A CORRELATION ANALYSIS OF FACULTY INTERACTION WITH UNDERGRADUATE

STUDENTS IN ONLINE COURSES AND STUDENT COURSE COMPLETION RATES

by

Claudia T. Restiano

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

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ABSTRACT

The extent in which a teacher communicates with his or her students in an online setting may affect student course completion rates. The increased use of online courses and degree programs at the post-secondary level has fundamentally changed the way faculty members and students interact, and ultimately may impact student course completion rates. Course completion is an aspect of student retention. The purpose of this quantitative correlational research study was to analyze the correlation between faculty interaction with online undergraduate students in required introductory English composition courses and student completion rates in those courses. Blackboard is a learning management system used for interaction between teachers and students in online courses. The number of interactions a teacher has with students on Blackboard may affect the retention rates of students in a particular course. This study examined and compared the data from faculty Blackboard interaction and student completion rates using SPSS. There was a positive correlation between the amount of times faculty accessed Blackboard and student course completion rates. However, there was no statistically significant correlation between the amount of times a faculty member responded to students' discussion board posts on Blackboard and the students' course completion rates. Suggestions for further research are included.

Keywords: course completion, retention rates, online education, teacher interaction, Blackboard activity, undergraduate online students

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List of Abbreviations

Administration Information Management (AIM)

Institutional Review Board (IRB)

Information Technology (IT)

Statistical Package for the Social Sciences (SPSS)

Structured Query Language (SQL)

CHAPTER ONE: INTRODUCTION

This chapter introduces the topic of the study and presents the background information used to support the purpose of this study. Included is the problem statement, purpose statement, significance of the study, research questions, null hypotheses, and definitions.

Background

Educators across the nation have embraced the fact that virtual learning environments are growing increasingly popular. According to Faja (2012), a recent survey indicated that six million students have participated in an online course. The push by the Obama administration for more college graduates has increased the demand for affordable and accessible education, which has resulted in an increase in online education enrollment. However, the percentage of students that complete courses or even complete degree programs may be influenced by a number of factors. Research has shown that prior online success, student efficacy, student-to-student collaboration, and teacher-to-student collaboration may influence student ability to complete a course. There is little research on faculty interactions with students in online courses and how they might influence student ability to complete a course.

The way students and teachers communicate online is through course management systems. A course management system is a software program or an integrated online platform that contains various web-based tools to support a number of activities, online interactions, and management procedures (Tella, 2012). Blackboard, Inc. is an example of a course management system. Through online Blackboard collaboration, student-to-student interactions and student-to-teacher interactions can be managed and documented. The degree of online collaborative interaction may have the ability to increase student engagement and develop a sense of

community by using teamwork skills (Faja, 2012). Students that are engaged and feel that they are part of a learning community will have a better chance of succeeding in an online program.

In addition, the 2010 Horizon Report (Johnson, Smith, Levine, & Haywood, 2010) claimed that due to an increasingly busy world in which the student lives, the demands of home, work, school, and family make it difficult for the student to manage schoolwork and may also play a deciding factor in course completion. However, the multitude of "browser-based software" has helped ease the burden of schoolwork, allowing for "device-independent programs" and a great deal of readily available knowledge on the web (Johnson et al., 2010). As technology dominates this changing world, students are able to increase communication with peers, faculty, and others from all over the world. If this type of communication is channeled in an academic setting with specific goals and strong faculty interaction, learning can be successful, comfortable, and enjoyable for the contemporary student. Specifically, interactions between students and faculty on course management systems such as Blackboard can influence retention rates, or course completion rates, of online students in a particular course.

Course management systems are designed to develop, support, and enhance online learning. The organization, creation, storage, retrieval, transfer, delivery, and communication of material are managed easily through one interface (Tella, 2012). The number of interactions between those involved in an online course may influence various success factors. The ability for instructors to provide links, videos, text, discussion boards, and support materials in one place can positively or negatively affect the success of the student's course completion. Furthermore, the online instructor needs to develop pedagogical practices that are slightly different than traditional face-to-face classroom practices. According to Meyer and McNeal (2011), the most effective pedagogical practices for effective teaching online are fostering

relationships, engaging students, timely responses, communicating regularly, providing feedback, effective course organization, flexibility, effective use of technology, and having high expectations. These practices can be a major influence on the student's quality of work, overall perceptions, and completion rates of a particular online course or degree program. Additionally, online classes and degree programs provide flexible scheduling, self-pacing, and a variety of programs that traditional settings may not provide at such a convenience. These factors may provide enough of an incentive for students to complete courses.

Faculty interaction plays a significant role in the success of online students. At the undergraduate level, it is beneficial to have online support systems or services where students can seek help to ensure their success. If the faculty member is unavailable, students should be directed to a forum, or a student support center, to seek guidance through the online course or degree program. In a recent study conducted by Russo-Gleicher (2013), most faculty members did not refer students to support services, which contributed to the retention problems of students in online courses at a community college. If there is an option for support, the faculty member must be instructed to be more diligent in identifying risk factors that may influence the success of students. If these students are identified and directed to a place for support, there may be an increase in retention. In addition, faculty members need to realize that their roles in student retention are equally as important as the administration and registrar. Their attitudes towards utilizing support services can greatly impact student retention (Russo-Gleicher, 2013).

Student retention in an online learning environment may be increased if certain factors that affect retention are utilized, such as early identification and effective intervention formulas (Liu, Gomez, & Yen, 2009). Research has shown that having online students complete a learner assessment early in a particular course can help identify students at risk for dropping that course.

Analysis of this information can target at-risk students and provide them with an intervention program such as supportive peer groups (Liu et al., 2009). The role of the educator is also crucial in improving the likelihood of student success in an online learning environment. Not only does the quality of the interactions among classmates affect retention rates of online students, but the number of interactions between faculty and students may also greatly influence student course completion.

Collaboration online may support online learning and therefore contribute to successful retention. The greater the frequency in which online students interact with teachers and peers, the more their social integration and readiness will increase, which should improve course retention (Liu et al., 2013). Effective communication should be practiced and each student needs multiple opportunities to develop the necessary intercultural skills that come along with effective communication (Lee, Poch, Shaw, & Williams, 2012).

Online learning lends itself to experimental discovery, interactivity, collaboration, and assessment, with less emphasis on rote learning (Subramaniam & Kandasamy, 2011). Most virtual learning environments provide features such as support services, grading, examinations, emails, instant messages, chat rooms, discussion boards, and file transfers that provide the learner with the tools necessary to communicate (Subramaniam & Kandasamy, 2011). Effective online collaboration with students may be a positive factor influencing student completion rates.

Problem Statement

The interactions between faculty and students in an online class can influence many aspects of a student's success. The problem with online education is the multiple factors that can affect student retention. Researchers Liu et al. (2013) identified that there is a lack of information on online student retention. One factor in particular, the frequent online interaction

between faculty and students, may result in higher course completion rates in online courses. Results of this study will help post-secondary institutions identify factors influencing the retention rates of their online students.

Purpose Statement

This study examined the correlation between faculty interactions with students in a post-secondary online course and student retention rates. Due to the increase in online courses, online course management systems were designed to manage interactions between faculty and students. Blackboard is one such online system that provides an interface that allows for these interactions. The number of interactions between instructors and students on Blackboard can affect student completion rates. After examination of the online student completion rates and faculty interactions on Blackboard, a correlation between the number of faculty interactions and the completion rates of students in online courses was significant in one respect. Specifically, the number of times faculty members accessed or checked Blackboard simply by logging on and the number of times they responded to student discussion board posts were analyzed to determine if there was a correlation with that data and online student course completion rates. As the demands of higher education increase, the degree at which faculty and students interact can influence the course completion rates of online students.

Significance of the Study

The recent push for more college graduates and greater educational requirements in the job market has increased post-secondary online enrollment (Meyer & McNeal, 2011). Online education is a growing trend due to its convenience and self-directed learning. Online students can balance a job, family, and the daily demands of life in addition to gaining an education. However, the retention rates of online students are influenced by many factors. Particularly,

faculty interactions with students can influence retention rates. In this study, faculty interaction with students in a required online post-secondary introductory English composition course were analyzed to see if there was a correlation between that data and online course completion rates.

Research Questions

RQ1: Does the number of times a faculty member accesses Blackboard by logging on affect the course completion rates of online undergraduate students required to take an introductory English composition course?

RQ2: Does the number of times a faculty member responds to a discussion board post of online undergraduate students required to take an introductory English composition course affect the course completion rates of those students?

Null Hypotheses

$H_0$1: There is no significant correlation between the number of times a faculty member accesses Blackboard and the course completion rates of online undergraduate students required to take introductory English composition.

$H_0$2: There is no significant correlation between the number of times a faculty member responds to discussion board posts of online undergraduate students required to take introductory English composition and the course completion rates of those students.

Definitions

1. *Asynchronous* - correspondence between students working on a collaborative activity that has significant time-delays.

2. *Attrition* - reduction in number of students completing a course or degree program.

3. *Blackboard* - a specific course management system where faculty and students communicate in online courses.

4. *Collaboration* - means of promoting learning by participating in groups with peers to develop shared ideas, online or traditionally (Sainsbury & Walker, 2008).

5. *Course completion* - student completion of a course.

6. *Discussion board post* - tool that teachers and students use in an online course to communicate.

7. *Face-to-face* - instructor and students interacting in a classroom setting.

8. *In-person* - collaborating in front of one another, such as in traditional collaboration.

9. *Real-time* - correspondence that happens instantaneously, whether face-to-face, face-time online, or on the phone.

10. *Retention* - student completion of a course and enrollment in another course the following semester.

11. *Self-efficacy* – the ability of the student to be effective and produce a desired result.

12. *Self-regulation* – the ability of the student to control the learning pace and desired outcome.

13. *Synchronous* - correspondence between students working on a collaborative activity that has no delays; live interaction with a web-based tool using a web-cam.

14. *SPSS (Statistical Package for the Social Sciences)* – a specific statistical analysis software.

15. *Virtual* - using the Internet for collaboration.

16. *Web-based collaboration* - process that describes how students communicate and collaborate online.

17. *Wiki* – interactive online collaborative tool that allows users to edit, add, modify, and share information.

CHAPTER TWO: LITERATURE REVIEW

This chapter presents the practical and empirical data used as the foundation for this study. The theoretical framework and literature review provided the proper documentation and evidence needed for this body of research.

Introduction

Distance learning in the form of online education has been a major contributor to 21st century education (Subramaniam & Kandasamy, 2011). As technology advances, education must adapt. According to the 2010 Horizon Report: K-12 Edition (Johnson et al., 2010), one of the major trends in education includes online course management systems. Online course management systems are virtual spaces where work can be done collaboratively with students and teachers.

The correct use of online course management systems such as Blackboard may have positive or negative effects on students depending on the quality of teacher interaction. According to Tella (2012), Blackboard can be used correctly as a pedagogical tool where teachers can promote the development of student communication, organization, and time-management skills. The amount of teacher interaction through Blackboard may influence the student's motivation level to participate in the course and may even influence the student's desire to remain in the course. Ultimately, the number of teacher interactions, including "hits" on Blackboard, responses, collaboration, and positive feedback can affect student course completion rates.

In 2009, President Obama announced the American Graduation Initiative, which included a goal for America to have the highest proportion of college graduates in the world by 2020 ("President Obama," 2009). As a result, universities across the United States have exploded with

more low-cost online education programs (Hachey, Wladis, & Conway, 2012). The popularity of online education has pushed the growth rates of online education higher than overall higher education (Hachey et al., 2012). With this increase of online education, student retention may become a factor. The flexibility and the self-directed pace of online education may initially appeal to the prospective student, but the reality may prove to be different. Student retention rates can be influenced by many factors. Specifically, faculty interaction through a course management system such as Blackboard may affect course completion rates of online students.

Theoretical Framework

The government has taken steps to ensure that higher education is available to any U.S. citizen. This trend towards higher education for all Americans has increased the amount of online degree programs available. Along with providing access to online classes and degree programs, higher education institutions are grappling with retaining online students (Seidman, 2012). The reasons students drop out, or fail to complete a degree, are varied. One bad experience could cause an individual to leave higher education and never go back. One factor that may decrease student retention in online programs is teacher involvement in online courses. The degree at which faculty members are involved may directly affect student course completion rates.

The theories developed by Tinto, Bandura, and Vygotsky will be used to support this study. Tinto (1987) researched and developed a theory of student retention over many years. According to Seidman (2012), the most important factor that Tinto identified affecting student retention rates was integration. Integration can be defined as a student's experience within the college; the more integrated into the academics and social aspects of the school, the more likely the student is to succeed in completing academic goals (Seidman, 2012).

Vincent Tinto is a noted theorist in student retention in higher education (2005). Tinto stated that student retention has been associated with social interaction of students. For instance, some students need to be connected to their communities, families, and churches to feel they belong. Each institution has a different feeling or connection to the student whether residential, nonresidential, or online. The classroom plays a vital role in a student's feelings of engagement and connection (Tinto, 2005). The key concept throughout all institutions that have implemented retention programs or have adopted different models of retention is that the most influential aspect of student retention is engagement (Tinto, 2005). Tinto stated that moving forward, all institutions have created or adopted some sort of program to address student retention, but often have difficulty implementing them, following through with them, and integrating them into campus life. Tinto found that one of the major problems institutions face is convincing the faculty taking part in helping retain students. Tinto's research showed that the faculty seemed to blame the institutions for giving them unmotivated or weaker students, and if they were better students, they would be able to retain them. Tinto suggested that one way to tackle the issue of student retention is to organize institutional restructuring where the institutions, programs, faculty, and students work together to engage students and create a community where everyone takes part in the success of the whole. Tinto proposed a method to integrate successful retention programs. One of the facets of the method focused on cooperative learning environments or communities where students and teachers work together as a cohort (Tinto, 2005).

Tinto's theory of social integration contains three stages: separation, transition, and incorporation (Seidman, 2012). The second stage, transition between communities, is the integration into a fairly new community. This can be particularly difficult if the new community is an online learning community. Additionally, Tinto (1987) suggested that contact between

students and faculty members was not as important as the social integration between students. However, if there was a lack of faculty interaction, that could contribute to the attrition of students. Tinto discussed the scope, pattern, and roots of student departure. To decrease the amount of student departure, social integration needs to be addressed (Seidman, 2012). Social integration, which involves psychological, social, and organization influences, may be influenced by teacher involvement.

Furthermore, according to Seidman (2012), instead of studying how students learn and academic rigor as separate factors effecting student retention, studying their combined effects may have a better impact on student retention. The dynamics of online courses allow for Tinto's theory of social integration to be practiced student-to-student and student-to-teacher using an online interface. Social integration can contribute to the retention rates of students in an online course depending on the degree of interaction between peers and faculty. Specifically, integrating faculty involvement and a student's learning style in the social setting can positively impact the retention rates of students.

According to Bowmen, Chingos, and McPherson (2009), student retention rates are a combination of weak motivation or interest of the student and the universities' ability to target those students and try to intervene before they drop out. The specific intervention programs available are unique to the college or university and dependent on setting. However, Tinto's theory helps explain the complexity of student retention and how students can be motivated to stay enrolled at college or university (Bowmen et al., 2009). Tinto's research reinforces the theory that most retention can be linked to factors such as "intention, commitment, adjustment, difficulty, congruence, isolation, obligations, and finances" (Bowmen et al., 2009, p.221).

Effective retention involves engagement and interaction between students and peers and students and educators.

Furthermore, institutions should take ownership for changes to the campus and how they might influence the students that attend (Bowmen et al., 2009). One recent change in higher education is the demand for online education. If institutions are looking to increase enrollment, increase the amount of course offerings, and increase the amount of online degree programs, there should be effective policies to increase retention or to at least target students that may be at risk of dropping out (Tinto, 1987). Tinto's principles are much easier to discuss than to actually implement, but Tinto's theories have been researched and applied for nearly three decades and continue to show success when considered (Bowmen et al., 2009). Social integration by means of engaging the student in the social community is a constant struggle for the online equation. However, it is a strong factor in determining retention of online students. One factor in student retention and social integration is interaction with faculty. The feeling that the student belongs to the class community via Blackboard discussions and online postings can make the student become more engaged and willing to complete the course.

Social integration has taken a new meaning in today's society. When Tinto first researched student retention and discovered the need for social integration, student engagement, belonging to the campus community culture, and interacting with peers and faculty, the social media aspect that has become the normal social interaction among the overwhelming majority of individuals in American colleges was not taken into consideration. There has been rapid growth in the general use of social media, mostly for recreational purposes, but many educators believe that these social networking tools "offer new educational affordances and avenues for students to interact with each other and with their teachers" (Poellhuber & Anderson, 2011, p. 102).

Specifically, these tools may be an integral part of online education with the use of these tools possibly taking a part in the social integration aspect of student retention (Poellhuber & Anderson, 2011).

Bandura's (1977) social learning theory stated that behavior is learned from observations in one's surrounding environment. Bandura's career at Stanford University opened up many opportunities to develop this theory and led Bandura to the conclusion that modeling through various experiences gives people "structure, meaning, and continuity to their lives" (Zimmerman & Schunk, 2003, p. 437). Environment directly affects human behavior by the way in which people observe, analyze, and model those individuals in their immediate environment. Educators that are engaging, modeling positive behaviors, and active in a learning environment will positively affect students. Students will tend to stay motivated, engaged, and willing to complete a course with an instructor that is able to cultivate a strong positive learning environment. However, it is challenging for educators to model, engage, motivate, and create online environments that motivate and sustain students.

Bandura's social learning theory involves the integration of three determinants: personal, behavioral, and environmental factors (Zimmerman & Schunk, 2003). Teachers can use aspects of these three determinants to develop a student's ability to self-regulate and self-motivate. Since online education is mostly self-regulated and self-motivated, this portion of Bandura's theory involving self-regulation is fitting for this correlational study. Fostering the personal, behavioral, and environmental components to self-regulation can be "highly effective in improving students' motivation, strategies, and academic achievement" (Zimmerman & Schunk, 2003, p. 446). The highly motivated and self-regulated student will most likely complete a course and/or a degree program.

Self-efficacy is the term used to describe the ability of an individual to control, motivate, and execute behaviors to obtain certain goals in one's environment (Bandura, 1977). Self-efficacy requires confidence and strong personal beliefs for a student to attain desired objectives. Educators need to be supportive of students' differences in learning and attuned to what motivates each student personally, behaviorally, and environmentally. Teachers can motivate students to monitor their activities and environment to become more effective in their personal education (Zimmerman & Schunk, 2003). In addition, educators' self-efficacy in teaching can be a motivational factor in the students' self-efficacy. The teacher that devotes more time to instruction, provides guidance to students, and praises his or her students' accomplishments, is more likely to motivate students to have greater academic achievement (Zimmerman & Schunk, 2003). The online instructor with more self-efficacy may encourage the online student to develop more self-efficacy.

Educational programs that incorporate aspects of Bandura's theory, specifically self-regulation, have been shown to highly motivate and effectively influence academic achievement (Zimmerman & Schunk, 2003). Bandura's influence on education has triggered a widespread awareness of how modeling, self-efficacy, and self-regulation can greatly effect students' coping skills, frustration levels, academic stressors, and ultimately their failure in personal academic achievement (Zimmerman & Schunk, 2003). In addition, Bandura stated that teacher's that have a strong instructional efficacy create classroom environments that are mastery experiences for their students (1997). A strong instructional self-efficacy may be difficult to create in an online environment. Institutions need to provide professional development and training to ensure that teachers are prepared to create the proper environment to support student self-efficacy. The teacher will demonstrate the appropriate modeling for student success. Bandura (1997) also

believed that a collective self-efficacy was necessary to reach certain goals; "a group's shared belief in its conjoint capabilities to organize and execute the course of action required will produce given levels of attainments" (p. 477). Therefore, it is not only the teacher and the students that will create the best learning environment, but the school, as a whole, needs to promote self-efficacy. Teachers are knowledgeable, but they need to look beyond pure content. Students need help to translate knowledge into proficient performance. They often cannot get themselves motivated to put in the necessary effort to complete difficult task demands that lead to student success and achievement (Bandura, 1997). Teachers that consider their students' self-efficacy and self-regulatory needs, in addition to enhancing their overall academic knowledge, are preparing students for success in their education (Zimmerman & Schunk, 2003). These skills and support from educators can give students the tools they need to complete their college courses and degree programs.

Vygotsky's theory relies on the interrelatedness between the following three factors: interpersonal, cultural-historical, and individual factors (Tudge & Scrimsher, 2003). The individual student brings personal interaction to the cultural-historical setting in which interaction between students and teachers takes place. A child's social development will contribute to the degree of interaction between students and teachers. Positive student-teacher interactions will support Vygotsky's social theory of education. Vygotsky believed that students need to be actively involved in their teaching/learning relationships (Tudge & Scrimsher, 2003). It is necessary for the individual to feel accepted to be a complete member of the cultural world (Tudge & Scrimsher, 2003).

Environmental influences and the interrelations of individuals, such as students with teachers and other students, change with their environmental experiences (Tudge & Scrimsher,

2003). Vygotsky believed that through the interactions with others, an individual can have self-discovery (Vygotsky, 1997c). The environment in education involves students and teachers. In a traditional classroom setting, the environment can also be the actual classroom structure, the location of the school, the materials the students work with, etc. However, in an online class, the environment for learning can be the student's physical environment while they are online (library, home, or even a coffee shop), and the online environment. It is the responsibility of the educator to provide an online environment that is supportive and conducive to learning. Although the interaction with the online student is important, the online environment is equally important in encouraging learning and retention.

Eun (2008) presented Vygotsky's developmental theories and stated, "the foundations of Vygotsky's theoretical framework are built upon the social origin and cultural mechanisms of development" (p. 135). There are certain key concepts that are necessary to understanding Vygotsky's theories. These concepts involve mental functioning that arises from specific social interactions. Vygotsky believed that higher mental functioning was reached through social interaction (Eun, 2008). In addition, through Vygotsky's work other researchers discovered that social interaction in the material world with other individuals can help people develop a better sense of reality (Eun, 2008). This social interaction in the material world can be accomplished through online classes. The material world involves the Internet and the access of online courses allows for social interaction in a very modern and material social setting.

Vygotsky believed that social interaction was the core to human development (Eun, 2008). The link between social interaction and higher mental functioning is mediation, or the transformation of external forms of social interaction to internal forms of mental functioning (Eun, 2008). Vygotsky believed that the transformation between social behavior and mental

functioning does not happen automatically and requires engagement of two or more people on a practical activity (Eun, 2008). Furthermore, the activity needs to be goal-directed, "for social interaction to lead to development, it has to be situated in activities that have a clear goal, such as joint problem-solving activities" (Eun, 2008, p. 139). The contexts as to which the students interact, participate, and socially connect with teachers and peers in activities will contribute to the intellectual development of the student (Eun, 2008). This intellectual development or higher mental functioning is what students need to decide whether or not to stay enrolled in courses and retain the course or drop out. Vygotsky's social development theories are focused on how the environment influences the social, behavioral, and mental abilities of the student. These theories can be used in the online environment to help explain why it is crucial for the students to be engaged, interact with other students and teachers, and have clear paths to communicate and achieve their goals. The correct online environment is necessary for students to achieve higher mental functioning and to make the correct choices in their future undergraduate degree courses and programs. Through the social interaction between teachers and students, this can be accomplished.

Most students are interacting socially in network environments using technological interfaces, such as Facebook, Twitter, and Instagram. The addition of programs used in online courses, such as Blackboard, have changed the students' perceptions of learning, specifically in the area of collaboration and communication with teachers. In positive teaching/learning relationships, teachers must be willing to foster successful interactions between themselves and their students in order to build on their students' strengths (Tudge & Scrimsher, 2003). A strong student with positive teacher interactions online will increase the chances of that student to remains enrolled in the class and ultimately completing his or her course and degree program.

Review of Literature

Higher education has become increasingly important in today's society. Distance learning promotes more accessibility for individuals to achieve a higher education. Online courses and degree programs have allowed institutions to provide quality instruction at a reduced cost (Crawford-Ferre & Wiest, 2012). In addition, the flexibility and instructional delivery of online instruction has made it appealing to individuals that have constraints in their lives that prevent them from attending a face-to-face course or program (Crawford-Ferre & Wiest, 2012). As a result, enrollment in online classes and degree programs has skyrocketed since the start of online education. Actually, online course offerings have increased faster than traditional course offerings (Crawford-Ferre & Wiest, 2012). According to Beck (2010), the amount of online higher education courses almost tripled between 1995 and 2003. With this increase in online education, educators must be prepared to handle a different type of student than the one often found in a traditional classroom setting. Faculty must be trained on the pedagogy of online instruction to be effective teachers of online education (Crawford-Ferre & Wiest, 2012).

Another facet of learning needed to ensure the success of online education is collaboration among students and instructors. Since the nature of online education is asynchronous, teachers and students will be unable to receive immediate feedback and consequently rely on communication or collaboration among peers (Crawford-Ferre & Wiest, 2012). Effective teacher interaction and collaboration online can affect the success of the student enrolled in a post-secondary online course and/or degree program. Success can be measured in the retention rates of students and course completion. Retention rates of online students in a class or particular degree program are a challenge for many institutions.

According to Seidman (2012), past research on the retention of the distance learner has focused on retention in a particular online class; consequently, more research should be conducted on persistence towards an online degree. The aspect of online education that deals with teacher and student communication can be researched to determine if there is a correlation between the amount of interaction online and retention rate or course completion rates. Online instruction has created pressure for teachers since the skepticism of the quality of online instruction remains strong and retention rates for online courses remain low (Hachey, Wladis, & Conway, 2012; Ter-Stepanian, 2012). In a study conducted by Horspool and Lange (2012), student perceptions of success in online or face-to-face instruction of the same course indicated that students found success in both learning environments when there was high-quality interaction with the instructor.

Ter-Stepanian (2012) discussed the benefits of a well-designed online course. Ter-Stepanian presented strategies for successful online instruction, which included improved learning outcomes, peer-interaction, and knowledge construction. Ter-Stepanian taught art history and designed twenty online courses. The means to which the online art history students interacted with faculty and peers was through discussion forum message boards. According to Ter-Stepanian, the theory of instructional design used in the courses offered to the online art history students was modeled after Keller. "According to Keller's model of motivational design, among the methods of grabbing the learner's attention are games, role playing, humor, and inquiry" (Ter-Stepanian, 2012, p. 43). Discussion board interaction stimulates active learning, causing intensive inquiry and curiosity that motivates students (Ter-Stepanian, 2012). If the online course is designed in such a way as to create engaging, intellectually stimulating, and

imaginative scenarios that motivate students to write and engage with the instructor and their peers, the success rate of the students to complete that course will increase.

Additionally, Ter-Stepanian (2012) stated that since distance learning can cause fear in novice online learners, the instructor should design the course to include introductions for teachers and students to share a bit about themselves to create an informal communication that, in turn, will encourage the student to be an active participant in the class. If students are more engaged and active in online courses, they are more likely to succeed and complete the course.

The flexibility and non-restricted nature of online education has made the industry grow significantly. According to Lee and Choi (2011), online enrollment continues to increase each year; however, online courses have higher dropout rates than traditional courses. In addition, failure to complete a course online might lower a student's self-confidence and discourage him or her from registering for additional online courses (Lee & Choi, 2011).

A 2011 study conducted by Lee and Choi supported Tinto's theory of social integration. Student are more likely to drop out of a class or degree program if they are unable to establish themselves in the college community (Lee & Choi, 2011). Lee and Choi analyzed empirical studies on online education from 1999 to 2009 that were published in peer-reviewed journals. The 35 studies were categorized as correlational, descriptive, experimental qualitative, and/or mixed method.

According to the research findings, the researchers in each study did not provide a clear definition of dropout from an online course. In some cases, a "dropout" was a non-completer of a course or a student that received an incomplete or F for the course (Lee & Choi, 2011). Retention was seen in some cases as completing a course with a grade between a C and an A or dropping out with a grade lower than a C.

Also, if students did not register for another course next semester, they were considered dropouts (Lee & Choi, 2011). Lee and Choi (2011) targeted 44 dropout factors after analyzing past studies. These factors were put into three main categories: student factors, course program factors, and environmental factors (Lee & Choi, 2011). Two factors that affected dropout rates were SAT scores and GPAs; students who had lower SAT scores and GPAs had higher dropout rates (Lee & Choi, 2011). In addition, Lee and Choi reported that "students with less academic aptitude and a history of poor academic performance are more likely to enroll in online rather than conventional courses, but less likely to persist in them" (p. 607). Moreover, relevant experiences relating to the courses and relevant skill related to the courses were factors affecting dropout rates.

Lastly, psychological attributes of student factors affecting dropout rates were analyzed. Lee and Choi (2011) described psychological attributes as students' attitudes towards learning, interaction with their instructors, and interaction with other students. This study provided evidence to support the theory that students' self-efficacy, motivation satisfaction with the course, and interaction between students and instructors can influence the likelihood for students to complete a course.

Furthermore, Lee and Choi (2011) discussed the aspect of course/program dropout factors involving course design in terms of interactivity. They reported that the instructors' efforts to increase interactions and involvement with students and between students would increase retention rates. Consequently, if instructors gave appropriate and timely feedback through discussion boards, emails, and interactive activities, as well as provided support, the students were more likely to complete an online course (Lee & Choi, 2011). Therefore, an

increase in faculty interaction or involvement with students in online courses may in fact increase the course completion rates for those students.

Online education depends heavily on computer self-efficacy and technology literacy. The success of online students may be affected by computer anxiety or weakness in technology literacy and self-efficacy. The following study examined the relationships between computer self-efficacy and computer anxiety in both online and face-to-face educational environments (Hauser, Paul, Bradley, & Jeffrey, 2012). The researchers in this study presented one of the challenges of online education as a complex educational environment that is devoid of the personal presence of an educator (Hauser et al., 2012). The expectation of students is for them to perform at the same level as they would in a face-to-face class, but since there is a lack of the physical classroom, the communication between students and between students and teachers should be structured differently (Hauser et al., 2012).

According to Hauser et al. (2012), empirical evidence regarding online education has identified two main factors in student performance—computer self-efficacy and anxiety. Hauser et al. defined computer self-efficacy as "an individual's belief in his or her ability to apply computer skills to a wider range of tasks" (2012, p. 143). Anxiety regarding online education can directly affect computer self-efficacy. As anxiety increases, computer self-efficacy decreases (Hauser et al., 2012).

The participants from this study were undergraduate students from a public university in the southeastern United States. A questionnaire was given to face-to-face classes and online classes over two semesters and the data yielded 129 male and 111 female responses (Hauser et al., 2012). The data was collected in two phases: questionnaires and then a test on Microsoft Access to measure performance. Computer self-efficacy was broken into general self-efficacy

and specific self-efficacy. Hauser et al. (2012) reported that higher computer self-efficacy resulted in higher performance scores. General self-efficacy was also positively correlated with specific computer self-efficacy, which positively affected student performance (Hauser et al., 2012). Student anxiety had a negative effect on both general and specific self-efficacy in a face-to-face environment, but only the specific self-efficacy was negatively affected in the online environment (Hauser et al., 2012).

Moreover, the findings from this study concluded that online students must reach the expectations of a traditional class without the interaction of the teacher and face-to-face instruction. Due to this fact, students must rely heavily on organizational skills and the completing of class material (Hauser et al., 2012). These necessary skills will reduce anxiety and increase computer self-efficacy online. Educators should aim to have more positive interactions with students online to help create a successful online environment and therefore increase course completion rates.

Engaging online students is key to student success in an online course or setting. A recent study conducted by Beaudoin, Kurtz, and Eden (2009) attempted to better understand interactions and engagement of online students with learning mediums, materials, and instructors and peers. This survey study provided an insight into what students felt were the most effective and least effective practices for success in online courses (Beaudoin et al., 2009). This study assessed student engagement in the online learning environment and aimed to identify factors about students and online learning that past studies have missed (Beaudoin et al., 2009).

The participants in Beaudoin et al.'s (2009) study were from the United States, Israel, Mexico, and Japan. A questionnaire was given to higher education online learners of various ages, both male and female. The 428 "respondents were asked to identify up to three online

learning experiences and to indicate their level of satisfaction with each" (Beaudoin et al., 2009, p. 280). Another series of questions asked the respondents to identify what elements of the online experience had most influenced their level of satisfaction (Beaudoin et al., 2009). Additionally, the questionnaire asked the respondents to rank 10 items that would be considered 'critical elements for successful online learning.' The students listed the following: self-motivation, ability to manage time, limited support, relationships with online facilitators, enjoying the challenge of learning, confidence to be able to achieve a goal, ability to express one's ideas, ability to cope with non-structured settings, relationship with other online learners, and familiarity with technology (Beaudoin et al., 2009). This cross-cultural study reported that the majority of online learners rated their satisfaction with the online experience as 'Very Good to Good' (Beaudoin et al., 2009). The report of the findings for the elements influencing satisfaction was the course itself, meaning how it was organized and the content of the course. This was followed by the "quality of instruction, interaction, convenience, and flexibility" of the online experience (Beaudoin et al., 2009, p. 285). The online experience has many factors and elements that influence student success, including interaction with the faculty and interaction online. The greater the quality of interaction with faculty and the more frequent the interactions with other students, the greater success a student will experience in an online course. Ensuring that the student is engaged and that the overall online experience is successful should encourage students to complete a course.

Online education can be difficult due to the lack of physical contact between students and their professors (Benson & Samarawickrema, 2009). Benson and Samarawickrema (2009) presented a study of six different cases regarding the separation of teachers and students and between students in e-learning and distance education. The study addressed concerns regarding

the distance involved in online education. The advances in e-learning have to take into consideration the variety of learning contexts the students are engaged in such as home-based learning, "access issues, pedagogical support, and the skills and responses of staff and students to the use of various technologies" (Benson & Samarawickrema, 2009, p. 7). It may be difficult to account for all of these issues, but most can be addressed in the design of the course. In addition, Benson and Samarawickrema discussed transactional distance theory, the psychological distance between students and teachers, which can be addressed and bridged through equal amounts of dialogue, course design, and student autonomy.

The analysis of the cases in this study discussed the management of transactional distance using balance of dialogue, structure, and student autonomy incorporated in the course design (Benson & Samarawickrema, 2009). The six cases in this study ranged from a variety of e–learning environments: face-to-face, blended, and strictly online. The analysis of the various cases resulted in the determination that transactional distance can be reduced with high levels of dialogue and structure for the students (Benson & Samarawickrema, 2009). Teachers have a direct influence on the dialogue and structure of an online course and can affect the learners' success. Success of students in online courses is mostly related to the interaction of the faculty. The more active the faculty are with their online students, the more likely the students will be to complete the course.

Retention rates for online students have been the subject of many reports since the early 1990s and the birth of the first online classes (Aversa & MacCall, 2013). There are many findings that have been reported to describe the best ways to retain students, but a recent case study by Aversa and MacCall (2013) looked at the attributes of a successful online program that already had a high retention rate. In this study, the nature of the class was a virtual classroom

that met twice a week with live lectures, discussions among students, guest lecturers, and group work (Aversa & MacCall, 2013). In addition, the course management system, Blackboard Vista, was used to provide materials, discussion, links to resources, and additional documents. Students could also use email, Facebook, and other social media to interact with peers and faculty. Students were encouraged to communicate and interact with faculty and peers during the semester (Aversa & MacCall, 2013).

The results of this case study showed that the students enrolled in the Master of Library and Information Studies degree program at the University of Alabama had higher than usual retention rates due to many factors, including that the program design was deliberately made to mirror a face-to-face program. The students reported the following positive experiences: faculty and students interacted regularly, individualized attention was available to each student, the faculty understood the issues confronting students that were employed and had adult responsibilities, and each student enjoyed being part of a close-knit community (Aversa & MacCall, 2013).

Faculty interaction, specifically, was one of the leading factors in the high retention rates of this degree program. On the contrary, other online programs do not have the live or synchronous interaction this program does. Most online programs are asynchronous. The delivery of the instruction can affect the social interaction between students and faculty. According to this case study by Aversa and MacCall (2013), the increase in positive interaction between students and teachers may be one of the major factors in increasing student retention.

Educators have a distinct role in the retention rates of students. Specifically, the interaction or involvement of an instructor of an online course can impact course completion rates. A qualitative study was conducted by Russo-Gleicher (2013) that provided insight into

ways faculty members could impact the retention rates of online students. This qualitative study was undertaken by interviewing faculty members from a community college in a metropolitan area in the northeastern United States. The faculty members were asked to discuss themes about online students. These included "behaviors that make faculty concerned about online students, faculty communication with online students identified as having behavior problems, and faculty utilization of student support and services with online students having problems" (Russo-Gleicher, 2013, p. 9).

Some of the behaviors that students would display that were a cause for concern involved missing postings on the discussion board, poor quality assignments, missing assignments, and low-test scores (Russo-Gleicher, 2013). The faculty members' responses to the students that exhibited troubled behaviors varied. Faculty members were unclear about their responses to the students because they were all so different. The timing of the semester also had a great impact on retention rates. Teachers tried to reach at-risk students by using the Blackboard announcements page (Russo-Gleicher, 2013). In addition, students in need of extra help were referred to student support services by their instructors. Most faculty members in this study admitted that they were not diligent about recommending or referring students to academic support services. Most faculty members were not even aware of the types or amounts of student support services available to them (Russo-Gleicher, 2013). Overall, Russo-Gleicher (2013) concluded that the lack of knowledge and attitudes towards student support services negatively affected online students, consequently impacting the college's retention rates. Faculty attitudes play a significant role in online student course retention.

The amount of teacher involvement in an online course can promote learning productivity. In turn, if the student is productive and successful, he or she is more likely to

continue and complete the online course or degree. Meyer and McNeal (2011) conducted a qualitative study that explored the different ways faculty can improve student learning in an online course. This particular study used interviews, blogs, discussion groups, and journaling to gather data from 10 full-time faculty members from the University of Memphis. The results of these findings included six themes that the experienced online faculty utilized to improve student-learning productivity. These six themes included "increasing student access to content, changing the role of faculty by increasing access, increasing interaction with students, emphasizing the importance of student effort, connecting to the 'real world,' and changing conceptions of time" (Meyer & McNeal, 2011, p 41-42).

Faculty access and increasing interaction with students plays a role in retaining students enrolled in an online course. Faculty members should adopt a policy where they answer emails within 24 hours. Announcements posted on a course management system such as Blackboard foster open communication and faculty access (Meyer & McNeal, 2011). Increased interaction with students on course management systems encourages communication between faculty members and the students' peers. The ability of the students to share their experiences with others involved in the course in an online discussion board is different than face-to-face. The online interface allows for otherwise shy and withdrawn students to feel they can express themselves without judgment (Meyer & McNeal, 2011). Increasing faculty access and interaction with students can provide the necessary self-efficacy that online students need to feel successful and remain in the online course.

The role of the instructor is crucial to any learning environment. Face-to-face instruction and online instruction both have their strengths and weaknesses. One possible explanation for the difference in instruction may be the way the instructor was trained for each learning

environment. Many educators are taught to teach in the classroom and not how to teach online.

One study used a mixed methods approach and focused on identifying possible risks and

strengths of each type of instruction, along with ways the teacher could improve how he or she

facilitated learning (Diaz and Blazquez, 2009). Regardless of the type of instruction, if the

teacher was trained in the specific instructional design, he or she should be successful. Another

element of online instruction that may affect the success of this type of education is the kind of

student receiving the instruction. Online instruction often attracts the student that has restraints

in life that may restrict the ability for the student to attend a face-to-face course.

Focusing on the instructor's role, Diaz and Blazquez (2009) conducted a combined study

to analyze the differences between face-to-face instruction and online instruction in order to

determine if there was a difference in the tasks carried out by instructors. The researchers

focused on four aspects of teaching: theoretical content, practical content or activities,

interaction, and design (Diaz & Blazquez, 2009). Theoretical content involved the content,

training action, and structure of the online component; practical content or activities involved the

actual activities that were used to understand the theoretical content; interaction involved the

relationship between teachers and students; design involved the managerial and administrative

aspects of teaching and included time, technical aspects, and instructions (Diaz & Blazquez,

2009).

The study's 255 participants included 250 students and five instructors/experts in the

field of distance education (Diaz & Blazquez, 2009). The data collection involved closed

questionnaires, semi-structured interviews, and discussion groups (Diaz & Blazquez, 2009). The

aim of the study was to identify points that may improve teaching methods in both face-to-face

and online instruction. The results showed that occasionally, the online theoretical or program

design and structure was more satisfactory to students than face-to-face instruction and design. One possible explanation for this is that the instructor prepared the course content and structured framework prior to teaching and the conceptual map and scheme of the course was presented upfront to keep students on track. Often that specific or structured framework of course design is not as rigid and defined in traditional teaching methods (Diaz & Blazquez, 2009). The activities in the online learning environment were seen as more satisfactory than the activities in the traditional, face-to-face environment, possibly due to the fact that online courses often emphasize activities (Diaz & Blazquez, 2009). In the traditional, face-to-face environment, the explanation of concepts often takes precedence over learning activities (Diaz & Blazquez, 2009).

As noted, interaction between instructor and students can be more effective with face-to-face instruction due to the visual content and useful resources available in person to motivate students. Online interaction can be limited by how the instructor and students communicate (Diaz & Blazquez, 2009). The more each party is involved, the more positive the experience will be. Lastly, regardless of the study design or teaching environment, the instructor needs to consider the pedagogical theoretical grounds for the course, technology, organization, and support (Diaz & Blazquez, 2009). However, most institutions that train teachers in online education concentrate more on planning than pedagogy (Diaz and Blazquez (2009). In conclusion, this study showed no significant difference "between the functions of teachers in the two teaching modes, online and face-to-face; and if these differences do exist, they are likely to be due to the teacher's involvement and the institution's commitment in the programming of the learning process" (Diaz & Blazquez, 2009, p. 342).

Consequently, this study reinforces the importance of teacher involvement. In most online teaching programs, universities should train and guide instructors in their interactions with

online students. Involvement and interaction of teachers in online courses can positively influence student satisfaction and engagement and ultimately affect the rate at which students complete a course.

Positive interactions between students and teachers are key to successful online education. Garrison, Anderson, and Archer designed the concept of Community of Inquiry (CoI), a constructivist learner concept developed for online students (2000). Hosler and Arend (2012) used this conceptual framework to support their study about the interactions between online students and teachers. Hosler and Arend described the CoI as the convergence of social presences, teaching presence, and cognitive presence to ensure success of the post-secondary student. In the online environment, the student exhibits social presence when he or she presents himself or herself as an actual person, both socially and emotionally (Hosler & Arend, 2012). Teaching presence is described as the meaningful design of the course, organization of the course, and direct instruction of course material (Hosler & Arend, 2012). Teaching presence was key to "establishing and maintaining social and cognitive presence" (Hosler & Arend, 2012, p. 219).

Lastly, cognitive presence is defined as critical thinking in the form of conceptualization, examination, and differentiation of learning levels (Hosler & Arend, 2012). Additionally, cognitive presence involves collaboration and reflection between students by exploring, creating, solving, and confirming their ideas. The purpose of the CoI framework is to provide a guide for teachers to support critical thinking in higher education (Hosler & Arend, 2012). Hosler and Arend (2012) looked specifically at student perceptions of the elements of teaching presence and cognitive presence and compared face-to-face and online classes. The participants of the study were 208 post-secondary students from a university in the Rocky Mountain region. One hundred

thirty-two of the participants were online students, and 76 were traditional, face-to-face students (Hosler & Arend, 2012). The survey administered was a CoI survey consisting of 34 statements designed to assess student perceptions of the three presences: teaching, social, and cognitive; each response was based on the Likert scale (Hosler & Arend, 2012). There was also a qualitative component to this study that presented the thoughts and descriptions about the relationship between cognitive and teaching presence to help explain the quantitative results of the survey (Hosler & Arend, 2012).

Hosler and Arend (2012) found that student satisfaction was dependent on cognitive and teaching presence, with a great emphasis on cognitive presence. According to this research, students want to be challenged to think more critically if their teachers direct, encourage, and support a high level of critical thinking (Hosler & Arend, 2012). Based on the qualitative results of this study, students related critical thinking to three aspects of teaching presence. The first aspect of teaching presence the students related critical thinking to was course goals, organization, and purpose of assignments. Secondly, students that were provided direct, timely, encouraging, and specific feedback from instructors felt their critical thinking was positively impacted. Lastly, the way instructors facilitated discussions, focused, and encouraged students positively impacted critical thinking (Hosler & Arend, 2012).

In conclusion, "students in online classes and face-to-face classes do not differ in their perceptions of teaching presence and cognitive presence" (Hosler & Arend, 2012, p. 226). A strong teaching presence can foster a strong cognitive presence and positively influence learning online. This particular study shed light on the structure of the online course and the involvement of the teacher. The research showed that students benefitted from positive, timely feedback from instructors with encouraging responses and strong discussions. This support in an online course

can lead to increased satisfaction and an overall increase in course completion rates. Interactions with students by supportive faculty will directly contribute to the success of online students.

Social presence can be defined as social relationships, communication methods, timing of feedback, and privacy of student interaction (Liu, Gomez, & Yen, 2009). Researchers Lui et al. (2009) conducted a quantitative research study analyzing the relationship between social presence and course retention in online community college courses. To predict social presence, the researchers used a questionnaire to measure social readiness. The questionnaire included topics such as asynchronous email communication, asynchronous bulletin board postings, and real time synchronous discussion environments (Lui et al., 2009). Course retention was analyzed by the online program administration staff and provided the researchers with final course grades that determined retention by the student either dropping out of a course (failed to complete) or successfully completing the course with an A to C grade (Lui et al., 2009). The participants in the study were 353 students taking various online courses from a community college in Maryland.

The results of this study suggested that social presence is a significant predictor of course retention in the community college setting (Lui et al., 2009). Two recommendations were determined that may help increase retention rates of students. These factors are early identification and early intervention (Lui et al., 2009). Early identification of students at risk of dropping out was determined by a Social Presence Questionnaire (Lui et al., 2009). Early intervention was defined as providing an at-risk student with experiences powerful enough to effectively change the student's social presence and integration (Lui et al., 2009). To develop an integrated social and learning community, Lui et al. (2009) suggested that learning communities provide academic and social integration. Students should develop supportive peer groups and

personal support and interactions within those groups (Lui et al., 2009). This social integration would provide the support students need to stay enrolled and successful in a class.

Online learning communities such as Blackboard can be used to foster collaborative learning and therefore, increase retention rates of students in an online course. According to Lui et al. (2009), "collaboration allows students to work and learn together to accomplish a common learning goal. In a collaborative environment, students can develop social, communication, critical thinking, leadership, negotiations, interpersonal, and cooperative skills by experiencing the perspectives of other group members" (p. 173). Online learning communities are the perfect avenue for positive learning and social integration through collaboration. An increase in social integration should improve student retention.

Online courses often have a course management system to manage the instructions and interactions between students and teachers, and to submit, analyze, and review course materials and assessments. One such program is Blackboard, Inc. Tella (2012), conducted a survey involving undergraduate students using Blackboard. The questionnaire included questions on "user satisfaction, system quality, content quality, service quality, learning and teaching quality, system use, self-regulatory learning, and net benefits" (Tella, 2012, p. 46).

The responses were based on a Likert scale. Out of the 600 questionnaires administered, 503 were returned and analyzed for the results of this study. The results of this survey showed that students were most satisfied with Blackboard's content quality, system quality, and teacher/learning quality (Tella, 2012). In particular, content quality and teacher/learning quality can be associated with the information available to the students and the type of teacher interactions on Blackboard. The user satisfaction of Blackboard may in fact affect the interactions of students and teachers in an online course.

A recent study by Jain, Jain, and Jain (2011) explored meaningful interactions in designing specific online courses. The researchers based their study on the Institute for Higher Education Policy that identified benchmarks for Internet-based education (Jain et al., 2011). Among these benchmarks were learner-instructor interactions and learner-learner interactions. According to Jain et al., interaction with faculty was essential and was facilitated in a variety of ways. Additionally, feedback or responses to students needed to be constructive and timely (Jain et al., 2011).

In particular, this study looked at the relationship between the interaction of faculty and students and differences in discipline (Jain et al., 2011). Jain et al. (2011) collected data from a university in the Rocky Mountain region of the United States in 2007. The data included actual numbers of students posting on a course management system's discussion board (Jain et al., 2011). The specific courses were from the school of education, business, arts and sciences, and health sciences. Data was collected over the course of three weeks and included postings, comments, and questions on the discussion board (Jain et al., 2011). The data was organized using SPSS and analyzed with a one-way Analysis of Variance to determine the relationship between discipline (the independent variable) and overall interaction (the dependent variable) (Jain et al., 2011). The data collected of asynchronous interaction of students in the online course was 4.76 per week with a standard deviation of 3.89 (Jain et al., 2011). The relationship between interactions online and the health sciences showed the highest interaction per student per week (Jain et al., 2011).

The results of this study suggested that "interactivity in an online class depends on the discipline it belongs to" (Jain et al., 2011, p. 543). Since there was some significant correlation between online interaction in an online course and the type of discipline, there might be a

connection between the desire to complete a particular course and the number of interactions between faculty and students in an online course. If the student is interested in the material engaged through interaction with the instructor, there may be a correlation between the particular course completion and the number of interactions online.

Online interactive activities, such as use of discussion forums on course management systems, can help students share and gain knowledge (Nandi, Hamilton, & Harland, 2012). The role of the instructor in these situations can influence the engagement of students in an online course. Nandi et al. (2012) explored the quality of interaction between students and instructors in an online course. The online learning environment can consist of asynchronous and synchronous interactions between students and faculty. The way in which the teacher directs the discussions and intervenes with the students will help enhance student satisfaction in an online course (Nandi et al., 2012).

As such, asynchronous discussions in an online course allow students to interact with each other, the instructor, and the course material (Nandi et al., 2012). If the instructor guides, assesses, and supports student learning during the learning and construction of knowledge, students will be engaged, satisfied, and want to complete the online course in which they are enrolled. According to Nandi et al. (2012), there are three levels of participation in asynchronous discussion forums that allow students and instructors to communicate regardless of the physical space and time. These three levels are as follows: the student that reads the messages and does not participate, the student that uses the discussion board as a notification center and posts his or her own position with limited interaction, and the student that participates and interacts to his or her full potential (Nandi et al., 2012). The researchers identified three main themes for quality interaction online: "content, interaction quality, and objective

measures" (Nandi et al., 2012, p. 7). Interactions between student and faculty are significant in enhancing student satisfaction in an online course (Nandi et al., 2012). The foundation of an online course is the discussion forum since that is the avenue of communication for participants in the course; therefore, the role of the instructor in assisting meaningful discussion in an online course is imperative (Nandi et al., 2012).

Nandi et al. (2012) conducted a case study to analyze the discussion forum content in two fully online courses at a university in Australia. The discussion forums in these online courses utilized the course management system Blackboard. The instructor created threads in the discussion board so that students were encouraged to participate and interact with each other (Nandi et al., 2012). The threads were "welcome and introduction, general discussion, assignment and exam discussion, feedback, and group discussion forums" (Nandi et al., 2012, p. 10). In addition to the asynchronous discussions each week, the instructor and the tutors assigned to the courses offered a synchronous chat session that each student was invited to join. It was optional and had very low participation (Nandi et al., 2012). The data collected from this study was "60-70 posts from students and 20-25 posts from the instructor and tutors in each week's group discussion forums and in each of the assignment threads…30-40 for the students and 10-15 for the instructors" (Nandi et al., 2012, p. 11). In addition to this quantitative data, qualitative data was collected using a grounded theoretic approach (Nandi et al., 2012).

The findings of this study were broken into student participation and instructor contribution to discussions online. Overall, students were making the most of their discussions online by performing tasks, asking and answering questions, sharing and gaining knowledge, and interacting with peers (Nandi et al., 2012). Students seemed to respond positively to feedback from their posts. Nandi et al. (2012) found that the instructors played an active role in

discussions by initiating and providing feedback. Nandi et al. stated that the instructor should have an active presence to keep the students on track, provide a balance between answering direct questions, and facilitate the discussion. Furthermore, an administrative role, technical guidance, and clear expectations are some key characteristics that instructors should possess while conducting a fully online course.

Also, a sense of community and freedom to interact online will enhance student satisfaction in an online course. Based on this research, Nandi et al. (2012) identified the ideal roles of an online instructor: "managerial and instructional design, pedagogical, technical, facilitator, and social roles" (p. 26). In conclusion, this research showed that a combination of approaches by the instructor, which required the students and the instructor to take responsibility for the creation of knowledge and ideas in discussions, would be most successful in enhancing student satisfaction in an online course (Nandi et al., 2012). When an active instructor in an online course provides enough support for the students to feel successful, the students are often satisfied and want to complete the course.

Moreover, collaboration is a means of promoting learning by participating in peer groups to develop ideas (Sainsbury & Walker, 2008). According to Sainsbury and Walker (2008), "collaboration between students allows projects of significance to be undertaken, where such would be excessive of an individual, and provides opportunities for students to develop social, communication, and problem-solving skills" (p. 105). There can be numerous benefits for students who collaborate. Among these benefits are increased social interaction, increased task-focused interaction, the exchanging information, and the development of decision-making skills (Baines, Blatchford, & Chowne, 2007).

According to researchers Baines et al. (2007), collaborative group work has positive effects on pupil academic and social outcomes, but an authentic setting needs to be in place to produce effective group work. They suggested a small group size of two to four students can help reduce noise and encourage group interaction (Baines et al., 2007). Although this research reflected the interaction of students within the classroom in a traditional setting, the use of Internet-based collaboration can be more effective at developing student efficacy and self-regulation.

Additionally, Yeh (2010) described online learning communities as "collaborative means of achieving 'shared creation' and 'shared understanding,' in which mutual exchanges between community members are encouraged to support individual and collective learning" (p. 140). This type of learning may motivate students to be active participants in their education and encourage them to stay in the course or degree program. Furthermore, Yeh believed the performance of online collaboration was determined by functional roles and behaviors. Yeh's research provided evidence that effective group work is correlated to the functional roles of the members in knowledge-related activities; however, the knowledge was subjective to the study (Yeh, 2010). "The number of online behaviors and online roles may vary with different discussion content and different participants" (Yeh, 2010, p. 141). Therefore, the type of assessment will determine the nature of the collaboration and then either increase the retention rates or the attrition rates of students in online courses.

A specific online learning community can be a virtual web-based course involving interactive web-based tools. These will enable students to use technology to interact with their peers and teachers. Additionally, "collaborative environments support both the collaborative creation of content and also communication of sharing existing content" (Johnson et al., 2010, p.

13). It is a means to have collaborative work while advancing with the latest technology. Students can research their own information and have their own opinions, which can then be shared among peers. Collaborative web-based tools allow for students to share their old and newfound knowledge without feeling the pressure of sharing g a poorly thought out idea or being embarrassed about what they would like to contribute to the group. The web-based tool allows for all students to post their thoughts and ideas. Not everyone needs to respond, but some will. According to Adewale et al. (2012), "the modern web technology provides an enabling environment for students to explore knowledge as well as the communication convenience for them to interact" (p. 211). Collaborative work becomes a way for students to feel comfortable in responding at their own pace and to whom they so desire. This, in turn, will make the experience more enjoyable and support retention.

The growing use of social networks among students, such as "Facebook, MySpace, and YouTube afford students unprecedented opportunities to share their ideas, celebrate their creativity, and receive immediate feedback from fellow networkers" (Wheeler, Yeomans, & Wheeler, 2008, p. 988). Social networking allows learners to participate in the digital world and regularly brings them back to productive enjoyable experiences (Wheeler et al., 2008). Most individuals have already experienced and enjoy social networking, which allows for a smooth transition into an interactive multimedia environment for learning. Additionally, students tend to "seek active engagement with others because they see it as both useful and satisfying" (Wheeler et al., 2008, p. 987). Hence, bringing in a component of social networking by actively engaging students with their peers and instructors should help to engage students and decrease the dropout rate.

As online courses are becoming more widely used, the effectiveness of communication within such courses should be explored. Teacher-to-student and student-to-student communication will affect the satisfaction students experience with online collaboration. Belair (2012) conducted a study investigating communication in virtual high schools. This qualitative study explored teacher and student interactions using observations, interviews, and investigation of archival data (Belair, 2012).

The investigation included 18 teachers and 11 students from selected virtual schools in the United States (Belair, 2012). Belair (2012) found that the ways in which teachers communicate with their students vary. If the student is not doing well, the teacher will often make a phone call to investigate the reason or to provide suggestions on how to be successful. General communication is through K-mails (internal communications in a school) or recorded voicemail phone calls. Students may expect to be able to contact the teacher via e-mail, IM, or other digital formats for regular communications, but in this study eight out of the eleven students preferred the internal K-mail system or to be contacted in writing by the teacher. In addition, students and teachers preferred instant messaging when the timing was right for both parties. Students typically did not respond to phone calls; therefore, teachers did not find phone calls to be an effective means of communication. In conclusion, Belair stated, "the student-teacher communication is most effective with text messaging, instant messaging, and other social media in which teenagers often participate" (p. 116). It seems that students respond best to the communication methods which they are most familiar. According to this research, virtual students, or even online students, prefer to communicate online instead of face-to-face.

In a recent study by Hachey, Wladis, and Conway (2012), more than 30% of all higher education students were enrolled in at least one online course. However, the link between

technology and course-completion lacks empirical evidence. Hachey et al. studied the differences between online education and face-to-face interaction and retention. The study involved data from online fall or spring courses over four years, and the sample was limited; it included only courses taught by the instructor online and face-to face (Hachey et al., 2012). This study limited the sample to control the "instructor, semester, and exact course taken so variation in retention rates could be reduced and potentially confounding variables removed from the equation" (Hachey et al., 2012, p. 7). Ultimately, this study reviewed and analyzed the effect of prior online course success and current online success and retention, controlling for instructor and course type.

One of the major results of this study showed that some prior online failure reduced the chances of future online success (Hachey et al., 2012). It might have been that past online course experience was unsuccessful, therefore negatively impacting the students' self-efficacy using technology-based education. Additionally, this study by Hachey et al. (2012) suggested that online learners might need resources and guidance, counseling, and assessment coaching to be successful in an online course. The more the teacher interacts and the more the student feels he or she has support, the more success the student will have in completing an online course or degree.

Online collaborative tools are less about what is known and more about how it is known (Ruth & Houghton, 2009). These online tools have "changed the way we approach the task of producing and consuming information" (Higdon & Topaz, 2009, p. 105). The convergence of web-based tools and pedagogical developments has created possibilities for students to learn better (Higdon & Topaz, 2009). This supports the constructivist approach to education promoting collaborative interactive technology or the "integration of ideas into existing

frameworks and reframing beliefs as a result of new learning experiences" (Neumann & Hood, 2009, p. 382-383). With the push for higher education, the increase in online courses will promote the use of online-collaborative tools. Lehmann (2009) said, "given the overwhelming flow of information that students can access using web-based tools, it is essential that educators become part of those conversations" (p. 19). Collaborating online creates ways for students to bring all their talents together, research, build, present, and network in meaningful ways (Lehmann, 2009). These activities would be inquiry based and allow students to build knowledge with the help of a skillful teacher. The more the teacher interacts with the students in an online class, the higher the rate of retention. The methods in which the teacher interacts may influence the percentage of students that remain in the course.

In recent years, the use of social networking tools such as Facebook and Twitter have been mainly used for recreational purposes; however, many educators are looking to incorporate some of these tools in their pedagogical practices (Poellhuber & Anderson, 2011). These tools are of special interest in distance learning or online programs. Educators may be able to use these tools as another means of collaboration or engagement. The ability of an online networking tool to perform various functions such as collaborating, socializing, and sharing pictures, thoughts and ideas, is termed social software (Poellhuber & Anderson 2011). Educational social software is interesting to the distance learning community. Distance learning is typically self-directed and students remain "invisible" to each other to protect the privacy of those involved in the class. Social software can provide a platform for instructors and students to become more "visible" and more social with each other (Poellhuber & Anderson, 2011).

Poellhuber and Anderson (2011) conducted a quantitative study to "describe the use of and interest in social software and Web 2.0 applications in which distance education students had

to measure their interest in collaborating with peers" (p. 106). The survey was based on a 5-point Likert Scale and used two-way MANOVA and ANOVA tests. The survey looked at teamwork experience, cooperative and individual preferences, interest in collaborating with peers, tertiary students' readiness or online learning, social software expertise, and interest in using social software for learning proposes. The results of the ANOVA test showed that men were more interested in using social software in courses than women. This was actually true among social media as well (Poellhuber & Anderson, 2011). Interestingly, adults ages 49 and over were more interested in social software for learning than were younger age groups (Poellhuber & Anderson, 2011). This study showed that men were not only more interested in social software, but also had more positive teamwork experiences than their female counterparts, indicating that gender plays a role in distance education and social networking tools. The study concluded that there were a significant number of distance learners interested in collaborating, but the older students showed more interest in learning using social software. Future research should be conducted on the effects of developing models of social software learning tools that keep students engaged and collaborating online (Poellhuber & Anderson, 2011). The correct use of social networking tools in education can enhance learning experiences and possibly reach students that would most likely be uninterested or engaged in a distance learning program. These tools may be another method to increase retention rates.

Hazari, North, and Moreland (2009) purported "as technology continues to become commonly used for global communication and productivity, technology skills must be incorporated by educators in the delivery of curriculum content" (p. 187). Collaboration promotes shared knowledge and a sense of community between peers. In addition, any type of

collaboration, Internet-based or traditional, promotes casual and flexible discussions and facilitates student teacher and student-student relationships (Neumann & Hood, 2009).

Furthermore, the proper use of an online collaborative tool should be reinforced with proper pedagogical practices. Proper teaching begins with planning, developing cooperation among students, encouraging active learning, giving timely feedback, stressing time on task, and respecting multiple intelligences and diverse learning styles (Hazari et al., 2009). Educators must receive proper training on how to effectively communicate with students online, as well as how to properly design assessments and evaluate their online students' success. In addition, the desire to expand education with online programs comes with hurdles to overcome. The course quality and teacher training in technology and administration can cause problems (Schechter, 2012). These issues in online education can negatively affect retention rates in a particular institution. Engstrom and Jewett (2005) conducted a study that involved having teachers model the use of a certain collaborative online tool and show how it could prompt interaction, critical thinking, and multiple perspectives. This strategy of modeling will help students to understand the full potential of online learning. Also, the collaboration aspect of the tool allows for the exchanging of written ideas at one's free will. According to Chong and Yamamoto (2006), whose investigation explored the exchange of ideas between individuals that were not familiar with each other, anonymous writing gave students a private space to develop independent thinking and clear understanding of ideas. Educators can model a constructive use of Internet-based learning by painting a positive digital portrait of themselves that showcases the work they do in school and online and how they network locally and globally; this could encourage students to do the same (Lehmann, 2009).

On the contrary, while online learning provides the flexibility to access a worldwide variety of courses and self-paced instruction anytime and anywhere, students in online communities are sometimes restricted in their learning experience (Napier, Dekhane, & Smith, 2011). Specifically, students with low computer literacy skills may find it more challenging to navigate an online course. Students also often believe that online classes are easier than face-to-face classes, but sometimes discover that "online courses often require more time for the completion of assigned work and readings…[and that] online writing communications may be far more time consuming than face-to-face class attendance and assignments" (Barnard, Paton, & Rose, 2007, p. 2). Barnard et al. (2007) reported that communications were essential to meaningful and quality interactions in the online learning environment. Therefore, increased teacher communication can lead to increased student retention in an online course.

Summary

The push for more Americans to have a higher education degree has caused more colleges and universities to develop multiple ways to obtain these degrees. Online courses and online degree programs allow students to complete parts, if not all, of their degrees online. The convenience and accessibility of online education provides students with the flexibility of completing assignments and communicating with faculty and peers at their own pace. However, along with these benefits come some drawbacks to online education. The lack of face-to-face instruction and possible connections with faculty and fellow students may cause a decrease in the completion of the course or degree. In addition, students with low self-efficacy and self-regulation may feel overwhelmed and powerless and in turn, drop out.

Student retention rates have always been a focus of colleges and universities. The factors that affect student attrition have been explored; however, one aspect of online education in

particular should be studied in more detail. The aspect of teacher interaction in an online course or degree program should be analyzed to see if an increase in the interactions between teachers and students affects retention rates. The use of a course management system such as Blackboard provides the interface in which communication between faculty and student can occur. Blackboard offers the ability for collaboration by providing a way in which students may get the support they need to stay matriculated in the course or degree program.

An effective collaborative learning environment may provide a way in which students will be motivated to learn; therefore, educators can increase academic achievement. The proper activity, selection of groups, selection of assignment, and method of collaboration may provide students with the necessary tools they need to achieve success. Traditional collaboration methods may provide students with support from peers and effectively provide the opportunity for them to gather and share knowledge. Nevertheless, the increasing use of social networking, virtual learning, and online interactive technology may lend itself to innovative ways of collaboration and increased engagement. If students are completely engaged and working cooperatively, there may be a correlation in the type of collaboration and its effectiveness on the attitudes and the overall achievement of the students. Types of Internet-based collaborative tools include "instant messaging, text messaging, course management software, and collaborative writing tools such as Google Docs, to work together at all hours of the day" (Lehmann, 2009, p. 21). Using online collaborative tools or a course management system may be the way that students become engaged and motivated to stay in an online course or degree program.

With the increase in enrollment in online education, the type of communication and collaboration among students and teachers online may affect the retention rates of these students.

Increased faculty interaction with students in online courses is necessary to positively influence retention.

CHAPTER THREE: METHODS

Increasing online higher education has been the focus of many institutions; however, online degree program retention rates are lower than traditional degree programs (Liu et al., 2009). The online student needs to use a course management system to communicate and relay information, especially assignments, to educators and peers. Course management systems such as Blackboard were developed to support and enhance the learning process, including content creation, storage, transfer, delivery, and application (Tella, 2012). The social aspect of communication between students and teachers using these course management systems supports Tinto's theory of social interaction and can be analyzed to see if that social aspect will affect retention rates (Tinto, 1987). Tinto's model suggested that student attrition was affected by the social integration of students in higher education. However, as a student enters into college, he or she brings a plethora of qualities that can be attributed to family, community, educational experiences, background characteristics, and skills (Mannan, 2007). While assimilating into college life, students that have more integration into the college system will be better committed to the institution and therefore more likely to complete a course and/or degree program (Mannan, 2007).

In addition, Bandura's social learning theory discussed student self-efficacy and self-regulation as factors contributing to students' learning. Faculty interaction with students online can enhance motivation and increase self-efficacy and self-regulation, producing independent learners (Zimmerman & Schunk, 2003). A strong independent learner will be motivated enough to stay enrolled in an online course. Educators play a vital role in nurturing the independent learner and providing an environment that is conducive to developing self-efficacy and self-regulation. Moreover, Vygotsky's social theory supported positive teacher-student interactions,

which Vygotsky believed were necessary to be accepted in the cultural world (Tudge & Scrimsher, 2003). Teachers need to be willing and able to build and enhance students' strengths in developmentally appropriate ways (Tudge and Scrimsher, 2003). These strengths may be hard to identify or develop in an online course, but they are crucial to the development of the student, which can affect student persistence in a course. A nurturing, positive relationship between teacher and student, especially in an online course, may increase the number of students willing to complete the course.

The purpose of this study is to examine the correlation between the numbers of interactions faculty members have on Blackboard and the course completion rates of undergraduate online students. This chapter describes the research design, research context, participants, instrumentation, data collection and procedures, and data analysis.

Design

This quantitative research study utilized a correlational research design, specifically a bivariate correlational design. According to Gall, Gall, & Borg (2007), this type of research design is advantageous to educators since it provides the relationship between the variables being studied. Essentially, the degree of the relationship between two variables was analyzed. The variables used in bivariate studies can be measured at the same or different points in time (Gall et al., 2007). Since this was a non-experimental study that did not have an independent variable to be manipulated, the correlational design was suitable (Gall et al., 2007). Additionally, the design of this study sought to find a linear relationship between two variables.

Correlational research design is appropriate to study a large group of participants (Gall et al., 2007). Also, these types of studies are advantageous to researchers that are trying to provide a degree of relationship between variables (Gall et al., 2007). For example, correlational studies

can be used to determine if there is a positive, negative, or non-existent relationship between variables. The correlation coefficient is a mathematical expression used in research to take into account the degree of relationship of the variables within certain ranges (Gall et al., 2007). The linear relationship between the specific variables in this study, teacher interaction and student retention rates, can be positive, negative, or non-existent.

Research Questions

RQ1: Does the number of times a faculty member accesses Blackboard by logging on affect the course completion rates of online undergraduate students required to take an introductory English composition course?

RQ2: Does the number of times a faculty member responds to a discussion board post of online undergraduate students required to take an introductory English composition course affect the course completion rates of those students?

Null Hypotheses

$H_0$1: There is no significant correlation between the number of times a faculty member accesses Blackboard and the course completion rates of online undergraduate students required to take introductory English composition.

$H_0$2: There is no significant correlation between the number of times a faculty member responds to discussion board posts of online undergraduate students required to take introductory English composition and the course completion rates of those students.

Participants and Setting

The population in this study consisted of 1,613 online undergraduate students required to take an introductory English composition course and 16 professors required to teach an online undergraduate introductory English composition course from a large non-profit southeastern

university. This university offers online degrees and courses in undergraduate, graduate, and postgraduate levels to over 100,000 students. The university's online degree programs have approximately 95,000 students, approximately 75,000 of whom are online undergraduate students. There are approximately 2,500 part-time and full-time faculty members at this university. This study utilized course completion rates of online undergraduate students required to take an introductory English composition course and the faculty interactions with those online students. Of the 1,613 online undergraduate students required to take introductory English composition, only 1,283 completed the course and registered for another semester. There were 71 classes of required introductory English composition with 16 instructors who taught at least one or more sections. This study analyzed the 1,283 students that completed the course and the 16 faculty members that taught those students. The correlation between the number of faculty interactions on Blackboard and the course completion rates of the students interacting with the faculty were the two variables analyzed.

Probability sampling was used to choose the participants (Gall et al., 2007). Specifically, this study utilized random sampling, which is used when there is a group of individuals in the defined population that equally and independently have a chance of being chosen to be a member in a study (Gall et al., 2007). The advantage of random sampling is that the research from this type of study can generate statistical data within margins of error that can be determined by specific formulas (Gall et al., 2007). Moreover, statistical inference is a set of mathematical procedures that is used in probability sampling, specifically, random sampling, which draws conclusions about the population from the sample (Gall et al., 2007). Inferential statistics can test the null hypothesis in a random sample and satisfy the logic and understanding behind it (Gall et al., 2007).

A correlational research design was used since there was a substantially large group of participants (Gall et al., 2007). The selected online university provided a large sample of 71 required undergraduate introductory English composition courses taught by 16 online undergraduate faculty members and their 1,613 online undergraduate students required to take the class. Probability sampling allowed for the selected sample size to be representative of the entire online population (Gall et al., 2007).

The demographics of the online undergraduate university and the required introductory English composition students are represented in the tables below.

Table 1

Gender of Sample Size Compared to the Overall Online Undergraduate University

Student Type	Female %	Male %
Required introductory English composition	56.05	43.75
University	60.29	39.71

Table 2

Age of Sample Size Compared to the Overall Online Undergraduate University

Student Type	Average Age
Required introductory English composition	31.0
University	35.5

Table 3

Ethnicity of Sample Size Compared to the Overall Online Undergraduate University

Ethnicity	Required introductory English composition %	University %
African American/Black	14.53	20.96
American Indian/Alaska Native	1.16	0.85
Asian	3.77	2.88
Hispanic or Latino	2.91	3.99
Mexican American	0.29	0.19
Native Hawaiian	0.00	0.04
Pacific Islander	0.29	0.24
Puerto Rican	0.29	0.37
White/Caucasian	76.74	70.47

The setting of this study took place at a non-profit southeastern university that has offered distance-learning programs since 1985 and is fully accredited by the Southern Association of Colleges and Schools. The university offers 243 online programs ranging from undergraduate to post-graduate degrees. There are about 2,500 faculty members. The Online Education Database ranks this university one of the top 10 online universities. The comparison groups included online undergraduate students required to take introductory English composition that have completed or did not complete a course, and the faculty that taught these students, including their interaction on the course management system, Blackboard. The faculty data included how many

times the faculty members accessed, simply by logging on, Blackboard for each online undergraduate required introductory English composition course and how many times the faculty members responded to discussion board posts via Blackboard. The data was compiled from a full fall semester of required online undergraduate introductory English composition courses.

<div align="center">**Instrumentation**</div>

The data collected for this study was anonymous, containing required online undergraduate introductory English composition student course completion rates and faculty Blackboard interaction during the Fall 2014 semester. Participants were students identified as completers or non-completers of the required online undergraduate introductory English composition courses and those faculty members that taught them. Course completion and retention rates are terms that are used interchangeably in this study since the participating university defines retention as a student that takes a course in one semester and then returns the following semester and takes another course. For a student to fail to be retained, that student would have to have taken a course one semester and then not return the following semester. This information was given from the university's Administration Information Management (AIM) office (for retention rates) and IT Communications Management department (for Blackboard communication data). Computer software programs were used to gather and measure the data. The participating university uses a database program called Oracle version 11g to store the student information each year. The researcher had to send a special request for this data by using the software Argos 4.2.1. This special request is call a structured query language (SQL). SQL is a program that develops a report with the participant information stated in the participant section and provides accurate information that is necessary for this study. The AIM office compiled the course completion data into a Microsoft Excel document and emailed it to the researcher. The

researcher downloaded the file and saved it in a secure password protected computer that only the researcher had access to. The researcher then uploaded the information into SPSS, which was also downloaded onto the researcher's personal password-protected computer. SPSS is the most widely used statistical analysis software program for educational research and is used to manage, analyze, and display data (Gall et al., 2007). The data collected was divided into four categories: faculty that accessed Blackboard, faculty responses on Blackboard, students enrolled, and students retained. Each of these categories were set up to correlate the number of times the faculty member checked Blackboard during the required online undergraduate introductory English composition course to the number of students that were retained, and the number of times the faculty member responded to a student's discussion board post on Blackboard to the number of students that were retained.

In this correlational study, the following software programs were used to assess instrument validity: Oracle, Argos, Excel, and SPSS. Many educational institutions utilize Oracle software as their main database management system. Using Oracle software, the researcher maintained integrity of the data. The Argos computer software program is utilized by institutions to process requests for information about institutional research. Using Argos, researchers can request access to information from the AIM office through a web-based query. The query is processed through the SQL. Completion and processing of this request reduces threats to internal validity. The population samples were homogenous to reduce the number of variables.

Procedures

The researcher first obtained permission from the University's Internal Review Board (IRB) for assistance with valid, accurate, and measureable data procedures. It was crucial that

the researcher received data that was anonymous to honor faculty and student confidentiality.

After approval was granted, the researcher requested the data through the structured query

language (SQL) program processed through Argos software to request the data from the

participating university's Oracle database program. The data sent to the researcher consisted of

the students enrolled in the required online undergraduate introductory English composition

course, the retention rates, and the number of times the faculty interacted with those students by

accessing Blackboard and responding to discussion board posts. Student retention was defined

in this study as the participating student completing the online undergraduate required

introductory English composition course in the Fall 2014 semester and then enrolling in another

course the subsequent semester. Blackboard access was defined as the number of times a faculty

member accessed, by logging on, Blackboard during the semester of the online undergraduate

course. Blackboard responses were defined as the number of times a faculty member responded

to the students via a discussion board post. The identity of the participants was not disclosed and

the data remained anonymous. The researcher only received numbers to upload and analyze to

stay within the boundaries of the IRB approval.

The student data was categorized in columns: students enrolled and students retained. In

addition, faculty interaction was tallied and grouped as "number of times the faculty accessed

blackboard" and "number of times faculty responded in a discussion board post." The columns

in Excel were titled the following: faculty accessed Blackboard, faculty Blackboard responses,

students enrolled, and students retained. Once presented with the data, the researcher took the

Excel file and uploaded the data for faculty accessed Blackboard, faculty Blackboard responses,

and students retained into SPSS. The researcher ran statistical analyses of the data through SPSS

and obtained quantifiable data, and then interpreted the data, confirmed and denied the null hypotheses, and presented the research findings.

Data Analysis

Since this was a correlational study analyzing two variables (the course completion rates of students and the number of times a faculty member interacted on Blackboard with those students) the researcher conducted a bivariate correlational statistical analysis. According to Gall et al., (2007), "a product-moment correlation coefficient (r) is computed when both variables that we wish to correlate are expressed as continuous scores" (p. 347). The student retention rates were analyzed to see if there was a correlation between the number of times faculty members accessed Blackboard and the number of times faculty members responded to students on Blackboard. The correlation coefficient used is called a Pearson r. The product-moment "r" is most widely used in bivariate correlational techniques since most yield continuous scores and "r" has a small standard error (Gall et al., 2007). The correlation coefficient measures the strength and direction of the linear relationship between the variables. Each research question was analyzed separately to measure the degree of the relationship between the type of faculty interaction and student course completion rates.

Summary

The purpose of this study was to see if there is a correlation between faculty interaction in a particular online undergraduate course and course completion rates of the students enrolled in that course. The data gathered for this study was organized by the number of times the faculty accessed Blackboard, the number of faculty responses to discussion board posts on Blackboard, and the number of students retained in online undergraduate required introductory English composition courses in the Fall of 2014. The participants in this study consisted of 16 faculty

members that taught a total of 71 sections of required introductory English composition and the

1,613 students attending a large non-profit southeastern university. The researcher utilized a

bivariate correlational design to analyze the variables in this quantitative research study.

Statistical analyses were conducted using SPSS and the results are presented and discussed in the

following two chapters.

CHAPTER FOUR: FINDINGS

The purpose of this study was to see if there is a correlation between faculty interaction and student retention rates of online undergraduate students required to take introductory English composition. A bivariate correlational analysis was conducted to see if there was a significant relationship between (1.) the number of times a faculty member accessed Blackboard and student retention rates and (2.) the number of faculty responses on Blackboard posts and student retention rates. Each research question is discussed separately.

Research Questions

RQ1: Does the number of times a faculty member accesses Blackboard by logging on affect the course completion rates of online undergraduate students required to take an introductory English composition course?

RQ2: Does the number of times a faculty member responds to a discussion board post of online undergraduate students required to take an introductory English composition course affect the course completion rates of those students?

Null Hypotheses

$H_0 1$: There is no significant correlation between the number of times a faculty member accesses Blackboard and the course completion rates of online undergraduate students required to take introductory English composition.

$H_0 2$: There is no significant correlation between the number of times a faculty member responds to discussion board posts of online undergraduate students required to take introductory English composition and the course completion rates of those students.

Descriptive Statistics

The null hypothesis for the first research question was tested using a bivariate correlation test—a Pearson correlation analysis that measured the degree of the linear relationship between two variables. Scatterplots were created to give a visual representation of the linear relationship. The shape of the dots can help determine whether or not the test is significant. In addition, the aspect of the two-tailed test in bivariate correlation analysis allows for a positive correlation or a negative correlation.

Results

Null Hypothesis One

A Pearson correlation coefficient was conducted to evaluate the null hypothesis, which stated there is no relationship between faculty accessing Blackboard and student retention rates. Preliminary analyses showed that there were no violations in the assumptions of normality, linearity, or homoscedasticity (see Histogram 1). In Scatterplot 1, a positive relationship exists due to the relative increase in Y and relative increase in X. Additionally, a line can be drawn through one end of the scatterplot to the other, signifying a linear relationship. The Pearson-product moment correlation coefficient was calculated to assess the relationship between the number of times faculty accessed Blackboard (*M = 370.81, SD = 188.19*) and student retention rates (*M = 80.19, SD =40.24*). According to Table 1, there were 16 observations (*N*) for each of the two variables. The test showed a significant correlation due to the fact that the p-value was $\leq$ .05. The p value for the first research question was .000, which means there was a significant linear relationship between faculty accessing Blackboard and student retention rates, r(14) = 0.846, *p* = .000. Since the "r" value was greater than 0.5, it showed a strong, positive relationship between the two variables (Cohen, 1988). In conclusion, there was significant

evidence to reject the null hypothesis.   The number of times a faculty member accesses

Blackboard was positively correlated to the number of students retained.

Table 4

Descriptive Statistics for Faculty that Accessed Blackboard and Students

Retained

	Mean	Std. Deviation	N
Accessed	370.8125	188.18509	16
Retained	80.1875	40.23965	16

Table 5

Correlations for Faculty that Accessed Blackboard and Students Retained

		Accessed	Retained
Accessed	Pearson Correlation	1	.846**
	Sig. (2-tailed)		.000
	N	16	16
Retained	Pearson Correlation	.846**	1
	Sig. (2-tailed)	.000	
	N	16	16

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

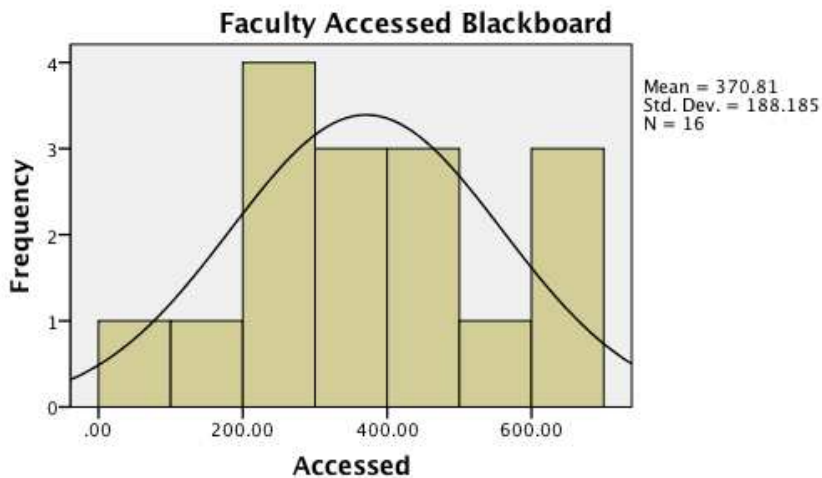Figure 1. Population Distribution of Faculty that Accessed Blackboard

Figure 1. The above histogram shows population distributions are normal.

Figure 2. Scatterplot of Faculty that Accessed Blackboard and Students Retained
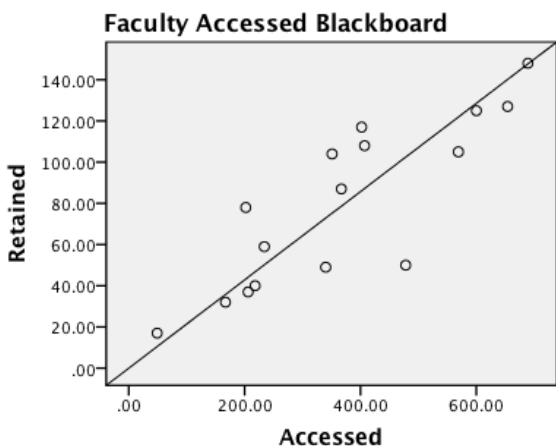
Figure 2. The above scatterplot shows a positive linear relationship between faculty that

accessed Blackboard and student retention rates.

Null Hypothesis Two

A Pearson correlation coefficient was conducted to evaluate the second null hypothesis,

which stated that there is no relationship between faculty responding to students' posts on

Blackboard and student retention rates. Preliminary analyses showed that there was not a normal

distribution in the number of faculty responses on Blackboard (see Histogram 2). In addition, looking at the scatterplot, the data points did not follow a perfect linear pattern, with some data points off to the left of the line of best fit and one definite outlier off to the right. There was a non-predictable relationship between X and Y, indicating a weak linear relationship. A Pearson-product moment correlation coefficient was calculated to assess the relationship between the number of times the faculty responded to students' discussion board posts on Blackboard (M = 58.38, SD =64.95) and student retention rates (M = 80.19, SD = 40.24). According to Table 3, there were 16 observations (N) for each of the two variables. The Pearson r-value was 0.282, which illustrates a weak correlation between the two variables. The data analysis showed that there was no significant relationship between variables (p value >0.001), with the p-value for the second research question being 0.289. Therefore, there was no significant relationship between faculty responding to students' discussion board posts on Blackboard and student retention rates, r(14) = 0.282, p = 0.289. Moreover, since the "r" value was between .10-.29, it showed a weak strength of the relationship. In conclusion, the researcher failed to reject the null hypothesis. Therefore, the increase in the number of times a faculty member responds to discussion posts on Blackboard does not necessarily correlate to the number of students that are retained.

Table 6

Descriptive Statistics of Faculty Responses on Blackboard and Students Retained

	Mean	Std. Deviation	N
Responses	58.3750	64.95216	16
Retained	80.1875	40.23965	16

Table 7

Correlations of Faculty Responses on Blackboard and Students Retained

		Responses	Retained
Responses	Pearson Correlation	1	.282
	Sig. (2-tailed)		.289
	N	16	16
Retained	Pearson Correlation	.282	1
	Sig. (2-tailed)	.289	
	N	16	16

Figure 3. Population distribution of Faculty Responses on Blackboard

Faculty Responses on Blackboard

Mean = 58.38
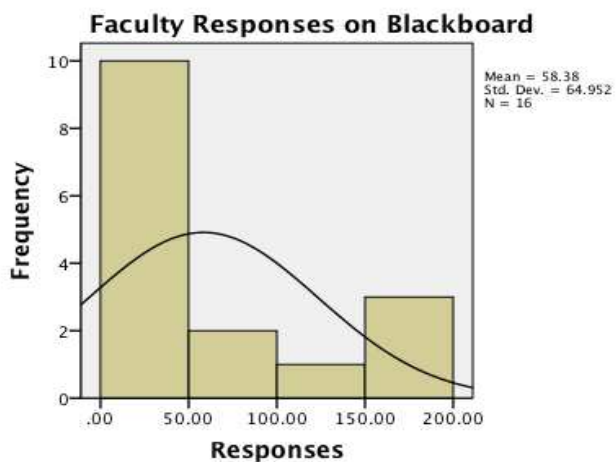Std. Dev. = 64.952
N = 16

Figure 3. The above histogram does not show a normal distribution.

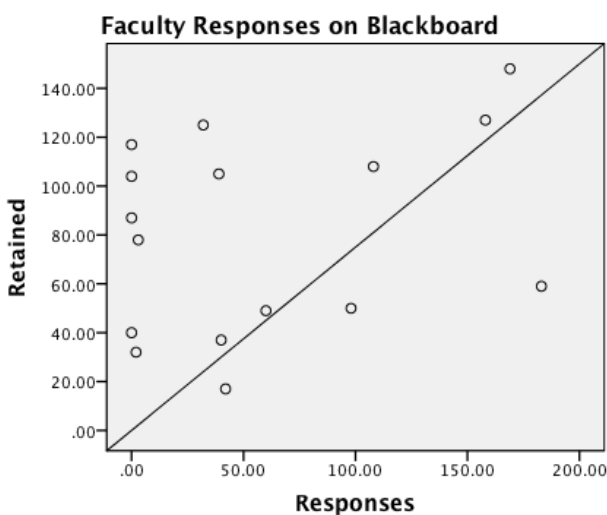Figure 4. Scatterplot of Faculty responses on Blackboard and Students Retained

Figure 4. The above scatterplot shows a weak linear relationship between the faculty responses on Blackboard and the student retention rates.

Summary

Required online undergraduate introductory English composition courses in the Fall 2014 semester with 1,613 students enrolled and 16 faculty members provided sufficient data for the researcher to obtain statistically valid results. This chapter analyzed two research questions using a bivariate correlation analysis. The Pearson product-moment correlation coefficient was obtained for both research questions to see if there was a significant relationship between faculty interaction and student retention rates. The first research question, the correlation between the number of times the faculty accessed Blackboard and student retention rates, was found to be significant. However, research question two, the correlation between the number of responses faculty members provided to students' discussion board posts on Blackboard and student retention rates, was not significant.

CHAPTER FIVE: DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

The following chapter discusses the findings of this study based on the data analysis presented in Chapter Four. The research questions and null hypotheses are examined in detail. The theoretical framework and literature are cited to draw conclusions for this correlational study. Implications, limitations, and recommendations for future research are also presented in this chapter.

Discussion

This study was conducted to see if there was a correlation between faculty interaction on Blackboard and student retention rates. The participants were online undergraduate students required to take an introductory English composition course and the faculty that taught those students in the Fall 2014 semester. The student retention rates, completing the course and registering for another one next term, were correlated to the number of times the faculty that taught those students accessed Blackboard and responded to discussion board posts. This chapter reviews the research questions and null hypotheses and concludes with the researcher's findings. Implications and limitations, along with recommendations for future research, are also addressed in this chapter.

The current government administration has pushed for an increase in the amount of college graduates in the United States ("President Obama," 2009). Due to this demand, the amount of online degree programs has increased to allow for a lower-cost education with the convenience of self-directed online learning (Hachey, Wladis, & Conway, 2012). The nature of the online course lends itself to self-motivated, self-directed, and highly independent students. However, the role of the teacher changes in online education. In a study by Horspool and Lange (2012), the results showed that student success in online and face-to-face instruction increased

with high-quality teacher interaction. Lee and Choi (2011) found that instructors who increased their interaction with students online had more students completing the course. This study found the same result; increased teacher interaction led to increased course completion rates.

Specifically, the use of online course management systems has contributed to the success of many online or distance learning programs. According to Tella (2012), the use of Blackboard as a course management system can promote communication and organization between teacher and student. Meyer and McNeal (2011) found that accessing Blackboard to post announcements is one of the ways to open communication between students and teachers. The findings in Chapter Four for research question one showed that there was a significant correlation between faculty accessing Blackboard and student course completion rates. Based on the results from the SPSS bivariate correlational analysis, the researcher believes that null hypothesis one should be rejected. This shows that the frequent access of Blackboard by the faculty can, in fact, correlate to retention rates of students.

Meaningful interactions between online teachers and students are determining factors in the success of the students and course completion rates. Jain, Jain and Jain (2011) based their study on the Institute for Higher Education Policy and found that faculty interaction needs to be timely and constructive. If the interaction is timely and constructive, the students will most likely complete the course. In addition, the research study conducted by Nandi, Hamilton, and Harland (2012) reported that the way the instructor interacts with his or her students determines the satisfaction of the students in an online course. Since the avenue of communication in online classes is often through discussion forums, the instructor needs to have meaningful discussion and responses via Blackboard. Interaction on discussion board forums such as Blackboard can allow shy students to express themselves free of the anxiety that might come with interacting in a

face-to-face setting (Meyer & McNeal, 2011). That aspect of online courses may appeal to students and increase the retention rates of those students. However, the type of response or the content of the response from the instructor may have some impact on the student.

A research study presented by Diaz & Blazquez (2009) found that online interaction was limited by the way the instructor handled communication and the degree at which the student responded. The findings for the second research question aligned with this research in the same respect. Although the research stated that the responses on Blackboard should be meaningful, this study did not look at the exact responses or the type of responses, but only at whether or not the faculty member responded to a student's discussion board post. For the second research question, there was no significant correlation between the number of times faculty members responded on Blackboard and the students' course completion rates. These results would suggest that the researcher failed to reject the null hypothesis. Therefore, the number of times the faculty responded to a students' discussion board post on Blackboard did not correlate to the students completing the course.

After conducting this research and reviewing all the results, the findings supported the social theories of Tinto, Bandura, and Vygotsky. Each of these theorists believed that the social part of education needs to be strong in order to influence learning in a positive way. Tinto's theory on social integration, Bandura's social learning theory, and Vygotsky's social theory on education are all involved to some degree with teacher-student interaction. Tinto (1987) emphasized that the social integration of students into the campus environment is crucial in retaining them. However, the institution on the whole needs to prepare its faculty and ensure that the pedagogical practices of the teachers reflect best practices regarding social integration and the motivation of students. These factors can contribute to the overall success of the student and

decrease drop out rates. Educators that have the proper tools and are engaged in the online learning community can nurture online students and help increase retention.

Bandura's theory of social learning stressed the importance of students developing self-efficacy and self-regulatory skills (Zimmerman & Schunk, 2003). These skills help distance learners complete a course and maintain enrollment in online degree programs. Educators need to be aware of how to motivate and enable students as they develop these skills. Online learners may need to develop and refine these skills, and teachers can provide assistance through modeling self-efficacy and motivating learners online. The educators that can demonstrate self-efficacy and motivation will check their classes regularly and interact with students on a collaborative interface, such as Blackboard, to model how involvement can lead to success. A teacher that cares motivates a student to care.

Lastly, Vygotsky's social cultural theory is reflected in this study through Vygotsky's beliefs that environmental factors influence the development of the mental function of students. Vygotsky believed that although individuals bring experiences from their pasts and their culture, the present learning environment can shape a student into a higher level thinker and lead to success in learning (Tudge & Scrimsher, 2003). In online education, this theory is supported upon analyzing how students interact with teachers and other students in online courses. The online environment can be engaging and collaborative with regular teacher interaction and collaboration among peers and teachers. However, negative teacher interaction can be detrimental. If the teacher creates an unreceptive learning environment, a negative outcome may occur, such as a possible decrease in retention rates. This study supports the positive frequent interactions amongst faculty and how they can lead to an increase in retention rates.

Online education has grown more popular in higher education (Hackey et al., 2012). Due to this fact, faculty members need to adjust their way of communication and become accustomed to using an online communication tool such as Blackboard. Yet despite this increase in online education, higher education institutions still struggle to retain students (Seidman, 2012). This study was designed to analyze one aspect of student retention by looking to see if there was a correlation between faculty interaction and student retention rates. Two aspects of faculty interaction were analyzed: the number of times faculty members accessed Blackboard and the number of times the faculty members responded to students through discussion board posts.

The participants were chosen from a standard pre-requisite online undergraduate course, introductory English composition. This course is a requirement to graduate with an online undergraduate degree and ensured a decent sized population of study. Of the 1,613 students that registered for introductory English composition, 1,283 students, or 79.5% of the population, completed the course and were retained. The results from this study were significant for the first research question: Does the number of times a faculty member accesses by logging on to Blackboard affect the course completion rates of online undergraduate students required to take introductory English composition? The 16 faculty members involved in the study accessed Blackboard 5,955 times in the Fall 2014 semester and 79.5% of the students were retained. The fact that the faculty members accessed Blackboard is statistically correlated to the fact that the students were retained. The flexibility, convenience, and accessibility of online education has increased the enrollment of online classes and degree programs; however, the faculty that teach online classes need to be prepared to handle the task of online instruction (Crawford-Ferre & West, 2012). One aspect of online instruction is frequently checking Blackboard or accessing the online class. Blackboard is a course management tool that fosters open communication

between faculty and students online (Meyer & McNeal, 2011). When a faculty member accesses Blackboard, he or she may choose to post a link, answer a discussion board post, or just check-in on students enrolled in the course. This constant checking-in is one form of communication between faculty and students. Open communication can help engage students and provide confidence in the students' abilities to complete the course. Ter-Stepanian (2012) stated that discussion board interaction stimulates active learning, motivates students, and can be used to engage students in learning with positive interaction between instructors and peers.

A bivariate correlation analysis through SPSS was chosen to analyze the data due to the fact that the researcher was attempting to analyze the correlation between two variables—faculty interaction and student retention rates. Research question one specifically targeted whether the number of times faculty members accessed Blackboard correlated with the student course completion rate. The faculty accessing Blackboard data was first checked for normality using a histogram. The histogram showed a standard bell curve shape with a few outliers, indicating a normal population distribution. In addition, the scatterplot for research question one showed a significantly positive linear relationship, indicating a significant correlation. The p-value <0.001 was, in fact, significant. The line of best fit on the scatterplot indicated an increase in Y with an increase in X, signifying a positive relationship. An r-value of 0.846 indicates a strong relationship between variables (Cohen, 1988). The coefficient of determination ($r^2 = 0.716$) indicated a 71.6% shared variance. The number of times faculty members accessed Blackboard explained 71.6% of the variance in student course completion rates. Since a bivariate correlation analysis is not a cause and effect relationship, the researcher could only conclude the correlation between faculty interaction and student retention rates was statistically significant.

Although the number of times the faculty members accessed Blackboard was statistically significant, the number of times faculty members responded to students' Blackboard posts was not statistically significant. SPSS bivariate correlation analysis was performed for research question two: Does the number of times a faculty member responds to a discussion board post of an online undergraduate required to take an introductory English composition course affect the course completion rate of that student? The responses on Blackboard were not a normal distribution according to the Histogram 2. In addition, Scatterplot 2 showed a weak linear relationship with the line of best fit indicating an increase in Y with an increase in X for only a few data points, many falling outside the linear trend line. This indicated that the results were not significant. The r-value was 0.282, which indicated a weak relationship between variables (Cohen, 1988). The coefficient of determination ($r^2 = 0.080$) was 8.0% shared variance. This means that there is an 8.0% shared variance in student retention rates and the number of times faculty members responded to students' posts on Blackboard. It is possible that outliers affected the significance of this research question. However, this weak correlation between faculty responses to students on Blackboard and student course completion rates failed to reject the null hypothesis.

The sample size of this population is only a portion of the online undergraduate population from this southeastern university. In the Fall 2014 semester, the demographics for the entire online undergraduate program of 74,832 students was 70.47% Caucasian, 20.96% African America, 3.99% Hispanic, 2.88% Asian, and 1.69% other, with only 26.7% of the population disclosing their ethnicity. Specifically, the online undergraduate students required to take introductory English composition comprised only 22.4% of the university's online population; their ethnicity was as follows: 76.74% Caucasian, 14.53% African American, 2.91% Hispanic,

3.77% Asian, and 2.06% other. According to this data, the majority of students taking online undergraduate courses, specifically required introductory English composition, are Caucasian. The ethnic background of the student did not play a role in this particular study, but it could be used in future studies to see if there is a correlation between number of faculty interactions with a particular group of students.

The introductory English composition course is a requirement to earn an undergraduate degree online. The average age for an undergraduate online student is 35.5, with 60.29% of the students being female and 39.71% of the students being male. In this particular study, the average age of the students was 31.0, 56.05% of whom were female and 43.75% of whom were male. The convenience and the accessibility of online education and undergraduate programs can be one of the reasons the average age of the student is older than the average age of a high school graduate heading out to college. The fact that these students did not just finish high school and are continuing education in their 30s can also explain why there might be more of an interest in retaining the course or not dropping out of a degree program. According to this data, more females than males are online undergraduate students and enrolled in required introductory English composition classes.

Conclusions

Online degree programs have exploded across the United States. However, online courses have higher dropout rates than traditional courses (Lee & Choi, 2011). Universities and colleges need to use online course management systems such as Blackboard to manage teacher-student interactions, student-student interactions, assignment submission, and grades. The correct use of Blackboard may have a positive or negative effect on students depending on the teacher interaction. For example, teachers can promote communication, organization, and time-

management skills through correct interaction on Blackboard (Tella, 2012). This type of interaction on Blackboard can affect student retention rates. The findings in this research study showed that faculty members who log onto Blackboard frequently can positively influence student retention rates. The literature has shown that engaging students and giving appropriate and timely feedback such as responses on Blackboard in online courses helps to increase the course completion rate (Lee & Choi, 2011). In this particular study and sample size, such findings were not supported. This study showed that the number of times a faculty member specifically interacted with a response on Blackboard had no significant correlation to student retention rates at the 0.05 level.

Implications

The implications of this study are to provide online institutions with data that might help them to understand one aspect of online education that may influence the retention rates of online students. Retention rates of students in higher education have always been a topic of concern, specifically, retention rates of online students in higher education (Aversa & MacCall, 2013). This study was conducted to determine the correlation between teacher interaction with student retention rates, defined in this study as a student that completed a course and registered for another. The literature has shown that providing students with additional materials and responding with timely feedback can increase retention rates of students (Aversa & MacCall, 2013). The fact that instructors access Blackboard numerous times throughout the semester may lead to increased interaction on Blackboard. The instructor may choose to post additional links or provide additional materials on this interface. Simply accessing Blackboard may promote interaction, engagement, or discussion with students. Accessing Blackboard may demonstrate care and concern or involvement of the instructor, which may lead to feelings of connection and

engagement and students wanting to complete the course. This study did show a significant correlation between teacher interaction and student course completion rates.

The frequency faculty members accessed Blackboard was significantly correlated to the 79.5% of students that completed the course; however, the study did not show a significant correlation between faculty member responses on Blackboard and student retention rates. A possible explanation for this finding may be that the faculty members may have responded through a different medium such as, email, text, or phone. Also, the nature of the response, the content of the response, and the tone of the response may have influenced the students' decisions to complete the course.

Limitations

Educational research studies have limitations that may affect the credibility and reliability of the research study. Limitations need to be considered in educational research because a study defines a specific sample and population and the results are generalized to that particular population, but not beyond (Gall et al., 2007). Although this study found a correlation between faculty interaction on Blackboard and student retention rates, it was limited to the population of online undergraduate students required to take an introductory English composition course and their professors at one large southeastern university.

The design for both research questions incorporated bivariate correlational statistics since two variables were involved in each question (Gall et al., 2007). The Pearson product-moment correlation coefficient was calculated to correlate faculty interaction and student retention rates. This was the best choice for this study because it was used to compute the magnitude of the relationship between the variables (Gall et al., 2007). One limitation in this computation is the

fact that the relationship may not be linear. If a relationship proves to be nonlinear, then the correlation ratio should be computed (Gall et al., 2007).

The random sampling of the population studied is considered another limitation. Studies normally have a narrow accessible population, although a randomly drawn sample may be a limitation due to the fact that it is not characteristic of a large general population (Gall et al., 2007). The random sample the researcher was able to obtain set a specific criterion in this study. This sample of 1,613 students and 16 faculty members was chosen from online undergraduate students required to take an introductory English composition course in the Fall 2014 semester. The 16 faculty members taught one or more sections of the 71 classes of required introductory English composition courses offered that semester. This provided the researcher with a large sample since the course was a requirement for all undergraduate students. This is considered a limitation for two reasons. First, the fact that the class was a requirement might skew the research since students have to complete this course to earn an undergraduate degree and therefore, regardless of the faculty interaction online, the students may still complete the course as a means to move forward in their studies. Second, this population was only from one course and one semester in a large, undergraduate, primarily online university. This study's findings cannot be compared to other subjects online.

Another limitation is internal and external validity. Internal validity can be defined as "the extent to which extraneous variables (ones that can affect the experimental outcome) have been controlled by the researcher, so that any observed effect can be attributed solely to the treatment variable" (Gall et al., 2007, p. 383). The population was chosen since online undergraduate introductory English composition was a required course and had a large enrollment to provide the researcher with a large sample. However, the ages, genders,

demographics, and ethnicities of the students were not considered when selecting this population. This might challenge the internal validity of the experiment. In addition, this was one online course in one institution. Perhaps utilizing other universities that offer degree programs online and required introductory English composition courses would provide a more valid sample size and stronger study. Additionally, the sample was from only one semester, a short timespan.

External validity can be described as factors that can affect the experiment beyond those individuals that were studied (Gall et al., 2007). For example, the researcher analyzed data from faculty members that taught online undergraduate required introductory English composition courses in the Fall 2014 semester. Many factors could limit the external validity of this study. For instance, the experience, qualifications, and personal lives of these faculty members were not taken into consideration. Since it was an online course, the faculty members needed to self regulate and follow a time-sensitive syllabus, but the quality of their interaction was not factored into this study. The number of times a faculty member accessed Blackboard and responded to a discussion board post was only tallied and correlated to the number of students retained. Each individual instructor's access to Blackboard was not analyzed, nor were his or her responses. In addition, the number of sections a faculty member teaches might affect the amount of interaction with students online. The fact that the instructors in this study were English professors, might be a limitation in itself since English courses require essays and constructive feedback in writing samples. English professors that teach multiple sections may have limited time to interact due to the intense work load. An instructor in any disciple with multiple sections may be limited in the amount of interaction with students in online courses.

Another limitation to the external validity of the study may be the nature of the faculty interaction. For instance, what did the faculty members do once they accessed Blackboard? Did

they post anything? Did they respond to anything? Did they send an email, comment on students' work, or post grades? The content and tone of the responses to the discussion board posts could affect the retention rates of the students. Those factors that were not selected or controlled can be a limitation to any study; however, they can lead to further research as well.

Recommendations for Future Research

Future research is recommended to help universities retain online students. This study was only a brief glimpse into a few factors pertaining to retaining online undergraduate students. The researcher looked at a small portion of the online population for only one semester. Correlational research design studies are useful at analyzing relationships between variables, but are considered non-experimental (Gall et al., 2007). However, other research design studies can be conducted. For example, a qualitative design study is one that may be more useful in pinpointing exactly what the faculty members were doing when they accessed Blackboard and responded to students' posts online that may contribute to the retaining of students. Qualitative research involves interpretive research or case studies, such as human actions with interviews and surveys that reflect research (Gall et al., 2007). This study looked at the number of times the faculty members accessed Blackboard and/or responded, not the nature of the access or the quality of responses.

In addition, the demographics of the teacher and students can be correlated to the retention rates of students and the faculty interaction. A future research study can determine if there is a correlation between the ethnicity, age, or gender of the student and the number of faculty interactions. A larger sample size or time frame may make for a stronger study as well.

A quantitative experimental research design provides a more rigorous test of casual hypotheses (Gall et al., 2007). Although this non-experimental quantitative correlational study

looked at the causal relationship between two variables, the experimental quantitative design study would establish whether the observed relationship was one of cause and effect (Gall et al., 2007). One could actually establish test groups and measure the number of times an individual teacher interacts with students in a particular way and if this affects student course completion rates. There could be a pretest and posttest group model. The students would be administered a pretest prior to the beginning of the class, the researcher could monitor the teacher interaction online, and then the students would take a posttest after completion of the course. An experimental quantitative research study may be difficult to design for this topic, but a mixed-methods study might be more suitable. There are a great deal of options for future research in the realm of online education and retention.

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