mean</b>	<b>Std Dev</b>	<b>AVE</b>	<b>CR</b>	<b>Cronbach's <math>\alpha</math></b>	<b>Online Modality</b>	<b>Interactive Methods</b>	<b>Instructor Capability</b>	<b>Student Satisfaction</b>
Online Modality	16.55	3.04	0.63	0.87	0.82	<b>0.7960</b>			
Interactive Methods	9.83	3.13	0.58	0.84	0.80	0.3053	<b>0.7600</b>		
Instructor Capability	9.33	2.90	0.68	0.86	0.71	0.0319	0.0072	<b>0.8254</b>	
Student Satisfaction	13.29	2.98	0.64	0.84	0.77	0.2047	0.1259	0.0219	<b>0.8004</b>

Notes: AVE=average variance extracted; CR=Composite reliability. The diagonal elements (in bold) represent the root of AVE. The 5<sup>th</sup> factor was rejected due to low reliability.

A simple least square regression analysis was applied and the results are presented in Table 6.

**Table 6: Summary of Multiple Regression Analysis for Predicting Students' Satisfaction to Online Class**

Analysis of Variance				
Source	DF	Sum of Squares	Mean Square	F Ratio
Model	11	396.56	36.05	4.84
Error	251	1867.84	7.44	<b>Prob &gt; F</b>
C. Total	262	2264.40		<.01***
Parameter Estimates				
Term	Estimate	Std Error	t Ratio	Prob> t
Intercept	7.88	1.63	4.83	<.01***
Year in Program	-0.46	0.30	-1.54	0.12
Age	0.38	0.33	1.15	0.25
Distance to University	-0.12	0.15	-0.83	0.41
Number of hybrid/online classes have taken	0.58	0.21	2.75	<0.01***
Communicate to others in F2F classes	-0.30	0.16	-1.96	0.05**
Communicate to others in HD/OL classes	0.49	0.15	3.20	<0.01***
Control of Cheating	0.24	0.17	1.42	0.16
Technology Reliability	0.30	0.15	1.97	0.05**
Instructor Capability	0.01	0.07	0.17	0.86
Interactive Methods	0.00	0.06	-0.06	0.95
Online Modality	0.18	0.06	3.11	<0.01***

\* $p < .10$ , \*\* $p < .05$ , \*\*\* $p < .01$ .

Factors found to be significant in affecting student satisfaction in this study include the number of classes taken in the past, communication preferences related to face-to-face and online modalities, technology reliability, and the basic online modality (i.e., the use of online submission, grading, grade book, and quizzes). However, factors that were not found significant included year in program, age, distance to the university, educational integrity (i.e., control of cheating), instructor capability, and interactive methods.

## DISCUSSION

The descriptive data strongly suggest that students are most interested in the basics of online classes related to basic methodological functionality (roughly equivalent to *teaching presence*). As found in many studies, many students are highly interested in what they perceive as assistance with learning: the organization of the course, the clarity of presentations and materials selected, the accessibility of the instructor, and the quality of feedback (Bolliger & Martindale, 2004; Young & Duncan, 2014; Sun et al., 2008; Asoodor, Vaezi, & Izanloo, 2014). The quality of organization and course pre-planning are highly important to students whose attention is divided by other courses and external interests, and who are easily frustrated with confusion or vagueness in instruction. Readings and lectures, among other information-imparting techniques, can be clear and easy to understand, or considered excessively complicated and poorly explained to students. A somewhat surprising note in this regard is the inclusion of quizzes. Follow-up focus groups used to clarify some of the less clear findings indicated that students see quizzes (with no or low points associated) as rehearsal opportunities critical to practice and success in testing. For example, accounting and finance students indicated that quizzes are critical to ensure that they understand their readings and lectures. Electronic quizzes (and homework) were generally considered preferable to hand-graded work because of the speed of response.

While a sense of learning community is more important for some types of classes in the humanities, education, and social sciences, most students across disciplines find the physical connectedness of learners and the instructor, student-to-student interactions, and group learning to be important (Arbaugh, et. al., 2008; Artino, 2010; Clayton, Blumberg, & Anthony, 2018; Liaw & Huang, 2013; Richardson et al., 2017; So & Bush, 2008; Wyatt, 2005); but not all studies find social and cognitive elements significance on student enjoyment (e.g., Chang & Kang, 2016). The *cognitive and social presence* factors were most likely to be represented in this study by videoconferencing, pre-recorded lectures by instructors, and discussion groups. They were much less important on average for students in this study, and did not achieve significance in regression analysis. However, a negative finding here begs additional questions before asserting that social and cognitive factors do not significantly affect student satisfaction across most or all situations. If instructors improved their use of videos, videoconferencing, and small group discussion groups (as a function of instructional quality), would it affect significance (see Draus, Curran, & Trempus, 2014)? As students become exposed to more and more technologically sophisticated classes, will it affect significance?

Overall, descriptively students generally believe that they can detect varying levels of *faculty training*; however, as a factor related to student satisfaction, it is not statistically significant. In an interesting response about the degree to which instructors affect student enjoyment are among the lowest in the survey. Because many online classes reduce lecture time and increase rehearsal and feedback time, students generally believe they are even more responsible for their personal achievement of learning than in face-to-face courses (Otter et al., 2013; Seok et al., 2010; Eom, Wen & Ashill, 2006). Indeed, despite the perceptions of many faculty to the contrary, Hoffmann & Oreopoulos, (2009, 83) assert that “the importance of college instructor influences [on student achievement] is small.”

While *experience with online classes* in high school was not significant, experience with online classes at the university was; more classes meant that they tended to be more satisfied and that factor did reach significance. This related to the high level of importance placed on *comfort with technology* which reached significance. A different but related issue that was rated moderately high and significant for student satisfaction was *technical reliability*. In focus groups there were few complaints, but when problems occur, they are frequently very upsetting and/or frustrating for students who sometimes feel helpless to deal with malfunctions and glitches in the system. On the other hand, problems with educational integrity (a factor previously unexplored in terms of student satisfaction) were scored less important than other items but it turn out not to be significant. Student did not see that as a factor affecting their online learning satisfaction. However, that doesn't mean faculty should not try to prevent cheating; it is still a significant issue for faculty in designing online classes. A *student characteristic* that was very important was students' communication patterns. Those students who communicated a lot in face-to-face classes were less likely to be satisfied in online classes. This begs the question, if online instructors did a better job in providing those students averse to online modalities with quality online interaction opportunities, would those student preferences change over time? For example, online conferencing has vastly improved the visual options, easy interaction via video and sidebar chat, and even simple and automatic distribution of students into small groups. Other student characteristics that were not significant included age, despite the perception that younger people are more adept and more comfortable with technology. Nor was the year in program of study significant. Furthermore, even though students at a distance might value the opportunity of online learning more, it did not translate into higher levels of satisfaction.

## CONCLUSION

With the purpose to see if various, under-examined aspects of online instruction align with past studies of student satisfaction, this study has several contributions to the literature. First, it examined the relationship of seven specific instructional methods with student satisfaction. Basic online functions relating to online submissions, grading, gradebook, and quizzes constituted a factor, were significant, and were consistent with the teaching presence construct. Three additional instructional methods, videoconferencing, group discussions, and prerecorded lectures constituted a separate factor overlapping with the cognitive and social presence constructs; however, the use of methods commonly associated with social/cognitive teaching were not significant in this study as a predictor of student satisfaction. Since the literature has heterogeneous results in this regard, it does seem possible that a study focusing on “advanced” teaching methods might find an impact with more sharply defined boundary conditions than in the current study.

Instructor training items constituted a coherent factor, but are not significant for student satisfaction in this study. Technology reliability and control of cheating load well as a fifth factor (labeled here as system trust) but have a low Cronbach's  $\alpha$ . Therefore, they are not included in the analysis as a factor, and instead the two variables—technology reliability and cheating—are treated as separate variables. As partialled variables, technology reliability is significant, while control of cheating is not significant in terms of student satisfaction. Students' communication preferences in face-to-face versus online modes was also found to be a significant factor in determining student satisfaction.

There are a number of noteworthy study limitations. The study uses a single method and a single institution rather than multiple methods and an array of sources. Further, the study population is narrow—business and public administration students—whose preferences cannot be assumed to be similar to students in other disciplines (Arbaugh, 2013). These limitations restrict the generalizability of the study considerably, and must be aggregated with other studies to assure wider applicability.

Because student satisfaction is so important, and because the underlying elements of online instruction are changing, it is critical that future research probe this area more thoroughly, both quantitatively and longitudinally. In this study, the quality of basic online modality features are very significant, but more advanced features are not. Is that simply because they are unlikely to ever become significant predictors of student satisfaction, or because they are

still new, student expectations have yet to become more demanding, or possibly that the quality of implementation is so low that they are largely irrelevant to students at this point? While the *perceptions* of instructor training are not significant predictors of student satisfaction, is it possible that *actual* training interventions do affect student satisfaction? Indeed, there are many areas that will benefit from further study in student satisfaction, as the capacity and demand for online education continues to increase and the technology used in the field continues to evolve.

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# Establishing Student-Led University Consulting Groups

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## ABSTRACT

Significant student value is obtainable through the introduction and continuation of a student-led university consulting group. Universities and business schools gain community engagement presence and contribution through such groups as well. Consulting groups represent experiential learning opportunities as students provide consulting services to clients. This article outlines the requirements necessary to establish and maintain a student-led consulting group based on five years of consulting group experience at a major Northeast USA Research-One University. The requirements include experienced alumni, driven students, recruiting process, student training, project sourcing, project work, and project completion.

**Keywords:** Consulting group, experiential learning, clients, business school

## INTRODUCTION

Student-led consulting groups are comprised of students interested in learning about and practicing professional consulting capabilities. Groups are supported by a faculty advisor experienced in professional consulting as well as several alumni who are consulting experts. Groups source project work and develop project scope with clients. Students work on the project and develop deliverables that align with established scope. The alumni consultants and faculty advisor support the students as they do their work. Consulting groups are based on the premise that, “Knowledge is continuously derived from and tested out in the experience of the learner” (Kolb, 1984, p. 27). In addition, more than half (51%) of the current generation of undergrads learn best “by doing” (Barnes & Noble College, 2018). While the students are engaged in the project, they learn experientially about marketing and sales, project scoping, project planning, storytelling, required technologies, and relationship development and management. By following a prescribed process, developed from five years of consulting group experience at a major Northeast USA Research-One University, universities and business schools can establish a successful student-led consulting group.

## STUDENT-LED CONSULTING GROUP REQUIREMENTS

There are seven key requirements for establishing a student-led consulting group:

1. Driven students
2. Experienced alumni
3. Student recruiting process
4. Student training
5. Client project sourcing
6. Client project work
7. Client project completion

### Driven Students

A core group of committed, driven students is required to establish a student-led consulting group. Student consulting groups don't work without driven and intelligent students. Students should exhibit a willingness to learn, and resiliency in the face of constructive criticism. The success of the group is predicated on the constant improvement of the students. A handful of students constitute the core and are often identified by faculty. Once the core group of students is identified potential alumni mentors are approached to participate.

## Experienced Alumni

Perhaps the most important ingredient in the creation of a student-led consulting group is the direction and involvement of experienced alumni mentors who are in the consulting industry. These alumni mentors are involved in the week to week operations of the group, and are a significant source of information, guidance, and training for initial members. Of import is their contribution of regular feedback on project work. Feedback is “informed, nonevaluative, objective appraisal of performance intended to improve skills” (Ende, 1983, p. 779) and timely feedback is known to enhance learning (Bakken, 2002). Alumni also connect the group with potential clients. Identifying potential alumni to serve as consulting group mentors is achieved through networking. University or business school alumni staff are a source of candidates as are university or school administrators. Faculty are also good sources of alums who can add value to such work. Potential mentors must have sufficient expertise, time and interest in helping students develop consulting expertise and in supporting group requirements. Selection of the faculty advisor is based on the same requirements. Selection of two to three alumni mentors eases the time burden that may arise.

## Student Recruiting Process

The core group of students and an alumni mentor are able to source and perform work, however recruiting additional students is necessary in establishing the consulting group and required to maintaining it over time. The recruitment process is stringent and involves a number of steps:

**Figure 1 – Recruiting Process**



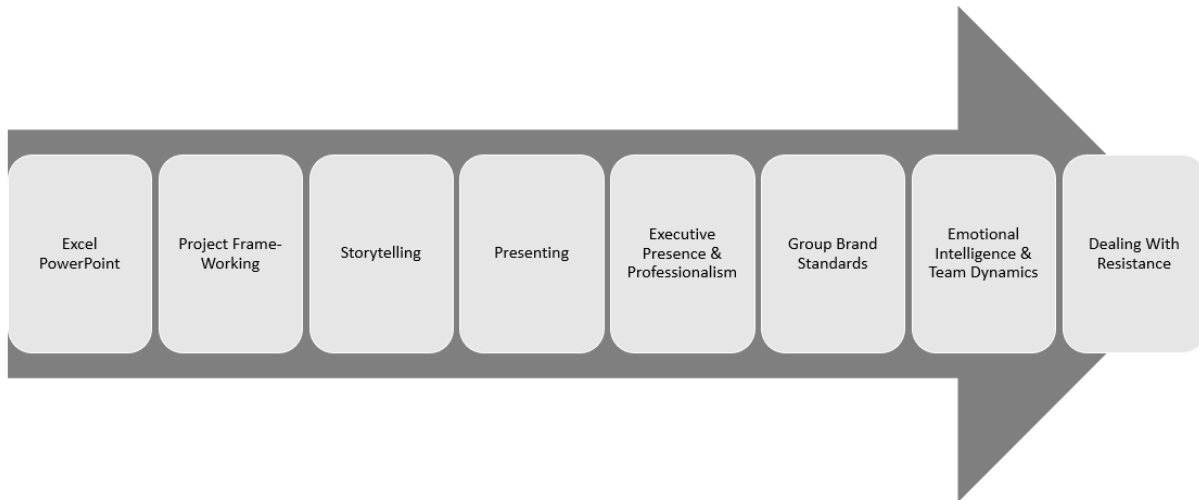
1. Resume Screening - Applicants are screened based on factors including GPA, and experience. Special note is given to year of graduation. The process of training is a continuous one, and the longer members participate, the longer they have to improve, and help train their peers. Freshmen and sophomores are strongly preferred.
2. Round One Interviews
  - a. Case Interview - This is the same format as a consulting interview, usually pulled from a casebook, or designed by students.
  - b. Fit Interview - Includes questions about why consulting, motivations and goals. One notable question used is “Why this University?”.
  - c. Group Case Interview - Four interviewees are put in a group and solve a case together. They are examined on how well they work with other people.
3. Round Two Interviews - The second round of interviews are done with alumni advisors. They consist of a case and a fit interview. These are one-on-one, and usually conducted virtually.

## Student Training

Students receive formal training during the interview process and for the first year after joining the Group. Informal training from Group peers, alumni and the faculty advisor occurs continuously after the first year of Group membership. Formal training goals include:

- Equip members with skills and knowledge to be successful in client consulting projects
- Apply the Group’s disciplines, processes and practices for client benefit and personal growth
- Ease the workload of board members/trainers by increasing self-sufficiency

**Figure 2 – Training Topics**



**Table 1 - Training Topics, Learning Objectives, and Sources**

<b>Topic</b>	<b>Learning Objective</b>	<b>Source</b>
Excel and PowerPoint	Apply basic skills to meet client project requirements	Microsoft®, Internet
Project Frame-Working	Apply processes, tasks, and tools to execute a client project	Alumni Mentors
Storytelling	Tell stories that engage your listeners more than facts alone	Alumni Mentors
Presenting	Create a professional, credible impression on listeners	Alumni Mentors, Internet
Executive Presence and Professionalism	Inspire confidence among senior leaders that engenders credibility and value	Alumni Mentors, Internet
Group Brand Standards	Apply Groups standards to ensure consistency	Group Officers or Trainer
Emotional Intelligence & Team Dynamics	Identify and manage one's own emotions and the emotions of others.	Internet, Group Officers or Trainer
Dealing with Resistance	Remove obstacles and resolve conflicts	Alumni Mentors, Internet, Group Officers or Trainer

Typically, training is delivered through topical PowerPoints that include application exercises and role-playing. As students join the Group and participate over their university careers, exiting the group is inevitable. As such, experienced Group members are paired with new members in mentor-mentee relationships. These relationships provide timely feedback and opportunities for discussion. At a minimum, mentors meet with mentees every two-four week to check-in on progress, answer questions, and resolve issues. Ad-hoc mentor-mentee conversations occur as needed.

A typical mentor-mentee check-in agenda includes these questions:

- What issues have you run into?
- What are you finding difficult?
- What have been your strengths?
- What questions do you have about the project?
- Was there anything unclear about the lessons to date?
- How can your mentor help you with training moving forward?
- Are there any comments or thoughts you'd like to share?

Similar to the Group member mentor-mentee relationship is when alumni advisors meet with group members to provide training, insights, and answers to questions. Those conversations occur often on an as-needed basis.

### **Client Project Sourcing**

Alumni mentors and the faculty advisor are the primary means of identifying potential consulting clients and projects. Initial discussion between the alumni mentor, faculty advisor, and client determine whether the project opportunity aligns well with Group capabilities and interests. If there is good alignment the discussion participants determine if the project can be completed within an appropriate timeframe, usually one or two semesters.

Once alignment is discerned there is a meeting with the Group leader (managing director or president), project leader, and alumni mentor with optional attendance by the faculty advisor. The goal of this meeting is to establish preliminary scope as well as a high-level timeline. At the follow-up meeting, the Group presents its final project scope and timeline. Prior to proceeding, the client signs off on the scope and a client employee is assigned as liaison to the Group. The Group commits to weekly or bi-weekly updates and the project work commences.

### **Client Project Work**

The project leader is responsible for structuring the project team. Multiple, semi-independent workstreams are often appropriate when the project is broad or contains parallelizable work. An example is site selection and financial modeling, these tasks are not dependent on each other, and can be worked on at the same time by separate workstreams. Each project has one project leader and at least one alumni mentor. Teams meet weekly and each team member receives tasks to complete before the next meeting. Team members are expected to turn in slide decks showing progress on the day of the meeting. Before each meeting, slides undergo revision, with the PL, workstream leader, or alumni mentors. Presentation slide decks undergo many revisions, with some decks seeing as many as 20 iterations. Members develop skills through this process of revision, which helps them produce better work over time. This is the key to making the group successful with the idea that application experience and constant iteration are valuable means of learning and improvement.

### **Client Project Completion**

When the approved project scope is met, the project team forwards a draft compilation of its client project deliverables. The client reviews the draft materials and provides feedback. The project team incorporates feedback and sets a final project meeting with the client. The project team presents its work to the client in a live or virtual meeting. The client asks questions and provides additional comprehensive feedback on the work performed, and recommendations rendered. This meeting marks the end of the project. The potential exists for a discussion of follow-on client work for another semester or academic year.

### **Client Project Examples**

A leading research and teaching hospital with an expansive health provider network was interested in identifying why patients are referred to out-of-network providers when in-network providers are available. Development of mitigation strategies was an additional project requirement. A Group project team was assembled who learned about how to approach and interview patient referral staff, analyze interview results, and develop mitigation strategies. Feedback from a student analyst on the value of the project included, "This project provided an unrivaled experience to learn about an industry first-hand while developing critical analytical and interpersonal skills that I was able to leverage the next summer during my internship."

An international conglomerate providing unique medium-large scale venue experiences to gamers and spectators wanted to develop a process to make consistent, efficient, and intelligent property (venue) investment decisions to support organizational growth. The Group project team that was formed learned how to build a 150 line operating profitability model. They also learned how to evaluate a business venture based on industry-standard return metrics (NPV, IRR, cash-on-hand, etc.). From a team member perspective, students, “Got excellent first-hand leadership experience and became much better at managing upward and downward,” and, the project “really showed me the amount of planning, diligence, and resources it takes to set up a large in-person event space.”

## CONCLUSION

By following the proven processes described herein, universities and colleges can establish and maintain a student-led consulting group. Careful attention must be paid to each of the seven consulting group requirements as weakness in any of them can diminish group efficiency and effectiveness. Student-led consulting groups benefit students by providing practical experience, applying concept and theory to real-world opportunities, requiring accountability, and supporting local and regional for-profit and non-profit organizations. The organizations served by student-led consulting groups appreciate the value the groups create as well as the ability to help undergraduates learn and develop.

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# Closing the Technology Skills Gap in Accounting Education: Making Excel Certification a Student Responsibility

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## ABSTRACT

Technology skills are increasingly cited as both curriculum deficiencies in accounting education and skills gaps in the workplace. Employers now view Microsoft Excel skills as the top technology competency required of entry-level accountants. To address these developments, the Western Connecticut State University (WCSU) Accounting Department began requiring Microsoft Office Specialist Excel certification as an independent assignment in its Intermediate Financial Accounting II curriculum. This paper describes the certification exam and the process by which a successful implementation was achieved without an overhaul of curriculum or a significant additional burden on faculty. Nearly all students passed the exam and their perceptions of the assignment show that they viewed the certification assignment positively in terms of its instructional merit despite indicating lesser enjoyment. Overall, students were satisfied with the assignment. The incremental time required by students to complete this requirement was reasonable for an out-of-classroom assignment.

**Keywords:** accounting education, technology skills gap, spreadsheet skills gap, Microsoft Excel certification

## INTRODUCTION

In 2012, The Pathways Commission on Higher Education, a joint initiative of the American Accounting Association and the American Institute of Certified Public Accountants, was formed to study the future of accounting higher education and develop recommendations for its improvement. The Commission identified technology as a particular curricular deficit in accounting education and underscored the need for curriculum models that reflect current and emerging technologies. The report asserted, “Enhanced technological skills are increasingly important for business’ success and, therefore, for future accountants” (Pathways, 2012, 133).

In 2015, the Technology Task Force of the Pathways Commission addressed the technology curriculum deficit identified in the 2012 Pathways Commission report. In its work, the Technology Task Force conducted focus groups comprised of academics and practitioners and asked “What technologies should accounting students know to be successful in the accounting workplace?” (Pathways, 2015, 10). From this, a top 25 technologies list was assembled. The number one ranked technology was “electronic spreadsheets”, defined as “A computer application used for creating, editing, and analyzing data that is organized into rows and columns. Example: Microsoft Excel” (Pathways, 2015, 23). Highlighting the impact that changes in technology are having on the skills required of new accountants, the report emphasized, “An accounting generalist must master the intersection of technology skills with accounting knowledge” (Pathways, 2015, 4).

The Association to Advance Collegiate Schools of Business (“AACSB”) reinforces the importance of technology skills development in accounting education through its Accreditation Standards for Accounting Accreditation (AACSB, 2018). Accounting Learning and Teaching Standard A5 addresses the continuously changing nature of technology and the need for accountants to continually adapt to these changes by learning new skills. Standard A5 refers to this dynamic as “information technology agility” (AACSB, 2018, 27). Standard A5 also provides examples of data analytics skills that are appropriate for accounting curricula such as statistical techniques, modeling, predictive analytics, text analysis, data management, learning systems and visualization. It is noteworthy that many of these skills can be performed with Microsoft Excel.

## THE MICROSOFT EXCEL SKILLS GAP

Excel skills are frequently cited as the top technology skill required of entry-level accountants. To identify the gaps between business education and employer expectations, Rassuli (2012) surveyed 50 top Midwestern employers about the importance of numerous business skill areas. Rassuli concluded that proficiency with Microsoft Word and Microsoft Excel are the highest-ranked information technology skills required of undergraduate business students by employers. Noteworthy, employers emphasized that a student’s ability to model business problems using

spreadsheets facilitated their ability to analyze alternatives, make decisions and contribute to project teams. Cory and Pruske (2012) emphasize that accounting students should master accounting-related technology skills prior to graduation. In a survey that included 213 CPAs and 251 non-public accountants, Microsoft Excel was the top technology skill required of accounting students prior to employment (Cory and Pruske, 2012). Echoing this conclusion, Pelzer and DeLaurell (2018) surveyed recent accounting graduates regarding their workforce preparedness. Excel training was the top subject that was not included in their undergraduate coursework that would have better prepared them for the workplace (Pelzer and DeLaurell, 2018). Further, the survey participants indicated that Excel was the top skill that students lacked upon entering the workforce (Pelzer and DeLaurell, 2018).

The accounting profession is taking steps to address its technology deficits and in particular its Excel skills gap. In April 2018, the American Institute of Certified Public Accountants (AICPA) added Microsoft Excel as a tool on the CPA exam. “The new Exam software will make the Exam more closely resemble the professional tools and business environment a CPA would experience in their everyday work life” (AICPA, 2018). This change was responsive to AICPA Examinations Team research investigating the knowledge and skills required of newly licensed CPAs and the impact of technology on their work. The Examinations Team determined: “Excel skills are essential” (Journal of Accountancy, 2019). The AICPA noted the evolving technology skills required of new CPAs, “Many of the skills newly licensed CPAs are using reflect CPAs’ ability to integrate emerging technologies into the business environment and use technology for greater business insights” (Journal of Accountancy, 2019). The Association of International Certified Professional Accountants (2018) showed its support for the profession’s technology initiatives through its Pre-certification Core Competency Framework. This skills-based competency outline recommends that students entering the accounting profession be able to use technology and tools to analyze data. Furthermore, in an indirect reference to Excel skills, the 2014 Joint Curriculum Task Force of the Institute of Management Accountants and the Management Accounting Section of the American Accounting Association included spreadsheet skills among its technology competencies now required of entry-level accountants. “Technology competencies include the use of software, including proficiency in the development and use of spreadsheet models and the use of technology to enhance communication” (Lawson, 2014, 301).

## **CREATING AN EXCEL CERTIFICATION POLICY IN THE WCSU ACCOUNTING CURRICULUM**

Each semester the WCSU Accounting Department faculty meets with its Advisory Council to gain practitioner perspectives on how developments in the accounting profession might impact curriculum requirements. The advisory team is comprised of partners from national and local public accounting firms as well as current and former staff of the FASB. The need for accounting graduates to develop technology competencies and Excel skills prior to entering the workplace is a regular topic of discussion. Echoing this conversation, job descriptions for entry-level accounting positions now commonly list Excel skills as preferred qualifications.

To address this need, the department amended its Intermediate Financial Accounting II curriculum to require Microsoft Office Specialist Excel certification. Intermediate II was selected because it is a gateway prerequisite for the upper level accounting courses in which Excel skills would be most utilized by students. Central to our implementation approach was positioning the certification requirement as an independent assignment. While the policy suggests on-line study courses such as GMetrix and Udemy, it clearly states that obtaining Excel certification is an independent assignment and is the sole responsibility of the student: “It is important to note that the exam content will not be taught in class. Students must prepare for the exam independently and outside of classroom hours” (WCSU, 2019). To facilitate communication with stakeholders, a policy document was prepared and shared with students, university administration and external partners such as local community colleges.

Per the policy, students unable to obtain Excel certification or receive a course equivalency waiver would receive a grade of “incomplete” for the course and have (per university policy) six weeks from the start of the next semester to cure the incomplete. Equivalency waivers for previously completed courses from other institutions are considered on a case-by-case basis and require the approval of the Department Chair. Failure to resolve the incomplete will result in an “F” for the course. While the department believed that the timeframe for resolving an incomplete grade was sufficiently flexible, the consequences of not obtaining certification were nonetheless high.

## **BECOMING A CERTIPOINT AUTHORIZED TESTING CENTER**

The Microsoft Office Specialist Excel certification exam must be taken at a Certiport Authorized Testing Center (“CATC”) and an exam voucher must be purchased in advance. To support our Excel certification initiative, WCSU successfully applied to become a CATC. This required working closely with our IT department to identify a Certiport-compliant on-campus testing location and install the test software on 30 desktop computers. This is likely a straightforward undertaking for schools with existing testing centers. In connection with this, we established test administrator and proctor roles and offered students a choice of four on-campus exam dates over the final four weeks of the semester. By eliminating the need for students to take the certification exam at an external testing center, we streamlined their examination process and demonstrated our commitment to their certification.

Our department administered 24 on-campus certification exams over four exam dates. In connection with this, we sold 22 test vouchers to students (2 students purchased vouchers directly from Certiport). Of the 22 vouchers, four (18%) were one-time vouchers and 18 (82%) were “voucher with retake” vouchers allowing students to retake the exam within 30 days if they failed the exam. The high percentage of retake vouchers purchased suggested that many students viewed their first test as a trial run.

As a dry run, I obtained Excel certification prior to the first semester that certification was required of our students. To prepare for the exam, I used the study resources suggested to students in the Excel certification policy. Because WCSU had not yet established a CATC, I purchased a voucher from Certiport and took the exam at an off-campus CATC. This hands-on experience proved invaluable in explaining the practical aspects of the certification process to students. Students were understandably apprehensive. Having obtained certification, I was well positioned to both answer their questions and share my genuine enthusiasm for Excel certification.

## **THE MICROSOFT OFFICE SPECIALIST EXCEL CERTIFICATION EXAM**

The Microsoft Office Specialist (“MOS”) Excel certification exam (Exam 77-727) is the first of three MOS Excel certification exams, followed by the MOS Expert and MOS Master exams. The MOS Excel certification exam is 50 minutes in duration and includes 35 questions. A passing score is 700.

According to Microsoft (2019), “Successful candidates for the Microsoft Office Specialist Excel 2016 certification exam have a fundamental understanding of the Excel environment and the ability to complete tasks independently. They know and demonstrate the correct application of the principle features of Excel 2016. Candidates create and edit a workbook with multiple sheets, and they use a graphic element to represent data visually. Workbook examples include professional-looking budgets, financial statements, team performance charts, sales invoices, and data-entry logs.” Per Microsoft (2019), the exam measures the following Excel skills:

1. Create and manage worksheets and workbooks (30-35%)
2. Manage data cells and ranges (15-20%)
3. Create tables (15-20%)
4. Perform operations with formulas and functions (10-15%)
5. Create charts and objects (15-20%)

## **EXCEL CERTIFICATION SKILLS ARE IMPORTANT TO CPA FIRMS**

The Excel skills measured by the MOS Excel certification exam are well-aligned with the Excel skills required of entry-level public accountants. Ragland and Ramachandran (2014) contend that CPA firms prioritize hiring Excel-proficient accounting students and identified the specific Excel functions that public accounting firm employees found to be the most important. Ragland and Ramachandran (2014) concluded that the top five functions are basic formula, filter and sort data, vertical / horizontal lookup, formatting documents and if/then statements. With the exception of vertical / horizontal lookup (which is covered by the MOS Excel Expert exam) four of the five top functions identified by Ragland and Ramachandran (2014) are addressed by the MOS Excel certification exam. Table 1 maps the five MOS Excel Exam skill categories to the top Excel functions identified by Ragland and Ramachandran (2014).



**Table 1: MOS Exam Skill Category compared to Ragland and Ramachandran (2014) Top Excel functions**

		<b>Ragland and Ramachandran (2014) - Top Excel Functions</b>				
		<b>Basic</b>	<b>Filter / Sort</b>	<b>Vert./Horiz.</b>		
<b>MOS Exam Skill Category</b>		<b>Formula</b>	<b>Data</b>	<b>Lookup</b>	<b>Formatting</b>	<b>If/ then</b>
Create and Manage Worksheets and Workbooks					X	
Manage Data Cells and Ranges					X	
Create Tables			X			
Perform Operations with Formulas and Functions		X			X	X
Create Charts and Objects					X	

**PRE-CERTIFICATION EXAM SKILLS PROFICIENCY**

To gauge student proficiency in the skills tested on the MOS Excel exam before they started their exam preparation, I conducted a voluntary survey. The survey asked students to indicate their ability to perform the various sub-skills within the five exam skill categories in terms of the following classifications: “proficient”, “can do with help” or “cannot do”. Survey participation was 15 (52%) out of 29 students. As summarized in Table 2, more than 70% of students believed that they were proficient in “Create and Manage Worksheets and Workbooks”, “Manage Data Cells and Ranges” and “Create Tables”, while slightly fewer than 70% indicated proficiency in the “Perform Operations with Formulas and Functions” and “Create Charts and Tables” categories.

**Table 2: Pre-assignment Excel Skills Proficiency Survey**

				<b>Pre-Exam Survey - Student Responses</b>		
<b>MOS Exam Skill Category</b>				<b>Proficient</b>	<b>Can do with help</b>	<b>Cannot do</b>
Create and Manage Worksheets and Workbooks				80%	15%	5%
Manage Data Cells and Ranges				76%	17%	7%
Create Tables				73%	18%	9%
Perform Operations with Formulas and Functions				67%	18%	15%
Create Charts and Objects				67%	27%	6%

**STUDENT PERCEPTIONS**

To assess student perceptions of the assignment, I followed the survey framework developed by Pirog (2019) to collect and analyze both pre-assignment and post-assignment data. Surveys were completed during class with students receiving one extra-credit point on their first and final exams for their participation in each survey. Students were reminded to not put their name on their surveys. To reinforce anonymity, surveys were constructed to ensure that they could not be attributed to particular groups of students (e.g. those that passed the exam or those that failed the exam). Students were also reminded that because they were the first students at WCSU to take the certification exam as a course requirement, the surveys would help faculty understand their perspective on the initiative. Thirty-one pre-assignment surveys and twenty-seven post-assignment surveys were completed.

Pirog's (2019) model elicits student views on six variables: three variables regarding the merits of the assignment such as "helpful", "learned" and "realistic", two affective variables "involved" and "enjoyable" and one overall variable, ("worthwhile") that combines merit and affect and is intended to measure student satisfaction with the assignment. Students recorded responses to the variables using a nine-point Likert-scale where 1 = "strongly disagree" and 9 = "strongly agree". While pre-assignment and post-assignment survey variables were the same, pre-assignment questions were positioned to gauge student expectations for the upcoming assignment and post-assignment questions were positioned to assess student experiences with the completed assignment.

### PRE-ASSIGNMENT SURVEY RESULTS

Table 3 summarizes the results of the pre-assignment survey conducted at the beginning of the semester.

**Table 3: Pre-assignment Student Assessments of Excel Certification Assignment**

Pre-assignment survey item	Variable	Mean	S.D.	r
1) I expect that the Microsoft Office Specialist certification assignment will be helpful to me in my understanding of Microsoft Excel (merit)	helpful	7.50	2.20	0.66
2) I expect to learn a lot about Microsoft Excel from this assignment (merit)	learned	7.00	2.30	0.70
3) I expect that working on this assignment will allow me to apply my knowledge to realistic business problems (merit)	realistic	7.50	2.00	0.79
4) I expect to be highly involved in this assignment (affect)	involved	6.90	2.20	0.90
5) I expect this assignment to be enjoyable (affect)	enjoyed	5.70	2.50	0.76
6) I expect that this assignment will be worth the effort (merit and affect)	worthwhile	7.30	2.50	1.00
	Average	7.00	2.30	
Notes: N = 31; Scale items: Strongly Disagree (1) to Strongly Agree (9).				
r = correlation with "worthwhile"				

The data indicates that students perceived the upcoming Excel assignment positively on an overall basis. The average mean score of all six scale items was 7.0 (S.D. = 2.3). Responses to the questions addressing the anticipated merit of the assignment (helpful, learned, realistic) were encouraging with mean scores of 7.5 (S.D. = 2.2), 7.0 (S.D. = 2.3) and 7.5 (S.D. = 2.0), respectively. Particularly pleasing were the high merit scores which indicated that students anticipated acquiring useful and relevant skills in the assignment. The "involved" score of 6.9 (S.D. = 2.2) indicated that students anticipated investing a meaningful amount of time to complete the assignment. It is noteworthy that the mean score for the affective variable "enjoyed" of 5.7 (S.D. = 2.5) was the lowest of the six scale items. While students saw the benefits of the assignment, this lower score indicated that they may have been apprehensive about the incremental work required. The response to the "worthwhile" variable was also encouraging; its mean score of 7.3 (S.D. = 2.5) was consistent with the high mean scores of the merit variables. This high score reflected student belief that the assignment would be a valuable use of their time despite the expected challenges and appears to reflect student support for the curriculum change.

Following Pirog (2019), Pearson r coefficients were calculated to determine the relationship of the "worthwhile" variable to the other variables (Table 3). Student pre-assignment expectations that the assignment would be worthwhile was most closely related to their anticipated degree of involvement ( $r=.90$ ), an affective variable. This result was surprising as it had been anticipated that student views regarding whether the prospective assignment would be "worth the effort" would be closely correlated with a merit variable. In this regard, the merit variable "realistic" ( $r=.79$ ) had the second strongest correlation with "worthwhile" and was consistent with my expectation.

### POST-ASSIGNMENT SURVEY RESULTS

Table 4 summarizes the post-assignment survey results and Table 5 compares the pre-assignment survey values to the post-assignment survey values.

**Table 4: Post-assignment Student Assessments of Excel Certification Assignment**

Post-assignment survey item	Variable	Mean	S.D.	r
1) The Microsoft Office Specialist certification assignment was helpful to me in my understanding of Microsoft Excel (merit)	helpful	7.00	1.80	0.75
2) I learned a lot about Microsoft Excel from this assignment (merit)	learned	6.80	1.70	0.71
3) Working on this assignment will allow me to apply my knowledge to realistic business problems (merit)	realistic	6.60	2.00	0.83
4) I was highly involved in this assignment (affect)	involved	6.00	2.50	0.78
5) This assignment was enjoyable (affect)	enjoyed	4.30	2.70	0.64
6) This assignment was worth the effort (merit and affect)	worthwhile	6.70	2.30	1.00
	Average	6.20	1.90	
Notes: N = 27; Scale items: Strongly Disagree (1) to Strongly Agree (9).				
r = correlation with "worthwhile"				

**Table 5: Pre-assignment survey scores vs. Post-assignment survey scores**

Mean Response							
Question	1	2	3	4	5	6	Average
Variable	<i>helpful</i>	<i>learned</i>	<i>realistic</i>	<i>involved</i>	<i>enjoyed</i>	<i>worthwhile</i>	
Pre-assignment	7.5	7.0	7.5	6.9	5.7	7.3	7.0
Post-assignment	7.0	6.8	6.6	6.0	4.3	6.7	6.2
Change	-0.4	-0.2	-0.9	-0.9	-1.4	-0.6	-0.7
Change (%)	-6%	-3%	-12%	-14%	-25%	-8%	-11%

The average post-assignment mean score for the six scale items was 6.2 (S.D. = 1.9). While this value is 11% lower than its pre-assignment value, it remained favorable and reinforces the pre-assignment view that students evaluated the assignment positively on an overall basis.

Responses to the questions addressing the merit of the assignment (*helpful*, *learned*, *realistic*) attained mean scores of 7.0 (S.D. = 1.8), 6.8 (S.D. = 1.7) and 6.6 (S. D. = 2.0), respectively. While lower than the pre-assignment values for these variables, the results reflect favorable post-assignment student perceptions and indicate that students acquired practical knowledge (Excel skills) that would be useful in the workplace. Table 5 shows that the mean score for the “*learned*” variable only is 3% less than its 7.0 pre-assignment value, which reinforces the view that student learning expectations were met.

Mean responses to the affective questions (*involved*, *enjoyed*) were 6.0 (S.D. = 2.5) and 4.3 (S.D. = 2.7) respectively. Noteworthy, Table 5 shows that the mean score for “*involved*” declined 14% from its pre-assignment value. This suggests that students may not have been able to devote as much time to the assignment as initially contemplated. Table 5 also shows that the mean score for the variable “*enjoyed*” declined 25% (from 5.7 to 4.3). Moreover, the 4.3 mean score for the “*enjoyed*” was 14% below a pure neutral score of 5. These results may reflect student perceptions that the assignment created a difficult workload burden. The compressed timeframe students used to prepare for the exam might have been a contributing factor (see Student Exam Preparation).

The mean response to the “*worthwhile*” variable was 6.7 (S.D. = 2.3). While this represented an 8% decline from its pre-assignment value, this result was nonetheless encouraging and suggests overall student satisfaction with the assignment. Following Pirog (2019), to gain insight into the relationship of the “*worthwhile*” variable to the other five variables, Pearson r coefficients were again calculated. Table 4 shows that post-assignment student beliefs about whether the assignment was “*worthwhile*” were most closely associated with their view that it was “*realistic*” ( $r=.83$ ). In contrast, student perceptions of whether the assignment was “*worthwhile*” was least closely associated with the variable “*enjoyed*” ( $r=.64$ ). These results indicate that overall student satisfaction with the Excel

certification assignment was ultimately associated with their perceptions of how practical the learning experience was in acquiring real business problem-solving skills notwithstanding their lesser enjoyment.

## STUDENT EXAM PREPARATION

To gather data about student exam preparation, additional questions were included in the post-assignment survey. Of particular interest was the incremental time-burden placed on students. Table 6 summarizes student responses to the following questions:

1. What study materials, if any, did you use to prepare to take the Microsoft Excel Certification Exam?
2. Approximately how many hours did you spend preparing to take the Microsoft Excel Certification Exam?
3. Approximately how many weeks in advance did you begin preparing to take the Microsoft Excel Certification Exam?

**Table 6: Study Materials Used, Hours of Study, Weeks in Advance**

Study Materials Used					
	GMetrix	Udemy	Hardcopy	YouTube	None
% of times indicated	30%	30%	6%	28%	6%
Hours of Study, Weeks in Advance					
	Mean	S.D.	High	Low	
Hours of Study	9.3	6.3	30.0	0.0	
Weeks in Advance	1.6	1.4	5.0	0.0	

GMetrix, Udemy and YouTube were the most frequently cited study resources receiving 30%, 30% and 27% weightings, respectively. All of these resources can be accessed on-line. GMetrix and Udemy are resources suggested in our Excel policy.

On average, students devoted 9.3 hours (S.D. 6.3 hours) preparing to take the Excel certification exam. The maximum number of hours spent was thirty and the minimum was zero. Students began preparing for the exam an average of 1.6 weeks (S.D. 1.4 weeks) in advance. The maximum was five weeks in advance and the minimum was zero weeks in advance. Given that on-campus certification exams were administered during the final four weeks of the semester, many students deferred beginning their exam preparation to the latter portion of the 15-week semester. Based on this data, the assignment did not place an unreasonable time-burden on students. Nonetheless, the compressed study timeframe may have created deadline pressure.

## EXAM RESULTS

At the end of the semester, our Excel certification exams results were as follows: 22 students (76%) passed, 3 students (10%) failed, 2 students (7%) received equivalency waivers and 2 students (7%) did not yet take the exam. Of the 22 students that passed the exam, 14 (64%) passed on their first attempt, 6 (27%) passed on their second attempt and 2 (9%) passed on their third attempt.

## CONCLUSION

Technology skills have been identified as curriculum deficiencies in accounting education and Excel skills are the top technology skill required of entry-level accountants by employers. Nonetheless, Excel training is often cited as a subject lacking in undergraduate accounting coursework. This paper presents the WCSU Accounting Department's approach to implementing Microsoft Office Specialist Excel certification as a required independent assignment in its Intermediate Financial Accounting II curriculum. Unlike typical curriculum implementations, this assignment did not require Excel instruction or a dedicated Excel class. The implementation was successful due to a synergy of students embracing the value of the requirement and the significant consequences of not passing the certification exam. Microsoft Office Specialist Excel certification provides accounting students with the opportunity to develop

accounting-related technology skills essential to their workforce preparedness. Moreover, Excel certification assesses competency with many Excel functions that are important to public accounting firms.

To prepare for and take the exam, students devoted an amount of time that is reasonable for an out-of-classroom assignment. However, students deferred their exam preparation and utilized a relatively compressed study timeframe, which may have impacted their enjoyment of the assignment. Overall, students were positive about the instructional experience provided by the Excel certification assignment and considered it worth the effort.

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# Improving Students' Sentence-level Writing Skills in a Large Undergraduate Business Management Course

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## ABSTRACT

Acknowledging the increasing challenges with respect to students' recurring development in the area of business composition is now a requisite for many business faculty, including those outside of traditional Departments of English or Business Communication. Central are the supporting roles and direct interventions that non-English and non-Business Communication faculty can take to improve business student composition, prose, and rhetoric on a continuous basis throughout a single course. We discuss our overall approach to this pertinent issue and the specific details of our pedagogy to assist students with improving their contemporary language use. Additionally, we provide preliminary but encouraging early results.

## KEYWORDS

Business Communication, Technical Communication, College Writing, Pedagogy, Writing-Across-the-Curriculum, Language Use, Grammar

## INTRODUCTION

Few can deny the importance of verbal and written communication for contemporary business professionals across industries and segments (NCW, 2004) and across functional areas within organizations (Quible, 1991). The learning outcomes associated with freshman composition have long been part of a formal university education (CWPA, 2014), and similarly, the skills, knowledge, and abilities affiliated with a Business Communication course have long been a part of a quality business school degree-based program (Wardrope, 2002). While the challenges of attracting, retaining, and developing employees with English-language skills for international firms is a pressing and growing matter (Lockwood, 2014), these same challenges persist for domestic firms too (Pittenger, et al., 2006; Quible and Griffen, 2007). In addition to employer feedback regarding the writing skills of entry-level professionals, some recent evidence suggests that even Masters of Business Administration (MBA) students require direct assistance with writing as well (May et al., 2012; Lentz, 2013). Lucas and Rawlins (2015) have argued for a change in the business communication curriculum to focus more on writing *competencies* (e.g., professional, clear, concise, evidence-driven, and persuasive) and less on writing *genres* (e.g., email, letters, reports, and speeches).

Jameson (2007) studied SAT and related test scores and writes "...that the proportion of students with solid writing and reading abilities has held fairly steady but remained small during the past 25 years" (p. 17). Jameson attributes the weak writing skills in college largely to "...the proportion of high school graduates who enter college within a year of graduation has soared, from one-half to two-thirds since 1980" (p. 19). She attributes weak writing skills to many factors: decline in writing instruction and practice, decline in time spent on homework, [inflationary] rise in grades, distorted self-perceptions of abilities, decrease in reading, and shifts in use of leisure time. A low level of writing skills at the beginning of college is disappointing; a low level of writing skills at the end of college is untenable.

Plutsky and Wilson (2001) interviewed several dozen faculty at a large, public, urban business school. These authors describe in extensive, disillusioning detail the recurring gaps in college-level writing proficiency between faculty expectations and student performance, and also, the gaps in the faculty members' own knowledge regarding composition in general and how to assist students specifically. In a different study, Wilson and Plutsky (1997) found that "...students seem to have the ability to...identify the errors for a series of questions on a test, but not the ability to identify and correct errors in their personal business documents." Our conclusion is that both faculty and students exhibit areas for improvement.

Although writing in general and business writing specifically may be considered a "basic skill" that doesn't mean it is either straightforward to learn or straightforward to teach. Along with other "basic skills," such as business mathematics, business statistics, critical thinking, and perhaps business computing, business writing might be as hard or harder to learn than discipline-specific subject matter. There is systematic evidence in the literature of the

difficulty associated with business writing (Badua, 2015) and the growing importance of assessment of General Education-related writing skill competencies for accredited business schools (Vitullo and Jones, 2010). Finally, there is anecdotal evidence that even the best business schools in the nation find the topic of college-level writing extraordinarily challenging (Middleton, 2011). Technical composition—in all contexts and for all purposes—is clearly a lifelong suite of skills, and this in turn, places new demands upon business school faculty.

## **ORGANIZATIONAL BACKGROUND**

The two authors of this paper work at a large, public, urban, masters-comprehensive university in the United States. For the most recent academic year, the university enrolled approximately 42,000 students. More than 7,600 students are enrolled in the undergraduate programs in the College of Business and Economics, including more than 2,000 students in the Department of Management. The university is accredited by Western Association of Schools and Colleges (WASC), is an Hispanic-serving institution, and enrolls the second highest number of international students among masters-granting institutions in the United States. The College of Business and Economics is accredited by the Association to Advance Collegiate Schools of Business (AACSB), and nearly two-thirds of the business students are transfer students, mostly from regional community colleges.

The writing interventions described below are for a required, core, junior-level course titled Principles of Management and Organizational Behavior. This course is taught in a large-lecture hall; approximately 150 students enroll at the beginning of each semester, and most students stay enrolled. There are five sections of this course taught each semester, and the writing interventions discussed in this paper are in regards to one of those five sections. Approximately 80% of the students enrolled each semester are business students and the other 20% are students from other (non-business) majors. Approximately 20% of the business students enrolled in this course are Management majors, and most of the rest of the business students are one of the other three large majors in the College: Accountancy, Finance, or Marketing. All the students have passed a freshman-level English Composition course; in addition, all the business students have passed a sophomore-level course in Business Communication. The Department of Management has mandated a minimum number of words to be written by each student in the course (2,500 total), and each instructor scores and grades her or his own students' work. Additionally, this Management course is used to evaluate the first college-level Student Learning Outcome (SLO): "Have Strong Written and Oral Communication Skills."

## **PAPER OUTLINE**

This paper proceeds as follows. We first provide detail as to the precise nature of our writing interventions with students in the classroom. We provide examples of student work that we show to all students both to follow best practices and to avoid common error patterns. While we assist students at the word-, sentence-, paragraph-, and argument-level, we focus here only on sentence-level remediation and development because that specific area is often the most pernicious (Quible, 2006b) and most challenging (Sitler, 2001) in the classroom. We then offer some preliminary but encouraging results from Spring semester, 2014. We end with a list of additional activities that business faculty can embark upon to aid in their own learning and collaborate with others across the campus. Finally, our work is not intended to be precisely prescriptive. A large university has many stakeholders with many objectives, and even small change takes time and effort. Faculty at other campuses can and should adjust our approach and pedagogy as appropriate.

## **OVERALL APPROACH**

Our high-level approach is comprised of three key elements. The first element is to acknowledge that business faculty have a responsibility to play a role in the continuing development of student writing. This includes, at a minimum, a responsibility to adequately discuss the nature and scoring of a course's writing assignments (Anderson and Speck, 1997). While the scope and magnitude of the involvement with writing alongside the involvement of regular course material will vary with employer expectations, program objectives, course descriptions, and faculty preferences, we believe that active engagement at some level with this subject is necessary in the contemporary business school classroom. The outcome is for the students to improve their skills, and to do this, the students need to know that the course instructor, subsequent course instructors, and future employers are all serious about observing strong business writing capability in their students and entry-level professionals.

The second element is to understand that individual instructors can improve their own knowledge of English language instruction and business writing pedagogies to assist students (Reinstein and Trebby, 1997). A related aspect is to learn how writing assignments can be designed and delivered in a way that complements existing course material and learning outcomes rather than substitutes for either. As a practical matter this means focusing on parsimonious efforts: the smallest amount of faculty effort that will lead to the largest amount of student improvement. Aligned with some suggestions from the literature, we elevate personalized and granular feedback over mere completion of a perfunctory minimum number of words required (see, for example, Hayes, 1998). Since the amount of reading of assignments and feedback on writing for a large class is difficult to automate, it is imperative that faculty have a serviceable strategy for dealing with the composition, prose, and rhetoric details needed in a management course. Finally, improving one's own learning regarding the language and linguistic details that helps students has spill-over effects with respect to other aspects of the teaching, research, service, and consulting activities normally conducted by faculty.

The third element is to present students early in the class with both quantitative data and qualitative data regarding writing performance aligned with course learning objectives. By quantitative we mean showing students actual numeric data which was appropriately summarized and anonymized. This could include, for example, the actual frequency distributions of various types of language use errors made by students similarly situated. In the age of the Internet and smartphones, modern students are exposed on a daily basis to tabular and graphical data. Instructors should be able to leverage that experience to help motivate students to improve. By qualitative data, we mean giving the students exemplars of various types of words, sentences, paragraphs, and arguments that demonstrate clear thinking and strong writing. Of course, general and technical writing handbooks are replete with such examples, but our experience is that providing current students examples from *prior students from the same course* leaves a cognitive residue and emotive affect that, again, helps motivate students to strive to improve. Striking a balance is key. Instructors want to provide enough materials to elevate and improve the student writing, but not provide complete, refined written products so that students are merely copying but not learning.

## DETAILED PEDAGOGY

Our specific pedagogy is detailed below. This is not prescriptive but descriptive. This does not represent all of the interventions we have implemented but rather only a few of the most important. The total amount of in-class time required for all activities described below is approximately 25 minutes.

1. Add technical composition matters to the first-day lecture. Set high expectations and emphasize the importance of writing in the course learning objectives (if applicable), syllabus narrative, and in the syllabus grading criteria. Provide brief, tangible examples of why and how strong writing skills matter both in class and in the workplace, especially with respect to meaning and interpretation (see, e.g., Alshare, et al., 2011; Sandell and Svensson, 2014), professional credibility (Beason, 2001; Gilsdorf and Leonard, 2001), and lingering effects by industry (Chase, 1991). As needed, review the scoring criteria in detail for both content and language use. There are strengths (Riebe and Jackson, 2014) and weaknesses (Cohen and Billsberry, 2014) to using rubrics in management courses. We prefer to give the students simple rubrics for each writing assignment.
2. Give a simple writing assignment on the *first day* of class, make it due on the *second day* of class, and *return it* on the third day of class. We have found that a rudimentary, open-ended prompt such as “Describe the most important opportunity or difficult challenge you have faced as an employee or customer” is suitable. Through trial-and-error we have found that this first, early essay can be between one and one-half and two full pages. This assignment is sufficient to 1), help the instructor understand the class baseline ability (including identifying significant areas for improvement) and 2), reinforce to the student that demonstrating reasonable writing proficiency both early and throughout the course is critical.
3. On the day the first paper is returned, review the content and language use issues in class with *specific examples drawn from prior students' work on the same assignment* within, say, the last year or two. Our observation has been that students learn best from the peers' writing, both as strong exemplars to follow and recurring anomalies to avoid. This step also has the additional advantage that the students know that the instructor cares about the writing of each student. This leaves an impact on the students that is often missing, especially in classes in large-lecture halls or in hybrid/online environments. Also, capturing—and possibly responding to—direct student writing in electronic form is easier on a campus with tools such as a Learning Management System (LMS) or similar technology.



4. Give the students one-half of their missed points back for the first assignment for errors in language use, including grammar and mechanics. This is referred to more formally as “glossing” (Johansen and Shaw, 2003). In terms of marking language use errors, we tend to follow a “minimal marking” strategy (Haswell, 1983). Also, we don’t mark the same type of error twice; we have found that marking it once is sufficient to achieve immediate remediation in most cases. Unlike (Quible, 2006a) we don’t label each error. Like Cook (2010), however, we find that students can correctly identify nearly all sentence-level errors; we therefore mark all types of errors, but generally only specifically identify (“label”) three broad error types that students have regular difficulty with: run-on sentences, sentence fragments, and inflection (verb conjugation/noun declension) errors. The time frame for the completion of this activity is by the following class session after the first paper is returned, that is, the *fourth* day of class. The students must meet with the instructor during office hours (or by appointment) with what we refer to as an “error log,” or more informally, as a “fix page” (Sitler, 2001). On such a “fix page,” a student must, for each error, 1), try to learn the type and nature of the error, 2), identify the reason why the error matters, and 3), state how she or he will try not to make the same error again. The student also needs to show some type of writing handbook to the instructor. Handbooks vary in many ways and there is no single best book (Cranmer, 2003); the important element for faculty is to simply select one and recommend it to the students. We *recommend* Hacker (2014) but do not *require* it; any student writing reference guide that might be used in a freshman composition or business communication class is acceptable. As with the use of students’ own writing as exemplars, this “give back” approach leaves a strong, positive affect in the minds of the students. The instructor’s goal should be to design a points schema that offers an extrinsic reward early in the course but encourages an implicit incentive later in the course. Also, since the number of points back is a percent of the points lost, this approach tends to help the students who need the most improvement.
5. Sequence the writing assignments in the course for both breadth and depth. After major and minor errors are reduced by student work (and re-work) on the first assignment, more emphasis can be placed on either content directly or on higher-order writing elements such as paragraphs and arguments. Student written deliverables later in class can be more advanced (such as demonstrating mastery of theory and/or evidence) or merely longer in length.
6. Emphasize the similarities and differences between papers. An early paper may not need any citations or references; a later paper will likely require both. The first paper, since it is given on the first day of class may be first-person and use no theory; the final paper, since students have improved, will likely be in third-person and make extensive use of management and organizational behavior theory, tangible evidence (often from key resources), and strong reasoning and logic. These important but perhaps subtle distinctions in the minds of the students can be done with a simple side-by-side single PowerPoint slide that can be referenced more than once during the course.
7. Offer to read any student paper before the paper is turned in. Some students may require extensive drafting, while others less so. Similar to giving points back, this leaves a positive residue in the mind of a student. Additionally, such office and online conversations are a chance to explore a range of other but often related issues that impact students.

#### **ASSISTANCE AT THE SENTENCE-LEVEL**

Hayes (1998) suggests that, even after a deliberate intervention, “the technical aspect ‘sentence syntax’ was the most constant...[both as ranked by]...perceived difficulty and actual difficulty.” Discussions with both business-school colleagues and business communication faculty also suggest that students require the most assistance at the sentence-level. We use a combination of writing resources to organize our students’ work, such as Hacker (2014), Tufte (2006), and Garner (2013). We organize students’ work into three areas: Technical Composition (e.g., introductory sentences, contrasts, and transition words), Artful Prose (e.g., conjunction and coordination, branching sentences, parallelism, and sentence variety), and Persuasive Rhetoric (e.g., linkages to domain/subject matter, quotes, and analogies). An excerpt of these elements is listed in Appendix I, and a more exhaustive list is available from the authors.

Associated with sentence-level improvement is general language improvement, and so we provide to a students a simple table identifying language use errors organized by typical writing handbook categories and sorted in decreasing order of frequency (see Appendix II). Note that the most recent, large-scale empirical research suggests that the *number* of errors undergraduate students make is relatively unchanged in many areas, but the *types* of errors have indeed changed, such as “errors in word choice” for “errors in spelling” (Lunsford and Lunsford, 2008).

## PRELIMINARY RESULTS

There is some evidence that the pedagogical approach of using a larger number of shorter writing assignments is helpful in business courses (Hall and Tiggeman, 1995). This course, therefore, use three writing assignments. The first is a brief narrative regarding **an important organizational opportunity or difficult organizational challenge**, the second is an **organizational dialogue** based upon the “Big 5 OCEAN” personality profile results, and the third is a **management analysis** of a current event in business and organizational context. As can be seen in Table 1, the results are promising. Errors in each of the language use categories were reduced. For this course, the error rate per 100 words written was 0.98 at the beginning of the course and 0.26 at the end of the course despite the fact that the written assignment at the end of the course is more difficult. An extension to the results from this course might be to do pre- and post-tests under more controlled conditions either at the course-level (Enos, 2010) or the degree program-level (Fraser, et al., 2005).

**Table 1: Changes in Sentence-level Writing Errors in a Spring, 2014 Management course**

	Assignment 1 Organizational Challenge	Assignment 2 Personality Dialogue	Assignment 3 Mini-case Analysis	% change (first to last)
Structure	54	15	11	-79.63%
Composing	16	12	8	-50.00%
Sentence Style	77	49	28	-63.64%
Word Choice	84	67	52	-38.10%
Grammar	151	108	73	-51.66%
Punctuation	141	120	101	-28.37%
Mechanics	48	45	38	-20.83%
Total	571	416	311	-45.53%
no. of pages	1.75	3.25	3.50	
no. of words (1 pg~250 words)	437.50	812.50	875.00	
no. of students	147	139	137	
Error rate per student	3.88	2.99	2.27	-41.56%
Error rate per student per page	2.22	0.92	0.65	-70.78%
Error rate per student per 100 words	0.98	0.37	0.26	-70.78%

Naturally, individual faculty should evaluate their own program-related contexts and instructionally-related preferences, and adjust (1), the number overall writing assignments and the alignment of each writing assignment to one or more student learning outcomes, (2), the difficulty and length of each writing assignment, (3), the weighted balance between scores for content and scores for writing, (4), the focus on which type and level of usage errors and other technical composition concerns are of prime interest, and (5), the weights given to the number of points back for identifying and rectifying any anomalies. Many other fine-tuning adjustments are possible within this framework as well.

## ADDITIONAL SUGGESTIONS FOR FACULTY

In addition to the curricular and pedagogical specific discussed previously, additional opportunities for faculty learning and student assistance may present themselves at campuses, especially large campuses. A brief summary of those undertaken by the authors of this paper are described below.

### Personal Development

- Learning about how English Language Learners (ELL) and international students come to read and write Standard[ized] American English is critical to any intervention. There are books devoted to this subject (see, for example, Miller, 2007). Faculty can begin with the most common non-English language in use within their classrooms.
- Learning about the linguistic differences between the English language and, for example, Indo-European languages assists faculty in marking and feedback strategies. For example, many Eastern European languages use verb inflections where English might use a preposition or an article. Two introductory, accessible books on this subject that the authors have found useful in assisting students are Meyer (2009) and Lieber (2010). A balanced approach to helping faculty help students with grammar is Huddleston and Pullum (2005).
- Learning about language use on an on-going basis is crucial for a modern business instructor. Rhetoric and composition instructors have traditionally relied upon usage guides for formal assistance in this area. A common usage guide for English instructors has often been Fowler's Modern English Usage (Butterfield at al., 2015). Business and Management instructors might augment the guidance from Fowler's with the guidance from Garner's (2009) Modern American Usage and, naturally, discipline-specific guides.
- Learning about what contemporary systems and technologies *can* do (Shermis and Burnstein, 2013) and just as importantly, *cannot* do (Ericsson and Haswell, 2006) to help students write and learn, and also, to help instructors score and teach writing, is important. Also, there are both commercial applications and open source tools that have been developed to assist students in writing and instructors in scoring, at least for surface-level (elementary language use) concerns. In addition to traditional functionality built into word processors, newer services include Grammarly ([www.grammarly.com](http://www.grammarly.com)) and Turnitin (<http://www.turnitin.com>). These can be purchased and used on an individual-basis, or can be procured by an institution for use by all student and faculty stakeholders. The reaction by many users to these tools, and those like them, is that their use is limited and their benefits are small with respect to providing marking assistance for instructors and individualized, detailed feedback to students. However, for standardized graduate-level exams with uniform prompts and a small set of scorers responses encoded into a database, researchers have found that the Graduate Management Admissions Test (GMAT) and Graduate Record Exam (GRE) can be reliably scored as well by a computer algorithm as by a human scorer.
- Learning about the composition, prose, and rhetoric requirements and recommendations for the *next course* in the students' matriculation sequence (or at least the required core courses) can assist in (1), broadening and deepening an instructor's perspective from an intra-program and inter-program perspective, and, (2), explaining and predicting how the written deliverables in one course might impact another course.
- Campuses have several departments that collect, analyze, disseminate, and archive various types of academic data. We have looked at the difference in the grade earned in the business communication course between students who enter directly from high school and transfer students. For the past ten years, the students who entered directly from high school have earned 2.8 grade points (on a 4.0 scale) and the transfer students have earned 3.2 grade points (again, on a 4.0 scale). This elevated difference may account for differing expectations, among other things, in subsequent courses among transfer students. We have also looked at the difference in earned grade performance in the required core courses in the business program between students who entered directly from high school and transfer students, and have found no statistical difference. Learning about such distinctions assist faculty in understanding the overall student environment which, in turn, informs the pedagogical design and development.

### Coordination and Collaboration

- At our campus all students must pass an upper-division writing proficiency exam when they have earned 90 units. For this exam students write several pages by hand in response to a general prompt, typically one drawn from a public, current event. This exam is scored by faculty who volunteer (with a small stipend) from across the campus. Among the benefits to the instructor from engaging in this activity are (1), learning the holistic style of essay grading, (2), learning to evaluate writing for which the instructor didn't choose

the prompt, (3), learning the writing skillsets from students from colleges within the university other than the instructor's own college, and (4), learning from colleagues outside of one's home college.

- Most universities provide some type of Learning Research Center (LRC) or Writing Center. We have worked with our LRC to help them stay open during the Summer hours (our college alone offers more than 30 sections of courses during the Summer period) and also provided detail to our LRC on which courses are writing intensive and extensive so that the LRC can improve their overall planning and support. By interacting with this key support unit, they learn that we are serious about our writing improvement, and we learn about tutoring approaches, individualistic development, and key references and resources used by knowledgeable tutors, both professional and student-peers. Similarly, we will begin to interact with the International Student Center on writing issues soon.
- Representatives from our college have begun to meet on an annual basis with the English Department leadership that manages the business communication course. This collaboration should improve the inter-college communication which in turn should improve the students' writing skills, knowledge, and along the entire matriculation value stream over time. So far constructive comments and open discourse have enabled each college to understand the other college's perspective at both the conceptual and practical levels. We anticipate more positive results from this activity in the next few years.

## CONCLUSIONS

Demonstrated competency with written work, regardless of communication venue or rhetorical situation, remains vital to the academic success of students and the career success of entry-level professionals. Many pressures on students, faculty, and institutions are creating a "perfect storm" that inhibits some students from achieving their goals. At the same time, mainstream technology to scaffold composition, prose, and rhetoric is developing at a slower—perhaps *much* slower—pace than technologies that support other aspects of pedagogy and delivery in the classroom, and other aspects of business work in contemporary professional practice.

In response, discipline faculty, including in colleges of business, can design, development, implement, and evaluate new classroom interventions to assist students in continuously improving their written work. This requires (1), acknowledging the root causes of the issue, (2), learning new skills related to the technical aspects of composition, and (3), and taking an active role in assisting students. While the challenges are many, this paper provides an overview of an approach and pedagogy that can be taken to address lingering writing issues.

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## Appendix I.

### Exemplar Student Sentences

The following well-written sentences are drawn verbatim from student writing on the first written assignment in this course during the academic year 2013-2014.

#### Technical Composition

##### *Introductory Sentences*

“He routinely yells at his employees and threatens to cut our hours if we don’t work harder.”

##### *Contrasts*

“However, they are doing so effectively but not efficiently.”

##### *Transition Words*

“*Furthermore*, the manager did not provide any benefits such as health insurance.” (emphasis added)

#### Artful Prose

##### *Conjunction and Coordination*

“The manager approved my idea, and now every week I have the employees and their supervisor sign their report.”

##### *Branching Sentences*

“As I returned to my desk thinking on how mad this client sounded over the phone, I heard screaming coming from the reception area.”

##### *Parallelism*

“Work tasks were monotonous: unchallenging, unrewarding, and unsatisfying.”

##### *Sentence Variety (same student, same document)*

(short) “We are a small firm.”

(medium) “On the rare occasions that they do notify me, they send an email saying a package in my name has arrived.”

(long) “Customer service is a problem faced by any service industry and this issue is a priority for restaurants because it’s a big part of the restaurant experience for the customer.”

#### Persuasive Rhetoric

##### *Linkages to Domain/Subject Matter*

“Elements of *planning* are demonstrated when high levels of management determine specific plans and goals of the [bank] tellers.” (emphasis added)

##### *Quotes*

“All ye abandon hope who enter here.”—Dante

##### *Analogies*

“Going to work every day became a chore if I knew I would be working with her. However, I knew in the back of my mind that the person that would have to change would be me. Just like in the clips [the class instructor] showed us in class, *the horse trainer stated that your life is reflected into your horse, just like my inappropriate behavior reflects back into my team.*” (emphasis added)

## Appendix II.

### Frequently-made Language Use Errors

The following errors were made on the first written assignment in this course for Spring, 2014.

<b>Error or Error Pattern</b>	<b>Frequency</b>	<b>Example(s)-- incorrect/correct</b>
Assignment Structure		
	17	wrong typeface
	12	not double-spaced
	10	late submission
	6	not minimum page length
	5	not left-justified only
	3	wrong typesize
	1	weak ink coverage
Composing and Revising		
	9	ungrammatical or awkward construction (phrase or clause)
	3	extra space between words
	2	inconsistent line break
	1	no paragraph breaks
	1	other
Sentence Style		
	19	missing word -- an article (i.e., a, an, the)
	13	missing word -- a conjunction (i.e., for, and, nor, but, or, yet, so)
	13	missing word -- other
	10	missing word -- a preposition (e.g., of, at, on, in, etc.)
	8	extra (single) word
	5	missing word -- a verb
	4	missing word -- the infinitive "to"
	3	extra words (more than one)
	2	missing more than a single word
General Word Choice		
	30	wrong word -- other
		wrong word -- near (phonetic) homophone (e.g., were/where)
	24	of/off, sales/sells)
		non-use of compound word (e.g., hardship, within, myself,
	13	whereas, overnight)
		wrong word -- homophone (heterographs) (e.g., site/sight,
	11	hire/higher, you're/your)
	2	wrong word -- incorrect preposition in an idiom
	2	wrong word -- pronoun
	1	wrong word -- lexical misunderstanding (e.g., affect/effect)
	1	non-use of hyphenated word (e.g., pre-determine)
Grammatical Sentences		
	49	wrong inflection -- verb conjugation (e.g., ask/asked, was/were, go/goes, do/did)

21	wrong inflection -- noun declension (i.e., for tense, number, or aspect)
18	run-on sentence (comma splice)
11	error in subject-verb agreement
11	sentence fragment
9	missing apostrophe for a singular possessive
9	error in antecedent-pronoun agreement
8	run-on sentence (fused sentence)
4	misuse of irregular possessive (i.e., its)
3	missing apostrophe for a plural possessive
3	incorrect use of an adverb
3	misuse of apostrophe
2	use of plural form when possessive form is correct

#### Punctuation

61	no comma connecting a dependent (opening) clause and an independent clause
47	no comma before a coordinating conjunction (i.e., for, and, nor, but, or, yet, so)
15	no semi-colon connecting an independent clause with another independent clause
9	misuse of the comma
3	misuse of the semi-colon
3	missing comma(s) surrounding a non-restrictive clause
1	missing needed comma in a series
1	misuse of the colon
1	missing needed colon

#### Mechanics

30	misspelled word
10	proper noun not capitalized
3	missing or incorrect terminal mark at end of sentence
3	common noun capitalized
1	common word (non-noun) capitalized
1	first word in a sentence not capitalized



# Disseminating Information to College Students in a Complex Media Environment

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## ABSTRACT

Colleges and universities have a need to provide information to students for many reasons. There are many university events to market to students to encourage attendance and enhance the college experience. There is also vital university information, such as registration deadlines, school outages, financial aid deadlines, etc. that must be disseminated to students as well. As such there is a need to understand how to best communicate with students in today's complex media environment, so they stay informed. Students have very diverse methods in which they may prefer to receive information, most of which are not traditional types of media. While colleges and universities may use things like flyers and brochures as well as university television and radio, most students are likely to prefer some type of social media in which to get their information. This study exams communication methods with students at a university. It investigates whether students would prefer to get their information via traditional media, email, or some type of social media or app. The preliminary study investigated how students received their information about a specific event, Earth Day. From that study a questionnaire was constructed in which students were asked their preferences on how to receive information from the university. The data was examined to determine the types of media students prefer to use to get university information. The media preferences by student classification were also considered to determine if preferences change as the students age and become more familiar with the university.

**Keywords:** college student social media use, university social media use

## INTRODUCTION

As a university, there are many different activities and events that we would like to publicize to college students. Knowing student preferences on how to receive this information could make the distribution of that information more efficient and cost effective. By understanding student preferences in information delivery, the university can effectively target appropriate information to the target audience.

There is a significant body of research that indicates that success in social relations is a key element in college admissions and retention strategy as well as overall life success for college students (Primary Research Group, 2020). Yet only 48.2% of all students consider themselves rather successful or very successful in making friends at college. Studies do show that students with higher grades tend to perceive the efforts of colleges at promoting social interaction as "favorable," however, these are not usually the students who are most likely to drop out of college.

Social interaction can be fostered through better student involvement on college campuses. Student involvement can come in several forms. It can be from developing friendships and peer groups, attending sporting events, attending university sponsored events, joining fraternities, sororities, and/or other organizations and clubs. There are numerous activities and events that take place weekly on college campuses that provide opportunities for students to be involved, but many students are unaware of the many events, organizations, and opportunities that are available to them to become more involved. To get students more involved, students must know what opportunities for involvement are available to them. Thus, universities have a need to provide information to current college students.

Universities have many options on how to deliver information to students. There are traditional methods like campus newspapers, campus TV, campus radio, flyers and brochures, and posters, email announcements, as well as nontraditional media sources such as social media.

## LITERATURE REVIEW

College students are known to utilize social media for a variety of reasons—to express their identity and opinions, to build social relationships, to stay in touch with family and friends, to know about social activities, and to feel connected (Kim, Wang, and Oh 2016). Kim et al (2016) found that individuals who feel more need to belong are more likely to share their experiences with others on social media and to communicate with their friends through mobile phones, thus using social media and smartphone interaction more frequently leading to greater levels of social engagement. “Social media use is found to affect individuals’ communication behaviors by providing interactive and convenient features of communication space in which many others from various backgrounds are connected.” (Kim et al, 2016, 265). Based on this, Kim et al (2016) found that because individuals’ social media networks are based on interpersonal relationships, students are more interested in information about social events that their friends share and are encouraged to get together through social media which can motivate them to actually attend social activities. The findings actually indicated that the more college students use social media and smartphones to interact with others, the more they participated in social activities. So, social media use can positively influence college students’ social engagement. As such, any communications directed at college students should include social media. The question is which social media outlets are the best options for relaying information to those college students.

There is a significant volume of literature about college students and social media. It runs the gamut of how college students use social media to different sources utilizing social media to sell ideas and/or products to students. This study is more interested in how students utilize media than how marketers sell through social media. There are several studies that do address how social media is used by students to gather information. Firat, Altinpulluk, Kilinc, and Buyuk (2017) indicated that on the Open Education related Facebook sites, students tended to utilize pages and groups related to programs emphasizing current job opportunities and student support services, while noting there were also numerous commercial accounts that tried to exploit students’ exam anxiety instead of generating actual content. Khan, Kend, and Robertson (2016) looked into the university social media use by accounting students and found that accounting students use social media for a number of academic-related purposes including establishing and maintaining fluid mentor/mentee relationships around academic activities related to interactions through social media. Potter (2012) found that exposure to a social marketing campaign from the university concerning bystanders taking an active role in reducing sexual and relationship violence and stalking increased participants’ awareness of their role and willingness to get involved. So, studies do show that social media is effective at reaching college students and affecting their behaviors.

What the literature does not do is elaborate on the types of social media that college students would prefer to get their information and how the delivery method may change as the student becomes more familiar with the university. It also does not examine how media preferences may change based on age or classification of the student. In this study, we exam the types of media students prefer to use to attain information about the university. A preliminary study was conducted during an Earth Day event to determine how students learned about the event to give the researchers some ideas about the types of media used by students.

## METHOD

Earth Day is celebrated on campus each year and the event is heavily publicized through various media. All attendees were asked to complete a simple survey and were given an Earth Day t-shirt in return for their completed survey. The survey asked each respondent: Which of these media outlets do you use regularly to find out about events and general information on university activities. Demographic data including age group and whether the respondent was a student, faculty or staff.

## RESULTS

A total of 295 people completed the survey including 246 students, 19 faculty and 30 staff members. A total of 74% of the students were 18-22 years old, 19% were 23-29, 5% were 30-39 and 2% were older than 39.

### Overall Results

Table 1 summarizes the results from all respondents. A total of 57.2% of respondents indicated the most popular method of receiving information is through their University email. This result may be because instructors widely use Blackboard to send emails to students in their classes and students are accustomed to checking email for course

information. After email, the popular social media sites were most often used: Instagram, Facebook, Twitter and SnapChat. Only 26% of the students indicated personal interaction via talking, chatting or texting with others is used regularly to convey University information. GroupMe and OrgSync (University student organization site) are used to a lesser extent but this may be because students must join or be added to a particular group they are interested in to receive communications. Finally, local news was used by a smaller percentage.

**Table 1: All Respondents Preferred Method of Receiving Information From the University**

Information Source	User Percentage
University Email	57.2
Instagram	39.7
Facebook	34.8
Twitter	33.4
SnapChat	32.1
Talk/Text	26.3
GroupMe	22.8
OrgSync	15.5
Local News	11.7
Other	0.3

#### Preferred Social Media by Age Groups

Analysis of the four popular social media sites (Instagram, Facebook, Twitter and SnapChat) revealed that each of the four is used by more than 30% of the respondents. When studied by age group, interesting differences are apparent. Facebook is the only social media used by respondents in the over sixty age group. The typical college age respondent (18-22) used Twitter most often but Instagram and SnapChat were used almost as much. Facebook was used by this age group to a much lesser extent. Looking at the 23-29 age group, Twitter and SnapChat popularity decreases dramatically, and Instagram is most often used. Facebook is the most used by each of the remaining age groups. Respondents 30 and over indicated some use of Instagram with much less interest in Twitter and SnapChat. Table 2 provides details of social media use by age group.

**Table 2: Social Media Use by Age Group**

	All Subjects	18-22	23-29	30-39	40-49	50-59	60+
Instagram	<b>39.7</b>	41.8	<b>50.0</b>	28.6	30.8	12.5	0.0
Facebook	34.8	26.9	46.6	<b>47.6</b>	<b>69.2</b>	<b>50.0</b>	<b>16.7</b>
Twitter	33.4	<b>46.7</b>	13.5	9.5	15.4	6.3	0.0
SnapChat	32.1	41.8	26.9	4.8	7.7	6.3	0.0

#### Preferred Group Media Outlets by Age

GroupMe is used by groups of friends or organizations to communicate. Individuals must be added to a group and only group members have access to the information. A decline in the total number of users was expected since groups are private, but it is interesting that 22.8% of respondents use GroupMe and traditional college-aged respondents (18-22) show a slightly higher (28.6%) use. For groups, this may be an important tool to share

information. OrgSync is a University system that all university student organizations are registered in. Students can choose to join any organization on OrgSync. Some organizations on campus use this as an important tool to communicate but others do not go beyond the basics required by the University. The results are a little surprising with the highest use of this method in the 23-29 year old age group (19.2%), 50-59 (18.8%) and 60 plus (16.7%). Perhaps, the higher number in the older age groups is because these age groups are composed primarily of faculty/staff and each organization is required to have a faculty/staff advisor who monitors OrgSync. Table 3 details this information.

**Table 3: Group Media Use by Age**

	All Subjects	18-22	23-29	30-39	40-49	50-59	60+
GroupMe	22.8	28.6	17.3	19.0	7.7	0.0	0.0
OrgSync	15.5	14.8	19.2	14.3	7.7	18.8	16.7

#### Other Information Sources by Age

Only 26.3% of the respondents indicated they gathered information by talking, texting or chatting with other people and for the typical college aged student this was only 24.2%. As discussed in the literature review, students indicate they have a difficult time making friends and the lack of personal interaction to stay informed may be linked to this issue. Local news was cited by 11.7% as a way to find news about the university with older respondents using this method more than younger. Finally, other sources appeared to have little importance in respondents being informed. Table 4 highlights these results.

**Table 4: Other Information Sources by Age Groups**

	All Subjects	18-22	23-29	30-39	40-49	50-59	60 +
Talk/Text	26.3	24.2	26.9	23.8	53.8	31.3	16.7
Local News	11.7	7.7	3.8	28.6	38.5	31.3	33.3
Other	0.5	1.9	0.0	0.0	0.0	0.0	0.0

## CONCLUSIONS AND RECOMMENDATIONS

Of primary interest in this study is how students are informed about University events. As discussed earlier, students who are engaged are more successful and more likely to stay in college. All universities are looking for ways to engage and retain students. To be involved, students must know what is going on and universities and organizations must know how best to communicate with students. This research is a first step in filling a research gap by studying media preferences of college students. The results indicate universities should use a wide range of social media to reach as many people as possible. To reach traditional 18-22-year-old students, Instagram, Twitter and SnapChat are the favored social media outlets. The results indicate that each of these outlets are used by more than 40% of respondents in the 18-22-year-old age group. In addition, 50% of the 23-29-year-olds use Instagram. Universities can easily and effectively communicate information to a large percentage of students using these three social media outlets.

## FUTURE RESEARCH

Additional research needs to be conducted in this area. A more extensive survey is currently being administered to students. The survey is looking at media sites students use to find out what is going on at the University, as well as, which sites they prefer. The new survey is also looking at how frequently students check each of the sites and collecting more detailed demographics.

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# I Can't Get No (Grade) Satisfaction: Self-regulated Learning and Success in a School of Business

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## ABSTRACT

Self-directed learning is a vital educational concept in need of further research, not just for its impact on learning, but also to the effects on student academic performance and satisfaction. Self-directed learning consists of the student taking initiative in identifying what their individual learning needs are, formulating their goals, recognizing what resources are available, and determining all possible outcomes. However, does this truly impact student learning, academic achievement, and grade satisfaction? Studies suggest that student motivation, academic performance, and levels of self-efficacy could yield positive increases through the implementation of self-directed learning. This article will examine self-directed learning strategies and their relationship to academic performance and grade satisfaction.

**Keywords:** learning strategy, self-directed learning, self-regulated learning, grade satisfaction, academic achievement, academic performance, self-efficacy

## INTRODUCTION

It is widely accepted that the development of self-regulated learning strategies is beneficial to students and educational institutions alike, through the retention of successful learners. Self-regulated learning (SRL) has developed into what Panadero (2017) describes as “one of the most important areas of research within educational psychology”. SRL has been examined extensively and internationally from various perspectives in academia and practice.

Early research efforts were directed toward identifying the characteristics of, and defining, self-directed learning theory as a subset or “pillar” of adult learning theory (Mezirow, 1997). Recently targeted categories of SRL research include: (1) modality (Howardson, Karim, & Horn, 2017; Panadero, 2017); (2) language learning and acquisition (Gelan, Verjans, Fastré, Martin, Janssenswillen, Creemers, Lieben, Depaire, & Thomas, 2018; Parsons, 2008); (3) learning intervention (Leins, Cuenca-Carlino, Sharlene, Jacobson, and Thompson, 2017; Dörrenbächer & Perrels, 2016; Khosa & Violet, 2013); (4) motivation and self-efficacy (Paciello, Ghezzi, Tramantano, Barbaranelli, and Fida, 2016; Rosário, Núñez, Valle, González-Pienda, & Lourenco, 2013; Fried & Chapman, 2012; Paulsen & Feldman, 2005); and, (5) online and blended technologies (Lau, Lam, Kam, Nkhoma, Richardson, & Thomas, 2018; Lin, 2018; Hill, Chidambaram, Summers, & Jama, 2017; Tsai, 2013; Chang, Tseng, Liang, & Liao, 2013; Tsai, Shen, & Tsai, 2011; Kitsantas & Dabbagh, 2011).

Prevalent academic subject areas targeted for learning research have included: (1) STEM disciplines (Colthorpe, Sharifirad, Ainscough, Anderson, & Zimbardi, 2018; Sun, Xie, Anderman, Lynley, 2018; Han, 2017; Chatzistamatiou, Dermitzaki, & Bagiatis, 2014; Postholm, 2010, 2011; Kopp, Starki, Heitzmann, & Fischer, 2009); (2) law (Crowder, 2015); physical education (Kolovelonis, Goudas, Dermitzaki, & Kitsantas, 2013; Keay & Lloyd, 2009); and, (3) business-related majors (Stoten, 2015; Strang, 2011, 2014; Opdecam, Everaert, Van Keer, & Buyschaert, 2013; Fearn, 2009; and, Loo, 2002).

## PURPOSE OF STUDY

Despite the prevalence of studies related to self-regulated learning, there is a relative scarcity of research of business students. Loo (2002) noted a greater focus on accounting majors in studies of learning styles among business students, but few focused studies of self-regulated learning among business-related majors have been conducted. This study targets business majors to identify (1) student self-reported self-regulated learning strategies; (2) strategies associated with higher achievement and with grade improvement on exams; and (3) study approaches students proposed to use for future exams. The current paper seeks to identify differences among student grades, grade expectations and satisfaction levels with their grades related to the application of SDL. Conceptually, student outcomes could be expected to improve if students apply SDL/SRL strategies. The outcomes will inform schools of

business and offices of retention about promotable strategies to increase student success. For the purpose of the study, self-regulated learning and self-directed learning are interchangeable concepts.

### Research Questions

1. Will measurable differences exist in student grade expectations between SDL measurement periods?
2. Will measurable differences exist in student actual grades between SDL measurement periods?
3. Will measurable differences exist in student grade satisfaction between SDL measurement periods?
4. Will measurable differences exist in student application of self-directed learning between SDL measurement periods?

## **REVIEW OF LITERATURE**

Robbins and Sanders (2018) examine the relationship between self-directed learning theory and student academic performance using Knowles' (1975) definition of SDL theory as the process in which "...individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes" (p. 3). Knowles, while focusing on andragogy, suggested key elements of motivation and personal responsibility for outcomes through the concept of self-directed learning. These elements in a classroom of traditional college-age students, within the bounds of what Knowles described as "new learning of an intensive nature" (Smith, 2002), suggest examination of students' motivation to achieve learning outcomes and their satisfaction with their efforts as indicated by grade improvement.

Self-directed learning, according to the Knowles definition, requires motivation toward a goal of improvement and recognition that change is needed to achieve the goal. Initiative must result from one's own desire for a different outcome, but may be facilitated by others; for instance, a teacher who establishes a learning contract (i.e., a syllabus). Robbins and Sanders (2018) note that the goals formed in learning contracts are key to critical thinking, which Paul and Elder (2003) indicate is transformative in nature, causing the thinker to improve the quality of thinking through the application of standards to thinking. This is not unlike Mezirow's (1997) concept of transformative learning as "the process of effecting change in a frame of reference." Robbins and Sanders (2018) describe the learning contract as generally established by the instructor but managed by the student. The learning contract provides: (1) study goals (learning objectives); (2) structure and sequence (how and when learning takes place, through the accomplishment of activities within a period of time); (3) grading methods, scales and procedures (how measures occur, the relationship of the graded assignment to the learning objectives, when students can expect to know the outcomes of their efforts); (4) feedback and evaluation (information from the instructor above and beyond scoring); (5) meeting with the student (direct communication); and, (6) agreement on policies regarding task completion (presentation of expectations, opportunities for student input and questions, and adjustments as needed. (Self-directed, 2018).

Content in university-level courses varies by discipline and class level, and pedagogy differences are further indicated by individual teaching styles. Knowles' assumptions regarding andragogy can be applied in classrooms of college-age individuals:

- Self-concept: the move from dependence to self-direction in learning
- Experience: accumulated experience as a resource for learning
- Readiness to learn: orientation toward developmental responsibility in social roles
- Orientation to learning: the shift from knowledge to application and from subject-centeredness to problem centeredness
- Motivation to learn: internally driven learning (Smith, 2002)

### **Empirical studies**

Sebesta and Speth (2017), noting the "gatekeeping" role of introductory courses in college, make an argument for the importance of the advanced attributes that Knowles' andragogy assumptions credit to adult learners for even young students' success. These attributes related to cognition, behavior, motivation, and development influence social and academic success. In response to the student question, "How should I study for the exam?", the researchers ask, "How do you study for the exam?" This led to development of a Likert-type questionnaire based on self-regulated learning (SRL) strategies from the SRLIS structured interview protocol. Their selection of items for

the questionnaire was based on their knowledge of resources and protocols available to their students. They identified two measurement periods, after each of two major tests/exams, and gathered data regarding students' self-reported strategies.

Surveys were administered as a homework assignment and students received credit for completion. No demographic or identifying information was associated with the student responses. Student SRL strategies were grouped using a rubric which resulted in six broad categories: (1) self-evaluation; (2) keeping records and monitoring; organizing and transforming; (3) goal setting and planning; time management; (4) seeking information; (5) environmental structuring; and, (6) seeking assistance from others.

Sebesta and Speth (2017) associated the reported SRL strategies in three contingencies: (1) those associated with exam grades (strategies identified by higher scoring students); (2) those identified in study plans (strategies students identified to use in subsequent exams); and, (3) strategies associated with grade improvement (SRL approaches used between exams 1 and 2 that resulted in higher scores).

They identified six strategies associated with grades on both exams: self-evaluation, seeking information, keeping records and monitoring, seeking instructor assistance, reviewing exams, and reviewing graded work. Five strategy categories were identified in student study plans, regardless of grade: goal setting and planning/time management; reviewing notes and/or course materials; self-evaluation; keeping records and monitoring/organizing and transforming; and, seeking assistance from other resources. They noted higher achieving students were much more likely to suggest further study of notes and other resources. Lastly, the researchers excluded from the grade improvement group all students who performed well ("A" or "B") on the first exam, and divided the remaining students based on second test performance: higher grade, maintained grade, lower grade. The strategies associated with improvement were: self-evaluation; goal setting and planning; seeking information; reviewing notes; and, reviewing exams.

The type of learning examined in this study is referred to by Habermas (1981) as *instrumental*, that which one does to manipulate or control the environment or other people to enhance efficacy to improve performance.

### **Relationship between self-directed learning strategy and student academic performance**

The relationship between self-directed learning and student academic performance is a vital dyad in need of further exploration. This theory consists of the student taking initiative in identifying what their needs are, formulating learning goals, recognizing what resources are available, and determining all possible outcomes (Knowles, 1975). Studies suggest that student motivation, academic performance, satisfaction, and self-efficacy yield positive increases through the implementation of self-directed learning. Specifically, this review will examine the relationship between self-directed learning strategy and student academic performance.

Numerous studies have shown correlation between self-directed learning and student academic achievement. Gabrielle (2006) introduced optional supplemental technology-based materials to 784 students enrolled in required courses at a military college and found that those who accessed the modules had increased levels of readiness for self-directed learning and higher-grade averages than a control group that had the same opportunity to use the modules, but did not access them. Long (1991) using a sample of undergraduate students found a positive relationship between overall grade point average and self-directed learning scores. Long concluded "attitudes toward learning as measured by the self-directed learning readiness score positively interact with quality of performance (as defined by GPA in school)". Long and Smith (1996) examined 340 students, recent graduates, and withdrawn students in a bachelor's degree program and found a difference of nearly an entire standard deviation between self-directed learning readiness scores of those who graduated and those who withdrew from college. Reio (2004) found that self-directed learning readiness scores were by far the most robust predictor of learning performance after the effects of age, gender, and ethnicity were controlled. Slaughter (2009) in a 4-year study of students in a pharmacy preparatory program found that students with above SDLRS performed better than those with lower scores. Broadbent & Poon (2015) conducted a search of relevant databases in December 2014 for studies published from 2004 to December 2014 examining self-regulated learning strategies as correlates of academic achievement. From 12 studies, the key components found in self-directed learning (time management, metacognition, critical thinking) positively correlated with student academic outcomes.

Additional studies further advance the positive relationship between self-directed learning and student academic performance. Cho & Shen (2013) identify self-directed learning as one of the most important factors for student success in a learning environment. Artino (2007) conducted an exhaustive research review on the relationship between self-directed learning and academic performance. This review encompassed relevant research published



from 1994 – 2006. Results indicated that self-efficacy had a positive correlation with the use of learning strategy, satisfaction with course, and academic performance.

## **METHODS**

### **Participants and consent**

Participants in this study were enrolled in college courses across several business-related majors: Accounting, Business Administration, Entrepreneurship, Finance, and Marketing at a small private university in the southern United States. The student population (n=800) consists of approximately 600 undergraduate students and approximately 200 graduate students. The investigation was conducted in fourteen different courses, some with multiple sections, for a total of 21 classes that participated. All courses were face-to-face classes, and no online classes were targeted in the study. While content varied in each course, professors who voluntarily distributed the survey, reported their courses routinely require students to: (1) engage with textbook resources through reading and completion of activities; (2) work in collaborative groups; (3) attend in-class lectures and discussions; and, (4) apply their understanding through a variety of means (discussion, quizzes, projects, homework assignments). Each professor indicated that their class had two major quizzes or exams.

The research was conducted with approval of the university's Institutional Review Board (December, 2017), and carried out during spring semester 2018. At the beginning of the semester, all school of business professors were made aware of the study and asked to voluntarily participate if their classes had at least two major quizzes or exams. A participation form was distributed at a regularly scheduled faculty meeting, asking for the professor's name, the course name and number, and the course enrollment. Each participating faculty member was provided instructions for delivery of the survey, a specific number of surveys based on course enrollment, and a survey protocol. Most professors chose to offer the survey as an extra credit assignment to their classes, which helped encourage participation by the students. Informed consent was given at the beginning of the survey, and students were advised that they could discontinue completion of the survey at any time without penalty. Students were further advised that the collection of their student number on the surveys was for matching comparisons only, not for student identification.

### **Learning strategies survey and procedure**

The researchers adapted a Likert-style questionnaire created by Sebesta and Speth (2017) for use across a variety of business-related courses. Sebesta and Speth credited the existence of validated instruments in their study of students in introductory science courses. In particular, Sebesta and Speth developed their questionnaire based on categories of Zimmerman's and Martinez-Pons' (1986) self-regulated learning (SRL) strategies identified for the SRLIS structure interview protocol. They adapted the descriptions to describe study behavior in language their specific students would understand. While one purpose of their study was to examine freshman students, our purpose was to examine students at several class levels and across business disciplines. To that end, additional descriptive data were gathered in the adapted survey, including: undergraduate major, course name, gender, whether the student was domestic or international, the student's affiliation with the university as a freshman or transfer, employment, and undergraduate major. The researchers slightly adjusted the wording of specific items in the survey itself, for the same reason Sebesta and Speth adjusted their descriptions. This allowed the survey to remain, as Sebesta and Speth warranted, "brief yet comprehensive and targeted" (p. 10).

Sebesta and Speth noted their future research could benefit from the use of identifiers to track student responses over time. Another adjustment the current study makes is the use of student identifying numbers to match second-survey responses with first-survey responses. Students were also asked which of three learning styles (visual, auditory/aural/kinesthetic) they most closely associate with (if learning style is known). The researchers chose the VAK model to inform the responses to this item, despite there being other more technically developed models since the development of VAK. Most students have been exposed at some point to the concepts behind visual, aural/auditory, and kinesthetic learning.

The complete survey asked students (1) how often they used each of the 15 learning strategies on a 5-point Likert scale (1 = never, 2 = rarely, 3 = sometimes, 4 = often, and 5 = very often); (2) other learning strategies they may have used; (3) their actual grade on the exam (A, B, C, D, or F); and, (4) their satisfaction with the grade (1 = strongly dissatisfied, 2 = dissatisfied, 3 = neither satisfied or dissatisfied, 4 = satisfied, and 5 = very satisfied); and (5) how they plan to prepare for the next exam.

## RESULTS

The surveys were completed by 585 students for the initial administration and 520 students on the follow-up survey. In the initial survey, the group consisted of 56.35% male and 43.65% female participants. The average expected grade from the exam was 85.35%. Over one-tenth (12.05%) of the students identified as international students. Another 65.10% of the students responding to the survey started their academic careers at the university where the data were gathered. Of the remaining students, 23.95% transferred from a two-year institution, and 10.95% transferred from a four-year institution. Over half (50.30%) of the students were currently employed.

In the follow-up survey, the group consisted of 55.74% male and 44.26% female participants. The average expected grade from the exam was 80.15%. A lower percentage (10.76%) of the students identified as international students. Most (62.36%) of the students responding to the survey started their academic careers at the university where the survey instrument was distributed. Of the remaining students, 25.01% transferred from a two-year institution and 12.63% transferred from a four-year institution. A larger percentage (53.66%) of the students were currently employed.

For each strategy in the study, frequencies were calculated. The results were analyzed by grouping the “very often” (5) and “often” responses into a single category. The lower use responses of “sometimes” (3), “rarely” (2), and “never” (1) were also grouped together. We then calculated the relative frequency of responses that reported high use (5 or 4) for each of the strategies. These results are presented in Tables 1 and 2. In each survey, the strategies with the highest use were: seeking information, self-evaluation, environmental structuring, and reviewing notes. In contrast, the lowest use strategies were: reviewing exams, seeking assistance from other resources, and self-consequating (choosing self-reward/punishment as a consequence of behavior).

**Table 1: Relative Frequency of Students who Reported Higher Use of a Strategy on Exam 1**

	Survey 1					AVERAGE
	A	B	C	D	F	
<b>SRL Strategy</b>	127	128	129	78	80	<b>542</b>
1. Self-evaluation	99%	95%	92%	96%	96%	<b>96%</b>
2. Organizing and Transforming	76%	74%	85%	78%	80%	<b>79%</b>
3. Goal Setting and Planning	80%	83%	82%	77%	84%	<b>81%</b>
4. Seeking Information	99%	98%	95%	99%	98%	<b>98%</b>
5. Keeping Records Monitoring	91%	88%	84%	87%	86%	<b>88%</b>
6. Environmental Structuring	96%	90%	91%	94%	94%	<b>93%</b>
7. Self-consequating	62%	64%	71%	65%	70%	<b>67%</b>
8. Rehearsing and Memorizing	85%	84%	89%	83%	85%	<b>85%</b>
9. Seeking Assistance from Peers	82%	84%	87%	81%	84%	<b>84%</b>
10. Seeking Instructor Assistance	82%	80%	75%	72%	70%	<b>76%</b>
11. Seeking Assistance	47%	51%	52%	42%	50%	<b>48%</b>
12. Reviewing Notes	95%	91%	91%	91%	96%	<b>93%</b>
13. Reviewing Exams	16%	23%	22%	22%	25%	<b>22%</b>
14. Reviewing Textbook	80%	86%	78%	82%	89%	<b>83%</b>
15. Reviewing Graded Work	88%	88%	84%	85%	90%	<b>87%</b>

This study used both descriptive and inferential statistics to explore and evaluate the data. The research questions were analyzed via hypothesis testing. Paired sample t-tests were used to determine whether the mean difference between the two sets of observations was zero. In the current study, each student was measured at two separate times, creating pairs of observations.

H0:  $\mu d = 0$

H1:  $\mu d \neq 0$

Statistical significance is determined by calculating the p-value. The p-value describes the probability of the null hypothesis being valid, where  $P < .05$

Research question 1 asks: *Do measurable differences exist in student grade expectations between SDL measurement periods?*

**Table 2: Relative Frequency of Students who Reported Higher Use of a Strategy on Exam 2**

	Survey 2					
	A	B	C	D	F	AVERAGE
<b>SRL Strategy</b>	<b>118</b>	<b>149</b>	<b>110</b>	<b>51</b>	<b>41</b>	<b>469</b>
1. Self-evaluation	96%	97%	92%	90%	90%	<b>93%</b>
2. Organizing and Transforming	81%	81%	84%	78%	85%	<b>82%</b>
3. Goal Setting and Planning	81%	79%	80%	69%	78%	<b>77%</b>
4. Seeking Information	97%	97%	95%	96%	95%	<b>96%</b>
5. Keeping Records Monitoring	90%	89%	86%	82%	83%	<b>86%</b>
6. Environmental Structuring	91%	92%	92%	94%	88%	<b>91%</b>
7. Self-consequating	65%	68%	74%	73%	68%	<b>70%</b>
8. Rehearsing and Memorizing	87%	93%	82%	84%	80%	<b>85%</b>
9. Seeking Assistance from Peers	82%	81%	78%	76%	73%	<b>78%</b>
10. Seeking Instructor Assistance	74%	78%	71%	76%	71%	<b>74%</b>
11. Seeking Assistance	47%	53%	51%	57%	44%	<b>50%</b>
12. Reviewing Notes	91%	93%	91%	90%	85%	<b>90%</b>
13. Reviewing Exams	23%	27%	26%	31%	20%	<b>25%</b>
14. Reviewing Textbook	83%	83%	86%	84%	78%	<b>83%</b>
15. Reviewing Graded Work	86%	87%	85%	82%	80%	<b>84%</b>

**Table 3: Differences Between Measurement Periods**

<b>t-Test Paired Two Sample for Means</b>	<b>Test 1</b>	<b>Test 2</b>
	<i>Exp. Grade</i>	<i>Exp. Grade</i>
<b>Mean</b>	3.415019763	3.205533597
<b>Variance</b>	0.437318514	0.690345556
<b>Hypothesized Mean Difference</b>	0	
<b>t-Stat</b>	3.607235076	
<b>P (T≤t) two-tail</b>	0.00034026	
<b>T Critical two-tail</b>	1.964672639	

As shown in Table 3, student grade expectations declined between the first measurement period and the second measurement period. The calculated value for the t statistic of 3.607 is greater than the critical value (two-tail) of 1.965. Thus, the null hypothesis is rejected. Therefore, the difference in expected grades between the two testing samples is significant at the 5% significance level.

Research question 2 asks: *Do measurable differences exist in student actual grades between SDL measurement periods?*

As shown in Table 4, student actual grades improved between the first measurement period and the second measurement period. The calculated value for the t statistic of -3.618 is less than the critical value (two-tail) of -1.965. Thus, the null hypothesis is rejected. Therefore, the difference in actual grades between the two testing samples is significant at the 5% significance level.

**Table 4: Actual Grade Improvement**

<b>t-Test Paired Two Sample for Means</b>	<b>Test 1</b>	<b>Test 2</b>
	<i>Actual</i>	<i>Actual</i>
<b>Mean</b>	3.178723404	3.52978723
<b>Variance</b>	465.5841945	464.445806
<b>Hypothesized Mean Difference</b>	0	
<b>t-Stat</b>	-3.618300175	
<b>P (T≤t) two-tail</b>	0.000328763	
<b>T Critical two-tail</b>	-1.965034989	

Research question 3 asks: *Do measurable differences exist in student grade satisfaction between SDL measurement periods?*

**Table 5: Student Satisfaction**

<b>t-Test Paired Two Sample for Means</b>	<b>Test 1</b>	<b>Test 2</b>
	<i>Satisfaction</i>	<i>Satisfaction</i>
<b>Mean</b>	3.623188406	3.96480331
<b>Variance</b>	477.9531541	477.121165
<b>Hypothesized Mean Difference</b>	0	
<b>t-Stat</b>	-3.348806355	
<b>P (T≤t) two-tail</b>	0.000875202	
<b>T Critical two-tail</b>	-1.964897881	

As shown in Table 5, student grade satisfaction increased between the first measurement period and the second measurement period. The calculated value for the t statistic of -3.349 is less than the critical value (two-tail) of -1.965. Thus, the null hypothesis is rejected. Therefore, the difference in grade satisfaction between the two testing samples is significant at the 5% significance level.

## DISCUSSION

The initial survey of students introduced a number of self-directed learning practices in the questions. Among the practices are: self-evaluation and review; information organization; goal-setting and time management; further research (information look-up); note-taking in class; arrangement of the study environment; self-reward for goal attainment; memorization practice; seeking peer assistance; seeking instructor assistance; seeking tutor or lab assistance; re-reading notes; practice exams; textbook and learning management system review; and, review of previous assignments for clarity. Additionally, participants answered open-ended questions about (a) other strategies they used for exam preparation and (b) strategies they plan to use for their next exam.

Between measurement periods 1 and 2, which occurred after the first and second major quiz or exam, students' expectations of test grades moderated, while actual scores improved, and satisfaction increased. The findings suggest that students applied self-regulating strategies: setting learning goals, monitoring progress toward them, and applying appropriate study strategies, as suggested by Sebasta and Speth (2017).

“Expected grade” responses in the first survey period, which occurred within days of the first test in the course, indicate higher expected scores than the later period. The high expectation could be attributed to student confidence (or overconfidence) in the current study habit, the perception that material is less demanding during the first part of the course, previous experience, or optimism. “Actual scores” on the first test provided a “reality check” which may have encouraged students to practice greater self-direction (self-regulation). Realizing their initial efforts did not result in the outcome (actual scores) expected (setting learning goals and monitoring the progress towards them),

students identified additional practices they would employ between test periods. Approximately 20% said they would practice homework and problems; 20% indicated they would take or rewrite notes; and another 20% said they would re-read text material and do practice quizzes/quizlets. The remaining 40% of responses were divided (in descending order) as: prepare flash cards, review study guides and handouts, read aloud or record oneself, review materials online, watch or review lectures, and copy or highlight material. A small, but equal percentage of students noted they would (1) watch or listen to television while studying or (2) have no distractions.

Test 2 expected grades and actual grades suggest participants not only exercised caution by expecting a lower grade, but also exercised greater self-regulation/self-direction in preparing, based on the higher actual grades. Consequently, satisfaction levels between the first and second test period increased.

In deference to Jagger's and Richards' (1965) double negative, students can get (grade) satisfaction by using SDL/SRL.

## CONCLUSION

While the current study's results are not generalizable, they support the relationship between expectation, self-directed/self-regulated learning strategies, performance and grade satisfaction. Results are useful for offices of student learning/success to promote viable strategies and interventions for students.

## FUTURE RESEARCH

Future research involving between group comparisons will examine if differences exist between students based on gender, class level (freshman, sophomore, junior, senior), undergraduate versus graduate, and major. The purpose of the between group comparisons will be to identify key differences to inform successful strategies and early interventions.

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**More to come**

# 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](http://www.beijournal.com) for latest per page fees. Sole author fees are discounted.
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- 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**

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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...

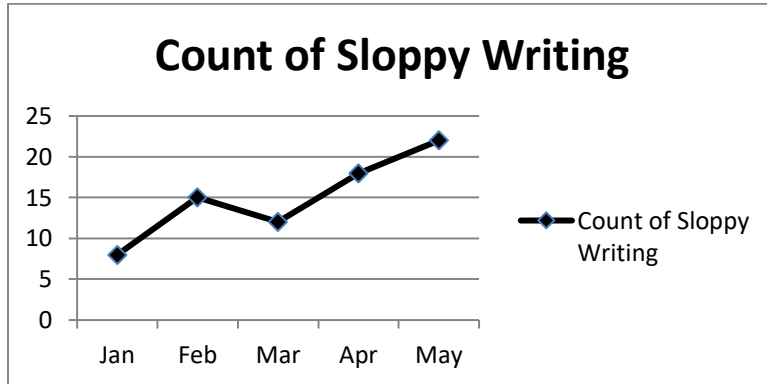
**Data Analysis**(Sub-heading, bold but not all caps, 10 point, aligned left, bold, no line after to paragraph)

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)**

	<b>Good Thinking</b>	<b>Sloppy Thinking</b>
<b>Good Writing</b>	5	22
<b>Sloppy Writing</b>	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)

**(1 line 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)

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Endnote: (do not use word footnote or endnote formatting to accomplish this; see comments above)