ASSESSING ACHIEVEMENT OUTCOMES AND STUDENT ENGAGEMENT PERCEPTION IN AN UPPER DIVISION BUSINESS MANAGEMENT COURSE

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ABSTRACT

This study examined differences in achievement outcomes among undergraduate business students enrolled in an online and face-to-face upper division business management course. Proponents of online education support the argument that there are no differences in outcomes between students who take online courses, and much of the literature supports this position. The purpose of the current study was to ascertain whether that belief is supported at the university where the study was conducted using a specific course from the Business School.

The course that served as the focus of this study is Finance 3000 (FIN 3000). It is a quantitative course, and one that is a prerequisite to other upper division courses in the core degree requirements. Failure to complete this course in the allotted three attempts results in students having to change their major out of the college.

The two units of analysis for this particular study consisted of students who completed the Finance 3000 (FIN 3000) course via online delivery and the traditional face-to-face classroom setting on the university’s Main campus between fall 2012 and fall 2015. These students were all declared Business majors (specific major will vary) at the university’s Business School.

A demographic profile of the students registered for these sections was constructed using data that are available through Self-Service Banner. The information gathered included: ethnicity (using categories defined by the university), major, academic classification (such as sophomore, junior or senior), and final grade earned in the course.
The purpose behind this information is to determine whether there is any relationship between grades earned in this course and the grades earned in FIN 3000, as well as to make sure that the online and face-to-face students are comparable.

Finally, a voluntary survey was administered to those students who completed the online version of FIN 3000 in fall 2015, in order to assess perceived levels of engagement.

Results of this study revealed that, overall, students who enrolled in the online section of FIN 3000 performed worse than those in the face-to-face section. Further analysis indicated that while there were no significant differences in factors such as major and gender, seniors registered more frequently in the online section and had lower achievement results. The results of this study contradict the literature that suggests there are no differences in achievement outcomes.
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CHAPTER 1
INTRODUCTION

The Merriam Webster dictionary defines distance learning as “education that takes place via electronic media linking instructors and students who are not together in a classroom” (def. 1). A 2011 report published by the National Center for Education Statistics revealed a twelve percent increase in enrollment in distance degree programs and degree programs between 2000-2008 (Radford & Weko, 2011). While student demand for, and enrollment in, online courses continues to increase at a rapid rate, online learning is often regarded as not being equal to face-to-face classes.

Allen and Seaman (2014) reported that more than seven million students had completed an online course, and that over 33% of all college students had taken, or are taking, an online course. Bradford and Wyatt (2010) suggest several reasons for this upsurge, including access to courses and the opportunity for institutions to reduce costs. With online courses, there are less associated costs with building upkeep and utilities. Duffy and Kirkley (2004) agree, stating that online education can be seen as a way to extend educational opportunities to individuals who may not be able to attend on-campus courses, which in turn may make education more affordable. Radford and Weko (2011) reported that when compared with all students enrolled in a distance education program, students in a business program had the second highest enrollment rate, at 24 percent, and a high persistence rate, at six percent.

In order to meet the growing demand for distance and online courses, higher education institutions have to increase their offerings of online courses and programs.
Driscoll, Jicha, Hunt, Tichavsky, and Thompson (2012) state that: “Online learning is a rapidly growing feature of higher education, and as it increases in both prevalence and importance, we…are increasingly obligated to understand its use and improve upon its implementation” (p. 326).

Ellis and Goodyear (2010) pose the following questions: How can educational opportunities be enhanced for all students; how can higher education institutions best support the changing make-up of today’s student population; and, how can universities upgrade curriculum and assessments to ensure that all students are well-equipped to meet the needs of an ever-evolving workplace? With the rising costs of higher education, the changing make-up of today’s college student, and the lack of space to accommodate large classes, online learning is becoming a more viable option. Bowen, Nygren, Lack, and Chingos (2013) suggest that increasing the use of technology through online learning can be seen as one way to help control costs while improving access and reducing gaps in student achievement. Begg, Ellaway, Dewhurst, and MacLeod (2011) suggest that political reaction to growing enrollment numbers and the need to provide a more cost-efficient means to education has played a role in the push for more online course offerings.

Despite its growing popularity, online learning is still perceived by many as easier than or not as robust as a traditional classroom. Harasim (2012) suggests that the debate surrounding the effectiveness of online learning may be attributed to confusion about what constitutes online learning. Attempts to prove that the quality of online education is just as good as the traditional classroom setting have not been overly effective in reducing the doubt among higher education administrators. Kolowich (2011) reports that
while the number of students in online courses continues to grow substantially, acceptance among faculty of online courses being just as good as face-to-face classes is occurring at a much slower rate. Kulchitsky (2008) agrees, suggesting that many faculty, students and administrators believe that there is a risk associated with online learning, as compared to the traditional classroom setting.

Kock, Verville, and Garza (2007) argue that online course delivery is good, as it allows those students who cannot take traditional classes to complete course work toward their degree with no great negative impact on their academic achievement. This perspective is referred to as no-significant-difference, as supporters feel there is no significant difference in the learning outcomes in an online course. Through their research, Bowen, Nygren, Lack, and Chingos (2013) found that learning outcomes were the same for students who completed hybrid-based courses as compared with those students who completed the same course in person. There are those who support the perspective of significant difference, arguing that online course delivery is weak, as it eliminates the interpersonal face-to-face interaction that contributes to a richer and therefore more fulfilling learning environment. These supporters claim that online learning does not allow for effective learning as it prevents the use of non-verbal cues that are obvious in the traditional classroom.

As institutions look to expand their offering of online programs, and increase student enrollment, it will be important to examine the persistence and success rates of current students enrolled in online courses, as well as to address any potential areas that may need additional development. Mgutshini (2013) suggests that while much of the current research focuses on attrition and performance, attention should be paid to the
overall student experience, including assessing student satisfaction with their online experience. Having additional data that indicates that students who complete online courses are just as successful, perhaps even more so, as students engaged in face-to-face settings may help to justify the addition of more courses and ease the fears of the faculty and future employers.

Statement of the Problem

The purpose of this study is to determine if there are any significant differences in student achievement outcomes (GPA) and student perception of engagement among undergraduate students enrolled in an online and traditional (face-to-face) upper division business management course. In terms of academic persistence, the stakes are somewhat higher in this course, as it is a prerequisite, or “gatekeeper”, to courses leading to the completion of a degree. Student demographics were assessed to determine whether gender, age, race, or choice of major interacted with course type to affect achievement.

In an effort to answer the research questions posed later in this dissertation, a mixed method approach was used to determine whether students performed better (earned higher grades) in an online section of Finance 3000 (hereafter referred to as FIN 3000) as compared to those students who completed the course in-person. In order to assess the outcomes, final class GPAs from fall 2012 through fall 2015 were examined and compared. To address the question of student engagement and satisfaction as it relates to persistence in course completion, a survey was distributed to students who completed this course in the most recent semester (fall 2015).
Theoretical Framework: Debating the Richness of Online Learning

*Media Richness v. Media Naturalness Theories*

According to Kock, Verville and Garza (2007), media richness theory (or the significant-difference perspective) suggests that forms of communication that eliminate face-to-face interaction will lead to lower outcomes in achievement. This theory is based on the idea that communication delivery that eliminates nonverbal cues (speech, etc.) does not allow for a meaningful, or rich, communication. The hypothesis behind the theory is that richness in communication is based on the ability to deliver non-verbal cues, such as tone of speech, or body language. According to Kock (2001), media richness theory suggests that communication that includes nonverbal cues should be considered richer than communication that eliminates these cues. Different levels of perceived richness will make communication more or less effective when relaying information or direction.

Kock and Garza (2011) further state that media richness theory suggests that certain tasks, such as those undertaken in an intense knowledge setting like a classroom, will be negatively affected if they are undertaken in an environment that is considered to be low in richness. This setting would include online courses. This theory argues that students who complete online courses will perform more poorly than those in a face-to-face classroom environment. If this theory is correct, then universities will have to consider eliminating, or at least reducing, online course offerings.

The media naturalness theory, or no-significant-difference perspective, is based on the theory of human adaptation and evolvement and is defined by Kock (2005) as the
ability of media to support the naturalness of communication. There are three constructs that are the main focus of this theory – “communication ambiguity, cognitive effort, and excitement” (Kock, Verville, & Garza, 2007, p.336). This theory suggests that the decrease in the naturalness of communication will lead to an increase in communication uncertainty, an increase in effort required from students, but a decrease in the excitement felt upon completion of a task.

Importance of the Research

Due to the increase in the number of institutions offering online courses and entire degree programs, it becomes important to continue to show that students in online courses consistently perform just as well as their peers in traditional courses. Much of the research has been with introductory level courses (i.e., lower level course work) or at the graduate level. It should be considered just as important to show that the same outcomes hold true for students who complete their upper-division course work online, and that the achievement outcomes at that stage in a student’s academic career are just as robust and enriching.

With the constant increase in overall enrollment at colleges and universities, physical classroom space is at a premium. To account for this, it will become more and more necessary to be able to offer access to education in various forms; chief among them, the online classroom. Therefore, it is important and necessary to show clear evidence that the achievement outcomes and academic achievement of students in upper division courses are equal to those in a traditional classroom setting. As stated previously, much of the focus has been on lower division courses, or graduate level courses, but not
much research has been done in terms of upper division courses, many of which are gateways to progression into senior level course work. Access will be more important than ever as college costs continue to rise, and students must decide between working full-time or taking out student loans in order to attend traditional classes. Having access to a robust program with classes offered in a format that is flexible to their schedule should help with retention and progression toward degree completion.

Responding to the need to offer more online options, it will be important to understand why students choose to take online courses, what tools they perceive as necessary to be successful, and whether the method of online course met their needs and expectations. Bradford and Wyatt (2010) state that delivery, as well as the degree of interaction with peers and the instructor, is often a barrier to course completion. It will be important to assess whether it is possible to deliver the same rich experience to students in an online course that students in traditional classrooms receive.

Research Questions

This study addressed several questions as they relate to student success in online and face-to-face courses. First, it assessed the academic achievement outcomes and student experience in both the online and traditional course delivery of an upper division required course in the Business School curriculum. The focus was on FIN 3000, which is a quantitative-based course required of all Business majors. As this study was interested in the possible disparity in academic outcomes of students in both the online and traditional course, emphasis was placed on final grades earned.
Second, a student demographic profile was constructed, using data available in Self-Service Banner. This information was used to determine whether there were any significant differences in academic achievement between males and females, among age groups, or among the different majors. Finally, the experience of the students enrolled in the online section of FIN 3000 in fall 2015, in terms of engagement, what they perceived helped them to be successful, and overall satisfaction with their experience, was discussed. Questions 1-3 are designed to compare the online and face-to-face sections of the same FIN 3000 course; questions 4-7 are designed for the online sections of FIN 3000 only.

Assessing Achievement Outcomes

This study compares average class GPA and grades earned of students who registered for, and completed, both online and in-person sections of FIN 3000. The course completion rate was determined by the number of Withdraws (indicated by “W”) entered as final grades.

Question 1: Is there a significant difference in student achievement, as evident by class GPAs, between students who completed an online or in-person section of FIN 3000?

Question 2: Did students who registered for the face-to-face section have a higher rate of course completion as compared to students who opted for the online course?

Assessing Student Demographics

In an article by St. John, McKinney, and Tuttle (2006), it was suggested that there are certain academic programs that do not tend to support persistence by students of
different racial backgrounds. Among those programs, which include healthcare and STEM (science, technology, engineering, and math), is Business. Peters, Shmerling, and Karren (2011) assert that women perform better than men in an online learning environment, perhaps due to a feeling of equality not normally felt in a face-to-face classroom. Peters et al. (2011) suggest that women have higher verbal and collaborative skills, which may explain his findings that women outperformed men in an online classroom setting when collaborative, not competitive, activities were involved.

**Question 3:** Are the relationships between higher grade achievement and gender, race or choice of major the same in online courses as in face-to-face courses?

*Comparing Student Perception of Satisfaction, Engagement, and Success*

In a 2014 national report by Noel-Levitz (a consulting firm for higher education), overall satisfaction among students attending a public four-year institution was 56%. This report shared the discovery that when considering which institution to enroll at, students listed financial cost as their primary deciding factor, followed closely by academic reputation, 82% and 79% respectively. This could prove to be problematic, as cost supersedes reputation in terms of where a student ultimately decides to attend. The Noel-Levitz (2014) report suggests that campuses will need to look for ways to increase their reputations, by enhancing the academic experience, and promoting the quality of programs and faculty. Another way to do this would be to increase access to education through more flexible course and degree options.

While the implementation of more Business courses as online options is of interest to administration, more research needs to be conducted on the academic success
of students in the existing online courses, what factors lead students to choose an online course rather than a traditional course, and the specific factors students feel are necessary to succeed in the online learning environment. In addition, understanding student perception of their learning style, and their perception of online courses as compared to traditional courses, will help to understand what it means to be an online learner. To a greater extent, this information may also help to clarify the benefits of online courses. As more students transition into online courses, it will be important to consider the issue of student satisfaction and engagement with these courses.

*Question 4:* Is there a relationship between self-reported levels of satisfaction, engagement and course completion in the online and face-to-face sections of the same Finance 3000 course?

*Question 5:* Is there a relationship between persistence and self-perception of ability in the online Finance 3000 course?

*Question 6:* What factors do students believe contributed to their success in the online Finance 3000 course?

*Question 7:* What factors do students believe hindered their success in the online Finance 3000 course?

**Operational Definitions**

*Academic Achievement:* For the purposes of this study, academic achievement will refer to the grades and GPAs earned in the FIN 3000 courses.
*Academic Standing:* For the purposes of this study, academic standing will refer to a students’ classification of sophomore, junior, or senior. As FIN 3000 is an upper division course with several course prerequisites, it is not possible for a freshman to be eligible to register for this course. The university defines sophomores as students who have completed 30 to 59 credits, juniors as students who have completed 60 to 89 credits, and seniors who have completed 90 or more credits.

*Online Learning:* According to Harasim (2012), online learning refers to the fact that the primary mode of course delivery occurs in an online environment, and could be comprised of various methods of online delivery, such as asynchronous, synchronous, or hybrid, also known as blended. The university offers two methods of online course delivery, online and hybrid, and defines them as:

**Online:** Courses offered entirely online without regard to face-to-face meetings. Students are expected to be academically engaged with comparable learning outcomes of a standard lecture course with alternate delivery methods. Contact time is satisfied through several means which can include but is not limited to the following: a) regular instruction or interaction with a faculty member once a week for each week the course runs; b) academic engagement through interactive tutorials, group discussions moderated by faculty, virtual study/group projects, engaging with class peers and computer tutorials graded and reviewed by faculty.

**Hybrid:** Courses offered in a blended format with one or more required face-to-face class sessions and with one or more required online sessions. ([http://bulletin.temple.edu/undergraduate/academic-policies/academic-credit/](http://bulletin.temple.edu/undergraduate/academic-policies/academic-credit/))

Using the parameters above, some of the university’s online courses are *asynchronous*, where content and information is available anytime and anywhere. All online courses in the Business School are offered through *synchronous* or *hybrid*, delivery; real-time class sessions are required and available through a web-based
conferencing program, usually through WebEx. This is similar to Allen and Seaman’s (2014, 2011, 2010) definition of an online course – that is, at least 80% of the course work and content is delivered online. The purpose of offering the courses in this delivery mode is to encourage collaboration among peers, which can lead to a better and richer online experience.

For the purposes of this study, online learning will refer to the synchronous hybrid delivery mode used by the Business School.

*Student Satisfaction:* For the purposes of this study, student satisfaction will encompass the overall level of satisfaction that students reported with their course experience to include perceived levels of engagement with the material, their peers, and the instructor. Bradford and Wyatt (2010) suggest that: “Satisfied students are engaged, motivated, responsive, contribute to an effective learning climate, and tend to achieve at higher levels. Dissatisfied or ambivalent students contribute to more negative environments where instructors encounter many more difficulties creating opportunities for effective learning” (p. 109).

**Introduction Summary**

Daymont and Blau (2008) indicate that there is a lack of assessment regarding the performance of undergraduate students in business management programs. This is of particular relevance to the university’s Business School as it looks to expand its online course and major program offerings. Stigma still exists surrounding online education, with employers, parents and students believing that online education is not as good as traditional, face-to-face, content delivery. Multiple studies have been conducted
comparing achievement outcomes between the same face-to-face and online courses. Results of these studies have shown that, overall, online students perform just as well as students who take their courses in the traditional classroom. Current studies (Bowen, Nygren, Lack, & Chingos, 2013; Daymont & Blau, 2008; Kock, Verville, & Garza, 2007; Mgutshini, 2013; Neuhauser, 2002; Shelley, Swartz, & Cole, 2007) have compared student performance in undergraduate courses and in graduate level programs (Kirtman, 2009) and have found that achievement outcomes were about the same for online and face-to-face sections of the same course, indicating that students do not lose anything in terms of achievement by taking an online course. However, a similar comparison should also be made between traditional and online versions of an undergraduate upper division business management course.

At the Business School, there are several courses that are offered via online and traditional delivery. There are more courses offered in the traditional format than there are online, but as our student population increases it is becoming increasingly difficult to offer enough traditional courses to meet the demand. In addition, physical space to accommodate large class sizes is at capacity, which means that offering more online courses is a viable option. However, this option only works if students are satisfied with the course structure, and if the academic outcomes are similar. Failing this, the perception of online courses and programs being “easier” may never be erased.

Responding to the need for more research into academic achievement outcomes in online and traditional upper division business courses, this study evaluated achievement outcomes, self-reported measures of student satisfaction, and feedback on engagement in a FIN 3000 course in online and face-to-face course learning environments. The
information provided in this introduction provides a justification for this study as well as a brief overview of the literature and proposed research questions.
CHAPTER 2

REVIEW OF THE LITERATURE

*The Case for Online Learning*

For many students today, online learning has become an acceptable and, in some cases, a preferable option to face-to-face classes. As mentioned earlier, Allen and Seaman (2014) reported that more than seven million students had completed an online course and that over 33% of all college students had taken, or will take, at least one online course. Rising costs of attending college has had a significant impact on both institutions and students which has resulted in higher education institutions assessing ways to make college affordable – specifically with regards to increasing online learning options for those students unable to attend on-campus courses.

In order to keep pace with the increasing demand for access to education and the changing technological environment, universities are striving to keep up. As online courses become more acceptable (Friday, Friday-Stroud, Green & Hill, 2006), institutions are offering web-based courses as an alternate to in-person courses. For business schools that are accredited by the AACSB (Association to Advance Collegiate Schools of Business), there is a mandate that the use of technology be included as a learning area in business classes. According to Standard 11: “Teaching/learning models include traditional face-to-face classroom models, distance (online) models, blended models that employ face-to-face and distance (online) components, other forms of technologically enhanced instruction, or any other form of instructional methodology”
Driscoll, Jicha, Hunt, Tichavsky, and Thompson (2012) state that “understanding the relative effectiveness of online learning environments is an issue of increasing importance and the subject of growing debate” (p. 312). Driscoll et al. (2012) expand on the idea that because online learning is growing in popularity, it is incumbent upon administrators to have a clear understanding of its use and to make improvements.

Changing Demographics

Tanner, Noser, and Totaro (2009) suggest that the make-up of today’s college student is much different than in years past and that institutions have to appeal more to the non-traditional student. The substantial increase in the availability and accessibility of online learning has resulted in a demographic change, as more adult students are entering institutions of higher education. Such changes in demographics mean that there will need to be a greater emphasis on the needs and characteristics of the adult or non-traditional learner. It is common to identify the non-traditional student by age, with non-traditional students considered to be those over the age of 24. However, as Palloff and Pratt noted in 2003, the interest in online learning is spanning all age groups. While age is still a factor, there are other characteristics to consider, such as the student who is returning to school, working full-time, enrollment status (full-or part-time) and having dependents. Due to the constraints imposed by these factors, online learning is a more convenient way for these learners to return to school, or begin, and earn their degrees. Stavredes and Herder (2014) agree, stating that the most common reason people enroll in online courses is flexibility.
Media Richness v. Media Naturalness

As mentioned earlier, there are those who would argue that online course delivery is good, as it allows those students who cannot take traditional classes to complete course work toward their degree with no great negative impact on their academic achievement. Kock, Verville, and Garza (2007) refer to this perspective as no-significant-difference, as supporters feel there is no significant difference in the achievement outcomes in an online course. There are those who support the perspective of significant difference, arguing that online course delivery is weak, as it eliminates the interpersonal face-to-face interaction that contributes to a richer and therefore more fulfilling learning environment. Proponents of this theory claim that online learning does not allow for effective learning as it prevents the use of non-verbal cues that are obvious in the traditional classroom.

According to Kock, Verville, and Garza (2007), media richness theory (or the significant-difference perspective) suggests that forms of communication that eliminate face-to-face interaction will lead to lower outcomes in achievement. This theory is based on the idea that communication delivery that eliminates nonverbal cues (speech, etc.) does not allow for a meaningful, or rich, communication. The hypothesis behind the theory is that richness in communication is based on the ability to deliver non-verbal cues, such as tone of speech, or body language. Different levels of perceived richness will make communication more or less effective when relaying information or direction. The media richness theory posits that the outcomes of tasks that occur in settings where there are low levels of richness will be poorer than those where there are higher levels of richness. Such settings would include the online classroom. Put another way, this theory maintains that students who complete online courses are outperformed by those who take
courses in a face-to-face setting. This would seem to go against the current influx of online courses; if this theory were proven correct, it would mean that the demand and growth of online courses would decline.

The media naturalness hypothesis argues that, other things being equal, a decrease in the degree of naturalness of a communication medium (or its degree of similarity to the face-to-face medium) leads to the following effects in connection with a communication interaction: (1) increased cognitive effort, (2) increased communication ambiguity, and (3) decreased physiological arousal. (Kock, 2005, p.117)

As defined by Kock (2005), the media naturalness theory suggests that media is able to support the naturalness of communication. There are three constructs at the center of this theory - vagueness in communication, mental effort, and enthusiasm. This theory suggests that with a decrease in the naturalness of communication there will be a corresponding increase in both communication uncertainty and in mental effort required from students, and a decrease in the excitement felt upon completion of an assignment.

Kock (2005) lists two main constructs that are affected by media naturalness: cognitive effort and communication ambiguity. Kock (2005) defines cognitive effort as the amount of activity involved in a communication interaction; the more effort required to communicate, the more the task is perceived as difficult. Communication ambiguity occurs when an individual is expecting certain information and does not receive it. Sometimes the missing information takes the form of contextual cues, such as non-verbal indications (body language) or immediate feedback. When this happens, individuals attempt to fill in the missing information based on processing information they may already have. The problem with this ambiguity is that when an individual attempts to fill in these gaps without all the information, there is a higher likelihood of misinterpretation.
This is especially true when thinking about feedback or constructive criticism received through email; this can be perceived as harsh, without the benefit of hearing how the message is delivered. This will be important for instructors to keep in mind when giving feedback through email or other forms of written communication. Physiological arousal is based on the idea that excitement decreases when communication is not face-to-face and you cannot see the reaction of people you are working with in a group setting, such as an online class.

This hypothesis supports the idea that, regardless of any challenges posed by low naturalness media such as learning environments where immediate feedback or non-verbal cues are not available (in the case of this study, online courses), individuals will adapt and achieve similar, or better, outcomes as those in richer media naturalness (face-to-face classes).

Kock and Garza’s (2011) theory on media naturalness supports the idea that most people believe that media communication reduces the non-verbal elements that we rely on, such as facial expression, body language and tone of voice. The suppression of these elements then leads to obstacles in communication which would then lead to decreased excitement or interest, increased communication ambiguity, and increased cognitive effort. It is important to note that media naturalness theory does not predict outcomes of tasks; it does, however, make the argument that low media naturalness effects (such as increased communication ambiguity) can lead users to develop skills that will make them better users. Stated another way, users of low media naturalness will learn to adapt over time and will become better at using the medium required for course, or task, completion. This is often referred to as the compensatory adaptation theory or channel expansion.
theory. This model, according to Kock (2001), points out that if individuals, or group members, are highly motivated to accomplish their goals, they will find a way to overcome any obstacles imposed by lower levels of media richness.

In a longitudinal study of undergraduate students in a management information systems class, Kock and Garza (2011) collected data from an undergraduate management information systems class at two different points in the semester, the middle and the end. Half of the students completed the course online and other half completed the course in the face-to-face environment. The only differences between the courses were the communication delivery methods employed. The results of this study did show that cognitive effort and communication ambiguity were higher in the online course, which was predicted according to the media naturalness theory. They also found evidence to support the channel expansion theory, since those students in the online course performed better at the end of the semester as they learned to adapt to the online environment. A study carried out by Kock, Verville, and Garza (2007) also found that while at the beginning of an online course there were slight differences in cognitive effort, ambiguity and excitement, over time these factors evened out, and resulted in a no-significant difference outcome between the face-to-face and online forms of communication. Kock et al. (2007) assert that this also supports the theory of compensatory adaptation by suggesting that students will, over time, overcome any differences between the face-to-face and online course formats.

Kock (2005) suggests that communication that incorporates at least one of the media naturalness components, such as synchronicity or being able to convey expression, will have a higher degree of the feeling of naturalness. It stands to reason that, based on
this, online courses that have the ability to accomplish this would have higher rates of student satisfaction.

Using Class GPA to Assess Academic Achievement and Performance

Despite the growing student demand for online courses, and the corresponding increase in offerings, skepticism still exists with regards to achievement outcomes, and whether or not students in online courses are performing as well as students in traditional classrooms. Daymont and Blau (2008) engaged in research that attempted to measure the academic performance of students in an online undergraduate business management course and those students enrolled in the same course, but in a traditional, face-to-face setting. What they learned is that students who enrolled in online courses performed as well as their colleagues in traditional classes. A study by Shelley, Swartz, and Cole (2007) of students enrolled in an undergraduate business law course yielded similar results – students in an online course performed just as well as students in the traditional course.

Friday, Friday-Stroud, Green, and Hill (2006) employed a similar method to conduct a multi-semester study (eight semesters), comparing student performance in both online and traditional sections of an undergraduate business management course. For consistency, exam and course content were the same for all sections. At the conclusion of the study, Friday et al. (2006) found that there was no significant difference in performance between the online and traditional course offerings. What they did find was that women earned higher grades on average than men in both the online and traditional courses.
In the studies conducted by Daymont and Blau (2008), and by Shelley, Swartz, and Cole (2007), two types of delivery formats were assessed: asynchronous (students can complete the work at any time) and the traditional classroom style. Daymont and Blau (2008) noted in their results that while the learning objectives for each course were the same, slight differences were identified in grading opportunities. For example, in the traditional classroom, there were opportunities to add points to their final grades based on their contributions in the classroom.

Course Design and Student Satisfaction

According to Bradford and Wyatt (2010), student satisfaction is an important factor in the evaluation of courses, instructors, and overall program quality. In a study conducted by Swan (1999), three factors were found to influence students’ satisfaction with an online course – interaction with peers in the form of active discussion, interaction with the instructor, and the design of the course. “When classes are poorly run, students feel it directly; classes are thus, in the eyes of the students, a key measure of the college’s academic credibility” (Chambliss & Takacs, p.41).

Daymont, Blau, and Campbell (2011) suggest that the following framework may help in understanding why some students prefer online learning: constructivism and social constructivism. According to Ally (2008), the theory of constructivism is based on the idea that people, in this case students, interpret information and their environment according to their own reality, and that individuals learn by observing and processing information and then apply it to their context. Similarly, Harasim (2012) asserts that in constructivist theory, individuals create their understanding of the world around them.
through their experiences and reflection of those experiences. The learner, in
constructivist theory, is the focus, or the center. Ally (2008) defines constructivist
strategies as those that “teach the why (higher-level thinking that promotes personal
meaning, and situated and contextual learning)” (p. 20). This definition is echoed by
Duffy and Kirkley (2004), who assert that the primary goal of constructivist learning is to
help the student develop useable knowledge, or knowledge that can be applied outside of
the classroom environment. Kim and Bonk (2006) state that online courses developed
with this strategy should be interactive, relevant, and collaborative, but also provide the
students some control over their learning.

Constructivism supports the idea that learners are active and that they process
information through their senses. Peters, Shmerling, and Karren (2011) state that this
learning style attempts to deliver information in a style that is collaborative and to
stimulate engagement among course participants. Harasim (2012) agrees, stating that
knowledge is gained through interactions with the environment and their community. Put
another way, Peters et al. (2011) suggest that the constructivist pedagogy makes the
assumption that more effective learning takes place in active environments as opposed to
more passive settings, and that “students receive and assimilate knowledge in an
interactive manner in order to move from a place of divergent thinking to a new place of
convergent thinking and understanding” (p. 313). Ally (2008) suggests that in this type of
learning environment, activities in online courses should be arranged that permit for
contextualizing information. Ally (2008) further suggests that if “information has to be
applied in many contexts, then learning strategies that promote multi-contextual learning
should be used to make sure that learners can indeed apply the information broadly” (p. 30).

Palloff and Pratt (2003) believed that the sharing of knowledge and interests establishes the foundation of constructivist learning, where learning is co-created by the instructor and the students. Constructivism and social constructivism learning environments can be created through collaborative and cooperative learning, through working with others. It can also be achieved with the inclusion of discussion boards that encourage reflective interaction, often at a deeper level than can be achieved in a classroom setting. Ally (2008) suggests that when learning online, students will require more time to reflect and process the information they are being asked to learn. In an online classroom environment, students have more time to consider the writings of their classmates, and have more time to offer a more thoughtful response than they can in a classroom. They also have more time to think about what they are writing before posting responses. Peters, Shmerling, and Karren (2011) suggest that this may actually be one of the greatest strengths of online learning – the fact that students are allowed more time for reflective thinking.

This format also highlights the different perspectives in terms of opinions and interpretations that result among the class participants even though they have read the same material, often due to the different world experiences they have had that influence their interpretation. By sharing these experiences with fellow students, the wealth of knowledge increases and every student is able to benefit in some way, albeit small in some cases, from these additional experiences. (Peters, Shmerling, & Karren, 2011, p. 327).

On the other hand, there are a large number of students who are more comfortable with face-to-face interaction, as indicated in a 2006 study by An and Frick (as cited in
Daymont, Blau, & Campbell, 2011). From their study, they found that the majority of students preferred face-to-face discussions, and that those students who preferred the online discussion boards were shyer, but were more tech-savvy. Kock, Verville, and Garza (2007) also note that electronic communication eliminates the immediate feedback or reaction that students have come to expect in the face-to-face classroom environment. Swan (1999) found that immediate feedback was of importance in face-to-face settings and suggests that the non-verbal and verbal cues that are received in the traditional classroom setting contribute to greater learning.

According to Driscoll, Jicha, Hunt, Tichavsky, and Thompson (2012), “Interaction in the online environment consists of a wide range of text-based exchanges which, although limited in comparison to in-person conversations, allow for a broad interchange of ideas, questions, and opinions” (p. 315). In order for an online course to be most effective, its structure must include a clear design and, as many students may be new to the online learning environment, it should provide clear instruction on how to access materials. Course expectations and requirements should be made clear. While the use of various multimedia tools, such as videos, can enhance the online learning environment, too much can be distracting and detract from the content that needs to be learned. In fact, Driscoll et al. suggest that “the inclusion of more media in online courses does not appear to affect the amount that students learn” (p. 316). The ideal online course should provide opportunities for interaction and active engagement with the material to promote learning. Song, Singleton, Hill, and Koh (2004) also found that course design had an impact on the success of the course; they suggested that design was the most important factor in course satisfaction.
Course design, according to Paechter and Maier (2010), is the major factor in the success of an online course. If a course is designed in a manner that facilitates meaningful learning and is structured in a coherent fashion, it is more likely to have a positive impact on the students’ experience in the online learning environment. Course design also plays a role in determining whether a student will persist in the course or drop-out.

Choosing Between Traditional and Online

What makes a student choose an online course versus a traditional setting? There can be many reasons why students choose to take an online course rather than the traditional version. Chambliss and Takacs (2014) suggest that there are two factors in play when students choose their classes – the courses they need (thereby eliminating all other choices), and minor considerations such as time and day that a course is offered, what is available, who is teaching and are they recommended by friends. Radford and Weko (2011) add flexibility to the list of factors, as this factor may encourage individuals with family and/or career obligations to complete a college degree program. Ally (2008) and Keramidas (2012) also list flexibility as a key factor, in that the material can be accessed at any time that is most convenient for the student, and the students can work at their own pace. Other factors of interest are reduced costs to students with regards to commuting and parking.

A common assumption may be that because students today are so attached to their electronics, they would want their education in the same format. However, that is not always correct. Studies have shown that students actually prefer face-to-face meetings with their professors and peers (Lohnes & Kinzer, 2007). It also appears that students
would prefer to have technology serve as a supplement to what they learn in the classroom, not as their actual class. This suggests that despite the growth in online education, a large majority of students prefer to be in the classroom.

Flexibility has been identified as a deciding factor when a student chooses between an online course and the traditional classroom setting. Due to work schedules, or home situations, the convenience of taking an online course, or completing one’s degree online, is likely a large contributing factor. Other students may be drawn by the ability to decide when and where they will “attend” class, rather than be locked into a set schedule. Another benefit is that with an online course, students can go back to a particular lesson and review it as often as needed, something that cannot be done in a face-to-face classroom.

Song, Singleton, Hill, and Koh (2004) issued a survey to students who had completed an online course to gauge their perception of the course. Respondents to the survey indicated that they took more time with their reflective writing, and thought more deeply when they were writing as compared to talking in a face-to-face classroom. Swan (1999) noted that as well, suggesting that online discussions allowed students more time to consider their peers’ contributions before posting their own. This was considered by the researchers to be a strength of the online course; respondents also mentioned that flexibility and convenience were strengths. Some students did indicate a weakness to the online environment in that there was the lack of immediate response from both the instructors and their peers, which led to feelings of frustration. Other weaknesses they reported were feelings of isolation and a lack of community.
In their research, Daymont, Blau, and Campbell (2011) found that the primary reason students choose to take the traditional version is the interpersonal interaction with their peers and the instructor. In this particular study, Daymont et al. (2011) surveyed undergraduate students enrolled in an online undergraduate business course, and students enrolled in the same course, but in the traditional face-to-face format. They were trying to discern why students chose to take the online version; in years past, much of the research into online learning was from the perceptive of distance learning. In recent years, this does not necessarily apply, as local students (those in close proximity to the institution) are opting for online courses.

The sample for the Daymont et al. (2011) study was made up of data from student records (demographics) and surveys administered to 259 students in five traditional and two online sections of the same course. The course is a business foundation course and therefore required of all business students. The survey was comprised of questions that related to student preferences, such as the method of communication (oral versus written) as well as questions related to learning and an open-ended question that asked why the student chose either the online or the traditional course.

Using a regression analysis, the researchers were able to determine that, of the 126 students who were free to choose their course preferred the traditional course, citing reasons such as having the professor in front of them, and face-to-face interactions with other students. This supports the idea that students prefer settings that allow them immediate feedback and the ability to engage in the moment. Students also reported that the traditional setting kept them more focused and provided more structure. Of those
students who preferred the online section, all reported that flexibility and convenience were the primary reasons. Others stated that the online course was easier to fit into their schedule, as they did not have to find a face-to-face course that would accommodate other registered courses or a work schedule.

Results from the regression analysis indicate that students who prefer a flexible schedule will prefer the online setting, students who prefer structured schedules will not prefer online courses, students with schedule constraints (due to work or other responsibilities) will prefer online courses, and students who are seeking more flexibility will also prefer online courses (Daymont, Blau, & Campbell, 2011). While the survey showed that online courses offered more flexibility, it also indicated that students agreed with the statement that an online course format requires more self-discipline. While this does not immediately detract from taking an online course, it does allow the student to weigh the advantages and disadvantages of an online course. For example, flexibility is an advantage; however, the disadvantage is that the student must become more self-disciplined and allow for an experience that may be less fulfilling from an interaction standpoint. A disadvantage would be the communication experience of learning online rather than in person.

Student Engagement and Satisfaction

It is a common assumption that students who are satisfied with their college experience are more likely to remain at the institution, and are more likely to support the institution upon graduation. Student satisfaction is typically measured through the use of surveys that gauge satisfaction with many aspects of the student experience, including
academic experience, advising, facilities, etc. Institutions use the results of this feedback as performance benchmarks, and to assess progress. Bradford and Wyatt (2010) believe that student perception of online courses is of great importance, as it offers an inside look at success in the online environment.

Coates (2006) broadly defines student engagement as active participation in activities that promote learning activities. Similarly, Strayhorn (2008) defines engagement as active involvement in those activities that create meaningful experiences in the classroom, in interaction with peers, and in interactions with course instructors. Carini, Kuh, and Klein (2006) suggest that student engagement is one of the better indicators and predictors of learning. They suggest those students who spend more time studying a subject are more likely to retain the knowledge; similarly, the more feedback that students receive on writing and course assignments, the better they will become (Carini et al., 2006). Research into student engagement is often based on the perspective that students are responsible for creating their own knowledge base and provides insight into the student experience.

Gibson (2010) suggests that students’ academic experience involves their experience in the classroom and with their instructors. But what are the most important factors in a students’ overall experience? In his analysis of past studies relating to student satisfaction with their academic experience, Gibson (2010) notes that two factors were identified as being the most significant: academic staff/teaching and classes/curriculum. In other words, these attributes (including quality of instruction, curriculum, and achievement outcomes) of the students’ program are the most important variables in student satisfaction. Paechter and Maier (2010) also suggest that the relationship between
the instructor and the student plays an important role in overall satisfaction, as this interaction supports motivation. Swan (1999) also found that high levels of interaction with the course instructor led to greater satisfaction with the course.

Tanner, Noser, and Totaro (2009) found evidence that also suggests that the lack of immediate interaction or feedback, presence in a traditional classroom, or belonging to a cohort of peers may also have an impact on how a student perceives their online learning experience. When comparing student and faculty responses to a survey that was designed to analyze attitudes toward online learning, Tanner et al. (2009) learned that students agreed more than faculty with the statement that no structured class meetings were appealing. In contrast, faculty put more importance on meeting outside of the classroom than did students. It may be that face-to-face interaction is not as important to students who are accustomed to interaction via text messaging.

Tanner, Noser, and Totaro (2009) found that students reported taking online courses because the interaction with the instructor was minimal, suggesting that they do not put as great a level of importance on this factor as their instructors do. In fact, Driscoll, Jicha, Hunt, Tichavsky, and Thompson (2012) found that when there was a high level of interaction among peers, it created an environment that made students engage with the material being taught. By interacting and actively engaging with peers on the course material, they learned from, and taught, each other. Students agreed that tests were more difficult online, a statement that faculty disagreed with. What is interesting is that both faculty and students agreed that online courses require the students to teach themselves, and students more so than faculty agreed that online learning required the students to be more self-disciplined. They were in agreement that online learning allows
the students to learn at their own pace and on their own schedule. Both groups also agreed that quantitative courses were among the most difficult to complete through online delivery. Ultimately, there is no one-size-fits-all pattern when considering online learning; there will be students who require a high level of interaction and engagement, and there will be those who do not.

What factors are necessary for a student to have a successful, positive and satisfying experience in an online classroom? In their research, Kerr, Rynearson, and Kerr (2006) found the following factors to be the most important to success in an online learning environment: computer literacy, ability to learn independently, self-motivation, and strong reading and writing skills. Song, Singleton, Hill and Koh (2004) suggest that the design of the course (delivery method), the student’s own time management skills, self-motivation, and technological skills are the key factors that determine whether a student has a positive experience or not. Palloff and Pratt (2003) agree, stressing that self-motivation and self-discipline are two of the most important factors that students need in order to be successful in the online learning environment. They must also be self-reliant, as they are responsible for meeting course deadlines without the reminders that they may get in a traditional class. Along with Palloff and Pratt (2003), Golladay, Prybutok and Huff (2000) note that it is not simply enough to be able to navigate the use of technology; students must commit to devoting enough time to the online course and be self-motivated. In many instances, students do not realize how much time is actually required to successfully complete an online course. According to Palloff and Pratt (2003), online courses may actually require more than twice the time commitment than a traditional course, due mainly to the amount of reading required.
Song, Singleton, Hill and Koh (2004) also identified challenges that hindered student success. These include a lack of engagement with a cohort of students, issues with technology, inability to fully understand the goals and objectives of the online course, and poor time management skills. In their study on student experiences in the online classroom, Blackmon and Major (2012) also found that inability to adequately manage time was a major concern among students. In particular, students in this study found it difficult to manage the amount of communication traffic that came with taking an online course; they often found it difficult to log in to their course site and keep up with the information that was posted. Daymont and Blau (2008) suggest that research needs to be conducted on self-motivation, learning styles, and what factors lead students to enroll in online courses.

In their analysis of an online and traditional undergraduate business law class, Shelley, Swartz, and Cole (2007) concluded that, in terms of satisfaction with the online course, there was no significant difference when compared to satisfaction surveys from the traditional course. McFarland and Hamilton (2005-2006) suggest that students’ perception of having to teach themselves is a likely reason for dissatisfaction with a course overall. Blackmon and Major (2012) also found that students who had a strong sense of responsibility for their learning had a more positive experience in their online class. Some of the students in this study reported that there was more detail in the online course and felt that more material was covered, allowing them to learn more than peers in traditional course environments.

In her research, Kirtman (2009) noted that many online students, unlike those in a traditional course, do not live close to anyone else in their course, so establishing study
groups before or after class is problematic. She also notes that, unlike a traditional classroom, when students in an online course pose a question, they are the beneficiaries of the information. In a traditional classroom, all students benefit. This can be alleviated somewhat by the instructor posting the additional information on the course website; students would then have to search the new information out for themselves. Kirtman (2009) also found that the students in her research indicated that they felt they missed out on interaction with their peers, which lead to a lower satisfaction rate with their online course. In fact, from their research on student barriers to online learning, Muilenburg and Berge (2005) found that the lack of interaction was identified as the biggest obstacle. Anderson (2008) supports the idea that peer interaction is critical when developing cohorts, or communities, in an online learning environment. Establishing these types of communities or opportunities for interaction and engagement “allow learners to develop interpersonal skills and investigate tacit bodies of knowledge” (p. 57), as well as to learn material from different perspectives. Pascarella and Terenzini (2005) also acknowledge the importance of peer interaction, suggesting that such interactions serve to positively influence academic development and learning among students. Faculty interaction is also highly important, especially as it relates to course information, as it contributes to continued knowledge gains.

In their research, Tanner, Noser, and Totaro (2009) found that students who completed an online course reported higher levels of quality in their education. They uncovered additional research that indicated factors such as the ability to self-manage, be self-reliant and to understand what their responsibilities as an online learner were, attributed to a successful and meaningful online learning experience. Findings by
Driscoll, Jicha, Hunt, Tichavsky, and Thompson (2012) were similar in that they found, through their research, that students reported they had to take a proactive role in their learning and felt more responsible for their own education. “Without an instructor present to provide pace, order, and focus, students must self-regulate their work and assume greater accountability for the learning process” (Driscoll et al., 2012, p. 314). Students in their survey reported that the often found themselves searching for answers on their own when the professor was not immediately available, thereby engaging in a more enhanced learning experience.

**Grit, Persistence and Success**

Kuh, Cruce, Shoup, Kinzie and Gonyea suggest that student success can be defined broadly and includes the following: “…academic achievement, engagement in educationally purposeful activities, satisfaction, acquisition of desired knowledge, skills and competencies, persistence, attainment of educational objectives, and post-college performance” (2008, p. 541). Tinto (2012) stated that persistence refers to the rate of students who continue and earn a degree from an institution of higher education, regardless of how long it takes or where they do so. Hu (2011) suggests that there are two factors that are related to student success – persistence and engagement in educational activities. Hu (2011) further suggests that persistence has almost become interchangeable with success and that engagement is thought to be the path to success in college.

Hershkovitz and Nachmias (2011) believe that persistence in online courses is of great concern, as these courses tend to have higher drop-out rates than traditional face-to-face classes.
Hochanadel and Finamore (2015) used the word “grit” to describe students who persevere in the face of adversity and put forth the effort needed to succeed when it does not seem possible. Similarly, Duckworth, Peterson, Matthews, and Kelly (2007) suggest that grit is the sustained passion for long-term goals and believe that grit could be used as a predictor of future success. They go on to suggest that grit is a trait common among high-achievers and prominent leaders, along with other characteristics such as charisma and self-confidence. Hochanadel and Finamore (2015) suggest that these students have a growth mindset and know that with effort, they can succeed. “Growth mindset is changing a student’s thinking that intelligence level is not a fixed number and can change. Grit in education is how one can achieve long-term goals by overcoming obstacles and challenges” (Hochanadel & Finamore, 2015, p. 49).

Similarly, Rovai (2003) supported the idea that persistence is the continuation toward an end goal in spite of challenges and obstacles that one may encounter. Rovai (2003) writes that “Persistence is an issue of increasing importance for both traditional and distance education programs in view of the increasing enrollments of nontraditional students” (p. 3). Using a model that was referred to as the Composite Persistence Model, Rovai (2003) suggested that there were certain variables that affected student persistence in online courses including student demographics and characteristics (i.e., age, gender, and ethnicity), skills (such as time management and ability to use technology), study habits, and outside factors such as employment.

When Levy (2007) compared dropout rates and persistence in an online course, it was found that both locus of control (LOC) and student satisfaction were the main factors in persistence in the course. Locus of control refers to the “measure of individual
perceptions on outcomes resulting from their own behaviors relative to their perceptions on outcomes resulted from actions of someone else” (Levy, p. 188). The two types of LOC referenced in this study are external (outside factors, due to fate or chance), and internal (attributed to results due to one’s actions). While LOC was not a factor in whether students dropped an online course, satisfaction (stemming from course design, delivery and interaction) was. In fact, satisfaction was determined to be the deciding factor in whether students dropped their online course or completed it. Factors that might typically be associated with dropping a course or persisting in it such as age, gender) were found not to be statistically significant.

Braxton, Doyle, Hartley, Hirschy, Jones, and McClendon (2014) also suggest that one’s locus of control plays a large role in persistence. They suggest that those students who attribute an outcome to their own performance (internal locus of control) are more likely to stop out than those who have a more external locus of control. Braxton et al. (2014) suggest four perspectives on overall persistence in college: sociological, economic, psychological, and organizational. In the sociological perspective, persistence in college is influenced by one’s social structure, such as family, peers, and support of significant others. Without support and/or positive feedback, students are less likely to persist in their college careers. The economic perspective has to do with one’s perception that the cost of college is equal to its benefits. With the cost of higher education skyrocketing, students have to weigh their economic situation (ability to pay) against the gains made by attaining a college degree. The college administrative structure and overall organization can impact whether a student persists in college as well. The psychological
perspective relates to one’s personality, belief in one’s academic skills, and developmental levels.

VanZile-Tamsen (2001) also mentions locus of control in the context of maintaining student engagement and motivations. She refers to locus of control in relation to students who possess high self-esteem and attribute their personal effort to their success. It is her assertion that “an individual’s self-efficacy beliefs, attributional beliefs, and motivational goal orientation will influence the type of strategies used, the effectiveness of that strategy use, persistence at academic tasks, and, ultimately, academic achievement” (VanZile-Tamsen, p. 234).

In his research findings, Holder (2007) also notes that in addition to factors such as emotional support, time and study management, and self-efficacy, the significance of a students’ perceived emotional support emerged as significant. In fact, for students who persisted in their studies, as compared to those who did not, emotional support accounted for the large difference in persistence rates. Holder (2007) stated that “having the experience of a supportive group of friends and family and the comfort of knowing that they are not alone in this learning process was a significant function related to students’ persistence” (Holder, p. 255).

Summary of the Research

Daymont and Blau (2008) suggest that further research should be conducted into areas of student self-discipline and learning styles, as well as trying to understand why students choose to enroll in online classes. Ally (2008) refers to one’s learning style as
“how a learner perceives, interacts with, and responds to the learning environment; it measures individual differences” (p. 26).

There have been a great number of comparisons between face-to-face and online courses, and it is been commonly found that students in the online courses perform just as well as their peers in face-to-face courses. Driscoll, Jicha, Hunt, Tichavsky, and Thompson (2012) also found no significant differences in satisfaction between the two delivery modes, online or face-to-face, supporting the assertion that online learning can be just as effective as face-to-face courses. Driscoll et al. (2012) suggest that when students and instructors are invested in the learning process, effective teaching can occur in any environment. Muilenburg and Berge (2005) agree, stating that there is evidence to suggest that there is no significant difference between the effectiveness of well-designed courses, whether they are online or face-to-face.

As higher education institutions continue to move in the direction of offering more opportunities for online learning, importance needs to be put on ensuring that content knowledge is being disseminated to students in the most effective manner. In order to continue to be successful, online learning needs to create engaging activities that encourage the learner to acquire “meaningful knowledge” (Ally, 2008, p. 16) and understand the material in a context that reflects their reality. Doing online education right means that courses should be constructed well, always with the learner as the focus, and with appropriate methods of support available.
CHAPTER 3

METHODOLOGY

According to a report by Allen and Seaman (2014), online education is a crucial component to an institution’s long-term strategy. Close to 70% of institutions now offer some form of online education, a substantial increase over past years. The number of students who have taken an online course is also at an all-time high, at close to 34%. With the future of online learning continuing to grow, it is a very small percentage of administrators who believe that the concerns about the quality of online education will be reduced.

For the purposes of this study, Allen and Seaman’s (2014, 2011, 2010) definition of an online course will be used – that is, at least 80% of the course work and content is delivered online. This study builds on prior work analyzing student achievement in both online and traditional learning environments by examining achievement outcomes for the same Finance course.

Research Setting and Population

A large urban university in the northeast section of the country was used for this study. The university is a public, four-year institution with a student population of over 27,000 undergraduate students and over 8,000 graduate students (University factsheet, 2015), whose mission is to provide a superior education for students regardless of their status. Of the eighteen colleges (including professional schools) that make up the university, the Business School enrolls the largest number of undergraduate students, at just over 6,400.
In the fall of 2012, the Business School offered students the opportunity to complete the requirements of an undergraduate business degree entirely online. Some of the available majors included: Accounting, Business Management, and Marketing. The course that served as the focus of this study is Finance 3000 (FIN 3000). As FIN 3000 is an upper-division course, the results from this study should be generalizable to juniors and seniors, rather than freshmen and sophomores. It is a quantitative course, and one that is a prerequisite to other upper division courses in the core degree requirements. Failure to complete this course in the allotted three attempts results in a student having to change their major out of the college.

The two units of analysis for this particular study consisted of students who completed the Finance 3000 (FIN 3000) course via online delivery and the traditional face-to-face classroom setting on the university’s Main campus. These students were declared Business majors (specific major varied) at university’s Business School. The time frame was fall 2012 to fall 2015, omitting summer sessions due to their condensed nature (six weeks versus the sixteen week full semester), and those semesters where the online option was not available (spring 2014 and spring 2015). In addition, the Honors sections of FIN 3000 were likewise excluded, as they are only available to those students participating in the Honors program.

A demographic profile of the students registered for these sections was constructed using data that were available through Self-Service Banner. The information gathered will include: ethnicity (using categories defined by the university), major, academic classification (such as sophomore, junior or senior), and final grade earned in the course. The purpose behind this information is to determine whether there is any
relationship between grades earned in this course and the grades earned in FIN 3000, as well as to make sure that the online and face-to-face students are comparable.

Finally, a voluntary survey was administered to those students who completed the online version of FIN 3000 in fall 2015, in order to assess perceived levels of engagement. In addition, information provided through the University’s form to evaluate courses and instructors from fall 2015 was used to assess satisfaction with the course overall.

Role of the Researcher and Ethical Considerations

I am currently one of four Associate Directors of Undergraduate Advising at the Business School. The Center for Undergraduate Advising, which includes academic advising, assists undergraduate students from entry to graduation, with issues ranging from orientation and registration, academic progress (both positive and negative), to academic dismissal, changing majors, among many other areas. While I do not teach any business courses, I oversee an advising unit that provides academic advising to students in traditional face-to-face courses, with options to register for online courses when available.

Data were obtained from the Center for Innovation for Teaching and Learning (CITL) and the Office of Enrollment Management at the Business School. Using class lists obtained through Self-Service Banner and information from Internet Native Banner (INB), an anonymous student demographic profile was built to see if there were any significant differences in grades between gender, race, or major.
Once those data were collected and analyzed, the next step was to reach out to those students who completed the online section FIN 3000 in the most recent semester (fall 2015), seeking voluntary feedback on their experience in the online course. The purpose of the questionnaire was to learn more about their experience in an online course, what their expectations were going into the course, what worked well for them in terms of framing their approach to the course (time management, etc.), and challenges they may have encountered. It was hoped that this information might be used in the future to establish a cohort for students enrolled in online courses and to a larger extent the online degree program that would lend itself to student support.

Ethical considerations in this study were limited to any harm that may happen as a result of providing commentary on experiences, or from the disclosure of academic records. Any identifying information was removed at the time of data analysis, thereby reducing any possibility of student identification. In addition, responses to the questionnaire were anonymous, so as to protect student identification. The questionnaire was completed via an online Qualtrics survey and was administered once final grades for the fall 2015 semester were recorded.

Data Collection Procedures

Using information from CITL, letter grades from FIN 3000 from fall 2012 through fall 2015 were statistically analyzed to determine percentage of letter grades earned (i.e., percentage of A’s, B’s, etc.) to compare outcomes of the online and traditional sections. Demographic profiles of each course section were constructed using a combination of information available in Self-Service Banner and the Business School’s
enrollment data to analyze and compare anonymous student information. This information included academic classification at the time of course enrollment (i.e., sophomore, junior or senior), major, race, gender, and final grade earned. Data from the Office of Enrollment Management included available Math SAT scores, to assess whether there is a relationship between scores on the SAT and performance in FIN 3000.

A voluntary survey (see Appendix A) was distributed to those students who completed the online section of FIN 3000 in the most recent semester (fall 2015). As stated previously, the purpose of the questionnaire was to learn more about their experience in an online course, what their expectations were going into the course, what worked well for them in terms of framing their approach to the course (time management, etc.), and challenges they encountered.

Research Design and Data Analysis Procedures

The design of this study was a type of quasi-experimental design, as there was no pre-experimental sampling prior to comparing the achievement outcomes. In this study, students were not randomly assigned to either of the two learning environments; rather, they self-selected which FIN 3000 section to register in. Creswell (2014) notes that in a quasi-experimental study, there is no random assignment to groups. Data analyses included Chi-Squared and Analysis of Variance.
CHAPTER 4

RESULTS

This study compared average class GPA and final grades earned of students who registered for, and completed, both online and in-person sections of FIN 3000. When reviewing the data and results of this study, it is important to remember that the number of available online sections of FIN 3000 is very small, compared to the number of face-to-face sections offered. Registration in online sections is kept small, typically “capped” at 35, whereas face-to-face sections can accommodate a large number of students.

The original intent behind utilizing the individual SFF data was to attempt to get a better idea of the student experience. Unfortunately, access to this information was denied, so the data used should be looked at as more descriptive.

Characteristics of the Sample: Students

The population of interest in this study were all students in the Business School who completed FIN 3000 either online or face-to-face. Between the fall 2012 and fall 2015 semesters, there were 34 sections of FIN 3000 offered on Main campus and six sections offered in the online format. In total, overall enrollment in FIN 3000 during this time frame was approximately 2,750; this number does not reflect those students who may have dropped the course during the registration period. Of the 120 “seats” available in the online sections during that same time frame, 30 remained available. This would seem to indicate a preference among students to complete this course face-to-face.
Characteristics of the Sample: The Course

The course is an upper division business course required of all business majors. Finance 3000 is offered in two formats: online and face-to-face. The online course format is synchronous, meaning that there are real-time “classes” that students attend. The delivery technology that the university utilizes is WebEx, which is a web-based conferencing system. This system provides real-time virtual meetings with faculty and students, screen-sharing capabilities which promote collaboration, and provides students the ability to record and replay classes or presentations when needed.

Course management is handled by faculty through the use of the Blackboard system. Here, faculty can post course documents and other class-related materials such as videos and announcements. Students use Blackboard to submit and receive assignments, take quizzes and tests, and participate in collaborative group discussions. In the FIN 3000 online course, exams and quizzes are completed through Examity software, which provides online exam proctoring. Feedback on coursework is provided via My Finance Lab, an online tool where students can submit their chapter homework and quizzes and receive immediate scores. This tool also allows students to review where any errors were made so the student can then go back and review the material.

Decisions Made

After all the available data had been gathered, several decisions were made:

- The first decision was to exclude those semesters that did not offer the option of registering for the online FIN 3000 course. This resulted in the spring 2014 and 2015 semesters being excluded from all analyses.
• The second decision that was made was to combine majors that were offered in the same department, such as Actuarial Science and Risk Management and Insurance. This created somewhat larger groups to compare. Similarly, all coded OBBA (Online Bachelor of Business Administration) majors were combined into OBBA, as were all Entrepreneurship and Entrepreneurship and Innovation Management majors (note that this major went through a name change to EIM). Honors sections of FIN 3000 were also excluded, as those sections are available only to those students participating in the Honors program.

• Sections of FIN 3000 offered at the university’s center city and suburban campuses were also excluded, as the study was to focus solely on Main campus and online sections only.

• The final decision made was to use the race categories of African American (AFA), Asian American (ASN), Hispanic (HIS) and White (WH) in research question 3. The categories of Unknown and Other left too much unexplained.

• The course completion rate was determined by the number of final grades assigned. Students who were not coded as Business majors were excluded from this, as were any students with indications of “WE” (Excused Withdrawal) or any special notifications, such as deceased or those students who were part of an exchange program.

• The decision was made to analyze available SAT Math scores to see if there was a correlation between low scores and low GPAs. Working with our office of Enrollment Management, it was estimated that between fall 2009 and fall 2011, approximately 1100 students matriculated into the Business School. Of those, we
were able to obtain scores for 841 students, or roughly 50-60%. It should be noted that of the Business School’s student population, roughly 43% of the students are transfers from other institutions, so they may not have SAT scores. Other students who may not have SAT scores include students who took the ACT instead of the SAT, and students who matriculated a while back, left for a period of time, then returned to the university.

Findings

This study attempted to address several questions as they related to student success in online and face-to-face courses. First, it attempted to assess the academic achievement outcomes and student experience in both the online and traditional course delivery of a required upper division course in the Business School curriculum. The focus was on FIN 3000, which is a quantitative-based course required of all Business majors. The purpose of this study was to ascertain whether this is a disparity in academic outcomes of students in the online versus the traditional course. As such, the emphasis was placed on the distribution of GPA’s and final grades earned.

Second, a student demographic profile was constructed, using data available in Self-Service Banner. This information was used to determine whether there were any significant differences in academic achievement as a function of gender, race, academic classification (sophomore, junior, senior) at the time of enrollment in the course, or among the different majors. Finally, the experience of the students enrolled in the online section of FIN 3000 in fall 2015, in terms of engagement, what they perceived helped them to be successful, and overall satisfaction with their experience, will be discussed.
Questions 1-3 were designed to compare the online and face-to-face sections of the same FIN 3000 course; questions 4-7 were designed for the online sections of FIN 3000 only.

Research Question One

Research Question One is as follows: Is there a significant difference in student achievement, as evident by class GPAs, between students who completed an online or in-person section of FIN 3000? To address this question, a one-way ANOVA was conducted to assess whether students performed better in an online or face-to-face course. Participants were placed into two groups: online (n=143) and face-to-face (n=2570). Table 4.1 presents the means and standard deviations for GPA of the two types of course format.

<table>
<thead>
<tr>
<th>Table 4.1. Descriptive Statistics for Class GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online</td>
</tr>
<tr>
<td>FacetoFace</td>
</tr>
<tr>
<td>Online</td>
</tr>
</tbody>
</table>

The ANOVA was highly significant ($F_{1, 2711} = 20.54, p = .000, \eta^2_p = .007$). As shown in Table 4.1, the mean GPA for students in the face-to-face sections was significantly higher than in the online section. The effect size, however, is small.

Research Question Two

Research Questions Two is as follows: Did students who registered for the face-to-face section have a higher rate of course completion as compared to students who
opted for the online course? To address this, a Pearson chi square test for association was conducted between course delivery (online versus face-to-face) and course completion.

### Table 4.2 Crosstabulation of Face-to-Face and Online Course Completion

<table>
<thead>
<tr>
<th>FacetoFace</th>
<th>Count</th>
<th>2574</th>
<th>37</th>
<th>2611</th>
</tr>
</thead>
<tbody>
<tr>
<td>% within Online</td>
<td>98.6%</td>
<td>1.4%</td>
<td>100.0%</td>
<td></td>
</tr>
<tr>
<td>Online</td>
<td>Count</td>
<td>145</td>
<td>5</td>
<td>150</td>
</tr>
<tr>
<td>% within Online</td>
<td>96.7%</td>
<td>3.3%</td>
<td>100.0%</td>
<td></td>
</tr>
</tbody>
</table>

The Pearson chi square test of association was not significant ($\chi^2(1) = 3.477$, $p=.062$). As shown in Table 4.2, a total of 2574 students registered for the face-to-face FIN 3000 course; of those, 37 (1.4%) students withdrew from the course. A total of 145 students registered for the online section; of those, 5 withdrew (3.3%). While the percentage of students who did not complete the online course (withdrew) is higher than the face-to-face it is important to take into account the significant disparity in the size of the sample.

**Research Question Three**

Research Question Three is as follows: Are the relationships between higher grade achievement and gender, race or choice of major the same in online courses as compared to face-to-face courses? To address these questions of whether there was a relationship between gender and achievement a two-way ANOVA was conducted.
Table 4.3 Means and Standard Deviations of GPA by Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Course Type</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Facetoface</td>
<td>2.54</td>
<td>0.99</td>
<td>1602</td>
</tr>
<tr>
<td></td>
<td>Online</td>
<td>2.18</td>
<td>1.20</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2.53</td>
<td>1.01</td>
<td>1673</td>
</tr>
<tr>
<td>Female</td>
<td>Facetoface</td>
<td>2.52</td>
<td>1.00</td>
<td>968</td>
</tr>
<tr>
<td></td>
<td>Online</td>
<td>2.11</td>
<td>1.19</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2.49</td>
<td>1.02</td>
<td>1040</td>
</tr>
</tbody>
</table>

A two-way ANOVA was conducted on the data in Table 4.3. Consistent with the previous analysis, the main effect for course type was significant. However, neither the main effect for gender nor the interaction was significant (Gender: F = .281, p = .596; Interaction: F = .061, p = .807). As shown in Table 4.3, while the mean GPA for both males and females in both the online and face-to-face courses were fairly similar, the male students did outperform their female classmates, although slightly.

To address the question: Is there a relationship between high achievement and race in the online or face-to-face FIN 3000 course, a two-way ANOVA was conducted. Table 4.4 presents the means and standard deviations for GPA of the two types of course format, separated by race.

Table 4.4 Means and Standard Deviations of GPA by Race

<table>
<thead>
<tr>
<th>Race</th>
<th>Course Type</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>FacetoFace</td>
<td>2.10</td>
<td>1.03</td>
<td>280</td>
</tr>
<tr>
<td></td>
<td>Online</td>
<td>1.59</td>
<td>0.97</td>
<td>22</td>
</tr>
<tr>
<td>Asian</td>
<td>FacetoFace</td>
<td>2.51</td>
<td>1.05</td>
<td>368</td>
</tr>
<tr>
<td></td>
<td>Online</td>
<td>1.72</td>
<td>1.55</td>
<td>6</td>
</tr>
<tr>
<td>Hispanic</td>
<td>FacetoFace</td>
<td>2.41</td>
<td>1.08</td>
<td>102</td>
</tr>
<tr>
<td></td>
<td>Online</td>
<td>2.54</td>
<td>1.05</td>
<td>8</td>
</tr>
<tr>
<td>White</td>
<td>FacetoFace</td>
<td>2.62</td>
<td>0.96</td>
<td>1485</td>
</tr>
<tr>
<td></td>
<td>Online</td>
<td>2.26</td>
<td>1.21</td>
<td>96</td>
</tr>
</tbody>
</table>
The main effect for race was significant ($F = 8.36$, $p = .000$, $\eta^2 p = .011$); the interaction, however, was not significant ($F = 1.107$, $p = .345$). A post-hoc Tukey test indicated that African American students had a lower GPA as compared to the other three groups. Therefore, although African American students are performing at a lower level, there is no evidence to suggest that the differences between online and face-to-face has anything to with ethnicity.

To assess whether higher levels of achievement were associated with choice of major, a one-way ANOVA was conducted. Since the sample size was too small to divide these data by face-to-face versus online, the GPAs were assessed across all sections. Table 4.5 presents the means and standard deviations for GPA of the available majors.

<table>
<thead>
<tr>
<th>Major</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting</td>
<td>2.75</td>
<td>0.99</td>
<td>561</td>
</tr>
<tr>
<td>Actuarial Science &amp; Risk Management</td>
<td>2.80</td>
<td>0.96</td>
<td>218</td>
</tr>
<tr>
<td>Business Management</td>
<td>2.19</td>
<td>1.11</td>
<td>161</td>
</tr>
<tr>
<td>Economics</td>
<td>2.45</td>
<td>1.04</td>
<td>81</td>
</tr>
<tr>
<td>Entrepreneurship</td>
<td>2.35</td>
<td>0.92</td>
<td>102</td>
</tr>
<tr>
<td>Finance</td>
<td>2.56</td>
<td>0.94</td>
<td>418</td>
</tr>
<tr>
<td>Human Resource Management</td>
<td>2.11</td>
<td>0.95</td>
<td>126</td>
</tr>
<tr>
<td>International Business</td>
<td>2.60</td>
<td>0.98</td>
<td>233</td>
</tr>
<tr>
<td>Legal Studies</td>
<td>2.11</td>
<td>1.11</td>
<td>71</td>
</tr>
<tr>
<td>Marketing &amp; Supply Chain Management</td>
<td>2.37</td>
<td>0.98</td>
<td>458</td>
</tr>
<tr>
<td>Management</td>
<td>2.58</td>
<td>1.05</td>
<td>199</td>
</tr>
<tr>
<td>OBBA</td>
<td>1.87</td>
<td>1.17</td>
<td>29</td>
</tr>
<tr>
<td>Undeclared</td>
<td>2.30</td>
<td>0.96</td>
<td>53</td>
</tr>
</tbody>
</table>
The ANOVA was significant ($F_{12, 2697}, p=.000$, $\eta^2_p=.046$), with a medium effect size. Students who chose majors that are highly quantitative (Accounting, Actuarial Science, Risk Management & Insurance, Finance) performed better than those who selected majors that are not as quantitatively-based. Those students coded as OBBA (Online Bachelor of Business Administration), performed substantially worse overall.

As a result of these analyses, another factor that was examined was students’ academic classification at the time they completed FIN 3000. For the purposes of this analysis, sophomores are students who have completed fewer than 60 credits, juniors have completed 60-89 credits, and seniors have completed 90 credits or more. Table 4.6 presents this information.

<table>
<thead>
<tr>
<th>Course</th>
<th>Academic Classification</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face-to-Face</td>
<td>Junior</td>
<td>2.60</td>
<td>0.98</td>
<td>1695</td>
</tr>
<tr>
<td></td>
<td>Senior</td>
<td>2.37</td>
<td>1.05</td>
<td>638</td>
</tr>
<tr>
<td></td>
<td>Sophomore</td>
<td>2.53</td>
<td>0.95</td>
<td>237</td>
</tr>
<tr>
<td>Online</td>
<td>Junior</td>
<td>2.27</td>
<td>1.15</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td>Senior</td>
<td>2.00</td>
<td>1.21</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td>Sophomore</td>
<td>2.17</td>
<td>1.45</td>
<td>8</td>
</tr>
</tbody>
</table>

The results of the two-way ANOVA indicated that the main effect for academic classification was significant ($F = 3.88$, $p = .021$, $\eta^2_p=.011$). As shown in Table 4.6, seniors have the lowest GPA of the three groups. The post-hoc Tukey test indicated that seniors were significantly different from sophomores and juniors, who did not differ.
Further analysis was conducted to determine if there was an association between academic classification and registration in the online or face-to-face course. To address this, a Pearson chi square test for association was conducted. Table 4.7 presents the results.

Table 4.7 Crosstabulation of Academic Classification and Course Delivery

<table>
<thead>
<tr>
<th>Class</th>
<th>FacetoFace</th>
<th>Online</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sophomore</td>
<td>244</td>
<td>8</td>
<td>252</td>
</tr>
<tr>
<td></td>
<td>96.80%</td>
<td>3.20%</td>
<td></td>
</tr>
<tr>
<td>Junior</td>
<td>1720</td>
<td>73</td>
<td>1793</td>
</tr>
<tr>
<td></td>
<td>95.90%</td>
<td>4.10%</td>
<td></td>
</tr>
<tr>
<td>Senior</td>
<td>647</td>
<td>69</td>
<td>716</td>
</tr>
<tr>
<td></td>
<td>90.40%</td>
<td>9.60%</td>
<td></td>
</tr>
</tbody>
</table>

The Pearson chi square test of association was significant ($\chi^2(2)=33.601$, $p=.000$). As Table 4.7 shows, while the sample size is small, seniors were more likely to register for the online section of FIN 3000.

Out of these analyses, another question arose that warranted examining: Are there differences between the groups (sophomore, junior, senior) on SAT Math scores? Table 4.8 presents the results.

Table 4.8 Means and Standard Deviations of SAT Math

<table>
<thead>
<tr>
<th>Class</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sophomore</td>
<td>582.89</td>
<td>65.17</td>
<td>90</td>
</tr>
<tr>
<td>Junior</td>
<td>566.33</td>
<td>74.99</td>
<td>622</td>
</tr>
<tr>
<td>Senior</td>
<td>528.37</td>
<td>79.76</td>
<td>129</td>
</tr>
</tbody>
</table>
The one-way ANOVA comparing the means indicated the results was significant \((F_{2, 838} = 17.59, p = .000)\). The Tukey post hoc test indicated that seniors SAT Math scores were significantly lower than sophomores or juniors.

A further question arose: If SAT Math is covaried, do the three groups still differ on course grade? Table 4.9 presents the data for grades in the course.

<table>
<thead>
<tr>
<th>Academic Classification</th>
<th>Grades Without SAT as Covariate</th>
<th>Grades with SAT as Covariate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sophomore</td>
<td>2.67</td>
<td>2.58</td>
</tr>
<tr>
<td>Junior</td>
<td>2.68</td>
<td>2.81</td>
</tr>
<tr>
<td>Senior</td>
<td>2.46</td>
<td>2.64</td>
</tr>
</tbody>
</table>

The answer to the above question would be no. From the data, it can be suggested that the major reasons seniors do worse in FIN 3000 is that they have lower SAT Math scores. When SAT Math is used as the covariate, the difference between online and face-to-face decreases by approximately 50%, although the difference is still significant. In other words, some of the reason that the grades in the online sections are lower is because more seniors take them, but some is due to other factors.

Overall results from the data analyses show the following:

1. Students in the online sections of FIN 3000 obtain poorer grades than students in the face-to-face sections (Face-to-Face mean = 2.53, standard deviation = 1.00; Online mean = 2.14, standard deviation = 1.19).
2. Seniors obtain lower grades than sophomores and juniors.
3. A higher proportion of seniors took online courses than sophomores and juniors. It is important to ask how much of the difference in performance between face-to-face and online is simply due to the fact that more seniors take the course.

Research Questions Four - Seven

Research Questions Four – Seven were as follows: (4) Is there a relationship between self-reported levels of satisfaction, engagement and course completion in the online and face-to-face sections of the same Finance course; (5) Is there a relationship between persistence and self-perception of ability in the online Finance 3000 course; (6) What factors (such as level of engagement and interaction) do students believe contributed to their success in the online Finance 3000 course; (7) What factors do students believe hindered their success in the online Finance 3000 course? To address these questions, Student Feedback (SFF) data from the fall 2015 face-to-face and online sections of FIN 3000 were analyzed, and an online survey was distributed to the online cohort of students. Table 4.8 presents the means and standard deviations from the Student Feedback Forms (SFF) for the face-to-face and online sections of FIN 3000, fall 2015.

<table>
<thead>
<tr>
<th>Items</th>
<th>Face-to-Face (Mean)</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I came well prepared for class.</td>
<td>4.05</td>
<td>0.25</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>0.4</td>
</tr>
<tr>
<td>The instructor clearly explained the educational objectives of this course.</td>
<td>3.75</td>
<td>0.75</td>
</tr>
<tr>
<td></td>
<td>4.03</td>
<td>0.32</td>
</tr>
<tr>
<td>The instructor was well organized and prepared for class.</td>
<td>3.8</td>
<td>0.77</td>
</tr>
<tr>
<td></td>
<td>4.15</td>
<td>0.26</td>
</tr>
</tbody>
</table>
Table 4.10 Means and Standard Deviations of SFF data (con’t)

<table>
<thead>
<tr>
<th>Item</th>
<th>Face-to-Face</th>
<th>Online</th>
</tr>
</thead>
<tbody>
<tr>
<td>The instructor was conscientious in meeting class and office hour responsibilities.</td>
<td>4.02</td>
<td>0.70</td>
</tr>
<tr>
<td>The instructor provided useful feedback about exams, projects, and assignments.</td>
<td>3.53</td>
<td>0.77</td>
</tr>
<tr>
<td>So far, the instructor has applied grading policies fairly.</td>
<td>4.02</td>
<td>0.69</td>
</tr>
<tr>
<td>The instructor taught this course well.</td>
<td>3.48</td>
<td>0.82</td>
</tr>
<tr>
<td>The course content was consistent with the educational objectives of this course.</td>
<td>3.98</td>
<td>0.64</td>
</tr>
<tr>
<td>This course increased my ability to analyze and critically evaluate ideas, arguments, and points of view.</td>
<td>3.55</td>
<td>0.68</td>
</tr>
<tr>
<td>I learned a great deal in this course.</td>
<td>3.56</td>
<td>0.65</td>
</tr>
</tbody>
</table>

From the SFF results in Table 4.8, the differences in mean scores for the online and face-to-face populations were not significant, with one exception. Students in the online section reported higher levels of agreement with the statement that their instructor was conscientious in meeting class and office hour responsibilities. Data from the survey also indicate that online students appear to spend more time per week preparing for class and completing assignments. A link to the online questionnaire was emailed to students who registered for FIN 3000 online in the fall 2015 semester to try and obtain a general view of their experience and expectations in the online course. There were 39 students
who were registered for this course; only four students volunteered their responses. This low response rate should be considered when discussing the results. Of the four respondents, the gender was even, with two males and two females taking part. All four students had completed an online course prior to taking this one and they all agreed that they would take another course online. Of the respondents, two were full-time students (registered for 12 or more credits) and two were part-time (registered for less than 12 credits). Students were primarily junior status (those who have completed 60 or more credits), with one senior, and were evenly split between Accounting majors and Management Information Systems majors.

The students self-reported that their primary reason for taking the online course was that it was more flexible with their schedule, which seems to fit with the literature on why students opt to take online courses. When asked to describe their level of engagement and interaction with their instructor, 50% of the respondents claimed that they were engaged, with one reporting being highly unengaged and the other being neither unengaged nor engaged. When the same question was asked about interaction or engagement with their peers, two respondents answered they were not engaged with their peers.

The following are anonymous reflective responses are based on questions from the online survey. The questions presented pertained to those course or instructor factors that contributed to learning, factors that helped students successfully complete the course, and challenges they faced.
What expectations, if any, did you have about taking Finance 3000 ONLINE in the fall 2015 semester? Many students expect an online course to be easier than the traditional classroom, but do not really understand what will be expected of them. Some base their expectations on experiences in prior online courses. Students in FIN 3000 explained their expectations:

“I had taken one online course prior to FIN 3000, and expected it to be similar in many aspects. The only part that I did not find to be similar was the peer to peer interaction in our weekly meetings. In my previous course, we had breakout sessions with our peers to work on a set of problems as a group which allowed us to learn from our peers’ understanding of the material, which I found to be very helpful in the learning process.”

“The course was very tough for me. Upon taking the course, I learned that I am the type of person that needs to be in a physical classroom to learn math.”

“Having a good understanding in Finance.”

“My expectations for a hybrid course were to have some contact via webex with the professor weekly and then have assignments to hand in online through blackboard or another site.”

What aspects of the design of the FIN 3000 ONLINE course, and/or the instructor’s approach, contributed most to your learning?

“The online pre-recorded lectures were the most helpful because I was able to pause, replay, and review topics that proved to be difficult to master.”

“Professor…was very kind, polite, and would answer any students’ questions without hesitation.”

“A great deal.”

“I really like how he had video recordings of the lessons I could play. I was able to play them during my commute to work.”
In your opinion, what factors helped you successfully complete the FIN 3000 ONLINE course?

“Our weekly online meetings contained a set of online questions, separate from homework, which allowed us to gain more experience working with the problems, and the ability to ask questions on concepts that we were not able to grasp in our readings.”

“Again, the flexibility of listening to his lessons when it was convenient to me but still having a scheduled time to get together. The hour class time was more than appropriate since he had the separate videos to watch.”

Two of the respondents indicated that they did not successfully complete the course, and did not provide further comments to this question.

What challenges, if any, did you face with completing course assignments (i.e., time management, confusion about assignments) for the ONLINE FIN 3000 course?

“The biggest problem for me was Examity. I had used Examity in my prior online course, but for some reason, during this course I would have to start the process of scheduling my exam more than two weeks ahead of time, and still had issues every time. On one occasion, I remember being on the phone with Examity every day to every other day the week of an exam to figure out the issues I was having, and finally got admitted to the exam the day I was to be scheduled for my exam. Time management was not an issue in this course, and I loved the flexibility with being able to complete online assignments before their due date, and the ability to review my assignments before the exam. My first week of classes, I had finished three weeks of lectures and homework, which helped me concentrate on my other classes as I felt necessary.”

“A few weeks into the semester my work schedule drastically changed which forced me to be unprepared for class several times and inhibited my study habits. My poor performance in the class was in no way, shape, or form a reflection of [the professor’s] ability, it was mine and mine alone.”

“Time management.”

“I don’t feel there were any challenges that were different from a live class. He kept everyone up to date on what was due and made clear what his expectations were.”
CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

FOR FUTURE RESEARCH

This study was an attempt to assess whether there were any significant differences in achievement between students who completed FIN 3000 online or face-to-face. While the implementation of more Business courses as online options is of interest to administration, more research needs to be conducted on the academic success of students in the existing online courses, what factors lead students to choose an online course rather than a traditional course, and the specific factors students feel are necessary to succeed in the online learning environment. In addition, understanding student perceptions of their learning style and their perception of online courses as compared to traditional courses will help to understand what it means to be an online learner. To a greater extent, this information may also help to clarify the benefits of online courses. As more students transition into online courses, it will be important to consider the issue of student satisfaction and engagement with these courses.

This final chapter provides a more thorough overview of the FIN 3000 course, summarizes the results of the study reported in Chapter 4, discusses the implications of the findings, discusses the limitations of this study, and provides recommendations for areas of future study.

Overview and Evolution of the Course

After all the data were analyzed, it became apparent that more information about the course was needed in order to put it into better context. The decision was made to interview the course professor in an attempt to put this course into context. The online
course professor, who asked to remain anonymous, agreed to meet with me to discuss their experience with teaching the online FIN 3000 course, the evolution of the course over time, and the issues that he sees in the online learning environment.

Initially, the online course would meet once a week and students would do a large amount of work in virtual groups; the professor would then “check in” with one member from each group on a specific question. This was determined to not be a good use of time, as it was difficult for students to work together and often did not complete the assignments.

A change was made to the course that resulted in a “flipped” classroom; e-quizzes were given prior to class and were based on pre-class work and assignments that the students were to complete via My Finance Lab, an online grading tool that provides immediate scores and allows students to review errors (note that this tool is also used for a similar reason in the face-to-face sections). The idea behind this was that the professor could use the results to cover material in class that seemed to be the most troublesome and therefore not spend time on content that the students appeared to understand. This method put the responsibility of reading and reviewing the material on the student which, in turn, resulted in students complaining that there were not being taught.

The online section of FIN 3000 evolved to use the same format as the face-to-face section in an effort to maintain consistency with the material being covered. Each section of FIN 3000 has identical homework assignments and completes the same exams. Students are provided a common detailed course syllabus that outlines their assignments and chapters that need to be read. Course materials and resources, such as videos and
written problems, are provided through Blackboard. There are no e-quizzes prior to class; rather, a worksheet is provided with review problems, and homework is based on the material covered in class.

One of the concerns with the online course is its limited meeting times; while face-to-face sections can meet up to three times a week, most online sections meet virtually once a week for 55 minutes. This is substantially less than the face-to-face sections and therefore requires the student to employ responsibility in keeping up with the homework and readings. The professor offers after class individual sessions, where students can ask individual questions about the material that was covered, or review topics they may not have understood; however, the professor shared that less than five students in any given week take advantage of this.

In addition to limited meeting times, the professor has noticed that students tend to perform poorly on the quantitative portion of the course but perform better on the qualitative portion. This includes items such as definition recognition and understanding variables and their effects. This has led to the question of whether quantitative-based courses should be offered online.

A major issue that the professor pointed out is how to get students to do the work on their own. Many students like the flexibility and convenience of online courses, also noted in the literature, but many do not understand what taking an online course entails. For example, success in an online course requires the student to be more self-motivated and self-disciplined. The responsibility for understanding the material and seeking out resources lies with the student, and many are not suited for an online learning
environment. In fact, it was mentioned that the department is currently looking at the significance of differences in average GPAs over time, and have seen that GPAs are lower in the online sections than in face-to-face. This was also found in this research study. The professor suggests that these problems also exist in face-to-face sections, but they are exacerbated in online courses because the responsibilities are greater.

The professor suggests that a well-designed online course should supply adequate resources to students. These include in-person office hours and videos that students can access at any time to review material as they work through homework assignments. He also suggested that when students register for an online course, they should be alerted to what they have signed up for and what is required of them in order to do well. He believes that faculty has an obligation to forewarn students and allow them the opportunity to drop the course if needed.

When asked to reflect on whether or not online learning works, the professor’s response surprised me. He said that the format has the potential to work really well, but that it is likely not the best choice for the typical college-aged student (18-21), as they do not know how to work on their own. Students often believe that online courses are easier, when in fact they require more effort and more self-discipline.

Relationship of the Study Results to the Literature

The outcome of this study may be seen to support Koch’s Media Richness Theory which suggests learning environments that are low in meaningful communication will produce lower achievement outcomes that those environments where there is more richness, such as the in-person classroom. The results of the study indicate that there is a
significant difference in final GPAs between the online and face-to-face sections of FIN 3000; 2.14 and 2.53, respectively. However, how much of this difference is due to the lack of communication richness is difficult to determine. It was also found that the number of students who withdrew from the online section was higher than the face-to-face sections; however, it is important to recall the significant disparity in the size of the sample.

The literature suggests that females tend to outperform male students in the online environment. That did not appear to be the case for this study; the means in both sections were fairly similar, with the males slightly outperforming their female classmates. It was discovered that African American students performed at a lower level overall, but that this discrepancy was not related to whether the student was taking an online or a face-to-face section.

Achievement levels did not appear to be associated with choice of major, although it is interesting to note that students in more quantitative-based majors did perform slightly better. The most interesting discovery here was that students who were coded as OBBA (Online Bachelor of Business Administration), performed more poorly, with an average GPA of 1.87.

Several analyses were conducted attempting to elaborate and extend the results regarding the difference in GPA between the two types of sections. There were several linked findings:

a. Students in the online sections obtained significantly lower grades than students in the face-to-face sections;
b. A significantly higher proportion of seniors took the online section as compared to sophomores and juniors;

c. Seniors were found to have significantly lower Math SAT scores.

The issue then became this: is the GPA in online sections lower simply because more seniors take these sections? As shown in Chapter 4, while there is some truth to this, when the effect of the difference in SAT Math scores is removed through the analysis of covariance, there is still a significant, although reduced, difference between the two types of course format.

Limitations of the Study

This study has several limitations that must be considered. Firstly, the sample size is limited to one course, FINANCE 3000, so the focus of the study is narrow and the sample size of the online population is small when compared to the face-to-face sections. The purpose behind selecting this course was primarily due to these factors: 1.) this is a required course in the Business curriculum, so all business students are required to complete it, 2.) this course is offered in both the online and face-to-face format, and 3.) the course is quantitative-based.

While online courses can offered in two delivery modes (synchronous and asynchronous), the online courses at the Business School are offered only in the synchronous format. Asynchronous courses are those that can be completed at any time; there are no scheduled class “meetings” and students are able to set their own schedule, keeping in mind any pre-set due dates for assignments and exams. The synchronous
course delivery relies on a hybrid setting, where students meet at least once a week in person or virtually, and the rest of the month is online.

Students make a conscious decision to register for an online course; they are not randomly assigned. The exception will be those students who are in the Online Bachelor of Business Administration (OBBA) program; it is strongly preferred that they complete their courses online, although some may often take a face-to-face course at any time. Possible reasons for a student opting for an online course include lack of availability of an in-person section (closed courses), employment, commuting issues, or inability to complete courses during the day owing to other reasons not cited.

Many students enter the Business School as transfer students (43%), often having completed their statistics courses elsewhere; statistics is a prerequisite to FIN 3000. Depending on the material covered, and their performance at their previous institution, grades earned in FIN 3000 may not be as high as those earned by students who completed their statistics sequence at the university. It is also important to note that some students may not have completed FIN 3000 immediately after Statistics, so some of the pertinent information may have been forgotten. Statistics grades are not included in this assessment, therefore, it would not be appropriate to include this as a comparison.

Inconsistency in grading may be a concern, as non-tenure instructors may be more likely to award higher grades, possibly resulting in higher ratings on their course evaluations. A further study might include comparing grade distributions of FIN 3000 courses taught by non-tenured and tenured faculty.
Other limitations are that, with the exception of students in the OBBA program, students were not randomly assigned to the online or face-to-face section; rather, they could self-select. The response to the online student questionnaire was too small to be of significance, and while the comments are of value, not enough feedback was gained to provide much information on the student experience. Individual data from the SFFs were requested, but access to the feedback was denied.

Recommendations for Future Research

1. *Longitudinal Analysis of existing online business courses and OBBA program.*

Further research should focus on an in-depth analysis of all online business courses, as compared to face-to-face to determine what types of courses are best suited for the online learning environment: Are qualitative-based courses better than quantitative? If so, what does that mean for the Online Bachelor of Business Administration (OBBA) program?

2. *Assess completion rates and achievement of OBBA as compared to face-to-face.*

Another area of study should compare the rate of completion and achievement of students in the OBBA program as compared to non-OBBA students in the same majors over time. This would be important to an overall assessment of the OBBA program, as results of this study show that students coded as OBBA performed substantially worse overall.

3. *Faculty development programs and support.*
Many instructors have never taught an online course and are attracted by the small numbers of students who are permitted to register. However, special attention should be paid to the design of the course and teaching approach, as instructors play a different role in the online learning environment as compared to the traditional classroom setting. These new roles will require specialized training, especially with regards to the use of technology. In addition to the SFF data provided each semester, each individual college should conduct reviews of the course set-up, ensuring that all materials are accessible and the structure is easy to navigate. It may be necessary to do an overhaul of the way courses are currently structured.

The bigger philosophical question that remains is: Are students really ready for online learning? Based on the research, the answer would be that it depends. Online learning can work well for those students who are self-disciplined and motivated to do well and who accept responsibility for their learning.

It is inevitable that online learning will continue to be an area of growth and new approaches to delivery methods will require continual assessment. Adopting formal policies and strong leadership will be critical for continued rigor and evolution. It will also be necessary for consistent evaluation of its effectiveness; tracking student performance over time will be one effective means of such an assessment. There are benefits to online learning, and with careful planning and adherence to the overall mission of the university, challenges to this approach can be mitigated. It will be important to envision where online learning is headed – what are some of the upcoming challenges and trends, is the institution equipped to handle the demand for online courses, is the support available for faculty - and to be able to respond to its needs.


APPENDIX A. STUDENT SURVEY QUESTIONNAIRE

I registered for the ONLINE section of Finance 3000 because:
1. There were no on-campus sections available.
2. I am in the Online Bachelor of Business Administration program.
3. It was more flexible.
4. I prefer to learn on my own.

Have you completed an online course before?
1. Yes
2. No

How likely are you to take another online course?
1. Highly likely
2. Highly unlikely
3. Only if there are no other options

Overall, how would you rate your satisfaction with the course?
1. Not satisfied at all
2. Somewhat dissatisfied
3. Neutral
4. Somewhat satisfied
5. Satisfied

Open-Ended Questions:
1. How would you describe your experience in the online section of FIN 3000?
2. How would you describe your level of interaction with other students in the course?
3. How would you describe your level of interaction with your course instructor?
4. What aspects of the course or the instructor’s approach contributed most to your learning?
5. What aspects of the course or the instructor’s approach would you change to improve the learning that takes place in the course?
6. What challenges, if any, did you face with completing course assignments (i.e., time management, confusion about assignments)?
7. In your opinion, what factors helped you successfully complete this course?

Demographic Information:

Gender
1. Male
2. Female
Age:
1. 18 to 24
2. 25 to 35

Ethnicity/Race:
1. Asian
2. African-American
3. White/Caucasian
4. Hispanic or Latino
5. Multi-Racial
6. Other

Campus:
1. OBBA
2. Main campus
3. Ambler

Enrollment Status:
1. Full-time (12-17 credits)
2. Part-time (0-11 credits)

Class level:
1. Sophomore
2. Junior
3. Senior

Major:
1. Accounting
2. Actuarial Science
3. Business Management
4. Economics
5. Entrepreneurship & Innovation Management
6. Finance
8. International Business
9. Legal Studies
10. Management Information Systems
11. Marketing
12. Real Estate
13. Risk Management & Insurance
14. Other
APPENDIX B. IRB APPROVAL

Date: 14-Jan-2016

PI: IKPA, VIVIAN
Committee: A1
Protocol Number: 23423
Project Title: Assessing Achievement Outcomes and Student Engagement Perception in an Upper Division Business Management Course

The above new study was administratively closed because the IRB determined that the proposed activity is not human subjects research as defined by DHHS or FDA regulations. Consequently, Temple IRB approval is not applicable and the study was given the status of “closed/never opened.” You are welcome to pursue the activity, obtaining any applicable administrative or departmental (non-IRB) approvals.

Please contact the IRB at (215) 707-3390 if you have any questions.