

THE RELATIONSHIP OF PEER-MENTORING AND ONLINE UNDERGRADUATE AND
GRADUATE COLLEGE STUDENT RETENTION

by

Stephen William Pray

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

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ABSTRACT

This study investigated the strength of the relationship between peer-mentoring and retention rates of online undergraduate and graduate college students. Extant literature has reported consistently lower retention rates within the online college student community when compared to the retention rates of on-campus students. One possible means for countering low retention rates is providing a mentoring program to online students, which has had a positive effect on the retention rates of on-campus students, as reported by various studies. This quantitative correlational study examined the association between peer-mentoring and retention rates of online undergraduate and graduate students. The study utilized a sample size of 30 participants enrolled in a medium-sized suburban university located in the southeastern portion of the United States. Individuals were current undergraduate and graduate-level students. Participants were randomly assigned to one of two groups: access to peer-mentoring or non-access to peer-mentoring. After collecting and triangulating enrollment data retrieved from university offices of admissions, financial aid, and registrar, the researcher used Fisher's Exact Test analysis to determine the level of association between variables. A discussion of the results, limitations, and recommendations for future research is also provided.

Keywords: attrition, retention, retention rate, persistence

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Dedication

This dissertation is dedicated to my wife, Carol'lynne W. Pray, son, Zachary M. Pray, and mother, Barbara H. Pray. I am grateful for your years of love and support during the writing of this paper. You all believed in me when I doubted myself. I am fortunate to have such a wonderful family.

I dedicate this dissertation to my dearly loved family members who did not live to see this become a reality, my father, Robert E. Pray, grandmother, Carolyn K. Hughes, and grandfather, William H. Hughes. I think about you frequently and am grateful that our Lord granted me the time we had together. I look forward to the day when we once again see each other face-to-face. You each contributed to my success in your special ways. I trust that you are proud of what I have accomplished in your absence.

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List of Abbreviations

Grade Point Average (GPA)

Institutions of Higher Learning (IHL)

Massive Open Online Course (MOOC)

National Center for Education Statistics (NCES)

United States Department of Education (USDOE)

CHAPTER ONE: INTRODUCTION

Overview

Over the past two decades, online college education has been introduced in an increasing number of institutions that have likewise witnessed increased online student enrollment (Chen et al., 2016; Skinner, 2019). The new course format has enabled institutions of higher learning to enhance course availability, increase revenues, and boost overall college enrollment (Chen et al., 2016; Supranovich et al., 2018). The influx of students has forced post-secondary educators to deal with retention within a student population that has proven more apt to discontinue their studies (Hart, 2016; Huntington-Klein et al., 2017). The following chapter examines the background of college student retention and its role in the students and institutions. The chapter will present the problem, purpose, and significance of the study. Research questions posed as well as pertinent definitions are given.

Background

College student retention has become a nationwide concern. The National Center for Education Statistics (NCES) reported that a quarter of the students would likely leave college before the conclusion of their sophomore year (NCES, 2019). An estimated 20 million students were projected to attend college in the United States in the fall of 2015 (NCES, 2015). According to national trends, many of these students never returned to complete their degrees. Educational institutions refer to retention when examining the number of students who cannot complete their degree (Maher & Macallaster, 2013). College student retention requires an urgent response (Mooring, 2016; O'Keefe, 2013; Yook, 2012). Urgency is needed due to actual and perceived adverse correlations between college retention rates, poor student success (Bonet & Walters, 2016), and educational effectiveness (Bailey et al., 2006).

A lack of college student retention defies a primary goal of institutions of higher learning (IHL), which is to graduate students. Graduation and retention are linked by the fact that students who are not retained do not graduate. Generally, first-time undergraduate students who complete their degree are included in what is referred to as a retention rate (NCES, 2014a). Retention rates within the student population vary but are lowest among non-traditional students (Forbus et al., 2011; Marshall, 2013).

A non-traditional student is frequently described as an individual over 21 years old, married, has a family, works more hours than a traditional student, and/or is ethnically diverse (Forbus et al., 2011; Marshall, 2013). Non-traditional students have proven to be more difficult to retain and are frequently the focus of higher education's attempts of increased retention rates (Forbus et al., 2011; Marshall, 2013).

A prominent characteristic of non-traditional students is that of online education (Gaytan, 2015). As of 2014, 25 percent of all college students completed at least some of their courses online, while 13 percent completed all courses online (NCES, 2014b). The smaller figure of 13 percent and the current estimate of 20 million college students equates to approximately 2.6 million students who completed their studies online. However, according to the most recent government report, a third of the 2.6 million students who study online were not expected to be retained (NCES, 2011). Based on the expected retention rate, 858,000 students will leave college without completing a degree. Thus, academic success will have eluded thousands of students, while affected institutions of higher learning (IHL) will lament the fact that so many students failed to complete their education.

Non-degree completion has IHL contemplating responses to the retention dilemma. Solutions to retention have included the creation of learning communities (Cambridge-Williams

et al., 2013; Dagley et al., 2016; Johnson, 2001) and orientation programs (Cambridge-Williams et al., 2013; Gill et al., 2011). A positive solution to student retention, in general, has been peer-mentoring (Bosco, 2012; Campbell & Campbell, 1997).

Peer-mentoring has positively impacted college students by increasing the retention rates of on-campus students (Bosco, 2012; Campbell & Campbell, 1997). Increased retention rates reflect enhanced student success (Bonet & Walters, 2016) and effective higher education performance (Bailey et al., 2006). Due to apparent success with traditional students, peer-mentoring has been an integral part of retention programs by several IHL (Dioso-Henson, 2012).

Historical Context

The first historical mention of a mentor was by Homer in the *Odyssey* (Miller, 2002). While the king was absent, his son was mentored by a trusted soldier. A mentor is a person who provides aid, comfort, advice (Miller, 2002), guidance, and support in times of difficulty (Fletcher, 2000).

In the Middle Ages, mentors were generally knowledgeable, mature individuals who offered their skills and talents to younger people known as apprentices (Ballard, 2013; Heyer & Lee, 2012). The Modern Era brought changes that included a lower average age of apprentices (de Munck, 2010; Wallis et al., 2010) and the utilization of servant apprentices who performed the role of tutors while serving wealthy families (Cooper, 2007; North, 2015). Apprenticeships declined in nineteenth-century North American society due to a perceived lack of relevance (Elbaum, 1989). However, the mentor-apprenticeship model persisted into the 1970s (Lee, 2012; Vickerstaff, 2003). Though IHL used a similar mentor-apprenticeship model of skilled professionals and students, a shift to peer-mentoring began in the latter 1970s (Obler et al., 1977).

Peer-mentoring is a relationship fostered over time by individuals who share similar characteristics that offer positive student engagement and support (Haggard et al., 2011; Hill et al., 1989). Research has revealed that peer-mentoring has aided traditional students by helping them adjust to college (Obler et al., 1977; Shotton et al., 2007), provide positive role models (Erkut, & Mokros, 1984), enhance student support (Haggard et al., 2011; Hill et al., 1989), assist in career advancement (Gibbons, 1992; Heyler & Lee, 2012), provide valuable information not otherwise attained (Grant-Vallone, & Ensher, 2000; Ross et al., 2015), and enhance social integration (Soria & Stebleton, 2013; Thomas et al., 2005). In addition, peer-mentoring has been credited with positively affecting retention rates at IHL among the traditional student population (Brill et al., 2014; Khazanov, 2011; Shotton et al., 2007).

Non-traditional college student retention has remained a problem. Online students tend to have retention rates that are 10 to 15 percent lower than their on-campus counterparts (Carr, 2000). Few gains in online student retention have been actualized, and online student retention continues to plague many IHL (Asunda, 2011).

Social Context

The inability of students to complete their program of study and graduate negatively influences IHL and society (Ionesque, 2009, Talbert, 2012). IHL is negatively impacted by low retention due to public perceptions of nationally-reported graduation rates (Bailey et al., 2006). A graduation rate is the percentage of first-time, full-time college students who complete their study program within four to six years and is reported nationally by the NCES (FAFSA, 2016). Perceived low graduation rates are cited as indicators of poor academic preparation, which can result in students electing to enroll elsewhere (Bailey et al., 2006).

Society is negatively impacted by low college retention in a variety of ways. For example, when college degrees are not attained, unemployment rates are higher, while those with jobs earn lower wages (Canon & Gascon, 2012), student loans are more difficult to repay (Rose, 2013), causing increased stress and anxiety (Hancock, 2009), and the nation receives workers that tend to be less educated than their foreign counterparts (Talbert, 2012).

Theoretical Context

Five prominent theories pertain to mentoring and non-traditional college students framed this study: community of inquiry, control-value, engagement, social learning, and social capital.

The concept of the community of inquiry theory was initially developed by Pierce (1877). In practice, the theory was a combination of cognitive, social, and teaching factors that blended to aid the scientist in analysis and prediction (Pierce, 1877). Dewey (1938) later introduced the theory on adults in increasing their learning potential and success. The theory's primary goal is to aid learners by creating a multi-dimensional community that includes the individual student, peers, and the teacher as a unit.

Pekrun et al. (2007) examined the control-value theory. Students display various emotions that affect their success in individual courses and overall college success (Pekrun et al., 2007). The theory focuses on positive emotions that translate into motivational aspirations that aid in alleviating anxiety, negative feelings, and stress frequently related to the college experience (Pekrun et al., 2007). Enjoyment is a primary emotion that has been correlated to student success within a college setting (Janssen & Westerlink, 2011; Muñoz et al., 2016).

The engagement theory was initially proposed by Tinto et al. (1994). Likewise. They found that students who build relationships via interaction with mentors are engaged, leading to greater student satisfaction and persistence. Mentored students' interest in their studies increases

as their overall engagement in the institution is enhanced (Collins et al., 2014; Zevallos & Washburn, 2014). As interest piques due to the mentor-mentee relationship, students are more likely to remain in school (Collins et al., 2014; Zevallos & Washburn, 2014). Mentor-mentee relationships are an integral factor in supporting the engagement theory by forging positive relationships (Collins et al., 2014; Zevallos & Wahsburn, 2014).

Salinitri (2005) used social learning theory and discovered that on-campus students who received intensive mentoring had increased retention rates. The majority of students that participated in the study reacted favorably to interactions with their mentors. The positive interactions reinforced students' desires to continue their studies as their perceived learning was enhanced. Such a result from positive reinforcement is a primary tenant of social learning theory (Brauer & Tittle, 2012). Furthermore, when students continue to participate in like-minded relationships with individuals or groups via two-way communication, they generally learn from one another (Bandura, 1971), increased perceived learning results in higher student retention (Brauer & Tittle, 2012).

People that share common characteristics such as ethnic backgrounds and experiences build relationships that result in increased levels of social capital (Bourdieu, 1986). Capital is the ability to influence another (Bourdieu, 1986). As capital increases, people are more likely to remain together and influence one another's decisions (Bourdieu, 1986). Campbell and Campbell (2007) found that when at-risk students had mentors of similar backgrounds and experiences, it appeared to result in positive learning outcomes and higher retention rates.

Problem Statement

Students innately desire to be engaged and supported (Bosco, 2012; Nel, 2017; Wurtz, 2015). Mentors have proven successful in increasing engagement and support with on-campus

students (Beltman et al., 2019; Collins et al., 2016). Unfortunately, the online student community is frequently not afforded the same level of interaction or support that on-campus students receive (Baker & Moyer, 2019; Khan & Gogos, 2013; Maddix, 2013). Mentoring is a likely means to fill the void.

While mentoring is commonplace among on-campus college students, retention solutions, such as mentoring, have not been fully explored for online students (Kumar & Coe, 2017; Singh et al., Trevino & DeFreitas, 2014). Previous studies examining mentoring for online students found it difficult to correlate persistence in courses due to requiring face-to-face meetings (Boyle et al., 2010; Thomas & Hadley, 2015; Welch, 2017) and using professors as mentors instead of peers (Mullen, 2012; Webber, Vaughn-Deneen & Maureen, 2020). Retention rates of the online participants were also not examined (Mullen, 2012; Webber et al., 2020).

A thorough examination of the correlation between retention rates and mentoring for online students has been lacking. Non-inclusion of various alternative face-to-face contact methods, non-faculty mentors, and the inclusion of both undergraduate and graduate-level students has been absent from recent research. Mentoring of traditional students has proved to be both common and effective. The problem is that online students have not been afforded an effective peer-mentoring program to increase retention rates.

Purpose Statement

The purpose of this study was to investigate the association between peer-mentoring and retention rates of online undergraduate and graduate students who have completed no more than two semesters at the particular institution being studied. After two semesters at the institution, both undergraduate and graduate students had completed an average of 12 semester hours. The variable, peer-mentoring, is a relationship that develops over time and can utilize various

mediums such as email, internet, phone for communication purposes (Haggard et al., 2011). The mentor aids the student in engagement (Sherman & Camilli, 2014), support (Xie & Ke, 2010), and social integration (Baxter & Haycock, 2014). Mentors are perceived as equal to the mentee rather than an authority figure (Haggard et al., 2011). Retention rate, the dependent variable, is the percentage of students who remain in school for a determined length of time (Schudde, 2011).

Significance of the Study

Retention rates are important as lower rates appear correlated to negative institutional perceptions (Crisp et al., 2017; Ngyen, 2011) and student hardships (Cannon & Gascon, 2012; Rose, 2013; Xiao et al., 2020). Due to the advent and popularity of online education, educators and administrators must now consider retaining both on-campus and online students.

Unfortunately, the online student community is at a greater risk of low retention as a disproportionately higher number of online students dropped out when compared to on-campus students (Erickson et al., 2017; Kahn & Gogos, 2013).

IHL should be aware that online students need to feel engaged and offered the identical level of support as traditional students. Mentoring students, in general, has a history of positively aiding retention (Akinla et al., 2018; Baeir et al., 2016). In addition, mentoring can be of esteemed value to online students by providing the desired academic support (Hunter, 2004; Nel, 2017; Rieske & Benjamin, 2015), career advice (Lunsford, 2014; Rubenstein, 2020), and engagement (Dioso-Henson, 2012; Frederickson, 2015; Nel, 2017).

The significance of this study lies in the fact that mentors can aid in increasing retention rates. Higher retention rates may reduce the possibility of negative institutional perceptions (Crisp et al., 2017; Ngyen, 2011), low enrollment (Bailey et al., 2006; Bingham & Solverson,

2016), unemployment (Canon & Gascon, 2012; Xiao et al., 2020), and overall student anxiety (O’neill et al., 2016; Rose, 2013).

Since online students vary by location and may never complete an on-campus course, IHL frequently needs to develop non-traditional student retention methods. Peer mentoring could provide value to student retention rates by presenting replicable methods to achieve student success. Educators and administrators will assess whether peer-mentoring programs should be added or amended to increase online retention rates. Peer-mentoring was utilized as an intervention with online undergraduate and graduate students to associate with retention rates positively.

Research Questions

The following research questions were used:

RQ1: Is there a significant association between peer-mentoring and retention rates of online undergraduate students?

RQ2: Is there a significant association between peer-mentoring and retention rates of online graduate students?

Definitions

The following definitions were being used in this study:

1. *At-risk*- An at-risk student is a person who is more likely to be suspended or dropped from their educational program (Corrigan-Magaldi et al., 2014).
2. *Attrition* – Attrition refers to the number of students who drop out of college programs (Ishitani, 2006).
3. *Enrollment data* – Enrollment data is information collected by higher learning institutions based upon student course registration (Day et al., 2011).

4. *First-time student*- A first-time student is a person who attends a college or university without prior college experience (Stewart et al., 2015).
5. *Full-time student*- A student is considered full-time when enrolled in a minimum of 12 credit hours in a given term (MacCann et al., 2012).
6. *Graduate student*- For this study, a graduate student is a person who is currently involved in a master-level coursework/degree program.
7. *Graduation rate* - Graduation rate is defined as a percentage of students who complete their respective programs within a standard time (Southall, 2012).
8. *Mentor* – A mentor is an individual who develops a relationship with another to provide aid (Haggard et al., 2011).
9. *Non-Traditional Student* – An individual who is generally over 21 years old, married, has a family, works more hours than a traditional student, is ethnically diverse (Forbus et al., 2011; Marshall, 2013), and/or completes courses online (Gaytan, 2015).
10. *Online student*- An online student is a person who completes distance education courses via the internet (Meyer, 2014).
11. *On-Campus student*- An on-campus student is a person who completes courses on-site (Morris et al., 2003).
12. *Peer-mentoring* – Peer-mentoring is a relationship fostered by individuals who share similar characteristics over a time that offers positive student engagement and support (Haggard et al., 2011).
13. *Persistence* – Persistence is defined as the ability or inability to continue to engage in the pursuit of a degree (Pruett & Absher, 2015).

14. *Retention* – Retention is defined by institutions of higher learning as the ability or non-ability of a student to remain at an institution and ultimately complete their program of study (Maher & Macallister, 2013).

15. *Retention rate* – A retention rate is defined as the percentage of students who remain in school for a given length of time (Schudde, 2011).

16. *Traditional student*- A traditional student is an individual who is between the ages of 18 and 22 and completes courses on-campus (Morris et al., 2003).

Undergraduate student-For the purposes of this study, an undergraduate student is a person who is currently enrolled in a bachelor-level program.

CHAPTER TWO: LITERATURE REVIEW

Introduction

Institutions of higher learning (IHL) desire to educate students to enhance their lives and the surrounding communities (Kaufman, 2016; Saichaie & Morpew, 2014). When students fail to complete their education, the purpose of IHL leaves a void. The retention of all students through degree completion remains a critical concern for IHL, though online students continue to maintain lower retention rates (Forbus et al., 2011; Russo-Gleicher, 2014; Yook, 2012).

The following chapter discusses extant literature about retention rates and peer-mentoring. Theoretical frameworks of engagement, social capital, and social learning are highlighted. The chapter also discusses empirical evidence regarding previously completed research involving peer-mentoring along with related literature. The chapter concludes with a summary of the findings from the extant literature review.

Theoretical Frameworks

When examining the topic of retention and the potential effects of peer-mentoring, five theories are prominently based upon extant literature: a community of inquiry, control-value, engagement, social capital, and social learning. Each theory contains elements that have assisted in creating environments of student success.

Community of Inquiry

A theory discovered within the extant literature is the community of inquiry. The theory states that people learn by investigating and questioning information and other people (Lipman, 1991). The theory has aided students in enhanced learning and academic success (Horzum & Uyanik, 2015; Rockinson-Szapkiw et al., 2016).

Historical overview. The theory was originally proposed by Pierce (1877) and was used to aid scientists in logic and scientific comprehension. Although he did not name the theory, Pierce (1877) noted that a learning unit consisting of the individual, peers, and another experienced person formed a group that could learn and interpret information collectively. Dewey (1938) brought the theory into the realm of education and noted that students could learn from each other and the teacher in all subjects. The teacher could limit the inquiry to certain aspects of subjects to foster desired learning (Dewey, 1938). The official name of the theory was first coined by Lipman (1991). Lipman focused upon the need for students to think logically. Lipman also posited that philosophy is added to a student's thought process. As a result, they can inquire and learn with greater ability and thoroughness.

Garrison et al. (1999) utilized the theory in an online learning environment. Students that maintained a higher sense of perceived learning via a communal environment were more successful in the course (Garrison et al., 1999). Similarly, Rockinson-Szapkiw et al. (2016) also discovered an increase in the predictability of perceived learning and student success based upon the community of inquiry theory applied to online students.

Collaborative learning. A prominent method that incorporates the tenants of the community of inquiry theory is that of collaborative learning. Collaborative learning can achieve success in each facet of the theory: cognitive, social, and teaching.

Cognitive. The cognitive function of the individual increases as the student inquires about their surroundings (Dewey, 1938; Lipman, 1991). Individuals learn from one another via self-research and personal contact. As students learn, they also impart wisdom to their peers. Research has shown that collective learning occurs as students work together toward a common goal of learning (Khosa & Volet, 2013; Wiu et al., 2015).

Social. When students can interact with one another, they produce inquiry on a higher level. Rather than merely learning from a single individual, students learn as they form social networks that increase knowledge via learning centers, Facebook, online course forums, and study groups (Colbron, 2012; Fish et al., 2016; Frederickson, 2015; Tsai, 2013; Valerio, 2013). Enhanced learning occurs as students formulate opinions and discuss available evidence.

Teaching. A third facet of the community of inquiry theory involves teaching. Teachers can lead students toward higher levels of thought by conducting lessons that enable students to pursue specified areas of desired learning (Dewey, 1938, Lipman, 1991). The teacher is, therefore, a prominent member of the inquiry triad. When professors create and implement a facilitation course design within a collaborative environment, the students flourish (Mackie & Bruce; Taylor & Znajda, 2015).

Theoretical application. The study used mentors to facilitate a collaborative learning environment. Mentors, students, and teachers work together as a unit toward the common goal of student success. Mentors enhance the cognitive and social aspects of the theory by providing students with knowledge and experience while forming communities of learning that aid in academic success and retention (Ruane & Koku, 2014; Scogin & Stuessy, 2015).

Control-Value Theory

A prevalent theory discovered within the extant literature is that of control value. The premise of the theory is that positive emotions experienced by students can be correlated to successful outcomes (Artino, 2009; Pekrun et al., 2007).

Historical overview. The theory was initiated by Pekrun et al. (2007) and stated that students' positive emotions correlated with positive collegiate outcomes, including increased academic success and college satisfaction (Pekrun et al., 2007). Positive outcomes discovered

were related to a perceived sense of value for the topic being studied (Pekrun et al., 2007).

Conversely, students who displayed negative emotions were more likely not to achieve success within their courses or degree programs (Artino, 2009; Daniels et al., 2009).

Muñoz et al. (2016) discovered that students who enjoyed their course were more likely to be successful and retained using the theory. A computer course was offered to students that included the use of video games. The games provided students with an alternative learning environment that created a sense of enjoyment that was correlated with student success within the course (Muñoz et al., 2016).

The control-value theory predicted student success in a physical exercise course. Simonton et al. (2016) indicated that students who were bored with their course generally were unsuccessful. They recommended innovative teaching methods that would increase positive emotions and a sense of value for future students.

Positive learning environment. Colleges and universities have implemented the tenants of the control-value theory by focusing upon a central theme of a positive learning environment (Muñoz et al., 2016; Fish et al., 2016). Fish et al. (2016) noted five factors that improve students' emotions: academic and career expectations, athletics, health, role models and mentors, and social and extracurricular activities. Of the factors noted, two directly pertain to the study: academic and career expectations and role models and mentors.

Academic and career expectations. When students perceive that an institution of higher learning values academic success and intentionally focuses upon enhanced instruction, student success increases (Fish et al., 2016; Pascarella et al., 2013). An environment of learning and achievement is created as students are deemed to be at the center of university interest and actions (Fish et al., 2016; Pascarella et al., 2013).

Role models and mentors. Students that have positive interactions and relationships with their instructors frequently achieve academic success (Fish et al., 2016; Huang, 2012). Research has also shown that peer mentors can prove to be role models that positively influence student emotions and success (Colbron, 2012; Rieske & Benjamin, 2015). Mentors afford students the resources that foster positive emotions that result in success and retention (Colbron, 2012; Fish et al., 2016; Rieske & Benjamin, 2015).

Online. Positive learning environments are available online. Online environments that have been demonstrated to be effective include discussion forums (Green & Hughes, 2013; Hall, 2015), learning communities (Annala et al., 2012; Tsai, 2013), and online mentors (Kiyama et al., 2014; Scogin & Stuessy, 2015).

Theoretical application. The theory of control-value was an integral part of the current study as peer mentors were used to aiding students in creating positive emotions based upon influential relationships. Peer mentoring can provide academic encouragement (Lundberg & Sheridan, 2015; Mokoena, 2013), assist academic performance (Asgari & Carter, 2016; Goodlad, 2013), and engage students with positive role-modeling (Colbron, 2012; Rieske & Benjamin, 2015). Each aspect of peer-mentoring promotes the control-value theory by helping students to actualize a positive emotional experience within their courses. Such positive experiences are likely to result in increased retention.

Theory of Engagement

One theory discovered within the extant literature that promotes an environment of student success is the theory of engagement. The theory of engagement understands that as people build positive relationships, they are more likely to be active, successful learners (Blinne, 2013; Wolf-Wendel et al., 2009).

Historical overview. The theory of engagement was prominently espoused by Tinto et al. (1994) and stated that students who increased their social interaction with other students would continue to complete their programs of study successfully. Engaged students were also linked to positive individual course outcomes, a desire to continue a relationship with the particular institution, and overall student success (Tinto et al., 1994). Using Tinto et al.'s (1994) theory, Ntiri (1999) matched mentors to students of similar ages and backgrounds in an adult literacy course. The results indicated that students who received mentoring and increased engagement were more successful within the course (Ntiri, 1999). Thus, positive peer relationships are formed and attributed to student success (Ntiri, 1999). Likewise, Zhao and Kuh (2004) indicated that positive peer relationships via learning communities displayed significant increases in positive academic performance and greater desire to complete courses (Zhao & Kuh, 2004). College students have further displayed a need for higher engagement levels to succeed (Kuh et al., 2007; Kuh et al., 2005). As learning environments are perceived to be conducive for engagement, higher numbers of students contribute more effort toward their studies (Huerta, 2004; Kuh et al., 2007; Kuh et al., 2005).

Student engagement was a primary focus of Kuh (2003), who established the National Survey of Student Engagement. The survey discovered several factors that educators have noted and used to benefit students: collaborative learning, enhanced learning environments, increased student-faculty contact, and performance expectations (Kuh, 2009). In addition, positive peer contact was discovered to be a factor that increased student engagement and collegiate success (Kuh, 2009).

Engagement via the addition of increased peer contact has been a source of recent online student engagement research. Peer influenced engagement has been successful in collaborative

assignments and learning (Frederickson, 2015; Tsai, 2013), creating a sense of belonging (Annala et al., 2012; Willis et al., 2013) and encouragement (Lundberg & Sheridan, 2015; Mokoena, 2013).

Learning communities. Institutions of higher learning have utilized the concepts of engagement theory to produce higher rates of student success and retention. Therefore, the creation of learning communities is an application that is of value for both success and retention. Zhao and Kuh (2004) noted that learning communities had been utilized in four distinct aspects that facilitate student engagement: academic, classroom, residential, and type.

Academic. Communities are established that include students enrolled in at least two courses (Zhao & Kuh, 2004). Students enrolled in the same courses tend to form communities consisting of collaborative learning that inspire and encourage each other to succeed and become increasingly engaged (Blinne, 2013; Slaten et al., 2016).

Classroom. The classroom has allowed educators to assist in creating learning communities via the formation of groups of students engaged in various learning activities and interactions (Zhao & Kuh, 2004). Classroom communities have created a student-led learning environment that has demonstrated successful retention and individual course success (Lysne & Miller, 2015; Freeman et al., 2014).

Residential. Learning communities are formed when students enrolled in identical courses also live near one another (Zhao & Kuh, 2004). Living in close proximity encourages students to interact in extra-curricular activities, increasing overall student engagement in the institution and enhancing academic performance (Dagley et al., 2015; Hall & O'neal, 2016).

Type. Learning communities can be created by placing specified groups together, i.e., at-risk or underrepresented students (Zhao & Kuh, 2004). Student communities created via type

have successfully produced engaged students who are retained at higher rates than those not involved in a learning community (Hall & O'neal, 2016; Scott et al., 2015).

Alternative learning communities. Learning communities listed by Zhao and Kuh (2004) focused on four categories of traditional students who complete their on-campus courses. However, extant literature has further revealed that learning communities can be forged via learning centers and online.

Learning centers. Learning centers are designated areas on college campuses that offer aid, including writing and basic college skills (Missakian et al., 2016; Wurtz, 2015). Students that partake in college learning centers are more likely to persist in their courses and programs (Franklin & Blankenberger, 2015; Wurtz, 2015). Self-access and tutored-instruction are two of the stated advantages of campus learning centers (Fumer, 2012; Chung, 2013).

Online. Online learning communities have also been shown to create positive student engagement leading to academic success and retention (Annala et al., 2012; Tsai, 2013). In addition, online learning communities are successful when students are afforded monitored outlets for collaboration and discussion (Maddix, 2013; Wang, 2015; Wei, 2013).

Theoretical application. The theory of engagement was utilized in the current study. The study used peer-mentoring to engage online undergraduate and graduate students. Peer-mentoring has been linked to aiding the formation of learning communities and student engagement (Naseem, 2013; Ruane & Koku, 2014). Peer-mentoring affords students the opportunity of increased peer contact and builds upon the theory of engagement. As students become involved with mentors via weekly communication, a relationship will be forged. Mentors and mentees were students enrolled in similar programs at the identical institution, potentially solidify the relationship. According to the theory, a relationship that is deemed

positive, encouraging, and informative will increase the likelihood of student engagement and, ultimately, retention (Tinto et al., 1994).

Social Capital Theory

Social capital theory has positively influenced education and student retention. This section reviews the theory in the context of history and the present study.

Historical overview. Bourdieu (1986) proposed the social capital theory, which has been related to various aspects of society, including education. As relationships are formed, people change attitudes and behaviors based on the relationship's strength and duration. Coleman (1988) agreed with Bourdieu and further added that peers could be valuable resources that affect positive life outcomes. Putnam (2000) has been another key contributor to the theory and focused upon capital created by forming groups and social networking. When applied to education, the theory has been used to explain how students are encouraged by peers to attend college (Perna & Titus, 2005; Smith et al., 1995). Examining the effects of social capital, Wells (2009) noted positive increases in persistence across each ethnicity examined for on-campus students.

Persistence for online students via social capital has also been investigated. For example, Luo et al. (2013) discovered that various student interactions, including email, group projects, and discussion boards, positively influenced course persistence. Similarly, a study conducted by Lin et al. (2011) revealed a positive correlation between course persistence and the perception of college adjustment with social networking.

Mentoring to create capital. Educators have recognized that the theory of social capital

can be utilized in a school setting. A minimum of two aspects are positively affected when mentors are used as part of a program to aid student assimilation, success, and retention: a sense of belonging and encouraging relationships.

Sense of belonging. As students enter the collegiate domain for the first time, they may struggle with a sense of belonging. The atmosphere, expectations, and standards can be foreign to their preconceived notions of higher education. Mentors have been used as a bridge between the perceptions and realities of a college education. As similar students forge new relationships via mentoring, capital is established. A positive representation of social capital is that of mentoring ethnic minorities. Minority students that are mentored have displayed increased academic success and college retention (Hasan & Bagde, 2013; Strayhorn, 2010; Rios-Ellis et al., 2015). Success has been attributed to cultural similarities, peer role modeling, and social similarities (Hasan & Bagde, 2013; Rios-Ellis et al., 2015; Strayhorn, 2010).

Encouraging relationships. Social capital is actualized as people encourage one another as part of an ongoing relationship. The result has been revealed via enhanced academic performance (Elliott & Silverman, 2014; Prest, 2016), career skills and advancement (Heyler & Lee, 2012; Hoffman, 2016), and student retention (Poor & Brown, 2013; Peltz & Raymond, 2016).

Online capital. The advent of online education has not deterred educators from the creation and utilization of social capital. Two common methods of online capital are social networking and discussion forums.

Social networking. Communities of online students are created via the use of social networking mediums such as Facebook and Twitter. Students that have utilized social networking have been aided by academic success, persistence, and retention (Johnston et al.,

2013; Lin et al., 2012; Valerio, 2013). Social capital increased as students built relationships by maintaining continuous virtual contact.

Discussion forums. Online college courses frequently include discussion forums to aid in the facilitation of learning. In addition, research indicated that discussion forums could build capital among students as they use forums as a required part of their coursework. Among the benefits of the online forums are increased belonging, critical thinking, and retention (Green & Hughes, 2013; Hall, 2015).

Theoretical application. The study used peer-mentors of similar backgrounds and college experiences to increase social capital. As social capital increases via mentoring, the association with retention rates was examined. Boudieu's (1986) theory was enhanced by the continuous contact between parties. Continuous contact was thought to change attitudes and behaviors regarding the institution, individual courses, and study habits. The result was thought to be increased student retention.

Social Learning Theory

The social learning theory has been applied to education. Specifically, the social learning theory can be positively applied by peer-mentoring. The following section will discuss the theory and present both a historical overview and relevance to the current study.

Historical overview. Bandura (1971) initially espoused the social learning theory and noted that people learn from others in like-minded groups. People may change beliefs or enhance their learning based on interactions with others (Bandura, 1971). Webb (1989) furthered the theory by noting a positive correlation between learning and social interaction. Students that were part of social groups demonstrated enhanced learning and course enjoyment as peer interactions increased (Webb, 1989). Peer interactions can positively influence students via role

modeling, which positively correlates to becoming more successful (Ender & Newton, 2000; Hunter, 2004).

Online college student success can be correlated with peer interactions on discussion boards (Clary & Wandersee, 2014; Xie, 2012). In a study that included online students of various ages, Xie (2012) noted that peer interactions positively affected student motivation, learning, and course success. Cohen and Cohen (2013) also noted that online students learned from each other using blogs during the course. They asserted that peer learning was positively correlated with increased student satisfaction and success in the two courses examined.

Small groups. Institutions of higher learning have promoted the theory of social learning through the use of small groups. Small groups have been afforded educators another avenue to achieve student success and retention. A variety of specific outcomes have been noted that include the following: better attitudes, enhanced discussions, increased learning, increased student interest, and support.

Better attitudes. When students are placed together within a small group, attitudes frequently begin to change. Specifically, the general attitude toward school and positive performance can be related to peer interactions within small groups (Hamann et al., 2012; Jackson et al., 2014; Kamran & Khan, 2012; Rehman et al.). In addition, regular meetings with one another in a small group setting have fostered student success in creating a greater desire to achieve academic success (Jackson et al., 2014; Rehman et al., 2012).

Enhanced discussions. The traditional form of instruction centers upon teacher-led instruction and discussion. Small groups consisting of peers allow students to learn from each other. Educators have discovered that students tend to carry the discussion further than they

normally would via teacher-led methods when learning from each other. Enhanced discussions provide students with increased odds of success (Hamann et al., 2012; Hooker, 2011).

Increased interest. College students lack success for many reasons. One factor is that of interest. Students who are not interested in their courses or studies, in general, are more likely not to actualize collegiate success. In addition, research has provided educators with a correlation between peer groups and positive student interest (Jackson et al., 2014; Hamann et al., 2012; Kang et al., 2012).

Increased learning. Students often learn more from each other than from their instructors. Small groups are one method that has allowed students to relate to one another in positive ways that create higher learning (Bernstein et al., 2016; Hamann, 2012; Ward et al., 2014). In addition, students that perceive a greater learning experience are more likely to remain in a given course and to be retained in their programs (Bernstein et al., 2016; Ward et al., 2014).

Support. When students receive positive interaction from each other, they may feel a greater sense of support. Researchers have noted that peers can aid in giving each other the needed support that results in increased college success and retention (Baker & Robnett 2012; Jackson et al., 2014). Support provided ranges from academic to emotional. The primary indicator of success lies in the level of perceived support (Baker & Robnett, 2012; Jackson et al., 2014).

Online small groups. Online instruction utilizes the small group method in the form of discussion forums, group projects, and varied collaborative assignments. Students that have participated in online groups have frequently demonstrated increase learning and desire to be successful within individual courses and in their specific programs of study. Students involved in

small online groups received the needed encouragement and support necessary to achieve academic success (Dietz-Uhlor et al., 2012; Mokoena, 2013; Wang et al., 2012).

Theoretical application. Online mentoring has afforded students the needed levels of learning aids and support that promote student success and retention (Kiyama et al., 2014; Scogin & Stuessy, 2015). The study included various communication methods in an attempt to foster interactive learning between online students and mentors. Mentors were able to provide encouragement and assistance based upon similar education and experience. Mentors were also potential role models that aided in creating a collaborative learning environment likely to increase retention (Clary & Wandersee, 2014; Webb, 1989).

Empirical Evidence

The extant literature has provided support for peer-mentoring as an effective tool to aid student retention. Peer-mentoring has been utilized for on-campus students but has lacked use in the online community. Research in both the on-campus and online arenas will be discussed.

Traditional Mentoring

Mentoring is a process by which two or more people engage in a relationship built upon encouragement and positive interaction (Haggard et al., 2011). Traditional mentoring generally occurs in a face-to-face setting (Carmen & Ortega, 2015; Thomas & Hadley, 2015). In an educational setting, the mentor-mentee relationship has produced greater student engagement (Baker, 2013; Chester et al., 2013), better grades, and enhanced learning (Chester et al., 2013; Grimes et al., 2014), and increased retention rates (Frederickson, 2015; Willis et al., 2012). Mentoring within IHL has generally been performed by highly educated professionals such as professors (Mullen, 2012) or student peers (Haggard et al., 2011; Jones & Goble, 2012).

Extant literature has divided student success with traditional mentoring into four categories: engagement, learning, motivation, and social integration.

Engagement. Student engagement occurs when relationships are formed between students and institutions based upon two-way communication and support (Trowler, 2015). On-campus student engagement has been created and mentored by those deemed co-equal peers (Haggard et al., 2011; Jones & Goble, 2012).

Engaged students become more active in their studies when they forge relationships with peers (Chester et al., 2013; Sherman & Camilli, 2014). According to Sherman and Camilli, engagement with peers is a vital factor in student retention. First-time college students react positively to engagement and are more likely to continue their programs of study (Baker, 2013; Wang, 2012). Mentored students increase their engagement and odds of being retained (Frederickson, 2015; Willis et al., 2012).

A primary limitation of on-campus studies involving mentoring is reliance on student satisfaction without calculating retention rates (Naseem, 2012; Trevino & DeDreitas, 2014). The study examined retention rates when determining a correlation with peer-mentoring.

Learning. Effective learning positively influences college retention. Effective learning is of primary concern in education and a pivotal factor in successful college student outcomes (Grimes et al., 2014; Kolwalski et al., 2014). Studies have demonstrated positive correlations between peer-mentoring and increased student learning using the concept of social learning theory (Chester et al., 2013; Kocadere, 2015). Students who participated in mentoring programs reported an increase in GPA (Chester et al., 2013), advanced learning (Grimes et al. 2014; Kocadere, 2015) and were retained at higher rates than non-mentored students (Khazanov, 2011).

Bandura's (1971) concept of social learning can be applied to online students' similar mentoring models. Peer mentoring can increase social interaction and enhance learning outcomes that could potentially assist in retention.

Motivation. Maslow (1954) included motivation through social needs in his list of vital elements to the human experience. Mentoring can aid social needs by providing students with an outlet for communication and relationships. Increased levels of motivation among students within higher education can lead to student persistence (Ward et al., 2012). Research has indicated that student motivation can be enhanced via peer-mentoring (Naseem, 2012; Ward et al.). The primary component pertaining to the expansion of student motivation is perceived levels of student support (Phinney et al., 2011). Undergraduate students perceived increases in student support when mentored resulted in greater motivation and desire to continue in their respective programs (Naseem, 2012; Phinney et al.; Ward et al.). Specific reasons for increased motivation include positive role-modeling (Naseem), assistance with life skills (Ward et al.), and continued mentor contact (Phinney et al.). Student motivation has also been attributed to a sense of belonging and encouragement created by peer-mentoring (Singh et al., 2014; Trevino & DeFreitas, 2014).

Although students appeared to react positively to the offered mentoring, no long-term effects were studied. However, the positive effects aided students in completing the individual courses.

Social integration. Research of on-campus peer-mentoring created cultural fit (Castellanos et al., 2016), student support (Baker & Robnett, 2012; Preez et al., 2013), and positive relationship building (Holt & Lopez, 2014; Jones & Goble, 2012). Advanced students were frequently reported to assist novice students as they completed college courses for the first

time (Collins et al., 2014). Furthermore, engaging students created positive integration with their peers currently enrolled in the identical program (Collins et al., 2014). Variations in mentoring formats included modular mentoring sessions (Preez et al., 2013), ethnic groupings (Baker & Robnett, 2012; Castellanos et al., 2016), extended mentoring time frames of several months (Holt & Lopez, 2014), and multiple on-campus meetings (Collins et al., 2014). Each study revealed a renewed sense of belonging by the participants and a desire to continue their study program.

Non-Traditional Mentoring

Non-traditional mentoring is similar to traditional mentoring, with the exception that it utilizes differing contact methods and is either limited or no face-to-face contact (Baker & Robnett, 2012; Owen, 2015). However, relationships are still formed, and students are aided via continuous contact with their peers (Lach et al., 2013; Preez et al., 2013).

Due to the advent of online education, IHL had to discover methods of peer-mentoring that will accomplish similar success as more traditional mentoring methods. Extant literature revealed four categories of student success due to online peer-mentoring: academic success, engagement, persistence, and social integration.

Academic success. Peer-mentoring may be attributed to online students' general academic success (Shojai et al.; Davis, & Root, 2014). Studies have demonstrated positive academic results of online peer-mentoring, such as improvements in writing (Lach et al., 2013), increased GPA (Shojai et al., 2014), and perceived enhanced learning (Thomas & Hadley, 2015). In addition, students were utilized as mentors (Shojia et al., 2014) along with proven professionals in specific subject areas (Lach et al., 2013; Thomas & Hadley, 2015).

Despite positive results, the studies contained various limitations. Thomas and Hadley (2015) utilized a blended mentoring model that included both face-to-face and online components. Additional limitations included no examination of retention rates or consideration of graduate-level students. Shojai et al. (2014) also did not factor retention rates in the study. Further, mentors were not always assigned to students, and contact was limited (Lach et al., 2013).

The study of online peer-mentoring included mentor-mentee assignments, an evaluation of potential mentoring and retention rate correlation, and the inclusion of both undergraduate and graduate-level students. Although academic success was not specifically measured, mentors were available to assist when possible. In addition, mentors were enrolled in similar programs and had gained significant experience that may have proven invaluable to participants' success.

Engagement. Engagement in a massive open online course (MOOC) can be challenging. However, Peer-mentoring has assisted in the engagement of non-traditional students by providing people who empathize with the student (Sloan, 2013), increased communication with other students (Tower, Walker, Wilson, Watson, & Tronoff, 2015), and alleviated perceptions of isolation (Carmen & Ortega, 2015). Studies have also indicated that mentors assist in the engagement process by affording students an outlet for additional questions and information (Baker & Robnett, 2012; Britt, 2015). In addition, students appeared to increase their successful course completion rate when engaged by mentors (Britt, 2015; Carmen & Ortega, 2015; Tower et al., 2015).

The primary limitation of the studies was that the overall retention rates were not examined. Successful course completion is a possible indicator of retention, but the overall retention rate is a preferred indicator as to whether a student will complete a program (Atuahene, 2012; Dagley et al., 2016).

The current study filled the gap in the literature by calculating retention rates. A correlation between retention rates of undergraduate and graduate online students and peer-mentoring was examined.

Persistence. Students that persist continue to complete their courses and degree programs (Pruett & Absher, 2015). As students persist in individual courses, their overall degree of persistence is magnified (Davidson & Petrosko, 2014; Spruill, Hirt, & Mo, 2014). Peer-mentoring can be positively correlated to online persistence (Kumar, Johnson, & Hardeman, 2013). Extant literature revealed that increased mentee retention rates (Kahn & Gogos, 2013) exhibited higher persistence in specific programs (Kumar et al., 2013) and encouraged students to continue their respective programs (Owen, 2015). Each study examined contained mentors who were professionals in their respective fields and mentored either graduate or doctoral level students. Owen (2015) matched students according to specific courses and fields of study rather than by age, ethnicity, or proximity. Email was the predominant mode of contact, while Skype and phone were also utilized (Kumar et al., 2013). Students reported being aided in motivation (Owen, 2015) and expertise (Kahn & Gogos, 2013).

Limitations of the studies included low participation (Kahn & Gogos, 2013, Kumar et al., 2013), lack of undergraduate students included, and an over-reliance on student-initiated contact (Kumar et al., 2013). Further limitations noted were the absence of alumni as mentors (Kahn & Gogos, 2013) and a lack of retention rate examination (Owen, 2015).

The study included differing academic levels of students. Mentor-to-mentee contact was initiated by the mentor each week of the term. Additional contact by the mentee was encouraged. The study was expected to produce participation at a level that would have equated to significant correlations. Therefore, retention rates were the primary measurement component of the study.

Social integration. The positive impact of social integration of on-campus students can also be accomplished in distance education (Lasater et al., 2014). A preponderance of the extant literature focused upon the social integration model of peer-mentoring. Bachelor-level students excelled in personal relationship building (Lasater et al., 2014), social networking (Ruane & Koku, 2014), and academic performance (Liedenfrost, Strassnig, Schabmann, Spiel, & Carbon, 2011). Graduate-level students reported beneficial relationships (Vrongistinos & Hwang, 2012), while doctoral-level students appeared to excel when paired with a perceived role model (Harris, Birk, & Sherman, 2016). Studies utilized various contact tools, including Blackboard discussions (Vrongistinos & Hwang, 2012), texting (Lasater et al., 2014), and face-to-face meetings outside of the virtual environment (Liedenfrost et al., 2011). In addition, some studies used student-to-student mentoring (Liedenfrost et al., 2011; Ruane & Koku, 2014), while others used program graduates and industry professionals (Harris et al., 2016; Lasater et al., 2014).

The study exploited multiple contact methods not requiring any face-to-face meetings. This would fill the gap in the literature regarding the outcome of these contact methods. The nature of online courses necessitates the exclusion of face-to-face meetings. Students may reside in a variety of geographic locations that may make the meeting in person difficult. Meeting in person can be replaced by various contact methods, including Skype, Google Hangouts, email, phone calls, texts, and various online chat formats.

Related Literature

Extant literature on related issues has revealed several factors about retention and college enrollment. Therefore, both sets of issues will be discussed in the following section.

Enrollment

Enrollment at the studied university was defined as student course registration within one calendar year. If a student registers for a minimum of one course during the year, the individual is considered to be enrolled. Enrollment is tracked by course registration on a semester-by-semester basis by admissions, registrar, and financial aid offices. Despite the best efforts of IHL, all online students do not complete their college education. The NCES has projected that total college enrollment will increase by 15 percent between 2012 and 2023 (NCES, 2016). When enrolled, 25 percent of all college students have elected to complete some of their online courses (NCES, 2014b). The USDOE has indicated that 13 percent of all college students complete their entire education online (NCES, 2014b). Using available data, 5 million students complete some online courses, while 2.6 million students exclusively utilize distance education. Private, 4-year institutions currently have the greatest online participation rate, with 60 percent of students completing their entire education online (NCES, 2016). A significant number of online students are not retained and tend to have lower retention rates when compared with traditional students (Forbus et al., 2011; Yook, 2012).

Factors influencing enrollment. Extant literature has provided factors that influence both traditional and non-traditional college enrollment. The section will discuss the factors of each mode of enrollment.

Traditional enrollment factors. A review of extant literature produced two common themes of traditional enrollment, support, and success. While other factors may exist, the two most commonly perceived factors will be highlighted.

Support. Students require support for a variety of reasons. Individuals enroll on-campus in lieu of online due to perceived enhanced support and better educational experiences (Eom & Arbough, 2011; O'neill & Sai, 2014). Support includes racial and social qualities (Baker & Robnett, 2012; Cerezo & McWhirter, 2012). Some ethnic groups both desire and require increased social support (Cerezo & McWhirter, 2012; Samuel & Scott, 2014; Slaten et al., 2016). Minority students frequently require additional support due to perceptions of not belonging (Baker & Robnett, 2012; Carmen & Ortega, 2015). Students who are perceived to be at risk due to a lack of academic preparedness and GPA also require support and frequently turn to on-campus resources (Hetzel & Laskey, 2011; Lloyd & Eckhardt, 2010; Rheinheimer, Grace-Odeleye, Francois, & Kusorgbor, 2010).

Success. Students enroll in on-campus courses due to perceived academic success. Academic success can be achieved when students are face-to-face with those that can provide assistance (Crisp, 2010, Eom & Arbaugh, 2011). Success is viewed as a need to continue in completing courses (Baker, 2013; Klatt & Ray, 2014), in learning (Eom & Arbaugh, 2011; Chester et al., 2013), and overall college satisfaction (Bell, Hackett, & Hoffman, 2016; Reinheimer & McKenize, 2011). Students that perceive success are more likely to be retained by the particular institution chosen for enrollment (Crisp, 2010; Reinheimer & Mckenzie, 2011).

Mentoring can assist students with support and success and positively correlate to enrollment factors (Crisp, 2010; Trowler, 2015). The study used mentors as facilitators of

success via the inclusion of peers with similar backgrounds who consistently initiate positive interactions every week.

Non-traditional enrollment factors. Non-traditional enrollment comprises students who are generally older than their traditional peers and complete education via MOOCs (Forbus et al., 2011; Gaytan, 2015). Factors relating to non-traditional enrollment include convenience, location, and social integration.

Convenience. A commonly cited reason for online course enrollment is convenience or flexibility. In the traditional method of course completion, students meet on-campus at scheduled times each week. Online courses generally do not meet on-campus or require specified login times. Since most non-traditional students are employed and work more hours than the traditional student (Forbus et al., 2011, Oguz, Chu, & Chow, 2015), time management is a factor in course selection. Research has shown that increased flexibility of online versus on-campus courses is a primary motivation for online course enrollment (Kowalski et al., 2014; Luo, Pan, Choi, Mellish, & Strobel, 2011). Time management was a key element in student perceptions of success (Kowalski et al., 2014; Luo et al., 2011).

Online courses afforded students greater flexibility within their schedules and perceived extended time for successful course completion (Kowalski et al., 2014; Lu et al., 2011).

Location. Although students who participate in online education are less likely to complete their programs, the online format remains a viable choice for an increasing number of students (Finkel, 2015). Non-traditional students select distance education for a variety of reasons. Geographic location tends to be a factor for the mode of completion, online vs. on-campus (Wang & Baker, 2015). Students located in remote areas frequently opt for online education (Wang & Baker, 2015).

Social integration. This is another factor in online course enrollment. Johnson, Stewart, and Bachman (2015) noted that a significant number of college students enrolled in an online course due to friends' online enrollment. In addition, students viewed the online experience as a method of social networking and learning enhancement (Johnson et al., 2015; Kizilcec & Schneider, 2015). Meeting new people via discussion boards was highlighted as one of the primary online course enrollment motivations discovered by Kizilcec and Schneider. Students also reported favorable interaction with professors to motivate online learning (Johnson et al., 2015).

Mentoring has been positively correlated with increased social integration (Cohen & Cohen, 2013; Lu et al., 2013). Although location and convenience are not directly related to mentoring, the presence of online relationships can aid in perceptions of a community (Carmen & Ortega, 2015; Tower et al., 2015). The researcher desired to achieve social integration and a sense of community by using student mentors with common interests, including degree and mode of study.

Retention

Retention is defined as the ability or lack of ability to remain in a course, semester, or degree program until completion (Maher & Macallister, 2013). Students that remain until program completion are statistically reported in a retention rate (Schudde, 2011). The United States Department of Education (USDOE) only reports an institution's retention rate according to the following criteria: first-time and full-time students (FAFSA, 2016). First-time students are individuals who attend an institution of higher learning without any prior college course completion (Stewart et al., 2015). A student is considered to be full-time when they enroll in a minimum of 12 credit hours in a given term (MacCann et al., 2012). In lieu of the corresponding

definitions and the USDOE calculation, only undergraduate level students are considered in the official retention rate that is reported nationally for each IHL. Graduate-level retention is not nationally reported by the USDOE. Graduate-level retention rates are attainable from institutions or via student surveys (Crede & Borrego, 2014).

The study examined the association of both undergraduate and graduate retention rates when peer-mentoring was made available.

Factors of Non-Retention. Student enrollment is a key indicator of retention (Kalsbeek & Hossler, 2010; Kiser & Hammer, 2016) and can be problematic due to a variety of factors. Available research has demonstrated several factors that appear to influence online student retention negatively. When the factors are present or perceived, some students become designated as at-risk. An at-risk student refers to an individual who is more likely to suspend or cease their program of study (Barrett et al., 2015; Corrigan-Magaldi et al., 2014). Peer-mentoring can positively influence the factors related to low online student retention.

Traditional factors that influence retention. Three predominant factors influence traditional student retention: academic support, program choice, and social support. Retention frequently hinges on the presence or lack of each.

Academic support. Extant research indicated that traditional students require academic support to be successful (Borghese & Lacey, 2014; Grillo & Leist, 2013). Studies have further indicated that students who do not receive academic support have an increased frequency of low retention (Grillo & Leist; Sluis et al., 2013). Support is frequently derived from other students (Grillo; Sluis).

Program choice. Numerous people choose to seek higher education after high school education has been completed. However, the choice of which program to select can be a

daunting task. Once the selection has been made and students begin to participate in a given program, they sometimes decide to discontinue due to program difficulty or uncertainty of personal qualifications (Hampshire et al., 2013; Meyer & Marx, 2014). At times students also end their college program due to issues involving gender and racial gaps between students and professors (Beasley & Fischer, 2012; Dougherty et al., 2015).

Social support. College students generally require differing levels of social support (Baker & Robnett, 2012; Mendoza et al., 2016). Students are frequently not retained when the support is either unavailable or perceived to be limited (Schudde, 2011; Thomas, 2014). Conversely, if social support is applied, retention appears to be positively correlated (Mendoza et al., 2016; Nordstrom et al., 2014).

Mentoring has positively aided in academic support and course retention by providing needed learning skills (Ross et al., 2015; Zevallos & Washburn, 2014). Although the studies did not measure retention within respective programs, the positive correlation with course retention was promising. Peer-mentoring has been able to aid students with program anxiety and encouragement (Collins et al., 2014; Mayer et al., 2014). In addition, mentoring that forges relationships of similar individuals can aid in bridging gender and racial gaps (Hasan & Bagde, 2013; Strayhorn, 2010, Rios-Ellis et al., 2015). Research has demonstrated positive correlations between mentoring and retention rates due to social support (Collins et al., 2014; Holt & Lopez, 2014; Jones & Goble, 2012). In addition, mentoring adds to students' sense of well-being (Collins et al., 2014) and provides a mode for creating positive relationships (Holt & Lopez; Jones & Goble). Their studies focused on mentoring as a method of relationship building, role modeling, and social integration. Based upon extant literature, the addition of mentoring should have had a positive correlation to retention (Collins; Holt & Lopez; Jones & Goble).

Non-traditional factors that influence retention. Factors that influence the retention of non-traditional students include engagement, social integration, and support services. Each factor can contribute positively or negatively to student retention.

Engagement. When students are not engaged, they are at risk of discontinuing their education (Bonet & Walters, 2016; Hunnik, 2015). Student engagement has been a prominent factor in on-campus student success (Bonet & Walters; Meyer, 2014). Online student engagement has become vital (Hunnik; Rose, 2014). Challenges to online student engagement include typical online student schedules (Dumais et al., 2013; Rose, 2014) and the impersonal nature of not meeting face-to-face (O’neill & Sai, 2014; Pearson, 2010). Positive peer-mentoring experiences have been reported via past research focused upon on-campus students (Ford, 2015). Peer-mentoring research that has included distance education students has also maintained positive engagement results (Tsai, 2013; Sherman & Camilli, 2014).

Face-to-face. Students frequently maintain the notion that traditional face-to-face instructions are preferable to online. The notion is perpetuated by documented preconceptions (Brocato et al., 2013; O’neill & Sai, 2014; Pearson, 2010). Moreover, preconceptions can negatively impact enrollment and retention (Brocato et al.; Platt et al, 2014).

Lack of accountability. Students must adhere to weekly deadlines in a traditional learning environment while facing the professor in person each week. The professor may personally decide to meet with students one-on-one to discuss real or perceived issues with academic progress. Peers may also add to the positive pressure of a desire to succeed. Online, students do not always have the same sense of accountability (Kutaka-Kennedy, 2015; Hunnik, 2015). Online courses have deadlines, but professors are not generally meeting with students, work can be missed without an immediate penalty, and peers are frequently not part of the equation. A lack

of accountability or positive peer pressure can lower online courses and programs (Kutaka-Kennedy, 2015; Hunnik, 2015).

Quality. The content of the education and course design are but two factors that students consider when rating the quality of a course. Online courses that are not deemed to have marginal value are more likely to be dropped (Jaggers & Xu, 2016; Knestrick et al., 2016). Retention rates of courses and entire programs are affected by perceived poor quality (Jaggers & Xu; Knestrick, 2016).

Social integration. The second factor of low online student retention is social integration. Research shows that fewer courses are dropped when online students receive positive social support and perceived integration (Baxter & Haycock, 2014; Bettinger et al., 2016). In addition, peer-mentoring and positive peer interaction have been viewed as crucial in increasing the likelihood of online course and program completion (Baxter & Haycock; Bettinger et al.).

Support services. Support services are frequently listed as a factor in non-traditional student retention. Online students generally demand the same level of support as on-campus students (Taylor & Holley, 2009). Desired support services include general academic assistance (Taylor & Holley, 2009), instructional (Chen et al., 2010), and peer (Ruane & Koku, 2014). Peer support, in particular, has been demonstrated to positively affect online student interactions (Xie & Ke, 2010) and improve retention rates of on-campus students (Jacobs et al, 2015).

Mentoring can positively assist each factor (Baxter & Haycock, 2014; Meyer, 2014; Xie & Ke, 2010). Mentors provided accountability, engagement, face-to-face contact, social integration, and support via weekly interactions that included phone calls, email, and texts. Peer-mentors have had a positive influence on courses perceived as poor quality by aiding what is

learned during each meeting with mentees. The current study used peer-mentoring to facilitate improvements in online student retention.

Summary

The literature provided a review of research history into the topic of peer-mentoring. Theoretical frameworks that guided the research were engagement, a community of inquiry, control-value, social capital, and social learning. Each theory addressed issues relating to retention, including academic success, social integration, and student support. Mentoring engages students and aids in motivating them to continue with their studies. Mentoring also forges relationships that can assist in changing negative scholastic behaviors, promoting role models, and provides enhanced learning. Traditional students that are mentored frequently display increased satisfaction with their programs and generally report positive emotions that aid in lowering attrition. Traditional and non-traditional mentoring have been positively correlated to increased retention rates.

In creating a conducive atmosphere for retention rates, online peer-mentoring research used both professionals and fellow students as mentors. Students frequently view mentors as advocates and friends (Bernstein et al., 2016; Colvin & Ashman, 2010). Though professionals can become advocates and friends, research has demonstrated that students tend to increase openness and ask additional questions of fellow students (Douglas, Smith, & Smith, 2013; Ward et al., 2014). Increased openness and additional questions may aid in student learning, integration, and persistence (Douglas et al., 2013; Ward et al., 2014). The theoretical frameworks of engagement, control-value, social capital, and social learning guided the research. A primary focus of the research was the building of relationships within the mentor-mentee relationship to maximize positive impact.

Though online peer-mentoring research has shown positive correlations, gaps in the literature are present. Gaps in the literature included requiring face-to-face meetings, no calculation of academic level retention rates, only single course retention results, and a lack of current studies involving online student retention. The study sought to fill the gaps in online mentoring by not requiring face-to-face meetings in person and reviewed semester-by-semester enrollment in retention calculation. In addition, the study addressed the previous research limitation of only one-degree level or program and included both undergraduate and graduate students who may be enrolled in a variety of programs. Thus, a primary aim of the study was to fill the void in educational research that has been created by limited recent studies covering the topic of online college student retention.

CHAPTER THREE: METHODS

Overview

The following chapter will discuss the design, research questions, null hypotheses, instrumentation, and data analysis used in the study. The study answered the research questions regarding a correlation between retention rates and online undergraduate and graduate college students. Null hypotheses to be tested are that there is no significant predictive relationship between peer-mentoring and retention rates of undergraduate and graduate students.

Participants and setting will be briefly described, along with the specific procedures that guided the research. The research was conducted during two semesters of enrollment, fall, and spring. Data were then analyzed to determine a correlation between the variables.

Design

This study utilized a correlational design. A correlational design was appropriate because the study investigated the relationship and significance between variables (Gall, Gall, & Borg, 2010; Roshani, 2012), have a high degree level of external validity (Adams & Lawrence, 2014), and are commonly used in the field of educational research (Gall et al., 2010).

Variables used were that of online college students, peer-mentoring, and retention rates. Online college students and peer-mentoring were each independent variables, while the dependent variable was retention rates. The use of the specified variables has been documented in past research: online students and peer-mentoring (Kumar & Coe, 2017; Valentin-Welch, 2016) and retention rates (Armstrong, Tudor, & Hughes, 2021; Gomez-Zermeno & De La Garza, 2016).

The study aided educational research by investigating the relationship between peer-mentoring and retention rates. A correlational design allowed the researcher to study the strength

of the relationship between the stated variables and ascertain their significance. If a significant relationship existed, higher education administrators and professors would use the information to retain online students.

Research Questions

The following research questions were examined:

RQ1: Is there a significant association between peer-mentoring and retention rates of online undergraduate students?

RQ2: Is there a significant association between peer-mentoring and retention rates of online graduate students?

Null Hypotheses

The following null hypotheses were utilized:

H₀1: There is no significant association between peer-mentoring and retention rates of online undergraduate and graduate students.

H₀2: There is no significant association between peer-mentoring and retention rates of online graduate students.

Participants and Setting

Participants for this study in both the treatment and control groups were selected using convenience sampling. Gall, Gall, and Borg (2010) stated that convenience sampling includes volunteers and is utilized when the subjects are readily accessible. Participants for the study were volunteers. The researcher is employed by the medium-sized, private, Christian institution to be studied. Employment includes access to the required information from various offices, including Admissions, Financial Aid, and Registrar. Access was granted via written consent (see Appendix A). Mentors were current students. Eligible mentors were either graduates who were currently

enrolled in a new program at the identical institution or enrolled in the final semester of their initial program. Each mentor had maintained a minimum GPA of a 3.5 on 4.0 scale. The institution made final selections.

The participants were undergraduate and graduate-level students who complete online courses only. The age range of participants was between 19 and 50 years. Males and females were included in the study. Most participants' ethnic backgrounds were African-American or Caucasian based upon institutional enrollment data available to the researcher. The research population comprised students who intended to complete either all or a majority of courses online at a private four-year institution located in the southeastern United States whose enrollment averaged 1100 students per semester. The institution offers both online and on-campus courses. Current enrollment statistics within the institution to be studied stipulate that 99% of the student body are non-traditional and complete most courses online (Enrollment Data, 2018). The intent was based upon responses to the volunteer request form sent to each student.

In determining the appropriate research sample size, several factors must be considered. An effect size is generally defined as the difference between two populations when divided by the standard deviation (Howell, 2011) and provides information about the magnitude of the association between the stated variables (Gall et al., 2010; Warner, 2013). Odds ratios were employed to review effect size. Odds ratios are used to determine the association between variables of categorical data (Easter & Hemming, 2021; Persoskie & Ferrer, 2017). Odds ratios are also used when the numerical frequency is established (Chang & Hoaglin, 2017) and can predict probability (Howell, 2011; Warner, 2013). The odds ratios can then be converted to an effect size by dividing by the suggested value of 1.81 (Chinn, 2000; Warner 2013). Cohen (1988)

stated that effect size is small (.2), medium (.5), and large (.8). The study employed a small effect size due to the number of participants.

The sample size must also consider the alpha level (α). The α refers to the level of significance needed to reject the null hypothesis (Gall et al., 2010). Typical research utilizes an α of .05 or less (Bartlett, Kotrlick, & Higgins, 2001). The study utilized an α of .05. A minimum participation level of 30 students was used to achieve a 0.05 alpha level (Gall et al., 2010).

During the fall semester of 2019, an email was sent to 300 undergraduate and graduate students based on current enrollment data. Enrollment data provided by various institutional departments included contact information such as email addresses. Participation requests included the incentive of an Amazon gift card. The names of mentees were placed in a drawing for the opportunity to win one of five gift cards. The enrollment data suggested that 300 students were eligible to participate in the study. A minimum of 30 participants was desired. Mentors were included in a separate email. Participants were then randomly assigned to one of two groups, with access to peer-mentoring and control students without access to peer-mentoring, utilizing software such as Research Randomizer®. Enrollment data was then collected at the start of the spring semester of 2020. Data to be collected included, but was not limited to, registered courses and mode of courses selected. Only students that have registered for courses were eligible to participate in the study.

Due to a smaller than expected number of participants, the process was extended to the fall 2020 and summer 2020 semesters. Fall 2019 data were collected at the beginning of the spring 2020 semester. A new batch of participants was recruited for the spring 2020 and summer 2020 semesters and compared with enrollment data at the onset of the fall 2020 semester.

Instrumentation

The study utilized the instrument of enrollment data. According to Salmond (2008), an instrument must be consistent, stable, and repeatable. The institution studies permitted the use of enrollment data. Enrollment data was used to determine retention rates and their accuracy deemed credible due to being triangulated by the offices of Admissions, Financial Aid, and Registrar. The data was initially retrieved from the Registrar's Office but was further examined with the aid of the Admissions and Financial Aid Offices. The instrument has been utilized in various other studies when determining retention rates (Day, Dworsky, Fogarty, & Damashek, 2011; Liedenfrost et al., 2011; Talbert, 2012) and is viewed as an accurate instrument in calculating retention rates (Day et al., 2011). The study analyzed participants' enrollment data for two semesters to determine if there was a significant association with retention rates.

Enrollment data consisted of basic student information, including gender, degree level, and course registration. For this study, if a student registered for a course(s) during a subsequent semester, they were considered retained by the institution. Whenever a participant did not register for a course(s), they were not retained. Only a few select semesters were in view for the study, and it was not known if the participants dropped out of their respective programs entirely.

Procedures

The researcher obtained permission to conduct the study from the president and executive vice president and of the institution (see Appendices B and C). A second permission was granted to extend the data collection period to the fall 2020 semester (see Appendix D). Next, the IRB of the institution was presented with pertinent documentation for approval (see Appendix E). Next, the researcher received the approval of the IRB at Liberty University (see Appendix F). A signed letter of permission from the institution to be researched was included in the materials presented

to Liberty University's IRB. Once approval was procured from the IRB at Liberty University, the researcher secured and trained volunteer mentors based on agreed criteria with the institution. A brief training session was used to aid uniformity in mentor procedures. The session discussed each facet of the mentor-mentee process. Following the training session, a check sheet of procedures (see Appendix G) was given to each mentor for fidelity purposes. Mentors were asked to adhere to the check sheet during all contact with mentees. Mentors also received a list of guidelines to follow when contacting mentees (see Appendix H).

Next, the researcher collected enrollment data relevant to the fall 2019 semester to ascertain potential research participants. Student emails and addresses were gathered from the university's Registrar's Office, and 300 students were sent a consent form (see Appendix I). Consenting individuals were sent a brief survey to determine whether they were currently being mentored outside or within the institution (see Appendix J). To preserve the integrity of the results of the study, only individuals that indicated that they were not currently participating in a mentoring relationship were eligible for selection. Identifying information, including email, was protected and not revealed to any other participant. Documents containing email addresses of students that have declined or not responded were destroyed via shredder. In addition, electronic documentation in the form of spreadsheets that contain any personal information of non-participants was deleted.

Participants were randomly assigned to one of two groups via software such as Research Randomizer®. Two mentors were then randomly assigned to members of the treatment group using Research Randomizer®. Each mentor was assigned no more than six mentees. The researcher followed institutional guidelines that required mentors and mentees to be of an identical gender. Mentor-mentee interactions were tracked via a log. Each mentor was

required to contact assigned mentees weekly. All contact, method, and length of contact were tracked on a virtual log that indicated contact in real-time. Next, enrollment data was again gathered once the spring 2020 semester began. Enrollment data regarding registered courses were screened with the Executive VP's aid to ascertain courses that included group assignments. Students participating in group assignments were not eligible to participate in the study. All data included an assigned number for identification purposes that followed the A1, A2, A3...for group one and B1, B2, B3...for group two. Demographic information, including gender, age, and the academic program, was collected with the enrollment data and was used and stored in a password-protected computer. Information was accessible by only the researcher. Finally, the researcher analyzed enrollment data using SPSS®. The analysis focused upon the re-enrollment or non-enrollment of mentored students over two semesters.

Data Analysis

The following procedures of analysis were repeated for each hypothesis. Data was analyzed using Fisher's Exact Test. Fisher's Exact test is appropriate when analyzing two categories of data (Jung, 2013; McHugh, 2013) with a small number of participants (Jung, 2013; McDonald, 2014). Independent variables used were online undergraduate students and online graduate students. In addition, the study utilized the dependent variable, retention rates. The researcher used SPSS® to analyze the data.

Before determining the level of significance between the variables, the researcher reviewed assumptions. Data were categorical (Connelly, 2016; McHugh, 2013), used a 2 x 2 table (Howell, 2011; Warner, 2013), study groups were independent (Jung, 2013; McHugh, 2013), and expected cell frequencies were less than five (Jung, 2013; McHugh, 2013).

Once all assumptions were reviewed, data were analyzed using Fisher's Exact Test within SPSS. The alpha level (α) was set to .05 (Gall et al., 2010; Warner, 2013). Fisher's Exact Test produces a p value paired with an of .05 in determining the significance level. The α refers to the level of significance needed to reject the null hypothesis (Gall et al., 2010; Warner 2013). Typical research utilizes an α of .05 or less (Bartlett, Kotrlick, & Higgins, 2001; Gardner & Neufeld, 2013). The study utilized an α level of .05.

The effect size was converted from odds ratios using Cohen's (1988) standard effect size. The standard effect sizes are small (.2), medium (.5), and large (.8). Raw data from the participants was input into SPSS to derive the odds ratios. Ratios were then converted to a natural log (\ln) then divided by the suggested base value of 1.81 (Chen, 2000; Warner, 2013) to determine the precise effect size of the data.

CHAPTER FOUR: FINDINGS

Overview

The following chapter details the analysis of the research data that is provided by the institution that was studied. Data were analyzed using SPSS software. Non-parametric Fisher's Exact Test was used to determine statistical significance regarding the rejection of the proposed null hypotheses. The brevity of the chapter lies primarily in two areas that will be discussed: no statistical assumption testing and a null hypothesis that could not be analyzed. Statistical assumption testing is not an option for the Fisher's Exact Test. Such testing would have added additional tables and explanations. The first null hypothesis could not be tested due to the participants' results of the study.

Research Questions

RQ1: Is there a significant association between peer-mentoring and retention rates of online undergraduate students?

RQ2: Is there a significant association between peer-mentoring and retention rates of online graduate students?

Null Hypotheses

H₀1: There is no significant association between peer-mentoring and retention rates of online undergraduate students.

H₀2: There is no significant association between peer-mentoring and retention rates of online graduate students.

Descriptive Statistics

The data analyzed included 30 participants who volunteered for the study; 15 received peer-mentoring while 15 did not receive peer-mentoring. The participants included seven

undergraduate students and 23 graduate students, 23 males and seven females. Participant descriptive data are listed in Table 1.

Table 1

Participant Overview

	Gender	Degree Level	Mentored
Males	- Undergraduate	5	3
	- Graduate	18	9
Females	- Undergraduate	2	1
	- Graduate	5	2
Totals		30	15

Data indicated that of the 30 participants, five did not return to continue their studies. A summary of the data is formatted in Table 2.

Table 2

Participants Returned vs. not Returned

	Gender	Degree Level	Returned
Males	- Undergraduate	5	5
	- Graduate	18	14
Females	- Undergraduate	2	2
	- Graduate	5	4
Totals		30	25

All students that did not return were studying at the graduate level. Therefore, a p value less than the α of .05 was desired when determining the statistical level of significance.

Results

When using non-parametric tests, several assumptions need to be answered. Although no assumption testing is available, the following are basic assumptions that were reviewed before performing the Fisher's Exact Test to ensure the appropriateness of the analysis: categorical data were used (Connelly, 2016; McHugh, 2013), data were organized in a 2 x 2 table (Howell, 2011; Warner, 2013), study groups were independent (Jung, 2013; McHugh, 2013), small sample size

(Jung, 2013; McDonald, 2014), and expected cell frequencies were less than five (Jung, 2013; McHugh, 2013).

The effect size was calculated using odds ratios. SPSS was used to configure the odds ratios for the raw data presented in Table 6. The ratios were then converted to the natural log (ln) using a scientific calculator. Results of the computation were multiplied by the base of 1.81 to derive the effect size. According to Cohen (1988), the effect size was small when computing the odds ratios of being mentored with undergraduate students versus graduate-level students. The effect size of being mentored at the undergraduate level compared to the graduate level was negligible. A small effect size was achieved of returning students at .268 when comparing graduate returned students to undergraduate and negligible for the inverse. The results are in line with the participant descriptive statistics. A summary of the findings is presented in Tables 3 and 4.

Table 3

Effect Size: Mentored by Degree Level

Degree Level	Mentored		Ratio	ln	Effect Size
	0	1			
0	3	4	1.455	.3750	.207
1	12	11	.688	-.3739	-.206
Total	15	15			

0=undergraduate

1=graduate

ln =natural log

Table 4*Effect Size: Returned by Degree Level*

Returned	Mentored		Ratio	<i>ln</i>	Effect Size
	0	1			
0	3	2	.615	-.4861	-.268
1	12	13	1.625	.4855	.268
Total	15	15			

0=undergraduate

1=graduate

ln=natural log

The first null hypothesis to be tested was that there was no significant association between peer-mentoring and retention rates of online undergraduate students. According to the data, all undergraduate students returned to the institution in subsequent semesters. A summary of the results is presented in Table 5.

Table 5*Undergraduate Student Data*

Gender	Mentored	Not Mentored	Returned
Male	3	2	5
Female	1	1	2
Totals	4	3	7

Since all students returned from both groups, mentored and non-mentored, the results failed to reject the null hypothesis. There was no association between peer-mentoring and retention rates of online undergraduate students.

The second null hypothesis to be tested was that there is no significant association between peer-mentoring and retention rates of online graduate students. Once assumptions were reviewed, raw data were entered into SPSS for analysis. (see Table 6)

Table 6

SPSS Raw Data

Degree Level	Mentored	Returned
1	1	0
1	1	1
1	1	1
0	1	1
1	1	0
1	1	1
0	1	1
1	1	1
1	1	1
0	1	1
1	1	1
1	1	1
1	1	1
0	1	1
1	1	1
1	1	1
1	1	1
0	0	1
1	0	0
1	0	1
1	0	1
1	0	1
1	0	1
1	0	1
1	0	1
1	0	1
1	0	0
0	0	1
1	0	0
1	0	1
1	0	1
1	0	1
0	0	1

0=undergraduate, not mentored, not returned

1=graduate, mentored, returned

Raw data was formulated into a cross-tabulation table that grouped data into categories (see Table 7).

Table 7

Degree Level Cross Tabulation

<u>Degree Level</u>		<u>Returned</u>		<u>Total</u>
		No	Yes	
Undergraduate	Mentored		3	3
	No		4	4
	Yes		7	7
	Total			
Graduate	Mentored	3	9	12
	No	2	9	11
	Yes	5	18	23
	Total			
Total	Mentored No	3	12	15
	Yes	2	13	15
	Total	5	25	30

The Fisher's Exact Test was performed using the available data. The test resulted in a two-sided p -value of .304 and a one-sided value of .236 (see Table 8).

Table 8

Graduate Student Results

Returned	#
No	5
Yes	8
Total	23
Fisher's Exact Test	.304
1-sided Fisher's Exact Test	.236

The two-sided p value is preferred (Hillis & Bull, 1993; Warner, 2013). The p value of .304 was greater than the set α of .05. Therefore, the results failed to reject the null hypothesis. There is no significant association between peer-mentoring and retention rates of online graduate students.

Inferential statistics were measured using different categories of data. For example, when combining data according to mentored and non-mentored groups, the test resulted in a two-sided p value of 1.000 (see Table 9).

Table 9

Mentored and Non-Mentored Groups

	Value	df	Asymptotic Sign (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson's Chi-Square	.240	1	.624	1.000	.500
Continuity	.000	1	1.000		
Correlation					
Likelihood Ration	.241	1	.623	1.000	.500
Fisher's Exact Test				1.000	.500
Linear-by-Linear Association	.232	1	.630	1.000	.500
N of Valid Cases	30				

The p value of 1.000 was greater than the set α of .05 and revealed no significant difference between mentored and non-mentored students.

The data was also examined to determine any significance between genders of mentored and non-mentored students. Using Fisher's Exact Test, a p value of 1.000 was observed, revealing no significant association in retention rates between males and females (see Table 10).

Table 10

Gender Results.

Returned	Female	Male	Total
No	1	4	5
Yes	6	19	25
Total	7	23	30

Fisher's Exact Test	1.000
1-sided Fisher's Test	.671

CHAPTER FIVE: CONCLUSIONS

Overview

The chapter will present the results of the performed study. A discussion of the data analysis will provide detailed answers to the research questions. Implications and limitations of the study and results will be examined. The chapter will conclude with recommendations for future research.

Discussion

The purpose of the study was to determine if a relationship existed between peer-mentoring and retention of online undergraduate and graduate college students. In determining the two hypotheses in the study, both questions were vetted using various theories and studies. Five theories discovered during the literature review were a community of inquiry, control-value, engagement, social capital, and social learning. Community of inquiry is the concept that people tend to learn best compared to others (Lipman, 1991). In a classroom setting, studies have shown that students may be afforded increased academic success when they are investigating information in collaboration with their fellow students (Horzum & Uyanik, 2015; Rockinson-Szapkiw et al., 2016). Similarly, the control value-value theory states that students may achieve successful collegiate outcomes when they are engulfed in a positive learning environment (Artino, 2009; Perkun et al., 2007). Previous studies have demonstrated that students who enjoyed their course(s) were more likely to persist in their studies (Muñoz et al., 2016; Simonton et al., 2016). Further studies suggested that peer-mentoring may aid in improving academic performance and providing student encouragement (Asgari & Carter, 2016; Lyndberg & Sheridan, 2015). The theory of engagement is the concept that successful outcomes are more likely to be achieved as people formulate positive relationships (Blinne, 2013; Wolf-Wendel et

al., 2009). Research with college students has yielded promising results linked to success (Frederickson, 2015; Mokoena, 2013). Peer-mentoring has been shown to aid in creating learning communities and engagement (Naseem, 2013; Ruane & Koku, 2014). Social capital is a theory that states that when people form strong and enduring relationships, they become valuable resources to each other (Bourdieu, 1986). Studies have linked strong peer relationships to student retention (Lin et al., 2011; Luo et al., 2013). Social learning theory maintains that people learn best from each other when included in like-minded groups (Bandura, 1971). Previous studies noted correlations between peer interactions and student success (Clary & Wandersee, 2014; Xie, 2012). Peer-mentoring has created positive social interactions and the formation of small groups that aid in retention (Deitz-Uhler & Lenter, 2012; Wang & Yang, 2012).

Peer-mentors may aid non-traditional students. Compelling evidence of online student success when paired with mentors has been provided by various studies (Lach et al., 2013; Shokai et al., 2014; Thomas & Hadley, 2015). Therefore, the present study was designed to provide online students with peer mentors based upon the discussed theories and the positive evidence of past online mentoring studies. The research presented two hypotheses.

The first question to be analyzed was, is there a significant relationship between peer-mentoring and online undergraduate college student retention. After analyzing the data, it was determined that there was no significant difference between students who received peer-mentoring and those who did not receive mentoring (see Table 3). Thus, the data failed to reject the null hypothesis. Furthermore, despite evidence to the contrary provided by past studies and supporting theories, all participating undergraduate students returned in the subsequent semester.

The second question posed in the study was, is there a significant association between

peer-mentoring and online graduate student retention. As in the first question, the data analysis showed no significant difference between the groups of students who received and did not receive peer-mentoring (see Table 3). A minor difference was present, but not enough for statistical significance.

Implications

An extensive review of the literature discovered gaps in past research. The primary information that appeared to be lacking was that previous studies in online student retention required in-person interactions, did not evaluate academic level retention rates, and generally reviewed retention in individual courses. The study addressed each gap that was revealed in the literature.

Students and mentors were not required to meet in person. Mentors used the preferred method of contact espoused by the mentees. In not requiring in-person meetings, the study was not limited by the location of participants. Since the institution studied maintains a 99% online student population, it was imperative to exclude the requirement to meet in person. Online students may never set foot on campus. Institutions of higher learning must adapt to ensure that online students receive the same services that will aid in their success. Mentoring is one possible service to students that may need to be more extensively utilized for the online student community.

The purpose of the study was to determine if mentors could assist online students in remaining in their programs. Online students may have limited contact with staff or faculty. A mentor could potentially be a positive conduit toward retention on behalf of an institution that may otherwise not know what a student is experiencing or having issues with during a given

semester. Mentors may be able to avert negative issues and assist students with continuing their courses and programs.

The measurement used was enrollment. If the participants did not re-enroll, they were not retained. If students returned in subsequent semesters, they were retained. As institutions of higher learning add online courses to their registration and programmatic options, retention methods that specifically address the online student population must be implemented to avoid drop-outs resulting in lower enrollment, revenue and decreasing graduation and retention rates.

Retention was measured over two academic levels, undergraduate and graduate. Each student was enrolled in a religious studies program. However, the degree level and precise degree pursued varied. The inclusion of different levels of academic study was necessary due to the specific enrollment data available from the institution. Varying degree programs imply that mentors could aid students regardless of their chosen educational path. Past studies have indicated possible service to students in singular programs rather than a prescriptive aid to the general online student body. The problem of online student retention was observed by the institution at all degree levels.

The institution enrolls a higher number of graduate-level students compared to undergraduate students. In addition, the ages of the students are similar regardless of academic level. By implementing a study that included both undergraduate and graduate students, a potential retention solution was examined that could span each level of academic pursuit. Analysis that did not fail to reject the null hypothesis would have far-reaching implications upon online college student retention since the potential remedy would not be confined to age groups or degree level.

Participants undertook a variety of courses. Past studies merely viewed retention in terms of a single course and left the reader to wonder if the methods used could be employed in other subjects of collegiate education. The current study viewed online student retention holistically, utilizing the five educational theories previously discussed as guiding principles. Specific courses were not in view, except those that required group projects. Any course that contained a group project was not included in the study due to the potential of skewed data. If students had been involved in a group project, they would have received engagement from other students similar to that of a mentor relationship. The study was predicated upon the belief that students who engaged in a relationship with a mentor may be more likely to persist in their courses and overall education. Therefore, the study results would not have been accurate by potentially already forming the mentor relationship.

Students need to be retained regardless of course or academic degree program. A retention aid that is not limited to specific courses, degree programs, or ages could be utilized by any institution of higher learning that offers online education to aid in student success and bolster retention rates.

Limitations

Though the study addressed gaps in the literature and utilized several educational theories, limitations were present. Four specific limitations were discovered due to the data received: number of participants, spanned multiple semesters, older students, primarily male students.

The study garnered 30 participants. Due to the size of the participation level, a non-parametric data analysis had to be employed. A greater statistical significance could have been gleaned from a larger sample size. A larger participant level would have afforded the use of

parametric data analysis such as logistical regression. Researchers stipulate that parametric data analysis is preferred when possible as it yields greater statistical significance (Gall et al., 2010; Mircioiu & Atkinson, 2017; Warner, 2013). In general, higher sample sizes are linked to greater levels of significance (Kelter, 2020; Warner, 2013).

When calculating retention rates, universities, such as the one studied, usually follow the fall-to-fall approach. Therefore, the calculation is an annual data point that discovers students that remain enrolled from one year to the next. Institutions also calculate the retention of students over two given semesters, such as fall to spring. Due to the difficulty in obtaining participants, the study spanned three semesters, fall, spring, and summer. Fall groups of students were compared to the spring, while spring students were measured along with students enrolled in the summer. The additional semester could prove problematic for researchers desiring to replicate the study as summer enrollment could be limited compared to spring and fall enrollment. Limitation in enrolled students would further limit the potential participants as well as skew data results.

The study primarily included older students. The average age of students enrolled in the institution studied is 42. Non-traditional students have increased responsibilities that can negatively influence retention. Employment, families, and plethora of financial obligations could potentially affect student enrollment in a given semester. Results of the data analysis appeared to indicate that the factors were either not present or did not hinder the progress of participating students. Increased age diversity may have produced differing results.

A majority of the participants were male students (see Table 1). The net result of the study may or may not have been influenced by a lack of gender diversification. Since few females participated in the study, the results may potentially be skewed. Only one of seven

females did not return (14%) in subsequent semesters compared to four out of a total of twenty-three males (17%). A larger sample size that includes balanced gender participation would be needed to be conducted to determine significance.

Recommendations for Further Research

A larger, more diversified sample size is recommended. Larger sample sizes have the potential of greater significance (Gall et al., 2010; Mircioiu & Atkinson, 2017; Warner, 2013) and can yield more detailed information for educators. The current study included 30 participants. As a result, a non-parametric analysis was used. However, a study that included a minimum of 100 participants would have yielded greater statistical power (Gall et al., 2010; Warner 2013). Possible data analysis with higher levels of participants would be a predictability study that utilizes logistic regression (Gall et al., 2010; Warner, 2013). Such a study could prove more beneficial to educators when considering implementing an online mentoring program. A larger sample size that included greater age and gender diversity could also aid in providing researchers with potential correlations that would benefit a more comprehensive array of a given student body.

The researcher recommends a mentoring study that measures enrollment over an academic year instead of a single comparison semester. A more typical fall-to-fall comparison that includes a retention rate calculation is recommended. A mentor to mentee relationship could be established more efficiently if the relationship was fostered over a full year. The current study only utilized mentoring over the course of a single semester. The brevity of the relationship may not have been a sufficient examination of the various educational theories espoused, effectively making no difference in the retention results. An expanded period could make better use of the theories.

The third recommendation for further research is that of academic discipline. The institution studied maintains a single academic discipline – religious studies. Educators would potentially receive greater value in a study that spanned differing disciplines. One discipline may have an advantage over another regarding student retention. A study that offered a variety of disciplines would have the potential to answer such questions. For example, college students enrolled in science, technology, engineering, and mathematics fields are more likely not to remain enrolled (Sithole et al., 2017; Xu, 2016). Including these or other disciplines in a study about online student retention may provide valuable results.

Higher education administrators could benefit from a future study that examined the motivating factors of college student retention. Prospective participants in the study completed a brief survey regarding any ongoing mentoring relationships. Only those that were not currently engaged in a mentoring relationship were eligible to participate. More students with mentoring were retained. The data did not significantly lead the researcher to question the motivations of those who did not receive the mentoring. Previous studies have indicated that motivating factors such as shorter courses that were less than full-term (Cecilia et al., 2020; Burke, 2019) and personal drive or desire (Burke, 2019; Simons et al., 2017) may yield positive retention results. Students within the study were enrolled in full-term courses that were between 11 and 15 weeks in duration. A qualitative study may be required to ascertain student motivations. A possible avenue of research involves differing programs of study. Students enrolled in religious studies may or may not be more motivated than those enrolled in non-religious programs. The knowledge could assist educators in formulating appropriate retention strategies.

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Appendix A

Date: 06/2018

James Flanagan
President
Steven Steinhilber
Executive Vice President
Luther Rice College and Seminary

Dear Dr. Flanagan and Mr. Steinhilber:

As a graduate student in the education department at Liberty University, I am researching as part of the requirements for an Ed.D. The title of my research project is The Relationship Between Peer-Mentoring and Online Undergraduate and Graduate Student Retention. The purpose of my research is to determine if a significant relationship exists between retention rates and peer-mentoring.

I am writing to request your permission to conduct my research at Luther Rice College and Seminary while utilizing your enrollment data.

Participants will be asked to complete their courses while having access to peer mentoring. The data collected will be maintained on a password-protected computer and only viewed by myself. Identification numbers will be used in lieu of personally identifiable information when referencing results. The data will be used to determine any positive correlation between retention rates and the addition of peer- mentoring. Participants will be presented with informed consent information prior to participating. Taking part in this study is completely voluntary, and participants are welcome to discontinue participation at any time.

Thank you for considering my request. If you choose to grant permission, please provide a signed statement on approved letterhead indicating your approval.

Sincerely,

Stephen W. Pray
Director of Student Affairs

Appendix B



Preparing Biblical Leaders through Christian Higher Education

June 2019

Stephen W. Pray
Director of Student Affairs



Dear Mr. Pray:

After careful review of your research proposal entitled *The Relationship of Peer-Mentoring and Online Undergraduate and Graduate Student Retention*, I have decided to grant you permission to contact our students and invite them to participate in your study. Permission to receive and utilize enrollment data for your research study is also granted.

Check the following boxes, as applicable:

The requested data WILL BE STRIPPED of all identifying information before it is provided to the researcher.

The requested data WILL NOT BE STRIPPED of identifying information before it is provided to the researcher.

We are requesting a copy of the results upon study completion and/or publication.

Sincerely,



Dr. James Flanagan
President
Luther Rice College and Seminary

Appendix C



Preparing Biblical Leaders through Christian Higher Education

June, 2018


Office of the Executive Vice President
Luther Rice College and Seminary

Dear Liberty University School of Education:

Luther Rice College and Seminary has received a request by Stephen W. Pray to conduct educational research utilizing volunteers from our student body. The research is to be conducted over the span of two semesters.

On behalf of the Institution, I grant Mr. Pray permission to proceed with the study. Mr. Pray, being an employee, has secure access to the information necessary to complete his study. I am confident that information will be used properly and look forward to participating in this endeavor.

Sincerely,


Steven Steinhilber
Executive Vice President

Appendix D



Preparing for Ministry through Christian Higher Education

December 2019

Stephen W. Pray
Director of Student Affairs



Dear Mr. Pray:

Your request to extend your research entitled *The Relationship of Peer-Mentoring and Online Undergraduate and Graduate Student Retention* has been reviewed. I have decided to grant you permission to extend contact to our students and invite them to participate in your study. Permission to receive and utilize enrollment data through the fall 2020 semester for your research study is also granted.

Check the following boxes, as applicable:

- The requested data WILL BE STRIPPED of all identifying information before it is provided to the researcher.
- The requested data WILL NOT BE STRIPPED of identifying information before it is provided to the researcher.
- We are requesting a copy of the results upon study completion and/or publication.

Sincerely,



Dr. James Flanagan
President
Luther Rice College and Seminary

Appendix E

Luther Rice College & Seminary Institutional Review Board

Luther Rice College & Seminary has established an uncompromising commitment to the Holy Scriptures' mandates, teachings, principles, and prohibitions. Based on these principles, the establishment of an IRB is necessary to protect the rights and welfare of human subjects involved in any research study undertaken by the university. Utilization of best practices in every department of the institution is also a priority.

The IRB is a committee that protects the rights and welfare of human participants in research studies. The Luther Rice College & Seminary IRB consists of faculty members from various departments who review research proposals with the express purpose of ensuring the privacy, anonymity, and, above all, safety of research volunteers.

Members:

Dr. Scott Henderson, Ph.D.,

Apologetics Program coordinator, Associate Professor of Philosophy & Apologetics. full-time faculty member

B.A. Florida Bible College

M.A. Southern Evangelical Seminary

M.A. Franciscan University

Ph.D. Duquesne University

Dr. Ricky Ricketson, Ph.D.

Leadership Program Coordinator, Professor of Leadership., full-time faculty member

B.S.Ed., University of Georgia

M.Div. Southwestern Baptist Theological Seminary

D.Min., Reformed Theological Seminary

Ph.D., Regent University, Organizational Leadership and Human Resource Development

Dr. Ann Kerlin, Ph.D., L.P.C.

Assistant Professor of Biblical Counseling, Department of Biblical Counseling, full-time faculty member

B.B.A., University of West Georgia

M.Div., Luther Rice College & Seminary

M.A., Liberty University, Human Services

Ph.D., Liberty University, Counseling

Meeting Times

The committee meets on the second Wednesday of each month or as needed.

Responsibilities

The IRB is charged with assuring the protection of the rights and welfare of human participants involved in research. Human subjects research is regulated by the federal government through the Department of Health and Human Services' Office for Human Research Protections. The IRB is required to review all research involving human participants prior to the conducting of any research.

Any undertaking in which a University faculty member, staff member, or student investigates or collects information on living humans for research may be considered as "involving human participants." This activity includes surveys, interviews, observations, and the use of archived data. Before beginning a project, each investigator's responsibility is to seek review by the IRB for any study involving human participants. All such research must be submitted to the IRB for approval before any data collection can begin.

- A. All students, staff, or faculty members preparing to engage in research involving human subjects must complete the attached Institutional Review Board proposal and submit it to the committee at least one week before the next meeting date for its review (See Appendix A). Once the IRB has reviewed and requested, if necessary, any revisions in the application, they will return a signed approval copy to the researcher. After receiving IRB approval, the data collection phase of the research may begin. All student applications must have a faculty sponsor.
- B. All research projects, unless receiving a waiver from the IRB, must include an informed consent form. The IRB has drafted a model consent form which is attached to these instructions (Appendix B).
- C. All projects are given approval for data collection for one (1) year, at which point they must be resubmitted for review again. In certain situations, the IRB may require a more frequent review of research projects, subject to their discretion and the nature of the project.
- D. Any changes in the protocol which the researcher deems necessary must be resubmitted through the IRB for approval. Such changes need to be reported before they are implemented in the research study to maintain IRB oversight.

During any research study that encounters problems, the IRB and the institutional president should be notified at once by the principal investigator (PI). Complaints regarding research studies should be addressed by the IRB board and the administration, depending on the nature of such issues. If there are unanticipated problems involving risks to subjects or others or any serious or continuing noncompliance with IRB policy or procedures or determinations by said body, then suspension or termination of IRB approval may result.

Human Subject Research Review Application Form

LUTHER RICE COLLEGE & SEMINARY

Proposal Number: _____

Principal Investigator:

Telephone:

Email:

Complete Title of Research Project:

Code Name of Project (One Word):

Faulty Sponsor/Chair (if student project):

1. This study is being conducted as part of (check one using an "X"):

Doctoral Dissertation Graduate Student Research

Faculty research Grant or Contract

Other (specify):

2. Where will this study be conducted:

Name of locale(s):

Internet (name of survey software/website):

Date you wish to start research (MM/DD/YY):

3. Approximately how many participants will there be?

4. Administration

How long will it take for you to "run" each research participant through your project?

How will participants be recruited (give a brief summary of the process)?

Are research participants equitably chosen (have an equal chance) for participation/selection?

Yes

No (explain below)

5. Describe the rationale for this research project and the reason for using the particular participant population in question:

6. Describe the methodology that will be followed (a brief but comprehensive statement of the methodology relating to human research participants):

7. Describe the procedures that will be used to obtain informed consent and protect the anonymity of the research participants.

8. Briefly assess any potential risks of harm that research participants may incur?

9. Briefly assess the potential benefits that may occur to individual participants or society.

10. Briefly explain the nature of training you received in data collection, research design, or in conducting this research.

This proposal has been approved for data collection

Required Signature: _____

Date: _____

Human Subject Research Review Application Form

LUTHER RICE COLLEGE & SEMINARY

Proposal Number: _____

Principal Investigator: Stephen W. Pray

Telephone: _____ Email: _____

Complete Title of Research Project: The Relationship of Peer-mentoring and
Online Undergraduate and Graduate College Student Retention
Code Name of Project (One Word): MentorFaculty Sponsor/Chair (if student project): Dr. Amanda Dunagan (Liberty Univ)

1. This study is being conducted as part of (check one using an "X"):

 Doctoral Dissertation Graduate Student Research Faculty research Grant or Contract Other (specify): _____

2. Where will this study be conducted:

 Name of local(s): Luther Rice Internet (name of survey software/website): _____ Date you wish to start research (MM/DD/YY): _____3. Approximately how many participants will there be? 100

4. Administration

How long will it take for you to "run" each research participant through your project?

Approx. 2 Semesters

How will participants be recruited (give a brief summary of the process)?

Letter and email with description and incentive

Are research participants equitably chosen (have an equal chance) for participation/selection?

Yes

No (explain below)

5. Describe the rationale for this research project and the reason for using the particular participant population in question:

Online Student Retention Issues; I will introduce an intervention,

6. Describe the methodology that will be followed (a brief but comprehensive statement of the methodology relating to human research participants):

All data will be protected via password encryption. Personal info will not be maintained,

7. Describe the procedures that will be used to obtain informed consent and protect the anonymity of the research participants.

Letter with description and risk (consent form). Participants will be identified as numbers w/o name or personal info.

8. Briefly assess any potential risks of harm that research participants may incur?

Primary risk is from interaction with mentors. Mentors will be students as well who are trained.

9. Briefly assess the potential benefits that may occur to individual participants or society.

Potential for students to remain in school/complete education

10. Briefly explain the nature of training you received in data collection, research design or in conducting this research.

Training via EdS + Ed.D. degree in Qualitative and Quantitative research. Certified IRB training as well.
This proposal has been approved for data collection

* Applicant Signature: _____

Date: 11/12/18

Approved by: _____

Date: 12/4/18

Scott Henderson

Printed name(s)

Approved by: [Redacted] Date 12/4/2018
Ronald E. Cobb

Printed name: [Redacted]
Approved by: [Redacted] Date 12/7/2018
Rusty Kicketson

Printed name: [Redacted]
Approved by: [Redacted] 11/28/18
Ann M Kerlin

Appendix F

INVESTIGATOR AGREEMENT & SIGNATURE PAGE*

BY SIGNING THIS DOCUMENT, THE INVESTIGATOR AGREES:

1. That no participants will be recruited or entered under the protocol until the Investigator has received the final approval or exception email from the chair of the Institutional Review Board.
2. That no participants will be recruited or entered under the protocol until all key personnel for the project have been properly educated on the protocol for the study.
3. That any modifications of the protocol or consent form will not be initiated without prior written approval, by email, from the IRB and the faculty mentor/chaire, except when necessary to eliminate immediate hazards to the participants.
4. The PI agrees to carry out the protocol as stated in the approved application: all participants will be recruited and consented as stated in the protocol approved or exempted by the IRB. If written consent is required, all participants will be consented by signing a copy of the approved consent form.
5. That any unanticipated problems involving risks to participants or others participating in the approved protocol, which must be in accordance with the Liberty Way (and/or the Honor Code) and the Confidentiality Statement, will be promptly reported in writing to the IRB.
6. That the IRB office will be notified within 30 days of a change in the PI for the study.
7. That the IRB office will be notified within 30 days of the completion of this study.
8. That the PI will inform the IRB and complete all necessary reports should he/she terminate University Association.
9. To maintain records and keep informed consent documents for three years after completion of the project, even if the PI terminates association with the University.
10. That he/she has access to copies of 45 CFR 46 and the Belmont Report.

Stephen W. Frey _____ 6/26/19
 Principal Investigator (Print) Principal Investigator (Signature) Date

Co-Investigator (Print) Co-Investigator (Signature) Date

FOR STUDENT PROPOSALS ONLY:

BY SIGNING THIS DOCUMENT, THE FACULTY MENTOR/CHAIR AGREES:

1. To assume responsibility for the oversight of the student's current investigation, as outlined in the approved IRB application.
2. To work with the investigator, and the Institutional Review Board, as needed, in maintaining compliance with this agreement.
3. To monitor email contact between the Institutional Review Board and principle investigator. Faculty mentors/chairs are copied on all IRB emails to PIs.
4. That the principal investigator is qualified to perform this study.
5. That by signing this document you verify you have carefully read this application and approve of the procedures described herein, and also verify that the application complies with all instructions listed above. If you have any questions, please contact our office (irb@liberty.edu).

Amenda Durogan _____ 6/24/19
 Faculty Mentor/Chair (Print) Faculty Mentor/Chair (Signature) Date

*The Institutional Review Board reserves the right to terminate this study at any time if, in its opinion, (1) the risks of further experimentation are prohibitive, or (2) the above agreement is breached.

Appendix H

Mentor Guidelines

1. Each mentor should contact all mentees weekly.
2. Contact will need to be tracked on the provided Mentor Checklist.
3. A variety of contact methods should be used according to mentee preference.
4. Suggested methods of contact are email, phone call, Skype, and text.
5. Be helpful and courteous.
6. Set boundaries that are appropriate for both mentor and mentee.
7. Respond quickly to inquiries.
8. Refer mentees to proper institutional departments for course issues.
9. Offer mentees:
 - a. Act as a positive role model

Aid in goal setting and life balance scheduling

- b. Career advice and contacts
 - c. Experiences and general wisdom
 - d. Support
10. Expectations:
 - a. Avoid offensive language or topics.
 - b. Be thorough and write comments/summaries of your interactions each week.
 - c. Have fun. Remember, the exercise is to be a positive and uplifting experience.
 - d. **Maintain privacy. Do not share information about the mentee without permission.**
 - e. Proofread and use a spell checker prior to sending a text or email.
 - f. Show respect to each person.

Appendix I

The Relationship of Peer-Mentoring and Online Undergraduate and College Student Retention

Stephen W. Pray
Liberty University
Education Department

You are invited to be in a research study of online student retention rates. You were selected as a possible participant because you complete online courses. I request that you read this form and ask any questions you may have before agreeing to be in the study.

Stephen Pray, a doctoral candidate in the education department at Liberty University, is conducting this study.

Background Information:

The purpose of this study is to ascertain the value of peer-mentoring upon retention rates of online undergraduate and graduate students.

Procedures:

If you agree to be in this study, I would ask you to do the following:
Actively participate in peer-mentoring. You will be randomly assigned to one of two groups:
Group 1= access to peer-mentoring or Group 2= non-access to peer-mentoring.

Risks and Benefits of Being in the Study:

The risks: The study has no more risks than the risks involved in everyday life.

The benefit to participation is to aid online students in completing their degrees potentially.

Compensation:

Participation is voluntary. Those that participate will be entered into a drawing for one of five Amazon Gift Cards. Each card will have a value of ten dollars.

Confidentiality:

The records of this study will be kept private. In any report I might publish, I will not include any information that will make it possible to identify a subject. Research records will be stored securely, and only the researcher will have access to the records. Personal information will not be kept or shared. In lieu of personal information, Student Identification Numbers will be utilized.

Voluntary Nature of the Study:

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with Liberty University or Luther Rice College and Seminary. If you decide to participate, you are free not to answer any question or withdraw at any time without affecting those relationships.

Contacts and Questions:

The researcher conducting this study is Stephen Pray. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact him at steve.pray@lutherrice.edu.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd, Carter 134, Lynchburg, VA 24515, or email at irb@liberty.edu.

Please notify the researcher if you would like a copy of this information to keep for your records.

Statement of Consent:

I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

(NOTE: DO NOT AGREE TO PARTICIPATE UNLESS IRB APPROVAL INFORMATION WITH CURRENT DATES HAS BEEN ADDED TO THIS DOCUMENT.)

Signature: _____ Date: _____

Signature of Researcher: _____ Date: _____

Appendix J

Mentor Survey

Thank you for your willingness to participate in the study. As a reminder, the study will seek to determine a correlation between mentoring and online student retention. For the integrity of the study to remain intact, it is imperative that participants are not currently engaged in a mentoring relationship. Mentors provide aid via the formation of helpful relationships. The relationships have the potential of affording mentees connections, encouragement, knowledge, and support. Mentors frequently have more knowledge and experience in specific areas that are beneficial to the mentee. While a mentee may become friends with the mentor, a friend is not necessarily considered a mentor. Examples of mentors include, but are not limited to the following: business professionals, pastors, and professors.

Please respond to the following question:

To the best of your knowledge, are you currently engaged in a mentee-mentor relationship?

Yes No

(Signature)

(Print Name)

Thank you again for your participation.