WHAT INFLUENCE DOES SOCIAL MEDIA HAVE ON STUDENT

SUCCESS AND PERSISTENCE WITHIN ONLINE

ASYNCHRONOUS COURSES?

Doctoral Dissertation Research

Submitted to the
Faculty of Argosy University, Phoenix Campus
College of Education

In Partial Fulfillment of
the Requirements for the Degree of

Doctor of Education

by

Daniel Frederick Sadler

July, 2014

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Larry Gay Reagan, Ed.D.

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ABSTRACT

The lack of socialization between online asynchronous students leads to higher failure rates and large amounts of students withdrawing from the online courses. This study analyzed the effects of social media on student success and persistence in the building of learning communities in asynchronous online courses. This study used a quantitative methodology and inferential statistics through descriptive statistics , two-way ANOVA, and chi-squares test of independence to determine the utilization of the social media web site and if students using the web site succeeded and persisted at a higher rate than students who did not use the web site. The study found that the institutional social media web site was under-utilized by all undergraduate and graduate students. The undergraduate students who used the social media web site succeeded and persisted at a higher rate than the undergraduate students who did not use the social media web site. Graduate students who used the social media web site did not succeed and persist at rates higher than the graduate students who did not use the social media web site. Further study needs to be conducted into the different types of social media that can be incorporated into asynchronous online courses. A qualitative study into the undergraduate students' perceived benefits and detriments of the social media web site could help improve the social media web site and possibly help improve on student success and persistence. A qualitative study could help online higher education institutions find ways to aid the graduate learners in their progress through their coursework.

ACKNOWLEDGEMENTS

I wish to thank certain people who have aided me in this educational journey and my continuation of lifelong learning. Dr. Teresa Collins-Jones who put me on the path to this study the day I had graduated with my master's degree by stating that this would be a fascinating study and I should go for it!

Dr. Gerry Bedore supported me through this process and personally aided me at the residencies. Gerry took time before and after Residency 1 classes to help me narrow down and perfect my dissertation title. The extra time and effort he spent on me was invaluable to this study.

Dr. James Mitchell, Dr. Larry Gay Reagan, and Dr. Charlene Johnson who understood the urgency I had to complete my degree. Your guidance through the dissertation process and superb feedback has helped me shape this study into what I had envisioned. I am honored to have had a dissertation committee with so much skill and could guide me to the final product of my vision.

I would not have made it through this process without my advising and mentoring team. Jeff Thomas and Dr. Ann Weaver helped perfect this study through their editing and statistical knowledge. Jena Minik, Theresa Lloyd, Nicole Schell, Tara Ellison-Jones, and Jeremy Lookabaugh supported my endeavor as my counselors and mentors. Thank you for the effort and being the sounding board to the dilemmas that occurred through the process. Dr. Karl Kovacs, Dr. Robert Wollman, and Mike Guyton have been a source of advisement and brotherhood for half of my life, thank you guys!

The importance of education was instilled in me through the loving support of my parents Joseph and Barbara Sadler and my grandparents Frederick and Elizabeth Nielsen

and Joseph and Eleanor Sadler, my brother Michael Sadler, and my in-laws Karl and

Carol Kovacs. You have shown me the value of education and have supported me when

no one else would have. I am forever grateful and I love you all.

My children Ashleigh and Joseph Sadler are a source of joy and pride I have in

my life every single day. You are both exceptional individuals and I can't wait to see

how you will influence the world in the big and little things you do. Thank you for your

patience and love.

Finally I wish to thank my wife Kellee. Your support and the sacrifices you have

made through this time have been too numerous to count. This compilation of the last

three years of my studies would never have happened without you. There are no words

to express the meaning you give my life and how much I love you.

DEDICATION

This work is dedicated to my family Kellee, Ashleigh, and Joseph Sadler, whose love, inspiration, and commitment to my success is never wavering.

TABLES OF CONTENTS

Page

TABLE OF TABLES

TABLE OF FIGURES

Figure **Page**

CHAPTER ONE: THE PROBLEM

Introduction

Higher education is in a critical stage of transformation with the seemingly limitless availability of information technology stemming through the internet clashing with the pre-modern classrooms complete with lectures and chalkboards. Online courses, massive open online classes (MOOCs), and digital books have infiltrated most of the major colleges and universities in the United States today. Meanwhile, the importance of student success and persistence within post-secondary and higher education can be seen through the plateau of completion rates and skyrocketing student loan default rates (Jenkins, 2012). College administrators are now challenged with how to embrace technology, increase student success, and persistence while maintaining the identity of the school through their mission, values, and goals.

Problem Background

The advent of asynchronous learning in an online classroom environment has provided students opportunities to achieve their degrees while maintaining employment and a family. In a traditional brick and mortar institution, students can learn through peer-to-peer interaction in and outside of the classroom (Chickering, 1993). Kuh, Klinzie, Schuh, and Whitt (2005) demonstrated peer-to-peer learning transpires through social collaboration in groups, mentoring, and peer evaluation. Due to the nature of the asynchronous online classroom format, students do not have those same opportunities for social peer-to-peer learning opportunities and therefore are less successful in their courses than traditional students (Picciano, 2002; Crawley & Fetzner, 2013).

Crawley and Fetzner (2013) found that the lack of the associations between students leads to higher failure rates and large amounts of students withdrawing from the online courses. Education Sector reports that students who drop out of class are four times more likely to default on their student loans than those who graduate (Beimiller, 2012). The default on student loan rates is now higher than it has been in over two decades (Thomason, 2013).

Student success and persistence in the classroom are focal points for college administrators and the United States government due to high dropout rates and large default rates on Title IV loans costing the nation billions of dollars (Thomason, 2013). Proprietary educational institutions have the highest default rates of all institutional types maintaining 10% higher than the national average (Bidwell, 2013). During the past several years the United States Department of Education has been attempting to implement gainful employment regulations on online proprietary educational systems due to the low success rates and high default rates of students. A portion of the current proposal is to eliminate Title IV funding for three years for any program which has student default rates higher than 30% (United States Department of Education [USDE], 2014).

Kuh et al. (2005) stated student success occurs when the institution holds the student to high reaching standards both within and outside of the classroom. According to Jenkins (2012), generating the expectation of learning through successful completion of a program means that students who succeed in classes are likely to stay in school, graduate, find employment, and pay off their student debt while students who fail their courses are likely to drop out and will not have the means to pay the debt incurred

through student loans. Woo and Reeves (2008) found that students succeed in courses due to their own motivation, the type of instruction presented, and the meaningful interaction in the ways students socialize with each other inside and outside of the classroom.

Purpose of Study

This study analyzed the effects of social media on student success and persistence in asynchronous online courses. Improving the social interaction between asynchronous students within higher educational institutions may increase student success and persistence. Finally, understanding informal learning communities outside of the online classroom may help online higher educational institutions gain insight into (a) how social media makes a difference as an informal educational tool, and (b) how social media impacts an asynchronous student's persistence.

Theoretical Framework

In the 1960s Arthur Chickering, William Perry, and Lawrence Kohlberg produced separate major theories that enabled student affairs departments to understand the developmental issues students face while attending school at a higher educational institution (Evans, Forney, Guido, Patton, & Renn, 2010). Chickering's theory was based on the college student's formation of identity and how the student's identity progresses as the student progresses through his/her education in college (Chickering, 1993). Chickering demonstrated that as a student's identity grows, so does his/her ability to be successful in their courses.

Chickering and Reisser (1993) developed seven vectors of a college student's psychosocial development that demonstrate how students psychosocially develop which

allows them to then progress academically. As stated by Evans et al. (2010), the seven

vectors are placed in a particular order as one transforms into another and helps an

individual grow psychosocially; however, students can skip through the vectors. The

seven vectors Chickering developed are: "developing competence, managing emotions,

moving from autonomy toward interdependence, establishing identity, developing

purpose, and developing integrity" (Evans et al., 2010, p. 67). Chickering and Reisser

(1993) also formed the seven environmental factors that can affect the student's

development while at college. They are (a) institutional objectives, (b) institutional size,

(c) student-faculty relationships, (d) curriculum, (e) teaching, (f) friendship and student

communities, and (g) student development programs and services (Evans et al., 2010).

Chickering's (1993) theory of students moving from autonomy towards

interdependence is important to the overall question of this study. Moving from

autonomy through interdependence is important because the students develop

interpersonal skills and peer-to-peer learning begins to influence student success. Those

skills of interpersonal relationships are the skills that students need to develop to help

them become more successful within college.

Kuh et al. (2005) found that while most educators think that it is solely the job

of the faculty member to teach the class, it has been discovered that schools cannot be

limited to just the faculty member's lectures. Research has been conducted on several

colleges and universities in a project called Documenting Effective Educational Practice

(DEEP; Kuh et al., 2005). According to the authors, DEEP has determined that students

can and do learn from each other as much as from the faculty member.

Collaborative learning can take many different forms internal to the classroom and externally as well. DEEP's study found:

> Included among the effective active and collaborative learning practices used at DEEP institutions are those on the National Survey of Student Engagement survey: (1) asking questions in class or contributing to class discussions or both, (2) making class presentations, (3) working with other students on class projects inside or outside of class, (4) tutoring other students, (5) participating in a community-based project as part of a course, and (6) discussing ideas from readings or classes with other students, family members, or others outside of class. (Kuh et al., 2005, p. 193)

When students are placed in an environment where they can work collaboratively for a common goal, their individual experience, ideas, and input effectively serves as a teaching tool to themselves as well as their peers (Kuh et al., 2005). Several studies have shown that student success is based on many factors, and student peer-to-peer interaction and activities are a big part of student success while at college (Casey & Evans, 2011).

Knowles' (1973) principles of andragogy are a factor for increasing student success within the student's coursework. According to Knowles' (1973), the first principle is to provide adult students with a way to use real world examples in their assignments. This follows Knowles' principle of letting the adult students know why they are doing something and making the objective task-oriented. The author then states the second principle is to make sure there are no surprises and the adult student understands why the assignment is necessary. This leads to Knowles' principles of andragogy by providing to the adult student reasons why the assignment is necessary. The third principle is to diversify the assessments so there is not a continuous influx of papers or tests in a given course. Knowles' principle of being task-oriented in the work the adult student is doing will enable them to be motivated and succeed. The

final principle is to allow the student opportunities to reflect through journal writings or end of the class summaries so the adult student will see and demonstrate that the learning objectives have been met (Knowles, 1973).

Research Questions

RQ1: What is the use of institutional social media by students?

RQ2: Do students participating in institutional social media succeed at higher rates than students who do not participate in social media?

RQ3: Do students participating in institutional social media persist at higher rates than students who do not participate in social media?

Hypothesis

Research Question 1 Hypothesis

The first research question was addressed with descriptive statistics of institutional social media participation; no hypothesis testing was involved.

Research Question 2 Hypothesis

H_0: There was no statistically significant difference in academic success (grades) between students who participate in institutional social media and students who did not participate in institutional social media.

H_1: There was a statistically significant difference in academic success (grades) between students who participate in institutional social media and students who did not participate in institutional social media.

Research Question 3 Hypothesis

H_0: There was no statistically significant difference in persistence between students who participate in institutional social media and students who did not participate in institutional social media.

H_1: There was a statistically significant difference in persistence between students who participate in institutional social media and students who did not participate in institutional social media.

Limitations and Delimitations

Limitations

The limitations and delimitations of the study define the areas which were considered or were out of the control of the researcher (Butin, 2010). First and foremost, there was not much research on the socialization of students in an asynchronous learning community. Participation of the students in the social media website was not mandatory so some students may not have been utilizing the website. Finally, students may have had limited knowledge or different interpretations and biases of the social media website that may have affected their survey questions and their participation in the social media website.

Delimitations

The study focused on a single proprietary online asynchronous institution at one specific time period which could have limited the analysis of the study. The study also focused on one set of students within the institution.

Definition of Terms

Several terms, central throughout the study, need to be defined for clarity and understanding of the context behind those terms. The intention was to restrict the various derivations of the terms so the concept intended by the term is clear.

Andragogy - Knowles, Holton and Swanson (2005) demonstrated that adult students use different means of learning than children. This method of learning combines understanding theory models and then placing those theories into life experiences and actions.

Asynchronous courses - The courses students take at the institution are designed to allow the student to post in a discussion board and submit papers, quizzes, and tests within their own availability of time. Due dates are set for the students to establish maximum timeframes of submission of the work, but students are able to submit any time previous to the due date.

Autonomy - Chickering (1993) defined autonomy as separating oneself from others by controlling one's own actions and feelings.

Interdependence - This study used Chickering's definition of interdependence as respecting the autonomy of others and looking for ways to give and take with an ever expanding circle of friends (Chickering, 1993).

Learning communities - The connection of students through commonalties and responsibility for not only their own learning, but the learning of other students create learning communities (Brown, 2001).

Persistence - For the purpose of this study, persistence was defined as students transitioning from one course into their next course without a break in time or enrollment not automatically designated by the institution.

Social media - For the purposes of this study social media was defined as the internal social media website used by the university for students and faculty to socially engage outside of the classroom. The only persons permitted into the social media site are students, faculty, and staff.

Student success - This study referred to student success as students who successfully complete their course by earning grades compliant with the institution's student handbook.

Significance of Study

This study may be significant since online courses and programs are rapidly growing throughout higher education. The results of this study could lead to the initiation of more social tools within asynchronous online classrooms to help increase the student success rates and the persistence of students throughout their coursework. The increase of student success and persistence could then begin to lower the student debt ratio that is plaguing higher education today.

CHAPTER TWO: REVIEW OF THE LITERATURE

Introduction

The focus of the review of research literature in this chapter explores applicable scholarly writings and theories pertaining to the influence of student socialization on their success and persistence in higher education. It first examines the physiological aspects of human socialization. It then establishes the theoretical framework of psychosocial development of higher education students through Erickson's stages of psychosocial development, Chickering and Reisser's seven vectors of psychosocial development, Knowles' theory of andragogy, and Mezirow's transformative learning theory. The review then focuses on learning communities and then social membership within higher education. The influences of student success and persistence are then reviewed and finally a review of social media technology within higher education is investigated.

The Physiology of Human Socialization

Lieberman (2013) found that all humans have the basic physiological need of being social. Through the use of a magnetic resonance imaging (MRI) machine the author found that inclusion within social groups brings pleasure to the brain and ostracization of social groups brings pain to the brain (Lieberman, 2013). The pleasure and pain synapses are both realized within the same region of the brain (Lieberman, 2013).

Campos, Laferriere, and Harasim (2001) asserted that a socio-biological dynamic happens when physical and symbolic exchanges occurred between subjects or symbolic objects such as computers. This biological dynamic is tended through structural and functional activities of the subject as well as the phylogenetic and genetic environment

the subject has learned through their culture (Campos et al., 2001). The authors stated that all individualized activities within an asynchronous online course have some form of collaboration required, and therefore, the subject's socio-biological mechanisms influence all of their coursework (Campos et al., 2001).

Galles (2007) found that at a molecular level the human brain learns when information is passed through neurons as energy and skips across synapses through the use of neurotransmitters which cause a chemical reaction. The author wrote that although much of how the brain works is still undiscovered, there has been evidence that the brain can or will not learn dependent on the emotional state of the individual (Galles, 2007). Nelson (2007) stated that how an individual relates to their environment through social or cultural interaction is critical to explain how learning happens.

Psychosocial Development of Higher Educational Students

Erickson's Stages of Psychosocial Development

Erickson (1964) described eight stages of psychosocial development from infancy to late adulthood. Each stage Erickson described plays a major role in the person's ability to socialize with others as well as become more confident with themselves as individuals (Erickson, 1964). Maslow's (1970) theory of self-actualization mirrors Erickson's theory whereby a person transforms from a self-centered orientation to another-centered orientation. Three of Erickson's stages are of interest to this study as they pertain to the age groups associated with the college student; (1) identity versus role confusion, (2) intimacy verses isolation, and (3) generativity versus stagnation (Erickson, 1964).

According to Erickson (1964), identity versus role confusion occurs during adolescence or ages 12 to 18. During this time, teenagers are developing a sense of self and personal identity. The need for independence and exploring their sense of self is critical for the adolescent to gain a strong personal identity and develop a direction for their lives (Erickson, 1964). The end of this stage is where students are potentially beginning college life. Reid and Boyer (2013) suggested that today, the use of online social media with adolescents is influencing the teen's self and personal identity in written form.

Young adults moving into Erickson's (1964) intimacy versus isolation stage will be ages 19 to 40. These people entering this stage have either established a self-identity and are experiencing relationships with others or will not have established their identity and feel isolated (Erickson, 1964). Marar (2012) found that intimacy had four definitive characteristics including; reciprocation, conspiratorial, emotional, and kind. Isolation, on the other hand, can be caused by the person not having their own identity, their own personal insecurities, wishful thinking, and various cultures (Marar, 2012).

In Erickson's (1964) generativity versus stagnation stage, adults ages 40 to 65 strive to make their mark on the world or will fail to do so resulting in stagnation. Slater (2003) found that through this stage people concern themselves with the level of inclusiveness with others, pride versus embarrassment, and responsibility versus ambivalence. Van Hiel, Mervielde, and De Fruyt (2006) found that stagnation significantly related to neuroticism, extraversion, and openness to experience while generativity significantly related to extraversion, conscientiousness, and openness to experience.

Chickering's Seven Vectors of Psychosocial Development

Chickering and Reisser (1993) developed seven vectors of psychosocial development of college students. Each vector a student passes through helps them become more successful in college (Chickering & Reisser, 1993). The seven vectors Chickering developed are: "developing competence, managing emotions, moving from autonomy toward interdependence, developing mature interpersonal relationships, establishing identity, developing purpose, and developing integrity" (Evans et al., 2010, p. 67). Chickering and Reisser (1993) also formed the seven environmental factors that can affect the student's development while at college; they are institutional objectives, institutional size, student-faculty relationships, curriculum, teaching, friendship and student communities, and student development programs and services as cited in Evans et al. (2010).

Blimling (2013) conducted a study comparing neuroscience with Chickering and Reisser's vectors. The author writes that the prefrontal cortex areas of the brain along with the limbic system are involved in the first five vectors of Chickering and Reisser's (1993) study (Blimling, 2013). The prefrontal cortex area of the brain undergoes significant changes of students up to the age of thirty years old. Chickering and Reisser's vectors of psychosocial development occur in part by the physiological changes occurring in the student's brain (Blimling, 2013).

The first vector, developing competence, is the student's overarching inner sense that they are capable of performing intellectually, physical and manually, and interpersonally (Chickering & Reisser, 1993). Intellectually, the student is externally measured through standardized tests and previous school experiences; thus, the student

feelings could be mixed while in college (Chickering & Reisser, 1993). Physical and manual competence such as athletics or painting has been shown to increase critical thinking with students (Winter, McClelland, & Stewart, 1981; Pascarella & Smart, 1990; Ryan, 1989). Interpersonal confidence stems from the students' communication skills as well as empathy towards others with appropriate responses for those other students (Chickering & Reisser, 1993).

Managing emotions is the second vector Chickering and Reisser (1993) used to show how students develop psychosocially. Students can go through a wide array of emotions while attending school including fear, overwhelmed, joy, anger, and pride. To develop psychosocially students must be able to be aware of their emotions, affirm the validity of their emotions, and then learn how to integrate those emotions so those feelings do not control the student but add to their self-expression (Chickering & Reisser, 1993). The authors stated, "We need programs that celebrate our common humanity and vulnerability as well as our cultural differences" (Chickering & Reisser, 1993, p. 113).

The third of Chickering and Reisser's (1993) vectors involves three components of moving from autonomy to interdependence: emotional independence, instrumental independence, and interdependence. The student begins in a state of autonomy where they have gained mastery of themselves without interference from others (Chickering & Reisser, 1993). Emotionally, the student will be able to separate from others and standalone without support (Chickering & Reisser, 1993). Instrumentally, the student will be self-sufficient and able to leave one place and function in another without issue (Chickering & Reisser, 1993). Finally the student becomes interdependent where the

student "respects the autonomy of others and looks for ways to give and take with an ever expanding group of friends" (Chickering & Reisser, 1993, p. 140).

The next vector of the psychosocial development of college students is developing interpersonal mature relationships. The authors wrote that the two components of this vector are tolerance and appreciation of each other's differences as well as what capacity the individual has for intimacy (Chickering & Reisser, 1993). The tolerance and appreciation of differences can be divided into three ethno-centric states and three ethno-relative states (Bennett, 1986). Within the ethnocentric states, students resist cultural diversity by a denial of differences, providing a defense against those differences, or minimizing the differences (Bennett, 1986).

Conversely, a student in the ethno-relative states accepts differences, adapts differences or integrates the differences to form strong relationships (Bennett, 1986). The capacity for intimacy occurs when students are able to find a balance of time with friends, time alone, and time with their partner (Chickering & Reisser, 1996). The relationships held with friends and partners will be interdependent upon each other where sharing, anticipating needs, and resolving conflicts can happen without resistance from others or the individual (Chickering & Reisser, 1996).

Students within the collegiate setting establish identity through the next vector by developing an awareness of their competencies, emotions, and values by standing on their own without support from others (Chickering & Reisser, 1993). Chen and Li (2009) found that establishment of social identity creates significantly higher problem solving, reciprocity, and social welfare maximizing actions. Vansteenkiste, Lens, and Deci (2006) founded the self-determination theory where humans are proactive of harnessing

their inner forces, humans want to develop and integrate with others, and best practices and action are inherent when brought out by the social environment.

The sixth vector described by Chickering and Reisser (1993) is when the student begins to develop purpose by establishing clear goals and persisting to those goals even if obstacles get in their way. Abowitz and Knox (2003) found that college students value the goals of interpersonal relationships over the goals of career or work. Gao, Podlog, and Harrison (2012) found that students should develop a multiple goal perspective to ensure that their work and motivation is continued.

The final vector of psychosocial development defined by Chickering and Reisser (1993) is developing integrity throughout the experimentation and diversity of college life. The authors determined that developing integrity meant the student placed a continual balance of their own values and self-interests with the interests of other students (Chickering & Reisser, 1993). The students also incorporate the values they have learned on their own and live by them and use the values they have in a socially responsible manner (Chickering & Reisser, 1993).

Knowles' Theory of Andragogy

In 1926 the American Association for Adult Education was formed due to research from Thorndike (1928), Lindeman (1926), and Sorenson (1938) who found scientific evidence that adult students had different learning abilities than children. Knowles (1973) developed the theory of andragogy which includes the six core principles related to adult learning. Those principles are: "(1) the student's need to know, (2) self-concept of the student, (3) prior experience of the student, (4) readiness to learn, (5) orientation to learning, and (6) motivation to learn" (Knowles et al., 2005, p. 16).

Knowles et al. (2005) stated that adult students need to know why they are going to learn something before they learn it. The authors suggest collaborative efforts between the instructor and the students to help satisfy their need to know how the material will be taught, what kind of learning will occur, and why learning the material is important to the student (Knowles et al., 2005). The how, what, and why of learning is imperative for educators to use to help motivate adult students so they may learn the required materials presented (Tannenbaum, Mathieu, Salas, & Cannon-Bowers 1991; Hicks & Klimoski, 1987; Baldwin, Magjuka, & Loher, 1991; Clark, Dobbins, & Ladd, 1993; Reber & Wallin, 1984).

Self-directed learning is the adult student's ability to be autonomous within them by taking ownership of their own learning (Knowles et al., 2005). Garrison (1997) found for this to happen the adult student needs to have control of their actions, motivation, and a sense of responsibility to the task. Self-directed learning is controlled by the adult student's feeling that either they have internal control or an external factor is in control of their learning (Knowles et al., 2005).

The utilization of an adult student's previous experience is necessary so the student can apply theory into action as well as apply theory into reflection (Schon, 1987). Jonassen and Grabowski (1993) found that individuals store their learning experiences in memory which aids in the assimilation of new learning material. Adult students will then pay more attention to the learning materials that fit their schema and less attention to that which does not fit (Knowles et al., 2005).

Readiness to learn has two core dimensions of direction and support which adult students will exhibit at some varying degrees throughout the learning process (Pratt,

1988). Direction is the adult students need for assistance from others which produce varying levels of competence or dependence in the student (Knowles et al., 2005). Support refers to the need of the adult student to have commitment and confidence in their learning abilities dependent on the subject matter (Knowles et al., 2005).

The student's orientation to learning and problem solving relies on Kolb's (1984) experiential learning styles including divergers, assimilators, convergers, and accommodators. Kolb's (1984) model demonstrates how an adult student takes concrete experience, makes observations and reflections on the concept, formulates abstract concepts and generalizations of the new material, and then tests the concepts in new situations. Much of this work is completed through the use of small groups and collaborative efforts (Knowles et al., 2005).

Wlodowski (1985) provided four factors that motivate adult students including: success, volition, value, and enjoyment. Adult students will be motivated to learn if they feel they can learn the material, the material will help them with an issue, and that issue is important to them in their lives (Knowles et al., 2005). Bannier (2014) found that through life experience, communication, camaraderie, clarification, confidence, and connections an asynchronous online student is able to build their motivation and goals through their coursework.

Mezirow's Transformative Learning Theory

Transformative learning theory designed by Mezirow, Taylor, and Associates (2009) has 10 phases that each student experiences psychosocially. They are:

1. A disorienting dilemma
2. Self-examination

3. A critical assessment of assumptions

4. Recognition of a connection between one's discontent and the process of transformation

5. Exploration of options for new roles, relationships, and action

6. Planning a course of action

7. Acquiring knowledge and skills for implementing one's plan

8. Provisional trying of new roles

9. Building competence and self-confidence in new roles and relationships

10. A reintegration into one's life on the basis of conditions dictated by one's new perspective. (Mezirow et al., 2009, p. 19)

Throughout the transformative learning theory, Langan, Sheese, and Davidson (2009) utilized five values of significance while utilizing the theory in the classroom. The values included (a) collaboration, (b) deep learning, (c) reflection, (d) engagement, and (e) caring (Langan et al., 2009). The reason for these values is to enhance the student engagement of the transformational learning theory model (Langan et al., 2009).

Langan et al. (2009) found that as students collaborate with the course material, instructor, and each other stronger personal transformations occurred in the classroom. This is accomplished by forming small groups and the instructor facilitating through the groups by moving from group to group ensuring proper discussions are occurring and turning the discussions back on track if needed (Langan et al., 2009). During the facilitation of the group, the instructor ensures that the room is set in accordance to the small group setting, that all students are participating equally, and cultural differences are being used to a benefit of the group (Mezirow et al., 2009).

Learning Communities

The formation of learning communities is becoming a strategy of student success and persistence in higher education (Maddix, 2013). Students are scheduled as a cohort to form a study and motivational team which can propagate the influence of student success and persistence (Tinto, 2012). Through the learning community, a student's academic and social involvement coalesces into a cohesive unit where all students in the community begin to see the academic and social benefits (Kaya, 2004). The demographic attributes of the students participating in the learning community have been shown to have little to no effect on the success of the student or the group; thereby all demographical differentiation of students participating in the learning community are able to find some benefit (Tinto, 2012).

Learning communities within higher education can be formed in various ways. The institution can link courses together where the students are taking a writing or math course while concurrently taking, for example, a history course (Kellogg, 1999). The courses have overlapping assignments so the students are learning two different disciplines at the same time. Another effective method for this type of learning community is to have the instructors of the class conjoined with the same ideas of outcomes for each class where the History instructor expects excellent sentence structure from the students in the English class at the same time (Maddix, 2013).

Creating cohorts or learning clusters of students is another way institutions can create a learning community (Kellogg, 1999). Grouping students together through three or more courses brings familiarity, more robust discussions, and peer-to-peer learning which increases the success of the students in the class (Tinto, 2012). "Academic

involvement in class through the use of cooperative group work, for instance, has been

shown to promote social involvement that extends beyond the class" (Tinto, 2012, p. 65).

Creating specific groups for first year students will enable them to formulate a

social peer group who has the same personal or academic interests (Kellogg, 1999).

Tinto (2012) found that the involvement of the first year student in social organizations

promotes the academic studies of the students. Pike, Kuh, and McCormick (2008) found

that student persistence increases when the students are involved socially and

academically through the use of learning communities. Tinto (2012) called for the

implementation of learning communities for all institutions especially for first year

students as well as the academically underprepared students.

Mitchell (2001) found that the construct of the learning community incorporates

the personal capacity of the members, the interpersonal capacity of the members, and the

organizational capacity in total. The author stated that learning communities arise and

flourish under the personal abilities, social relationships, and organizational structures

surrounding the community (Mitchell, 2001). Maddix (2013) found that when students

and faculty engage in consistent dialogue within a learning community model the

members of the learning community engage in collaborative learning experiences.

The building of personal capacity within a learning community requires a member

to deconstruct their previous knowledge and experience and then analyze the parts of

their knowledge to understand the theories being studied put in use (Mitchell, 2001).

Deconstruction is seen as a reflective practice internally to the member (Mitchell, 2001).

The member of the learning community formulates new ideas in the form of narratives

about the topic and becomes passionate and excited about the idea itself (Mitchell, 2001).

Building interpersonal capacity means building an effective climate of affirmation and invitation of participants where members of the learning community may challenge each other on their ideas (Mitchell, 2001). The learning community is based on a social-constructivist viewpoint of negotiation amongst members during the process of learning (Mitchell, 2001). Prawat and Peterson (1996) concluded that the narration of the member must pass though not only a test personally, but also a test interpersonally.

The structure and mandates issued through the institution supporting the learning community is extremely important to the overall effectiveness of the learning that takes place (Mitchell, 2001). Structurally, the minds of the members must be open and prepared for the constructive criticism of personal thoughts and notions derived from the personal capacity (Mitchell, 2001). The author states the most important organizational structure is the administration of the institution and their willingness to support a learning community within the structure of the institution itself (Mitchell, 2001).

The use of learning communities through distance learning can be challenging since much of the structure of the learning community is devised of interpersonal interactions. Maddix (2013) stated that online learning communities require not only a physical presence by faculty and staff in the classroom, but also a social presence. To build and sustain collaboration through a learning community, Rovai (2002) found that there needs to be small transactional distances between the instructor and the student.

Rovai (2002) further stated that communication within the classroom must be very intentional as the tone of the words typed could be misconstrued socially based on the readers' conceptions. Online learning communities require social equality which assures equal opportunities for all students to participate and be seen within the

classroom (Rovai, 2002). An easy way to facilitate social equality and allow the faculty member to utilize adult learning theories is through small group activities or classes (Maddix, 2013).

Students can form their own learning communities and begin to overcome the feeling of isolation through the asynchronous online discussion threads in a three stage process of: (1) making friends with classmates in the course, (2) gain community acceptance within the classroom through the use of long thoughtful discussions, and (3) developing a sense of camaraderie after a long-term discussion of both a classroom and personal nature (Brown, 2001). Students gravitate towards other students who have the same interests and characteristics as themselves and those were the students who would have continuous discussions through the course (Brown, 2001). A sense of community forms among the group as other students begin to join in the discussion through meaningful discussions (Brown, 2001). After extended periods of time, students begin speaking to each other about personal matters as well as classroom matters forming a sense of camaraderie (Brown, 2001). Throughout this process the student engagement level continually increases thereby creating higher student success in the class (Brown, 2001).

Social Membership

Marginality and mattering are terms that Schlossberg (1989) used to demonstrate the need for social membership within college students. Schlossberg (1989) explained that mattering is a feeling that students have when they feel they can rely on other students and other students can rely on them. Rosenberg and McCullough (1981) described that mattering helps students perform better and influences their behaviors both

internally and externally of the classroom. Schlossberg (1989) demonstrated that instances of marginality or feeling left out can decrease the likelihood of a student succeeding in their relationships and their coursework.

For new students, social membership is a key influence into the students' transition into college and helps reduce the stressors of the academic work through the support of the students' peers (Rayle & Chung 2007). Students who gain a sense of social membership to the academic community and their peers gain a personal sense of belonging and mattering to the institution which drives them towards their academic goals (Tinto 2012; Cabrera, Castaneda, Nora, & Hengstler, 1992; Cabrera, Nora, & Castaneda, 1993; Nora, 1987; Pascarella & Terenzini, 1977, 1980). Tinto (2012) found that students with large formal and informal social connections with faculty and peers had a higher student success and persistence in college.

Tinto's (2012) study found that inclusion and the feeling of mattering increased the accessibility and flow of information between students. This allowed the students the ability to ask questions to each other and aid each other in their studies outside of the classroom (Tinto, 2012; Attinasi, 1989; Torres, 2004). Woo and Reeves (2008) determined that the key to successful online learning is the level and quality of meaningful interactions between the students.

While Tinto (2012) found that higher educational institutions develop programs determined on why a student drops out instead of why students stay and succeed, knowledge behind why students leave school is advantageous to ensure all students are being heard. Fetzner (2013) found that the main reason students did not succeed in their online courses was due to the feeling they were behind, and it was too hard to catch up.

The author also found that personal problems and the shared responsibilities of work and study contributed respectively as the second and third reasons students did not pass or persist through the course (Fetzner, 2013).

Tinto (2012) stated that student success and persistence should be enhanced by focusing on the conditions that are known why students succeed and graduate instead of studying why students leave the school. One of the conditions Tinto (2012) focused on was the involvement of the student socially in and out of the classroom. "Student persistence is also shaped, directly and indirectly, by social forces internal and external to the campus, especially those that influence students' sense of belonging and membership in the social communities of the institution" (Tinto, 2012, p. 27).

Social membership and the integration of the student into the social culture of the institution have been shown to positively increase student success within the classroom (Barnett, 2011). Rendon, Jalomo, and Nora (2000) found that the feelings of self-efficacy and validation by the student influences student persistence. Tinto (2012) found that enhanced self-efficacy will cause the students' behavior to be more positive towards the likelihood of succeeding in their coursework.

Karp, Hughes, and O'Gara (2010) found that student integration and sense of belonging to the institution was directly tied to the students' persistence level. The authors also found that the connections the student had through their social ties strengthened their feelings of inclusivity to the institution and the more the student used those personal connections the more likely they would persist (Karp et al., 2010). Tinto (2012) reported that the students' membership in social clubs promote academic success and persistence within college students.

Influences of Student Success and Persistence

A study conducted on online institutions by Bedore (2009) concluded that the factors which influence student success are course content, faculty, and the learning platform. "If institutions are to significantly increase the persistence and graduation of their students, especially those from low-income backgrounds, their actions must be centered on the classroom" (Tinto, 2012, p. 6). Tinto (2012) urged institutions to assess and analyze the success patterns of students as they progress through their programs determining where students succeed as well as where they struggle. The author further stated that alignment for the course sequences which students take should have sensibility and coherency on the structure to aid in the timely completion of their program (Tinto, 2012).

Asynchronous online courses utilize message boards for classroom discussions between the faculty and the students. Kashy, Albertelli, Bauer, Kashy, and Thoennessen (2003) found that students using third party support websites did not succeed as well as students using support websites designed by the instructor of the class. Much like building learning communities, instructional designers compose the discussion boards with assignments for the students to come up with answers to initial questions, compare their ideas with fellow students and the faculty, and reflect upon their own answers after reading their colleagues answers and questions (Woo & Reeves, 2008). During the asynchronous discussions students need to form a sense of presence so they feel connected to the class and feel as if they belong to the group of students (Piccano, 2002).

Much of the success within a learning community is focused on the faculty moderation through evaluation, teaching styles, and behaviors (Tinto, 2012). The type of

assessment and feedback used by faculty members in an online course were shown to have a direct impact on the number of discussions a student had and the quality of their conversations (Cheng, Jordan, & Schallert, 2013). Andragogy has been shown to be highly effective in the use of online courses due to the demographic nature of the students while teaching strategies that utilize collaborative learning increase the self-efficacy and learning (Thompson & Dies, 2004; Fencl & Scheel, 2005). While not all students are equally affected by the behavior of the faculty member, the attitude of the faculty member plays a part in the overall discussions of the course (Allen & Madden, 2006). "Out-of-classroom involvements, in the academic realm at least, come to matter in large measure as a result of what occurs within the classroom" (Tinto, 2012, p. 68).

The United States Department of Education has established regional accrediting commissions to ensure "that education provided by institutions of higher education meets acceptable levels of quality" (United States, 2014). Each of the six regional accrediting commissions has high level standards and guidelines set for student support and services. For example, the Western Association of Schools and Colleges state that the reporting of student success must explicitly demonstrate how the institution addresses the learning and personal development (Western Association of Schools & Colleges, 2013).

With the increase of asynchronous online courses across the higher educational industry, Shelton (2010) developed the Quality Scorecard for the Administration of Online Programs (QSAOP). The QSAOP has directly aligned itself with the accreditation standards set forth though each of the six accreditation commissions in the United States (Moore & Shelton, 2013). The authors determined four indicators of social and student engagement from the QSAOP including; "creating a sense of community for

the students, introducing the students to online learning, support students' use of technology and provide ongoing support for learning, research, resources and guidance" (Moore & Shelton, 2013, p. 54). The City University of New York devised an internal social network of all its students to provide the exchange of information among all participants due to the significant increase of enrollment for the institution (Moore & Shelton, 2013). Through this online communication, students are able to identify with each other and are more likely to persist in education (Boston et al., 2008).

Orienting first time online students to the digital classroom requires the student to understand how the classroom works both through the manipulation of the software and the way learning should take place (Burkle & Cleveland-Innes, 2013). It is critical that the students initially understand the requirements of the program and minimum time expectations to successfully complete their coursework since the majority of online students are working adults with other responsibilities such as families (Moore & Shelton, 2013). Optional or mandatory orientation courses are offered for many online programs to increase the students' comfort of the technology as well as provide information of where to find resources within the institution (Britto & Rush, 2013).

Persistence strategies for higher education online institutions include many models: campus or online orientation courses, student readiness assessments, and technical support desk solely for online students (Britto & Rush, 2013). Nitsch (2003) stated that student persistence and success derive from forms of the students' psychosocial behaviors, the faculty's input to the course and their teaching style, and the administrative policies, support services, and technical support. Britto and Rush (2013) found in their study of student persistence at Lone Star College – Online that online

academic advising hours averaged 15 hours more than the traditional student at the College showing the need of the social interaction needed by the students.

Support for online higher education students is imperative for student success and persistence and can only be done through collaborative efforts within the collegiate setting (Crawley & Fetzner, 2013). Shea and Armitage (2002) developed five stages of online student services for the United States Department of Education to ensure the needs of the student are addressed on a continual basis. The five stages include (a) academic services, (b) communication, (c) administrative core, (d) student communities, and (e) personal services (Shea & Armitage, 2002). The recommendations made by Shea and Armitage (2002) include the need for student-to-student communication as well as the need for student activities and population segments.

Kalsbeek (2013) defined a four-stage framework for student persistence within higher education which focuses on the student and institutional profile, the students' academic progress, the processes that affect a wide array of students, and institutional focus of the program outcomes (Kalsbeek, 2013). The profile of the institution should focus on the profile of the students who are succeeding and graduating at the institution (Kalsbeek, 2013). The authors further stated that enrollment management is key to getting the profile of the student who is graduating in the hands of the enrollment management teams to help build freshmen classes that will likely graduate (Kalsbeek, 2013).

Kalsbeek (2013) found that institutions need to focus on the persistence of the student as well as the structure of the administrative areas of the institution including policy and course development. "A campus orientation to the importance of process

requires us to leave the comfort and predictability of bureaucratic and fragmented organizational structures and focus on the functional interconnectedness of students' interactions with all aspects of their experiences: academic, co-curricular, and administrative" (Schroeder, 2013, p. 46). Kalsbeek (2013) found that there must be a continual collaboration between the academic and enrollment management of an institution to significantly increase persistence in higher education.

Talbert's (2012) study on enrollment, persistence, and graduation (ERG) rates showed that college administrators had strategic plans surrounding ERG through use of community and academic partnerships, academic advisement, and academic mentors. Community and academic partnerships with businesses and leadership outside of the institutional setting give students a more hands-on experience that can affect the student academically and professionally (Talbert, 2012). Academic advisement and mentorship programs provide students with the motivation needed to continue with their program in times of difficulty (Talbert, 2012).

Di Pierro (2012) discussed the total time to degree as a factor in the attrition rates of students. The author suggested utilizing orientation courses throughout the students' program to help the student focus on the progress made as well as the time remaining in the program to increase the persistence rates for the institution (Di Pierro, 2012). Many demographic factors can influence the students' willingness to complete their program including the age of the student, gender, and race (Poock & Love, 2001; Seagram, Gould, & Pyke, 1998). Barbatis (2010) found that students felt the academic experience could be improved by assimilation of the student into the institution's culture coupled by the faculty interaction and their teaching styles.

Gibson and Graff (1992) found that the three overarching reasons students do not complete their program are situational to the students' own life, institutional reasons due to policies and procedures, and dispositional reasons of the students' sense of connectedness to the institution. Carroll, Ng, and Birch (2013) found that the leading reasons for attrition in the students' own life are the student's employment, financial reasons, family commitments, the structure and working of the courses, and the health of the student. Institutionally, the author found that responsiveness of the institutions staff, the design of the program, the relevance of the program to the students' expectations, the support systems of the institution, and the placement and completion of a student's orientation course are all directly related to attrition of the student (Carroll et al., 2013). Socially, the authors found that the students' motivation changed or was not strong enough, the goals and expectation of the students were set too high, the students self-confidence waned, and the overall student satisfaction was not met are reasons of attrition from the institution (Carroll et al., 2013). Overall, the top factors Carroll et al. (2013) found were socially related to the students' persistence within their program.

Social Media Technology in Higher Education

The use of different forms of social media websites such as Facebook, Skype, and Twitter including instant messenger applications have shown to provide students with a social presence in online courses which would translate into better collaborative growth opportunities (Tinto, 2012). In order for social media to have an impact within higher education, all stakeholders within the system need to have attention to the system, participation within the system, collaboration between peers and faculty, network awareness of how social media operates and critical consumption of the users to

determine which are valid media websites and which are not (Rheingold, 2013). Okoro (2012) concluded that social media can enhance the collaborative learning culture increasing student success in the classroom.

Nicholson (2002) reported that the use of instant messaging by online students allowed for easier communication, a stronger sense of community, and more chances to involve themselves in communication related to class material and the institution. Tree, Mayer, and Betts (2011) found that the use of instant messaging allowed students more flexibility to use their own voice as if speaking instead of writing a paper which, in turn, made the students feel more connected to each other. The authors also found that students tended to do more multitasking while in an instant message dialogue which improves multitasking skills, but could tend to be a distraction to those students not as experienced using the system (Tree et al., 2011).

Social media websites such as Facebook can be advantageous to the learning process for students through the global network of collaborators such websites provide along with making the student take further ownership of their learning through formal and informal means (Wankel & Blessinger, 2012). Salaway, Caruso, and Nelson (2008) found that nearly half of students surveyed used Facebook as a tool to discuss their coursework. Towner and Munoz (2011) found that 58% of the students surveyed (n=283) had asked another student on Facebook about an assignment or project and 53% of the students claimed they aided other students with a project or assignment using Facebook as the instrument of communication. Tadros (2011) viewed social media as a way to engage a new kind of student who is technologically savvy where traditional methods of engagement will not work.

For online distance education courses, social media plays a critical role in building learning communities used for the support and motivation of the students (Porto, Blaschke, & Kurtz, 2011). The use of chat, audio, video, and document sharing are tools that increase interest, motivation, and interaction between students and can be built into online learning system platforms (Porto et al., 2011). Aside from the internal classroom structure, students need to have the opportunity to participate in the campus life even though enrolled in a distance learning program (Porto et al., 2011). The authors stated that the University of Maryland's Masters of Distance Education program has developed a hub online which is a place for students to find out what is going on with the University on a daily basis and allows the students an opportunity to chat with each other about various topics including blogs, peer mentoring, and links to social websites (Porto et al., 2011).

Morgado (2011) found that students create their own personal learning environments according to their own personal characteristics and preferences when taking online courses. The formation of personal learning networks by using the classroom to form open and collaborative learning environments is a way social media can aid the online student through their courses (Morgado, 2011). The learning networks provide the student with both formal and informal methods of learning which are critical to the success of the student (Morgado, 2011). Scheepers, Scheepers, Stockdale, and Nurdin (2014) found that the main reason students participate in social media is to gain the feeling of a community of personal networks.

The utilization of blogs within a developmental reading course demonstrated significant persistence rates as compared to a control group not using the blogging and taught by the same instructor (Hsu & Wang, 2011). The study found that,

> Even though the blogging-group students' majors were diverse, the group's blogging activities increased the members' interaction and helped them form a learning community in which they could make friends quickly and easily, offer comfort and support to one another, exchange relatively private information about school work and social life, and offer suggestions to deal with academic problems. (Hsu & Wang, 2011, p. 83)

The discussion threads within online asynchronous courses are vital to the learning process for the students (Zingaro & Oztok, 2012). Short threads will not demonstrate the active learning required through the foundations of learning communities since the thread does not include the collaboration needed to engage in social presence and learning (Hewitt, 2005; Moore, 1993; Moore & Kearsley, 1996; Garrison, 1999). The basis of online asynchronous courses stems from the social constructivist principles; therefore collaborative learning is essential to this type of class structure (Zingaro & Oztok, 2012).

Seo (2007) noted that peer-moderated discussion threads had more postings and content than those of faculty moderated discussions. One significant reason for this is the students shared more personal experiences and opinions with the rest of the class which furthered the discussions (Hew & Cheung, 2008). When the discussion threads bring personal meaning to the students, the risk of digital copying becomes much more remote (Kashy et al., 2003). The participation of the faculty member with the students coupled with the required postings between peers are the two most important factors for online asynchronous students (An, Shin, & Lim, 2009).

The learning which happens within the online asynchronous classroom occurs when meaningful interaction occurs between student-to-student and student-to-faculty (Woo & Reeves, 2012). Meaningful interaction occurs when other students respond to peers' postings by adding to points or arguing against the post through constructive criticism and alternative perspectives (Lapadat, 2002). Woo and Reeves (2012) concluded that for successful learning to happen within asynchronous online courses meaningful interaction must occur within the discussions of the class through feedback, interpersonal feedback, and authentic activities.

Zingaro and Oztok (2012) found that within asynchronous online courses, it is important for the student to post early in the week of the class so the rich discussions can develop. The authors also found that students should post regarding one specific topic in a single post and not allow themselves to be sidetracked (Zingaro & Oztok, 2012). It is vitally important that students are encouraged to ask questions not only of the faculty member but of each other to further the discussion and to learn from each other (Zingaro & Oztok, 2012).

Goleman (2006) found that social intelligence was able to be derived through separate capacities including:

Social Awareness

1. Primal empathy: Feeling with others; sensing non-verbal emotional signals
2. Attunement: Listening with full receptivity; attuning to a person
3. Empathetic accuracy: Understanding another person's thoughts, feelings, and intentions
4. Social Cognition: Knowing how the social world works

Social Facility

1. Synchrony: Interacting smoothly at the nonverbal level

2. Self-preservation: Presenting ourselves effectively

3. Influence: Shaping the outcome of social interactions

4. Concern: Caring about others' needs and acting accordingly. (Goleman, 2006, p. 32)

Humor in the online classroom has been shown to build positive emotions within the student regarding the institution as well as their class (O'Regan, 2003). According to Meyer and Jones (2012), the emotions students experience the most and say that affect them the most are fear, pleasure, and motivation. The authors demonstrated that these emotions were ones that online asynchronous students were able to experience through the modes of communication afforded by the institution (Meyer & Jones, 2012). The students took more of themselves online in the online classroom than they did while gaming or surfing the internet (Meyer & Jones, 2012).

Student participation in the classroom is essential for their success both quantitatively as well as qualitatively (Bliss & Lawrence, 2009). Most online courses have a minimum posting rule that ensures the student is participating in the boards, but the amount of postings in the boards do not translate into learning the outcomes of the course (Bliss & Lawrence, 2009). The quality of the students' posting is determined by the significant depth in which a student responds to the topics being explored and continues the conversation (Benigno & Trentin, 2000). The role of the faculty member within discussion threads has been widely debated, but the role of the instructor as a facilitator at some level is imperative to ensure learning outcomes are being achieved

through the discussions by moving in and refocusing the discussion when needed (Bliss & Lawrence, 2009). The authors found that the smaller group sessions conducted a higher student interaction and posting of qualitative postings than larger groups (Bliss & Lawrence, 2009).

Summary

This review of literature demonstrates that human beings need to interact socially and defines how higher educational students and adult students develop psychosocially while attending courses at a collegiate level. The building and utilization of learning communities develop the social aspects of a collegiate student's fulfilling the intrinsic needs they require. Individually, the social membership of the student within their collegiate environment and culture lends to the students' success and persistence within the classroom. The review then focused on the influences of student success and persistence within and the strategies that institutions have used. Finally, the literature focused on how social media has been an influence within higher education, especially within asynchronous online courses.

CHAPTER THREE: METHODOLOGY

Introduction

This study explored the relationship between the use of social media, academic success, and academic persistence among university students completing wholly online degree programs (hereafter asynchronous online courses). This chapter describes methods of data collection in several sections. Following a brief introduction of the problem background and purpose of the current research, Section One describes the Research Design and is followed by five subsections: Research Questions; Selection of Participants; Instrumentation; Methodological Assumptions and data collection Procedures. Section Two describes Data Processing and Analysis. It is followed by Limitations and Delimitations. Section Three is a chapter Summary.

Problem Background and Purpose of the Research

Students can and do learn from each other as much as they learn from faculty members (Kuh et al., 2005). Chickering (1993) proposed a theoretical basis for this: Students move from academic autonomy towards interdependence with both student peers and faculty as they progress through their degree program. During that process of emerging interdependence, students develop interpersonal skills; peer-to-peer learning which theoretically begins to positively influence student success (Chickering, 1993). Interpersonal relationships help instill and/or develop some of the specific skills that students need to promote their own academic success and persistence.

Therefore, this study examined the relationship between social media, student success, and student persistence in asynchronous online courses because more detailed documentation of the relationship is needed. For this study, social interaction between

asynchronous students was defined as using social media. Social media was defined as the use of chat-like communications software that is imbedded in the asynchronous online environment outside of (in addition to) weekly modules (which contain class content such as lectures, assignments, quizzes, and discussion boards). This definition of social media implies that the use of the imbedded communications software reflects emerging interdependence as well as the development of an informal learning community among students. Hereafter, the communications software is referred to as institutional social media.

The purpose of the study was to see if the use of institutional social media, and the learning communities they imply, make a difference in academic performance as an informal educational tool. Specifically, the purpose was to compare students who participate in institutional social media to students who do not participate to determine if they can be distinguished by their levels of academic success and academic persistence. Academic success was measured as grades. Persistence was measured as registering for and attending the next term.

Research Design

The research design was an exploratory associational design using archival data from the university's database. Data included student participation in institutional social media, their grade for the course, enrollment the following school term, and demographic data related to student academic pursuits. Data were quantitative. Quantitative studies draw a representative sample from the population of interest and use the sample to draw inferences about population characteristics; that is, quantitative findings can be generalized (Creswell, 2008). This study used a quantitative method because one aim of

the study was to describe the nature of institutional social media participation, as well as determine if it serves as an informal educational tool. Ultimately, the aim was to determine if there were sufficient evidence to promote the use of institutional social media in asynchronous online degree programs.

Research Questions

RQ1: What is the use of the institutional social media by students?

RQ2: Do students participating in institutional social media succeed at higher rates than students who do not participate in institutional social media?

RQ3: Do students participating in institutional social media persist at higher rates than students who do not participate in institutional social media?

Hypotheses

The first research question was addressed with descriptive statistics of institutional social media participation; no hypothesis testing was involved. Hypotheses were tested for research questions 2 and 3 as follows.

Research Question 2 Hypotheses

H_0: There is no statistically significant difference in academic success (grades) between students who participate in institutional social media and students who did not participate in institutional social media.

H_1: There is a statistically significant difference in academic success (grades) between students who participate in institutional social media and students who did not participate in institutional social media.

Research Question 3 Hypotheses

H_0: There is no statistically significant difference in persistence between students who participate in institutional social media and students who did not participate in institutional social media.

H_1: There is a statistically significant difference in persistence between students who participate in institutional social media and students who did not participate in institutional social media.

Selection of Participants

The population of interest was university students completing wholly online degree programs via asynchronous online courses at proprietary university. Criteria for inclusion included being an undergraduate, master's level, or doctoral student in good standing with the university, who was also enrolled in coursework during the 2013-2014 school year.

The sampling frame was the student body enrolled in a for-profit university that includes institutional social media as part of the asynchronous online course environment. The sampled university was a convenience sample chosen because the researcher was employed there, obtained written permission to sample the student database, and has working knowledge of the computer software to obtain the samples.

A power analysis was done on the GPower 3.1 website; for *t*-tests and correlations with alpha set at = .05, an estimated medium effect size of .30, and power = .80, an estimated minimum of 82 participants would be needed. However, a larger database was available for analysis, providing ample data to parse out students by demographic

variables, including gender, program of study, and degree level (undergraduate, master's level, and doctoral students) with a minimum of 82 participants per group.

Instrumentation

Data were archival, collected from the university student database. In the sampled university, courses start every five weeks for undergraduates and every seven-and-a-half weeks for graduate students. The last school term of 2013, which ran from December through February 2014, was chosen because it included all undergraduate and graduate classes and thus fully encompassed all programs of study.

Two types of online students were then sampled, those who participated in institutional social media for a course (the treatment or media group) and those who were enrolled in a course during the same term who had not participated in institutional social media (the control or non-media group). Students were selected from the same term to control for potential threats to validity, such as the effect of the Christmas holiday on participation and academic performance.

For all students in both the media and the non-media groups, the following two measures were collected as dependent variables. One, data were collected on the students' grade for the class; for the treatment group, this was the grade for the class in which they participated in institutional social media. For undergraduates and master's students, grades were the conventional categorical letter grades A – F, and included Withdrawn and Incomplete statuses. For doctoral students, grades were categorical (PR, Progressing; LP for Limited Progress; NC for No Credit; and CR for Credit). Two, for all students in both the media and the non-media groups, data were collected on whether students enrolled in a class for the next term and attended that class.

For students in the media group, two further measures were obtained for use as dependent variables. One, data were collected on the number of "friendships or connections" each student accumulated during their participation in institutional social media; this measure is hereafter called the "friendship count" variable. Two, counts were collected on the cumulative number of different pages that students viewed while participating in institutional social media; this measure is hereafter called the "page views" variable. Information is not available on the total number of postings per student. Demographic variables included gender, degree level (undergraduate, master's level, and doctoral students) and specific program of study (degree sought).

Methodological Assumptions

Methodological assumptions were that the "friendship count" variable was a reasonable proxy for engagement in institutional social media, and that the "page views" variable reflected a student's degree of participation in institutional social media. Further assumptions were that discussion was largely academic and that participation was a surrogate for a learning community. Finally, an assumption of this study was that student records of institutional social media participation provided accurate portrayals of the utility of institutional social media as an informal educational tool.

Procedures

Before the actual study took place, the researcher obtained written permission from the university to access the student database to obtain institutional social media-related information. Then, to observe guidelines that have been instituted for the protection and ethical treatment of participants, the researcher obtained permission to conduct this study from Argosy University's Institutional Review Board (IRB). Data

were obtained as Excel spreadsheets and downloaded into the researcher's computer for analysis. Because the data were archival, the researcher replaced student names and university ID numbers with case numbers so that none of the data were traceable to any student in particular and confidentiality was maintained. Additionally, all of the data were stored in the researcher's password-protected computer. The researcher was the only individual with access to the computer and to the password. All data will be shredded three years after the completion of the proposed study. Also, because the data were archival, there was no collection of signed Argosy Consent for Research Participation forms.

Data Processing and Analysis

Dedicated statistical software, SPSS vs. 22, was used for all analyses. All data were initially screened for entry errors and missing data points. Continuous variables (the friendship count variable and the page views variable) were screened for normality, linearity, outliers and homoscedasticity. Significance was set at $p = .05$. Percentages were rounded off to whole numbers. The formats for presenting results included descriptive and associational inferential statistics (Ch. Four).

Limitations and Delimitations

Limitations

Limitations are inherent elements with the potential to change the researcher's ability to obtain accurate results, but over which the researcher has little or no control (Butin, 2010). A major limitation was the extent to which different faculty members teaching courses did or did not enforce, encourage, or even require the use of institutional social media as part of course assignments.

A second potential limitation was that participant records were of students who attend a for-profit asynchronous university; the students whose archival records were reviewed in this study may have been particularly "tech-savvy" and view institutional social media differently from students attending traditional on-ground universities. On the other hand, student participation in institutional social media is not necessarily mandatory, so some students may not utilize the website. Students may have had limited knowledge of the use or benefits of social media, or preconceived opinions of it, that affected their participation. Finally, a limitation was that the other students in the course may or may not have influenced the use of institutional social media; for example, if a course only contained a few students interested in interaction with other students outside of the classroom discussion board, use of the media website may have occurred initially but then faded through a general lack of participation.

The primary benefit of this archival study was that it measured participants' behavior *directly* in the environment where the behavior typically occurs. Students were not affected by awareness that their institutional social media behavior might be studied at a later data or by the social desirability bias, which is a typical limitation when dealing with human subjects because people have an inherent desire to be socially acceptable to the researcher (Gliner & Morgan, 2000).

Delimitations

There were a few delimitations. The primary delimitation was that participants were students attending a for-profit asynchronous university at one specific time period.

Summary

This study's purpose was to examine student use of institutional social media and to determine if there were differences between students who did and who did not engage the institutional social media. The sample was archived student records from a university database. This study used a quantitative methodology and inferential statistics. Limitations and delimitations were identified.

CHAPTER FOUR: RESULTS

This chapter is divided into five sections. Section 1 restates the purpose and main research questions (corresponding hypotheses are shown with each research question in Section 4). Section 2 explains the steps taken to screen the data before descriptive and inferential analysis. Section 3 presents the descriptive statistics of participant demographics. Section 4 presents the results of testing the main research questions with inferential analyses. Section 5 presents a summary of the findings.

Section 1. Restatement of Purpose and Research Questions

Students can learn as much from each other as they can learn from faculty members (Kuh et al., 2005). Ideally, students develop academic interdependence with both faculty and other students as they progress through their degree program (Chickering, 1993). Part of the emergence of interdependence is the development of interpersonal skills that lead to students learning from one another, which in turn exerts a theoretically positive influence (Chickering, 1993). While this is theoretically true, empirical support of the process is needed.

Therefore, this study explored the relationship between the use of social media, academic success, and academic persistence among university students completing wholly online degree programs (hereafter asynchronous online courses). For this study, social media was defined as the use of chat-like communications software that is imbedded in the asynchronous online classroom environment outside of (in addition to) weekly modules (modules contain formal class content such as lectures, assignments, quizzes, and discussion boards). This definition of social media implies that the use of the imbedded communications software reflects emerging interdependence as well as the

development of an informal learning community among students. Hereafter, the

communications software is referred to as institutional social media.

The purpose of the study was to see if the use of institutional social media (and

the learning communities that they imply) makes a difference in academic performance

as an informal educational tool. Specifically, the purpose was to compare students who

participate in institutional social media to students who do not participate to determine if

they can be distinguished by their levels of academic success and academic persistence.

Academic success was measured as grades. Persistence was measured as registering for

and attending class the next term.

Research Questions

RQ1: What is the use of the institutional social media by students?

RQ2: Do students participating in institutional social media succeed at higher rates than

students who do not participate in institutional social media?

RQ3: Do students participating in institutional social media persist at higher rates than

students who do not participate in institutional social media?

As mentioned above, hypotheses are shown in Section 4 with results of inferential

analysis.

Section 2. Screening the Data and Rationale for Statistical Tests

Screening the Data

Eight variables were assessed. Five of the 8 variables were categorical: (1)

gender; (2) college, with 6 levels: Undergraduate, College of Business, College of

Psychology, College of Education, Health Sciences and Health Services; (3) degree

program, with two levels: undergraduate and graduate; (4) persistence, with two levels:

persisted by registering for and attending one or more classes the following school term, or did not persist; and (5) status of participation in social media, with two levels: participated in social media, did not participate in social media.

The remaining three variables were measured as continuous or ratio-scaled variables and screened for normality: (1) grade for the class of the selected term, based on a 4.0 scale; (2) the number of friends among students who used social media; and (3) the number of social media page views among students who used social media.

All data were screened for entry errors and missing data points; there were no entry errors or missing data points. Grades were normally distributed and thus met the parametric assumptions of normality, linearity, and homoscedasticity. The other two continuous variables, social media friends and page views, were dramatically skewed and did not meet the assumptions of parametric statistics. The details are presented in Section 3.

Rationale for Statistical Tests

Research question 1 was addressed descriptively. No hypotheses were tested.

Research question 2 was addressed with two-way ANOVA tests. ANOVA is an acronym for analysis of variance (the following explanation is drawn from Weaver & Goldberg, 2011). It is a family of tests that compare means across three or more different groups. The aim of ANOVA is to determine if the groups are similar enough to have most likely come from the same population or different enough to suggest that at least one of the groups came from a different population than one of the other groups. Group comparisons of two groups are examined with a *t*-test.

The ANOVA *F* statistic is a ratio of the variance between the groups divided by the variance with the groups. The *F* ratio is approximately one when groups came from the same population. This means that the higher the value *F* statistic, the greater the differences between at least two of the groups. For significantly different groups, the size of the effect of the independent variable (which is often used synonymously with factor) is measured with a statistic called partial eta squared. Partial eta squared can be interpreted as the amount of variance in the dependent variable (the source of the group means and variances) that is explained by the independent variable. Partial eta squared values are interpreted categorically as indicative of small (0.01 or 1%), moderate (0.06 or 6%), or large effects (0.14 or 14%). Partial eta squared does not include a p value because it is not used to test hypotheses *per se*. In the current study, the ANOVA tests were based on two independent variables (social media participation and the other was gender), used to analyze the dependent variable, grades.

Research question 3 was addressed with chi-square tests of independence. Chi-squares test of independence analyze categorical data in contingency tables that cross-tabulate variables by comparing the observed frequencies to the expected frequencies (the following explanation is drawn from Weaver & Goldberg, 2011). *Observed frequencies* are the number of participants in the database that fall into a specific category (e.g., the actual number of males who participated in social media and also persisted by attending class the next term). *Expected frequencies* are the number of participants that would be expected if there were no relationship between the categorical variables (i.e., the number of males one would expect if there were no relationship between social media and

persistence). That is, expected frequencies are frequencies that are to be expected to occur from chance alone.

The overall chi-square statistic indicates whether the distribution of observed frequencies differs non-significantly or significantly from the distribution expected by chance. For contingency tables with significant chi-square statistics, individual pairs of observed and expected frequencies are then examined for statistical significance to see if all of the observed-expected pairs contributed to the overall significance or fewer pairs accounted for significance. Observed-expected pairs in which the observed frequency is substantially different from the expected frequency are statistically significant. Statistical significance in each observed-expected pair is revealed by transforming the difference between the observed and expected frequencies into z-scores. These transformed differences are called *adjusted residuals*. Adjusted residuals that are ±1.96 identify statistically significant relationships (Siegel & Castellan, 1988). In the current study, chi-square tests of independence were used to test the statistical association between two dichotomous categorical variables: social media participation and persistence.

Section 3. Demographics

Data were collected on a total of $N = 7987$ students. The mean grade for class taken during the term that was sampled for this study was a high C average, $M = 2.81$, $SD = 1.52$. There was more records for females in the study than males, $n = 5768$ females, 72%; $n = 2219$ males, 28%. There were also more records for undergraduates, $N = 5728$ undergraduates, 72%, than graduate students, $N = 2259$ graduate students (28%). For the rest of this chapter, undergraduate statistics are presented first, followed by a separate

presentation of graduate student statistics. Undergraduate and graduate demographics are shown separately below.

Undergraduate Demographics

      Undergraduate gender and grades. Records for $n = 5728$ undergraduates were reviewed for the study. The proportion of female to male undergraduates was identical to the proportions of gender in the overall database: female, 72%, male, 28% (Fig. 1).
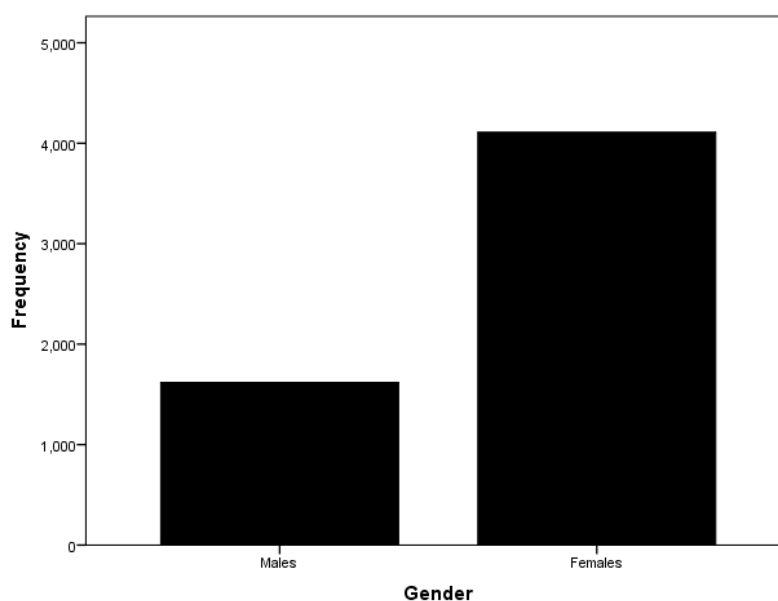
Figure 1. Bar chart of the distribution of male and female undergraduates.

      Figure 2 shows the distribution of undergraduate grades and illustrates that the major mode was a grade of 4.0 and the minor mode was a grade of 0.0. Just under half of the undergraduates, 40%, had a 4.0 grade point average, 20% had a B average, and the remaining 40% had a C average or lower. Of the latter group, 11% had a C average, 4% had a D average, and 23% had not earned a grade.
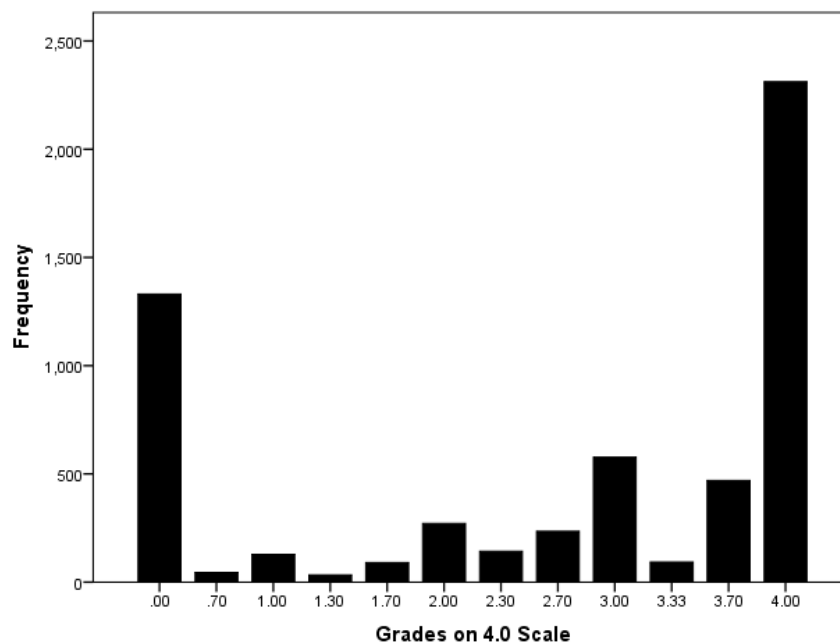
Figure 2. Distribution of undergraduate numeric grades.

Undergraduate persistence and gender. Undergraduates who did and who did not persist by registering for a class the following term were split approximately evenly. A slightly higher percentage of undergraduates persisted to the next school term, $n = 3282$ undergraduates, 57%, compared to just under half, 43%, $n = 2445$ undergraduates, who did not persist. Figure 3 shows undergraduate persistence data by gender. A chi-square test of independence showed that there was a significant association between persistence and gender, $X^2 (1, 5728) = 5.33$, $p = .02$. Specifically, Table 1 shows that more males did not persist and fewer males persisted than expected by chance. In contrast, fewer females did not persist and more females persisted than expected by chance

Table 1

Undergraduate Persistence and Gender Cross-tabulation

Persistence Category		Gender		Total
		Males	Females	
Did Not Persist	Observed Count	730	1715	2445
	Expected Count	691.1	1753.9	2445.0
	Adjusted Residual	2.3	-2.3	
	% within Persistence	30%	70%	100%
Persisted	Observed Count	889	2394	3283
	Expected Count	927.9	2355.1	3283.0
	Adjusted Residual	-2.3	2.3	
	% within Persistence	27%	73%	100%
Total	Observed Count	1619	4109	5728
	Expected Count	1619.0	4109.0	5728.0
	% within Persistence	28%	72%	100%
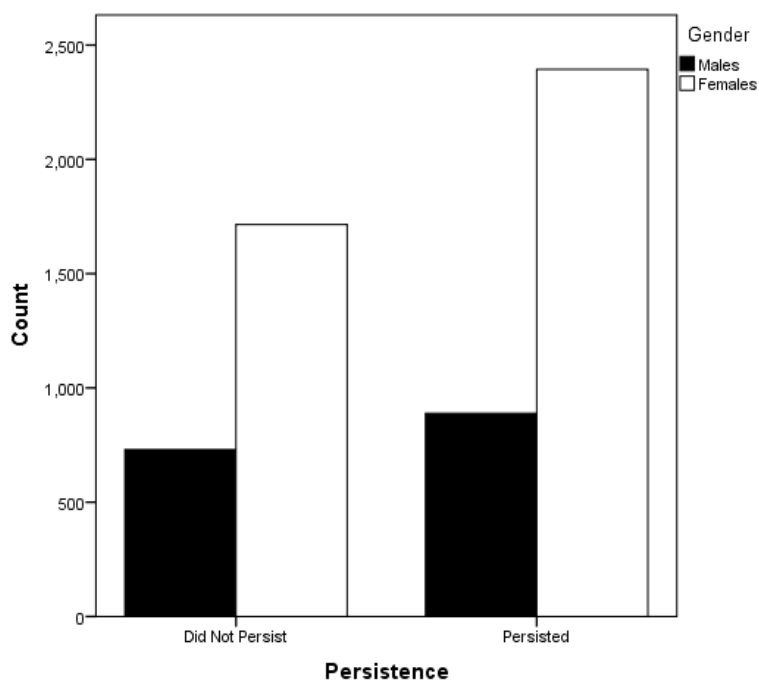
Figure 3. Undergraduate persistence by gender.

Graduate Demographics

Graduate gender and grades. A total of $n = 2259$ records on graduate students

was reviewed in this study. There were almost three times as many records for female

graduate students, $n = 1659$, 73%, than for male graduate students, $n = 600$ (27%, Fig. 4).
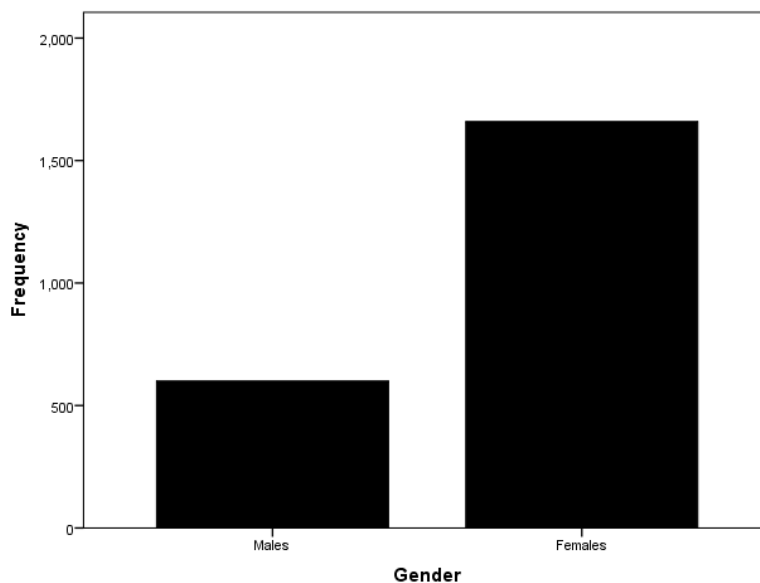
Figure 4. Distribution of graduate students by gender.

The distribution of graduate grades in Figure 5 illustrates that the major mode was

a grade of 4.0, the minor mode was a grade of 3.7, and the majority of graduate students

averaged at least a B (87%). Just five percent had earned a grade in the range of 1.0-2.7

and eight percent had not earned a grade.
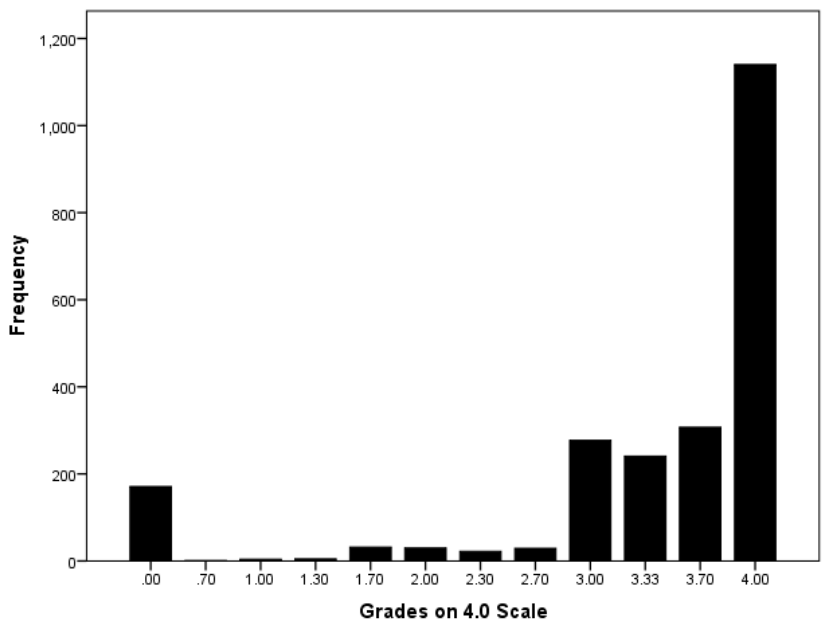
Figure 5. Distribution of numeric grades among graduate students.

Graduate colleges. Figure 6 shows that graduate student records in the current study did not equally represent the different colleges (Business, Education, Health Sciences, Health Services, and Psychology). In particular, there were only five Health Sciences records; these were collapsed into Health Services for analysis. Most of the graduate records were from the College of Business (38%) and College of Psychology (37%), followed by the College of Education (16%), and the Health Sciences (9%).
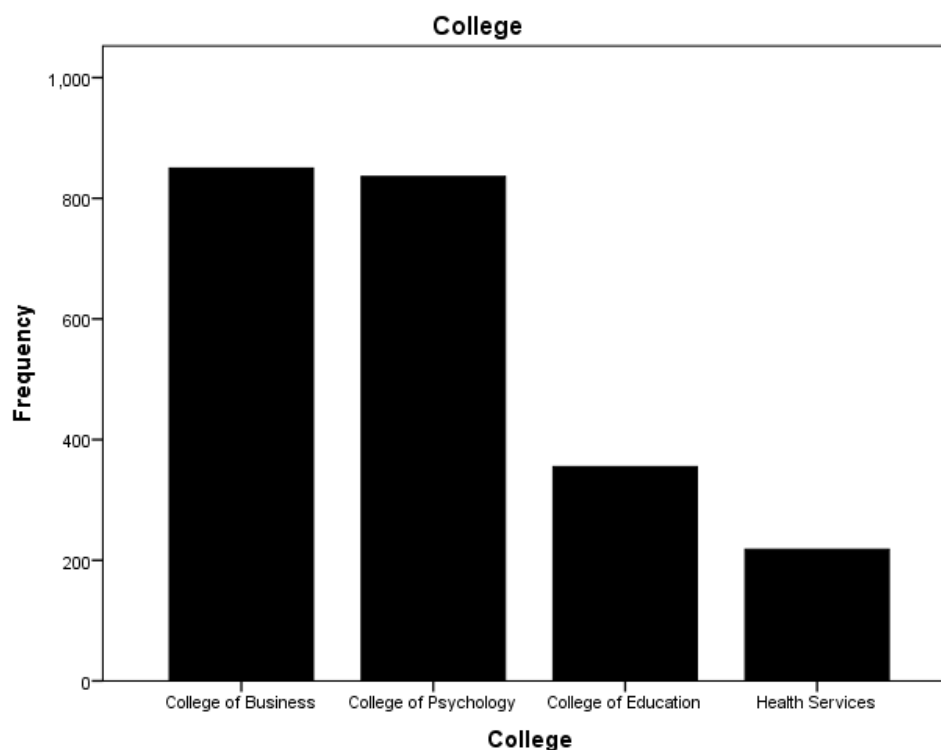
Figure 6. Distribution of records from the separate among graduate students.

Graduate persistence and gender. Most of the graduate students persisted to the next school term, *n* = 1762 graduates, 78%. Correspondingly, less than a quarter of the graduate students did not persist, 22%, *n* = 497. Figure 7 shows graduate persistence data by gender. A chi-square test of independence showed that there was a significant association between persistence and gender, X^2 (1, 2259) = 15.29, *p* = .00 (Table 2). Specifically, Figure 7 shows that fewer males did not persist than expected by chance and more females did not persist than expected by chance. Correspondingly, more males persisted and fewer females persisted than expected by chance.

Table 2

Graduate Persistence and Gender Cross-tabulation

| | | Gender | | |
		Males	Females	Total
Persistence				
	Observed Count	98	399	497
Did Not Persist	Expected Count	132.0	365.0	497.0
	Adjusted Residual	-3.9	3.9	
	% within Persistence	20%	80%	100%
	Observed Count	502	1260	1762
Persisted	Expected Count	468.0	1294.0	1762.0
	Adjusted Residual	3.9	-3.9	
	% within Persistence	28%	72%	100%
	Observed Count	600	1659	2259
Total	Expected Count	600.0	1659.0	2259.0
	% within Persistence	26.6%	73.4%	100.0%
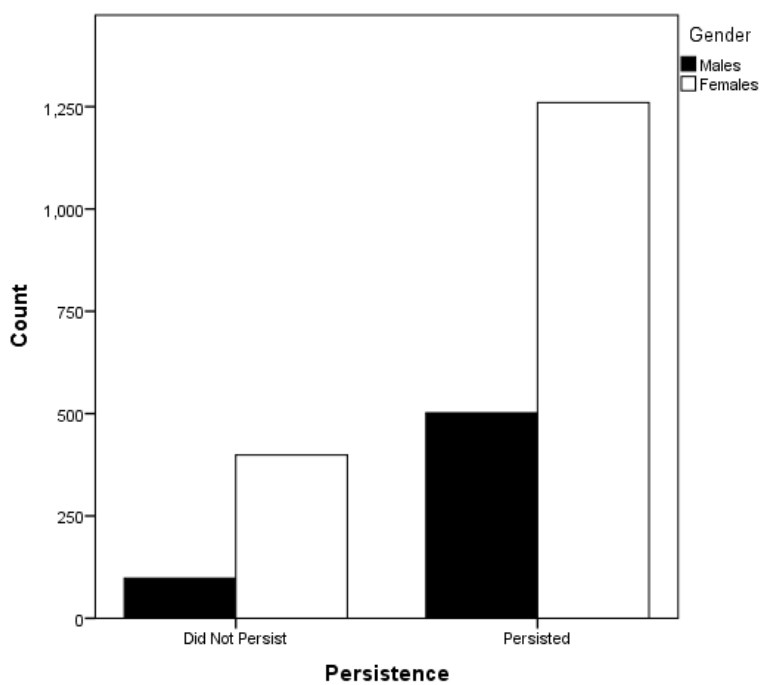
Figure 7. Distribution of persistence by gender among graduate students.

Section 4. Results of Testing the Main Research Questions

Research Question 1 - Institutional Social Media by Students

What is the use of the institutional social media by students?

The first research question was addressed with descriptive statistics of institutional social media participation; no hypothesis testing was involved. Undergraduate social media statistics are presented first, followed by graduate student social media statistics in a separate section.

Undergraduate Use of Social Media by Gender

Overall, 83% of the undergraduates did not use social media, $n = 4735$ undergraduates, leaving 17% who did. This overall proportion of undergraduates who did not use social media compared to those who did was the same for both males and females (Table 3).

Table 3

Undergraduate Social Media Use by Gender Cross-tabulation

	Gender		Total
Social Media Group	Males	Females	
Did Not Participate in Social Media	1351 (83%)	3384 (83%)	4735
Participated in Social Media	268 (17%)	725 (17%)	993
Total	1619 (100%)	4109 (100%)	5728

Number of Friends among Undergraduates Who Use Social Media

The descriptive statistics in Table 4 of the number of friends among the 993 undergraduates who participated in the social media show that undergraduates averaged two friends, but that the number of friends ranged from 0 - 182. Table 4 also shows that the statistics that reflect "imbalance" and "peakedness" in the data, skew, and kurtosis, respectively, indicated substantial imbalance toward five or fewer friends and,

correspondingly, excessive peakedness (kurtosis = 311.53); thus, an illustration of friends

as a frequency distribution was too skewed to read and is not included here. Specifically,

95% of the undergraduates had only one or two friends on institutional social media. The

majority of undergraduates, n = 808 out of 993 (82%), had one friend. Another 13% (n =

131 out of 993) had 2 – 5 friends. Of the top five percent with the most friends, the

bottom four percent had 6 - 22 friends and the top one percent of the undergraduate had

26 – 182 friends.

Table 4

Descriptive Statistics of Friends and Page Views for Undergraduates who Participated in

Social Media, n = 993

	Number of Social Media Friends	Number of Social Media Page Views
Mean	2.31	11.92
Median	1.00	0.00
Mode	1	0
Std. Deviation	7.78	75.13
Skew	15.45	17.37
SE of Skew	0.08	0.08
Kurtosis	311.53	336.91
SE of Kurtosis	.155	0.16
Minimum	0	0
Maximum	182	1595

Note. SE = standard error

Number of Page Views among Undergraduates Who Use Social Media

Table 4 also presents descriptive statistics on page views among undergraduates.

The model number of pages viewed was zero, n = 538 out of 993 undergraduates, 54%.

The average was 12 page views. Another 287 out of 993 undergraduates, 29%, viewed 1-

10 pages. Finally, 17% of the undergraduates viewed from 11 – 1595 pages. The highest

number of recorded page view by a single undergraduate during single term was 1595

(Table 4).

Graduate Student Use of Social Media by Gender

Overall, 88% of the graduate student did not use social media, *n* = 1987 graduate

students, which left 12% who did use social media, *n* = 272 graduate students (Table 5).

This overall proportion of graduates who did not use social media compared to those who

did was the same for both males and females (Table 5).

Table 5

Graduate Students Social Media Participation by Gender Cross-tabulation

	Gender		
Social Media Participation	Males	Females	Total
Did Not Participate in Social Media	520 (87%)	1467 (88%)	1987
Participated in Social Media	80 (13%)	192 (12%)	272
Total	600 (100%0	1659 (100%)	2259

Table 6

Descriptive Statistics of Friends and Page Views for Graduate Students who Participated

in Social Media, n = 272

	Number of Social Media Friends	Number of Social Media Page Views
Mean	1.65	22.57
Median	1.00	0.00
Mode	1	0
Std. Deviation	2.24	261.12
Skew	5.26	16.34
SE of Skew	0.15	0.15
Kurtosis	32.76	268.63
SE of Kurtosis	0.29	0.29
Minimum	1	0
Maximum	21	4300

SE = standard error

Among graduate students, the average number of friends was one, and ranged from 1 – 21. Both skew and kurtosis statistics for graduate students indicate a substantial imbalance in friends, with $n = 227$ out of the 272, 84%, of the graduate students having just one friend. Among the graduate students, 95% had 1- 4 friends. The large size of the skew and kurtosis statistics indicated that an illustration of friends among graduate students as a frequency distribution was too skewed to read and is not included here.

Number of Page Views among Graduate Students Who Use Social Media

The average number of page views among graduate students was 23, with a range of 0 – 4300 (the extreme outlier of 4300 accounts for the large standard deviation for page views among graduate students). About half of the graduate students, 54%, did not view any pages. The bottom 95% of the graduate students viewed up to 33 pages, which meant that the top five percent viewed 36 – 210 pages (excluding the extreme outlier of 4300 page views).

Research Question 2

Do students participating in institutional social media succeed at higher rates than students who do not participate in institutional social media?

Hypotheses

H_0: There is no statistically significant difference in academic success (grades) between students who participate in institutional social media and students who did not participate in institutional social media.

H_1: There is a statistically significant difference in academic success (grades) between students who participate in institutional social media and students who did not participate in institutional social media.

In this research question, student success was measured as numeric grades on the conventional 4.0 GPA scale. As such, numeric grades were measured as continuous or ratio-scaled data, which allowed them to be analyzed with ANOVA. Research question 2 was therefore addressed with a series of 2 x 2 ANOVAs. One of the factors was social media use, with two levels (no, did not participate in social media; yes, participated in social media). The other factor was gender (males, females). The dependent variable was grade. The ANOVA hypotheses are as follows.

Interaction Effect

H_0: There is no statistically significant effect of an interaction between social media participation and gender on grades.

H_1: There is a statistically significant effect of an interaction between social media participation and gender on grades.

Main Effect of Social Media Participation

H_0: There is no statistically significant main effect of social media participation on grades.

H_1: There is a statistically significant main effect of social media participation on grades.

Main Effect of Gender

H_0: There is no statistically significant main effect of gender on grades.

H_1: There is a statistically significant main effect of gender on grades.

Research Question 2 - Undergraduates

The question addressed in this section was whether undergraduate students who participated in institutional social media succeeded at higher rates than undergraduate

students who did not participate in institutional social media, where success was measured as grades.

For undergraduates, there was sufficient evidence to reject the null hypothesis about the interaction effect and conclude that there was a statistically significant interaction between social media participation and gender on grades (Table 7). There was also sufficient evidence to reject the null hypothesis about the main effect of social media (Table 7). Gender had a non-significant effect on grades; the null hypothesis for a main effect of gender was retained.

Table 7

2 x 2 ANOVA Summary Table of the Effects of Social Media Participation and Gender on Undergraduate Grades

Source	SS	df	MS	F	Sig.	Partial Eta Squared
Gender	2.14	1	2.14	0.84	.36	.00
Social Media	297.15	1	297.15	*116.35*	*.00*	*.02*
Gender x Social Media	27.41	1	27.41	*10.73*	*.00*	*.01*
Error	14619.20	5724	2.55			
Total	53670.11	5728				

Note. SS = Type III Sum of Squares. MS = Mean Square.

Figure 8 shows that undergraduates who participated in social media had significantly higher grades than did undergraduates who did not participate in social media. Among undergraduate who participated in social media, males had higher grades. Among undergraduates who did not participate, females had higher grades.
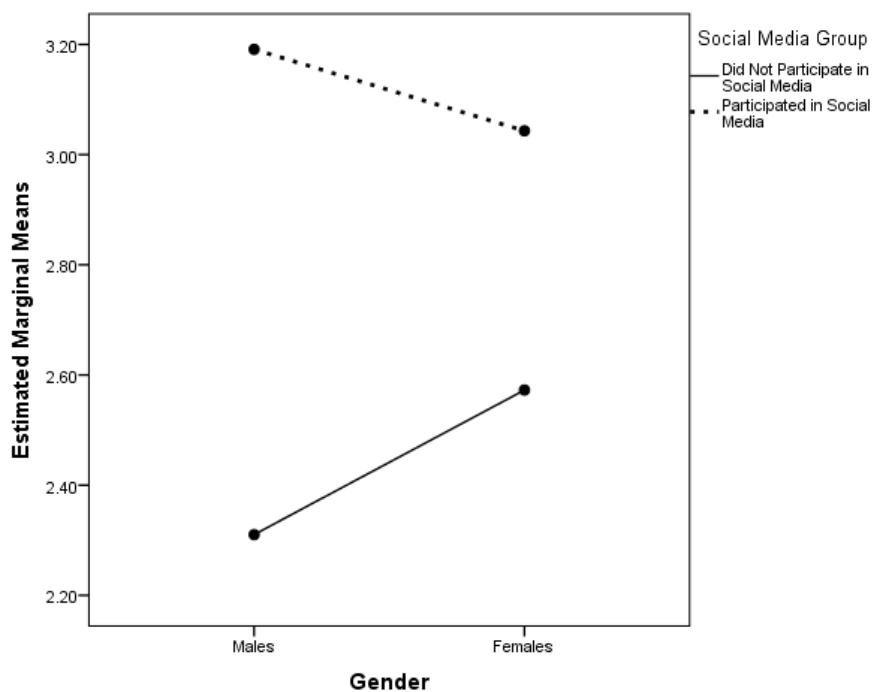
Figure 8. Line graph of mean grades in undergraduates who did and who did not participate in social media by gender.

Research Question 2 – Graduate Students

The question addressed in this section was whether graduate students who participated in institutional social media succeeded at higher rates than students who did not participate in institutional social media, where success was measured as grades.

This section presents the results of testing research question 2 for the graduate students in the College of Business, Psychology, Education, and Health Services separately. A 2 x 2 ANOVA was run to address the question for each college, and the ANOVA results for all four colleges are shown in Table 8. The effect on the grades of graduate students in each college is then addressed in individual paragraphs and figures following Table 8.

Table 8

2 x 2 ANOVA Summary Table of the Effects of Social Media Participation and Gender on

Graduate Students Grades

Source	Type III Sum of Squares	*df*	Mean Square	*F*	Sig.	Partial Eta Squared
Graduate Students – College of Business						
Gender	.01	1	.01	0.01	.98	.000
Social Media	2.34	1	2.34	1.94	.16	.002
Gender x Social Media	0.09	1	0.09	0.08	.78	.000
Error	1018.51	846	1.204			
Total	10694.52	850				
Graduate Students – College of Psychology						
Gender	1.24	1	1.24	.92	.34	.001
Social Media	0.65	1	0.65	.49	.49	.001
Gender x Social Media	0.16	1	0.16	.12	.73	.000
Error	1113.40	832	1.34			
Total	9823.51	836				
Graduate Students – College of Education						
Gender	6.67	1	6.67	*9.66*	*.00*	*.03*
Social Media	5.03	1	5.03	*7.28*	*.00*	*.02*
Gender x Social Media	5.82	1	5.82	*8.44*	*.00*	*.02*
Error	242.25	351	0.69			
Total	5091.03	355				
Health Services						
Gender	3.09	1	3.09	3.13	.07	.014
Social Media	9.42	1	9.42	*9.56*	*.00*	*.043*
Gender x Social Media	1.87	1	1.87	1.90	.17	.009
Error	210.94	214	0.99			
Total	2552.42	218				

Research Question 2 – Graduate Students in the College of Business

The question addressed in this section was whether graduate students in the

College of Business who participated in institutional social media succeeded at higher

rates than students who did not participate in institutional social media, where success

was measured as grades.

For graduate students in the College of Business, there was insufficient evidence of interaction or main effects, and all three null hypotheses were retained. Table 8 shows that there was a non-significant interaction effect, a non-significant main effect of gender, and a non-significant main effect of social media participation. Thus, the conclusion was that graduate students in the College of Business who participated in institutional social media did not succeed at different rates than students who did not participate in institutional social media, where success was measured as grades. The close values of the mean grades are illustrated in Figure 9.
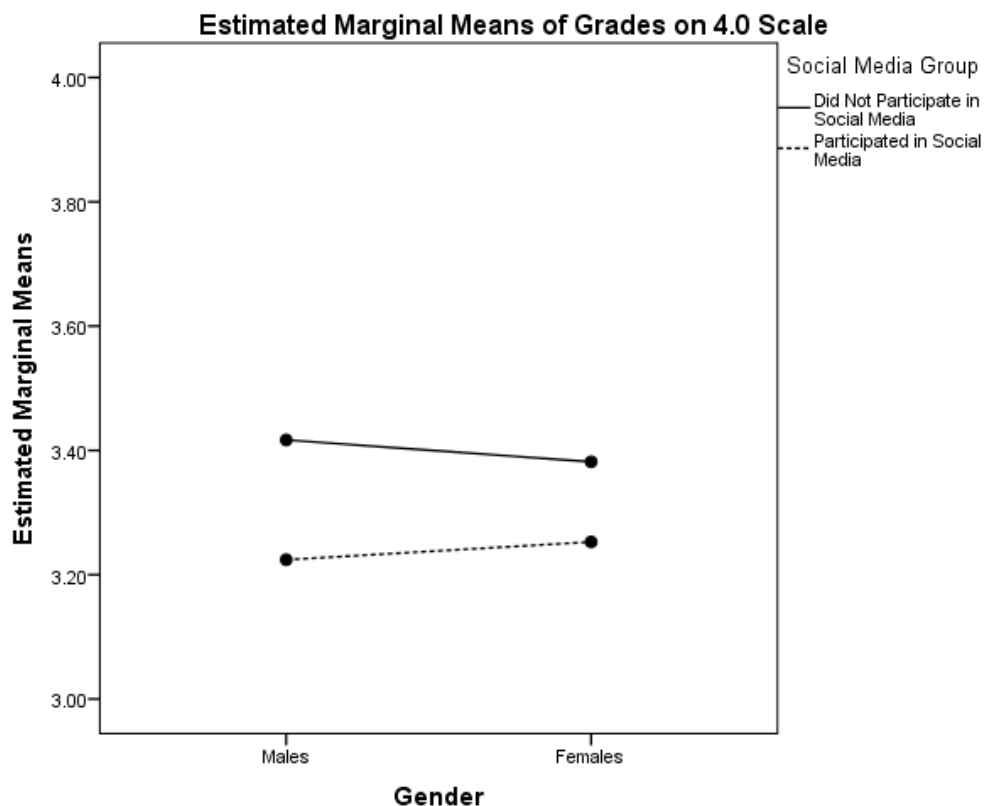

Figure 9. Line graph of mean grades in College of Business graduate students who did and who did not participate in social media by gender.

Research Question 2 – Graduate Students in the College of Psychology

The question addressed in this section was whether graduate students in the College of Psychology who participated in institutional social media succeeded at higher rates than students who did not participate in institutional social media, where success was measured as grades.

For graduate students in the College of Psychology, there was also insufficient evidence of interaction or main effect on grades. All three null hypotheses were retained. Table 8 shows that there was a non-significant interaction effect, a non-significant main effect of gender, and a non-significant main effect of social media participation. Thus, the conclusion was that graduate students in the College of Psychology who participated in institutional social media did not succeed at different rates than did students who did not participate in institutional social media, where success was measured as grades. Mean grades for Psychology male and female graduate students who did and who did not participate in social media in Figure 10 are similar in value to grades among Business graduate students (Fig. 9).

Figure 10. Line graph of mean grades in College of Psychology graduate students who did and who did not participate in social media by gender.

Research Question 2 – Graduate Students in the College of Education

The question addressed in this section was whether graduate students in the College of Education who participated in institutional social media succeeded at higher rates than students who did not participate in institutional social media, where success was measured as grades.

For graduate students in the College of Education, there was sufficient evidence to reject the null for all three hypotheses. Table 8 shows that there was a significant interaction effect between social media participation and gender on grades (thus, the null hypothesis for the interaction effect was rejected). The conclusion was that graduate

students in the College of Education who participated in institutional social media succeeded at different rates than did students who did not participate in institutional social media, where success was measured as grades.

However, the outcome for grades was not in the predicted direction of higher grades among students who used social media. The interactive effect of social media and gender on grades is shown in Figure 11, which reveals that female graduate students in the College of Education who participated in social media had significantly lower grades than did males who participated in social media. Figure 11 also shows that female graduate students in the College of Education who participated in social media had significantly lower grades than both males and females who did not participate in social media. Both main effects of gender and of social media participation were statistically significant (thus, the null hypotheses for both were rejected, Table 8); however, the statistical significance of these main effects arose as a function of the interaction effect explained above.
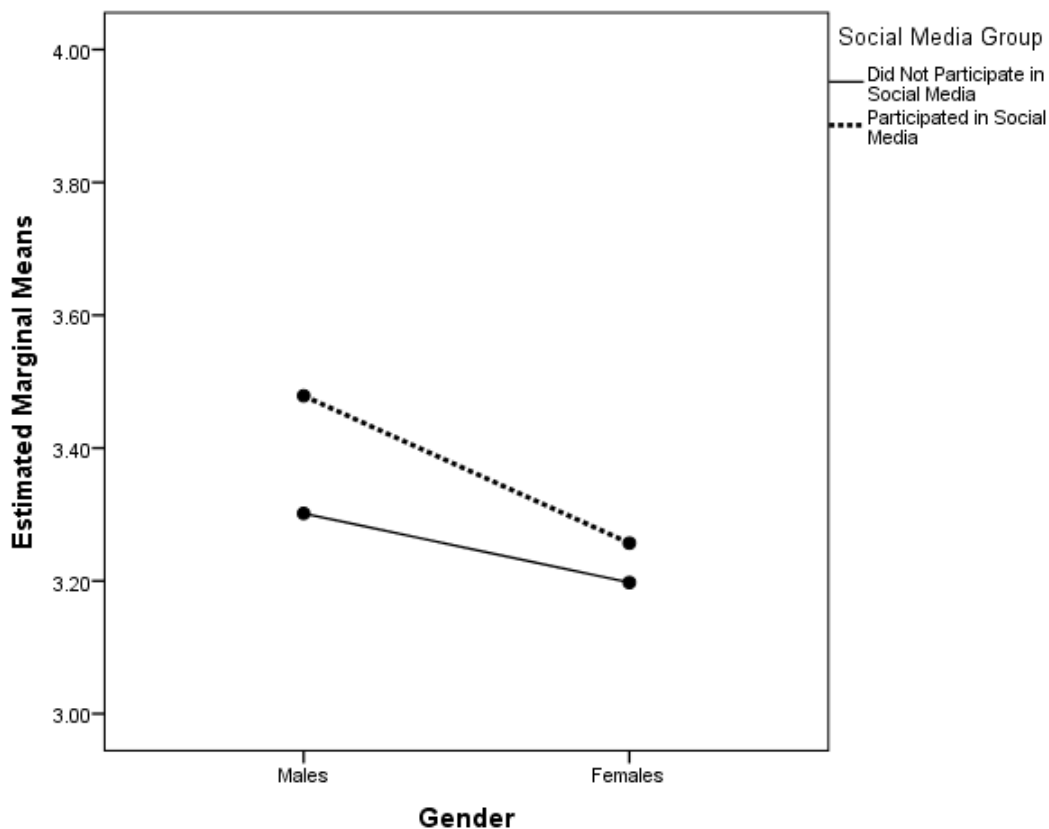
Figure 11. Line graph of mean grades in College of Education graduate students who did

and who did not participate in social media by gender.**Research Question 2 – Graduate**

Students in the Health Services

The question addressed in this section was whether graduate students in the

Health Services who participated in institutional social media succeeded at higher rates

than did students who did not participate in institutional social media, where success was

measured as grades.

Table 8 shows that for graduate students in the Health Services, there was

insufficient evidence to reject the null hypothesis for the interaction effect (thus, the null

hypothesis for the interaction effect was retained).

However, there was a strong and significant effect of social media participation on grades among Health Services students (thus, the null hypothesis for the main effect of social media was rejected, Table 8). But the outcome did not go in the predicted direction. As a group, Health graduate students who participated in social media (regardless of whether they were male or female) had significantly lower grades than did students who did not participate in social media (Fig. 12).

In addition, there was a statistical trend for a main effect of gender, which is also illustrated in Figure 12. That is, regardless of whether they participated in social media or not, Figure 12 shows that the mean grades among male graduate students in Health Services were higher than they were for female graduate students in Health Services, a difference that came close to being statistically significant.
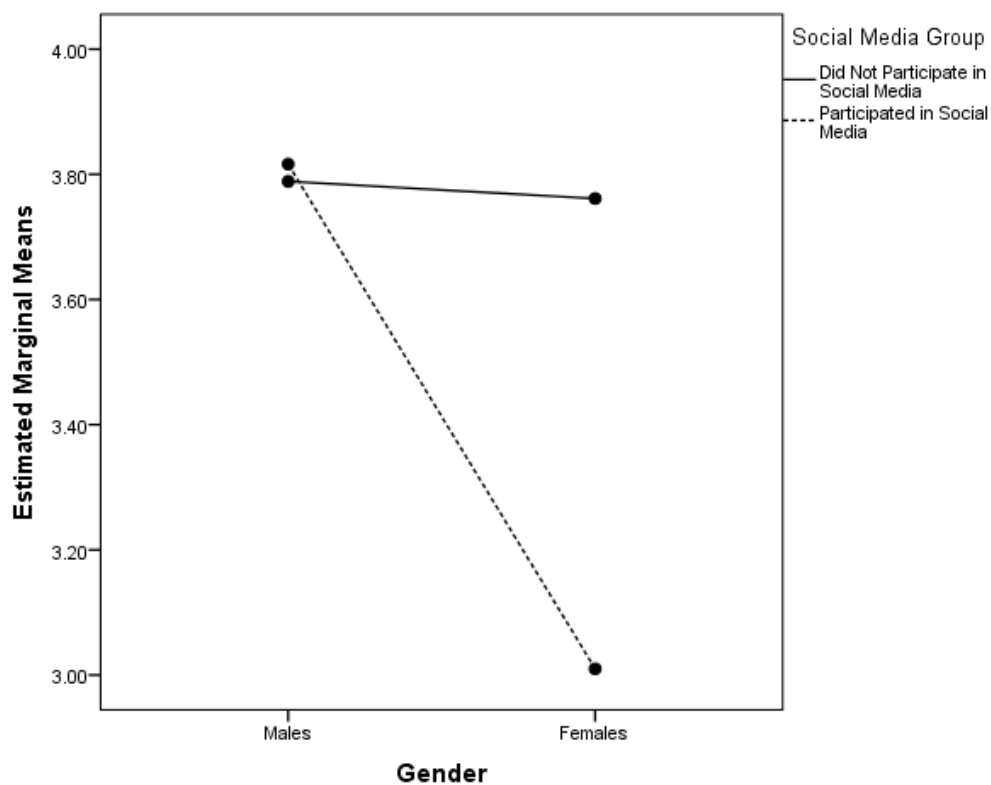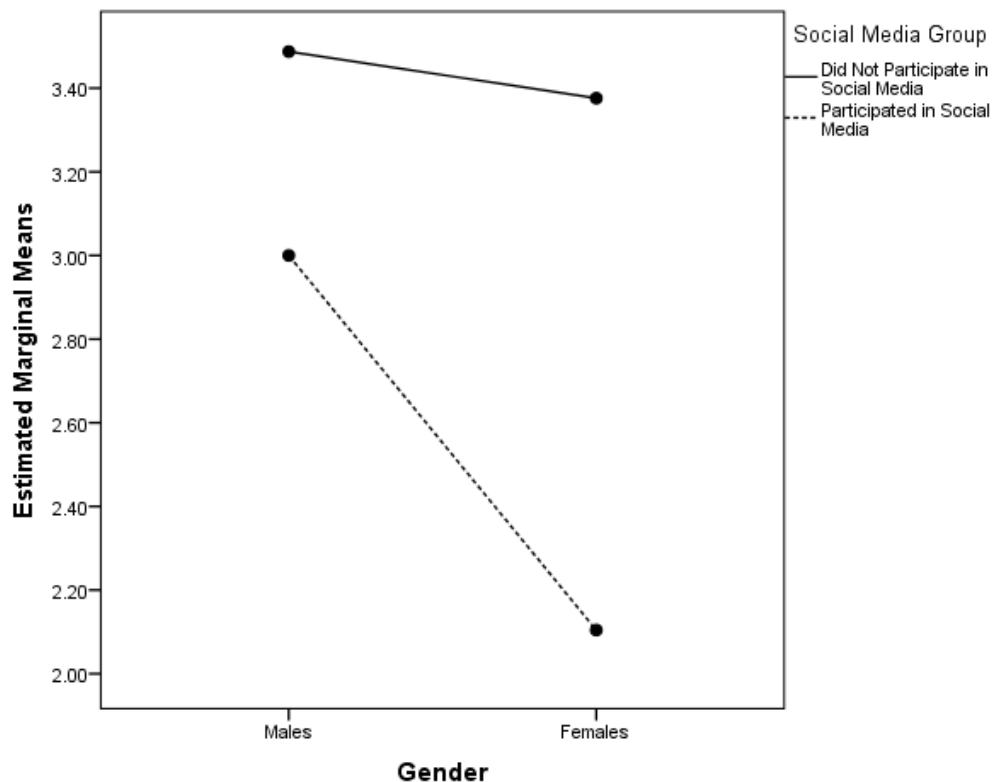
Figure 12. Line graph of mean grades in Health Services graduate students who did and who did not participate in social media by gender.

Research Question 3

Do students participating in institutional social media persist at higher rates than students who do not participate in institutional social media?

Hypotheses

H_0: There is no statistically significant difference in persistence between students who participate in institutional social media and students who did not participate in institutional social media.

H$_1$: There is a statistically significant difference in persistence between students who participate in institutional social media and students who did not participate in institutional social media.

Persistence data for research question 3 were measured categorically and dichotomously (yes, the student persisted by registering for and attending class the following term; no, the student did not persist according to the above criteria). Social media participation (yes, no) was also measured categorically and dichotomously. Thus, research question 3 was addressed with chi-square tests of independence.

However, recall that Table 1 and Figure 3 show that there was a gender difference in persistence for undergraduates, and that Table 2 and Figure 7 show that there was a gender difference in persistence for graduate students. Consequently, in this section, male and female students are examined separately. As before, undergraduate results are presented first and are followed by graduate student results.

Research Question 3 – Male Undergraduates

The question addressed in this section was whether male undergraduates who participated in institutional social media persisted at higher rates than male undergraduates who did not participate in institutional social media. The null hypothesis was rejected for male undergraduates, X^2 (1, 1619) = 115.12, p = .00. The contingency table (Table 9) shows that the observed numbers of male undergraduates were distributed in the predicted direction and that all adjusted residuals were statistically significant.

Table 9

Persistence by Social Media Group Cross-tabulation among Male Undergraduates

Persistence		Social Media Group		
		No, Did Not Participate	Yes, Participated	Total
Did Not Persist	Observed Count	689	41	730
	Expected Count	609.2	120.8	730.0
	Adjusted Residual	10.7	-10.7	
	% within Social Media Group	51%	15%	45%
Persisted	Observed Count	662	227	889
	Expected Count	741.8	147.2	889.0
	Adjusted Residual	-10.7	10.7	
	% within Social Media Group	49%	85%	55%
Total	Observed Count	1351	268	1619
	% within Social Media Group	100%	100%	100%

Specifically, the Yes, Participated column in Table 9 shows that significantly fewer males who participated in social media did not persist than expected by chance (41 vs. 120.8) and significantly more male undergraduates who participated in social media persisted than expected by chance (227 vs. 147.2). Among male undergraduates who did not participate in social media (Table 9, No Did Not Participate column), significantly more did not persist (689 vs 609.2) and significantly fewer persisted than expected (662 vs 741.8).

Figure 13. Bar chart of male undergraduate persistence by social media participation.

Research Question 3 – Female Undergraduates

The question addressed in this section was whether female undergraduate students who participated in institutional social media persisted at higher rates than female undergraduates who did not participate in institutional social media. The null hypothesis was rejected for female undergraduates, X^2 (1, 4109) = 64.27, p = .00, and the conclusion was that there was a significant association between persistence and social media participation. Table 10 shows that the observed numbers of female undergraduates per cell went in the predicted direction; all adjusted residuals were statistically significant.

Table 10

Persistence by Social Media Group Cross-tabulation for Female Undergraduates

Persistence		No, Did Not Participate	Yes, Participated	Total
		Social Media Group		
Did Not Persist	Observed Count	1509	206	1715
	Expected Count	1412.4	302.6	1715.0
	Adjusted Residual	8.0	-8.0	
	% within Social Media Group	45%	28%	41.7%
Persisted	Observed Count	1875	519	2394
	Expected Count	1971.6	422.4	2394.0
	Adjusted Residual	-8.0	8.0	
	% within Social Media Group	55%	72%	58.3%
Total	Observed Count	3384	725	4109
	% within Social Media Group	100.0%	100.0%	100.0%

Among female undergraduates who participated in social media (Yes, Participated column in Table 10), fewer females did not persist (206 vs. 302.6) and significantly more females persisted (519 vs. 422.4) than expected by chance. Among female undergraduate who did not participate (No, Did Not Participate column, Table 10), more did not persist (1509 vs. 1412.4) and fewer persisted (1875 vs 1971.6) than expected.

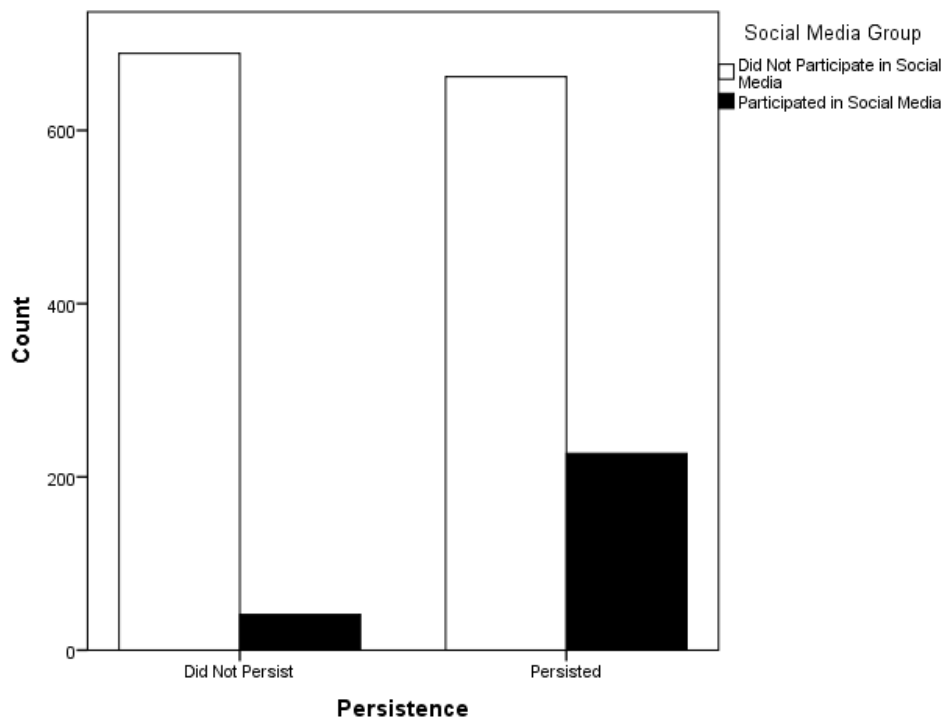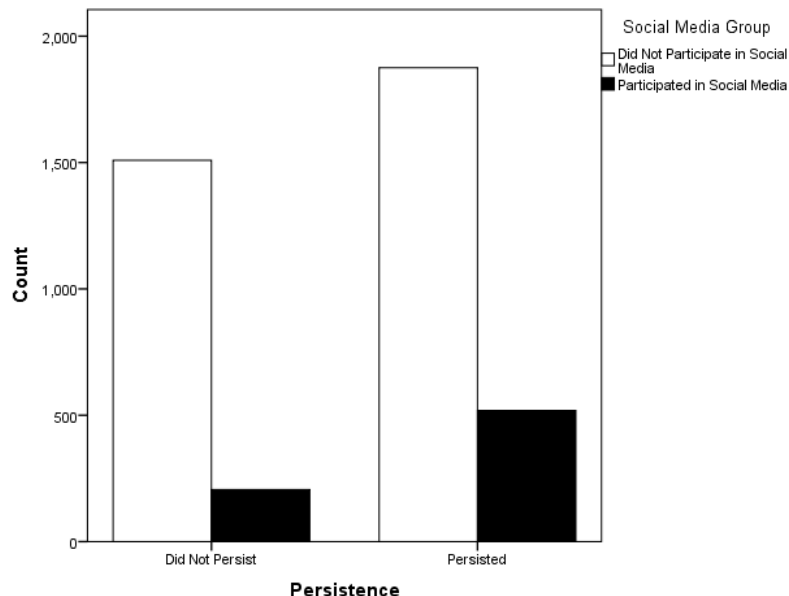*Figure 14.* Bar chart of female undergraduate persistence by social media participation.

Research Question 3 – Male Graduate Students in the College of Business

The question addressed in this section was whether male graduate students in the College of Business who participated in institutional social media persisted at higher rates than male Business graduate students who did not participate in institutional social media. The null hypothesis was rejected for male Business graduate students, X^2 (1, 282) $= 6.08$, $p = .01$. The conclusion was that there was a significant association between persistence and social media participation for male Business graduate students. Table 11 shows that the observed numbers of male Business graduate students per cell were statistically different than the observed frequencies and in the predicted direction.

Table 11

Persistence by Social Media Group Cross-tabulation among Male Graduate Students in the

College of Business

Persistence		No, Did Not Participate	Yes, Participated	Total
		Social Media Group		
Did Not Persist	Observed Count	39	1	40
	Expected Count	33.8	6.2	40.0
	Adjusted Residual	2.5	-2.5	
	% within Social Media Group	16%	2%	14%
Persisted	Observed Count	199	43	242
	Expected Count	204.2	37.8	242.0
	Adjusted Residual	-2.5	2.5	
	% within Social Media Group	84%	98%	86%
Total	Observed Count	238	44	282
	% within Social Media Group	100%	100%	100%

Among male Business graduate students who participated in social media, fewer
did not persist (1 vs 6.2) and significantly more persisted than expected (43 vs. 37.8) than
expected. The pattern was the opposite for male Business graduate students who did not
participate in social media: more did not persist (39 vs 33.8) and fewer persisted (199 vs
204.2) than expected. Figure 15 illustrates these differences.

Figure 15. Bar chart of persistence among male graduate students in the College of

Business by social media participation.

Research Question 3 – Female Graduate Students in the College of Business

The question addressed in this section was whether female graduate students in

the College of Business who participated in institutional social media persisted at higher

rates than did female graduate students who did not participate in institutional social

media. There was insufficient evidence to reject the null hypothesis for female Business

graduate students, X^2 (1, 568) = 1.23, *p* = .29. The conclusion was that there was not a

significant association between persistence and social media participation for female

Business graduate students.

Figure 16 shows that the proportions of female graduate students in the College of

Business who did not persist did not vary by social media participation. That is, for both

graduate students who participated and did not participate in social media, a comparably

small proportion of students did not persist (29% of the social media participants and

23% of the non-participants) and a comparably large proportion of students persisted

(71% of the social media participants and 77% of the non-participants). Thus the null

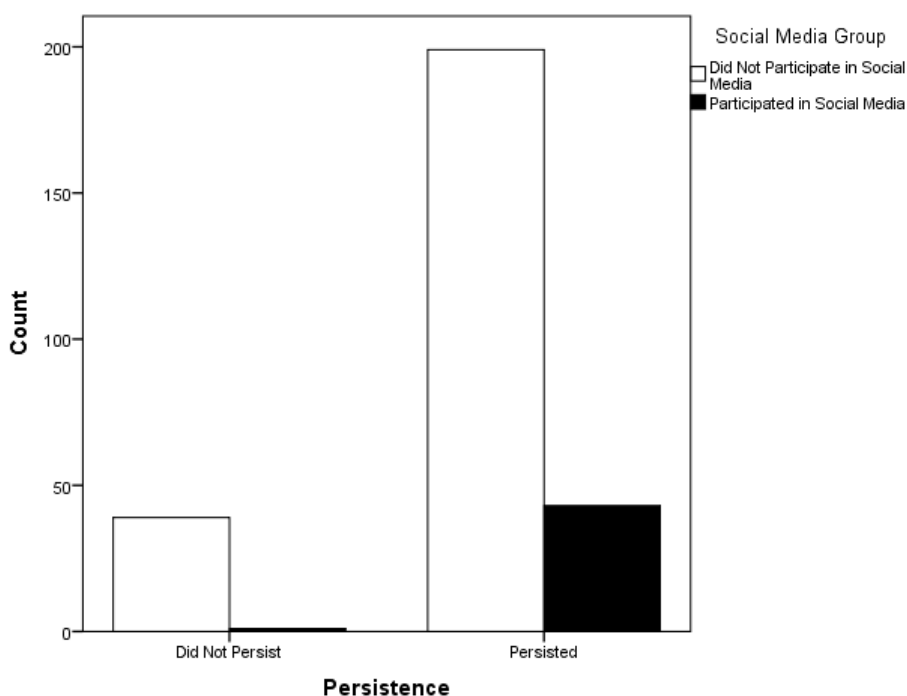hypothesis was retained.

Figure 16. Bar chart of persistence among female graduate students in the College of

Business by social media participation.

Research Question 3 – Male Graduate Students in the College of Psychology

The question addressed in this section was whether male graduate students in the

College of Psychology, who participated in institutional social media, persisted at higher

rates than did male Psychology graduate students who did not participate in institutional

social media. There was insufficient evidence to reject the null hypothesis for male

Psychology graduate students, X^2 (1, 175) = 0.01, p = .94. The conclusion was that there

was not a significant association between persistence and social media participation for male Psychology graduate students.

The proportions of male Psychology graduate students who persisted and did not persist did not vary by social media participation (Fig. 17). That is, for graduate students who both participated and did not participate in social media, the identical small proportion of males did not persist (19% of the social media participants and 19% of the non-participants). Correspondingly, an identically large proportion of students persisted (81% of the social media participants and 81% of the non-participants). The chi-square null was retained for male Psychology graduate students because the proportions did not differ by social media participation.
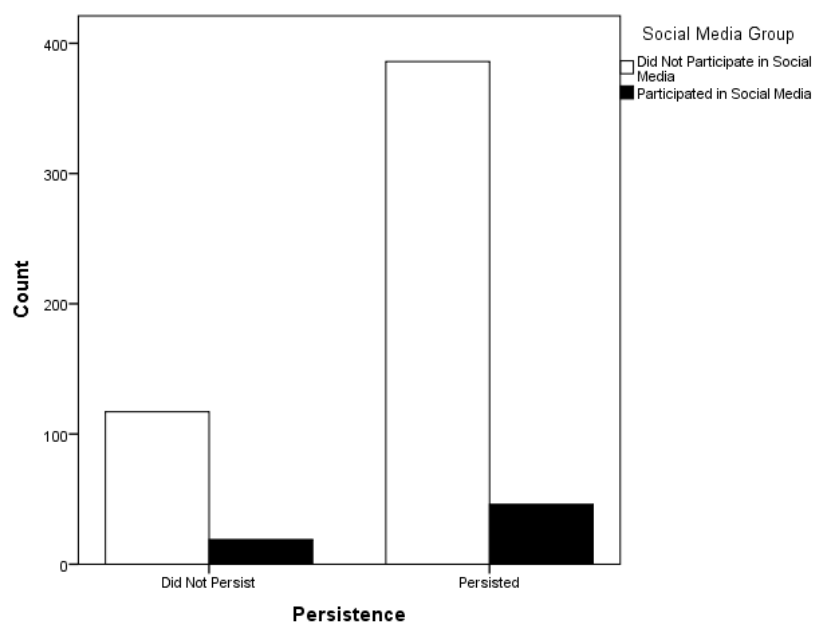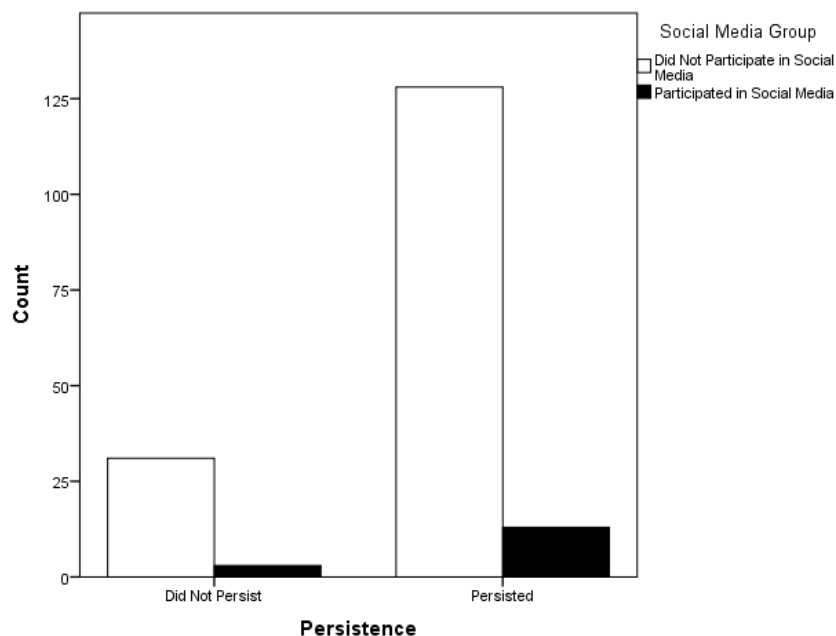

Figure 17. Bar chart of persistence among male graduate students in the College of Psychology by social media participation.

Research Question 3 – Female Graduate Students in the College of Psychology

The question addressed in this section was whether female graduate students in the College of Psychology who participated in institutional social media persisted at higher rates than did female Psychology graduate students who did not participate in institutional social media. There was insufficient evidence to reject the null hypothesis for female Psychology graduate students, X^2 (1, 661) = 1.59, p = .21, and the null was retained. The conclusion was that there was not a significant association between persistence and social media participation for female Psychology graduate students. The null hypothesis was retained because the proportions of female Psychology graduate students who persisted and did not persist did not differ as a function of participation in social media (Fig. 18). That is, for both graduate students who participated and did not participate in social media, a similarly small proportion of females did not persist (34% of the social media participants and 27% of the non-participants). Correspondingly, a similarly large proportion of students persisted (62% of the social media participants and 73% of the non-participants). The null hypothesis was retained for female Psychology graduate students because the proportions did not differ enough by social media participation to be considered statistically significant.

Figure 18. Bar chart of persistence among female graduate students in the College of Psychology by social media participation.

Research Question 3 – Male Graduate Students in the College of Education

The question addressed in this section was whether male graduate students in the College of Education who participated in institutional social media persisted at higher rates than did male Education graduate students who did not participate in institutional social media. The null hypothesis was retained because there was insufficient evidence to reject the null hypothesis for male Education graduate students, $X^2 (1, 104) = 1.34$, $p = .25$. The conclusion was that there was not a significant association between persistence and social media participation for male Education graduate students.

The null hypothesis was retained because the proportions of male Education graduate students who persisted and who did not persist did not differ as a function of

participation or lack of participation in social media (Fig. 19). That is, for both male

Education graduate students who participated and did not participate in social media, a

similarly small proportion of males did not persist (14% of the social media participants

and 25% of the non-participants). Correspondingly, a similarly large proportion of

students persisted (75% of the social media participants and 86% of the non-participants).

The null hypothesis was retained for male Education graduate students because these

proportions did not differ sufficiently by social media participation to be considered

statistically significant.

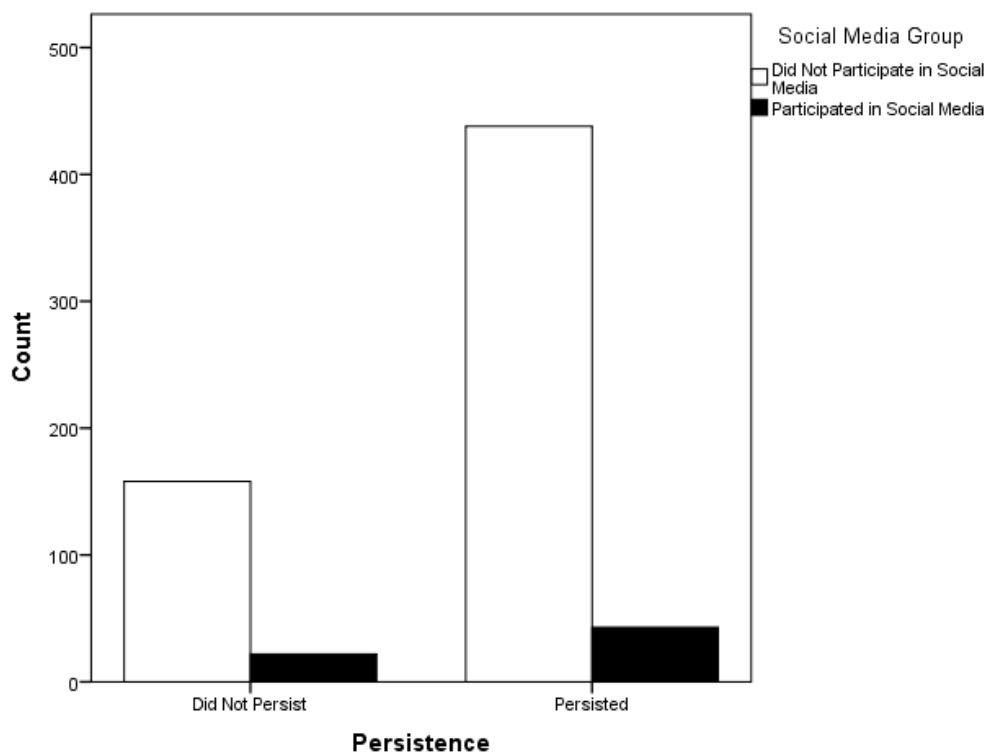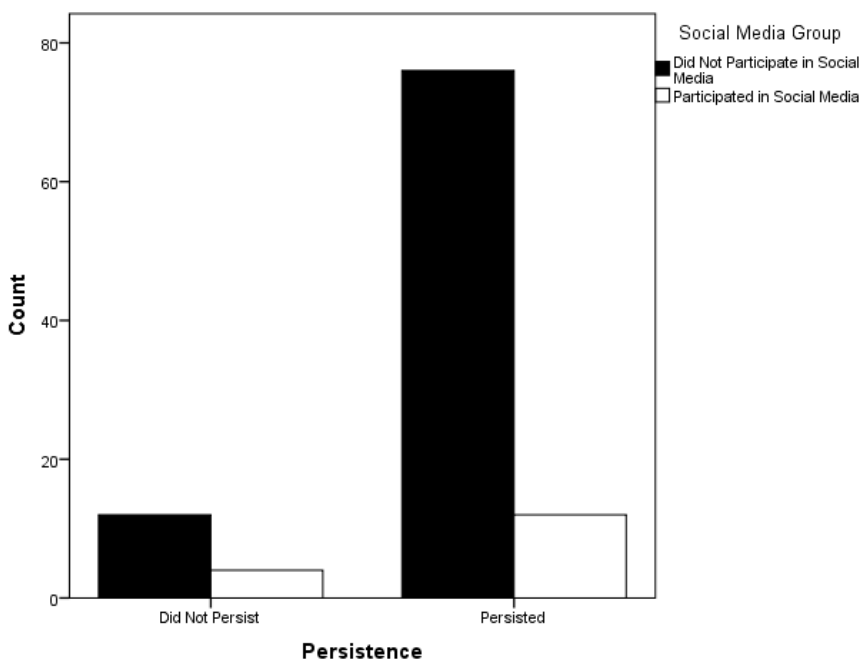*Figure 19.* Bar chart of persistence among male graduate students in the College of

Education by social media participation.

Research Question 3 – Female Graduate Students in the College of Education

The question addressed in this section was whether female graduate students in the College of Education who participated in institutional social media persisted at higher rates than did female Education graduate students who did not participate in institutional social media. The null hypothesis was rejected because there was sufficient evidence that the proportions of female Education graduate students who did and who did not persist varied by social media participation, X^2 (1, 251) = 4.76, *p* = .03. The conclusion was that there was a significant association between persistence and social media participation for female Education graduate students (Table 12).

Table 12

Persistence by Social Media Group Cross-tabulation among Female Graduate Students

in the College of Education

		Social Media Group		
		No, Did Not Participate	Yes. Participated	
Persistence				Total
Did Not Persist	Observed Count	30	11	41
	Expected Count	34.6	6.4	41.0
	Adjusted Residual	-2.2	2.2	
	% within Social Media Group	14%	28%	16%
Persisted	Observed Count	182	28	210
	Expected Count	177.4	32.6	210.0
	Adjusted Residual	2.2	-2.2	
	% within Social Media Group	86%	72%	84%
Total	Count	212	39	251
	% within Social Media Group	100%	100%	100%

Table 12 shows that the observed numbers of female Education graduate students per cell were statistically different than the observed frequencies, but they did not go in the predicted direction of greater persistence among social media participants. Among female Education graduate students who participated in social media, more did not persist

(11 vs 6.4) and significantly fewer persisted (28 vs. 32.6) than expected. The pattern was the opposite for female Education graduate students who did not participate: fewer did not persist (30 vs 34.6) and more persisted (182 vs 177.4) than expected. Figure 20 illustrates these differences.
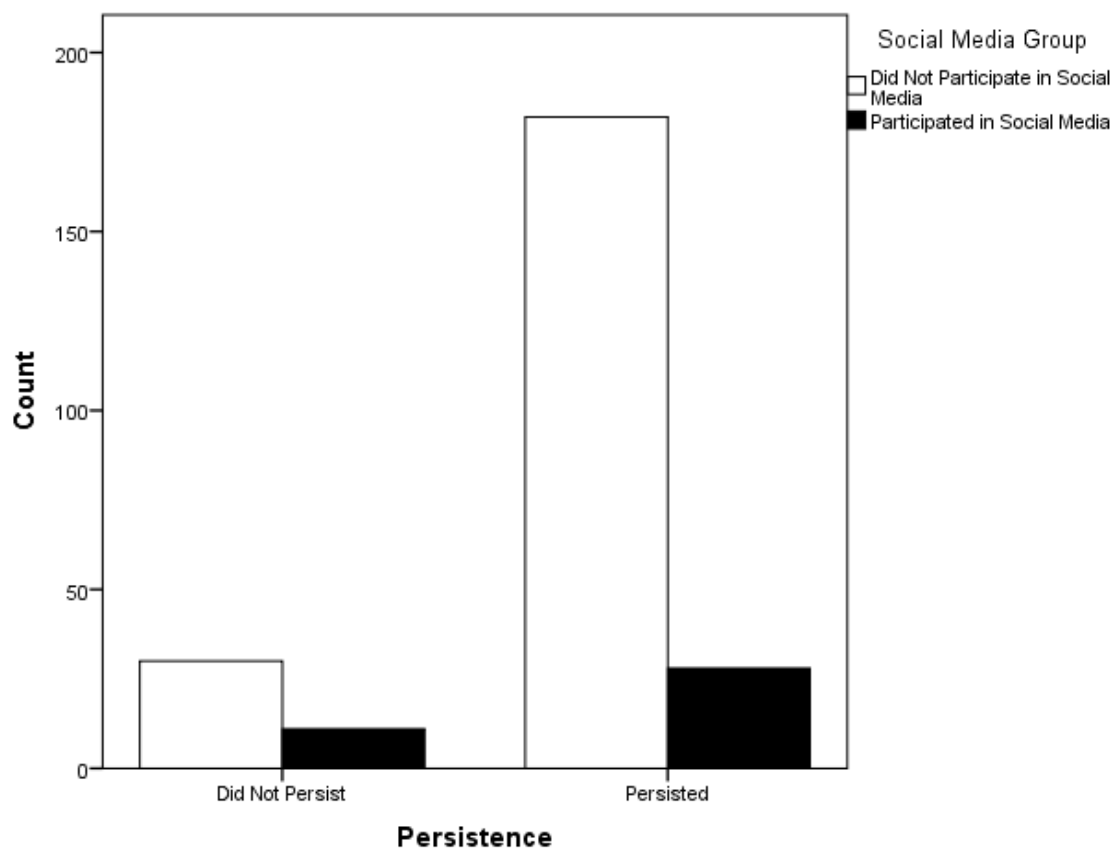
Figure 20. Bar chart of persistence among female graduate students in the College of Education by social media participation.

Research Question 3 –Graduate Students in the Health Services

The question addressed in this section was whether graduate students in Health Services who participated in institutional social media persisted at higher rates than did graduate students in Health Services who did not participate in institutional social media.

There were $n = 39$ male graduate students pursuing Health Services degrees, but the division of observed frequencies among them was not sufficient to run a chi-square test of independence solely on the males. Therefore, for this question, both males and females were combined in order to have a sufficient number of expected frequencies, and gender differences were not examined.

The null hypothesis was retained because there was insufficient evidence to reject the null hypothesis for graduate students in Health Services, $X^2 (1, 218) = 1.86$, $p = .17$. The conclusion was that there was not a significant association between persistence and social media participation for graduate students in Health Services.

The null was retained because the proportions of graduate students in Health Services who persisted and did not persist did not differ as a function of participation or lack of participation in social media (Fig. 21). That is, for graduate students in Health Services who did and who did not participate in social media, a small proportion of students did not persist (33% of the social media participants and 22% of the non-participants). Correspondingly, a comparably large proportion of students persisted (67% of the social media participants and 78% of the non-participants). The null hypothesis was retained because these proportions did not differ sufficiently by social media participation to be considered statistically significant.
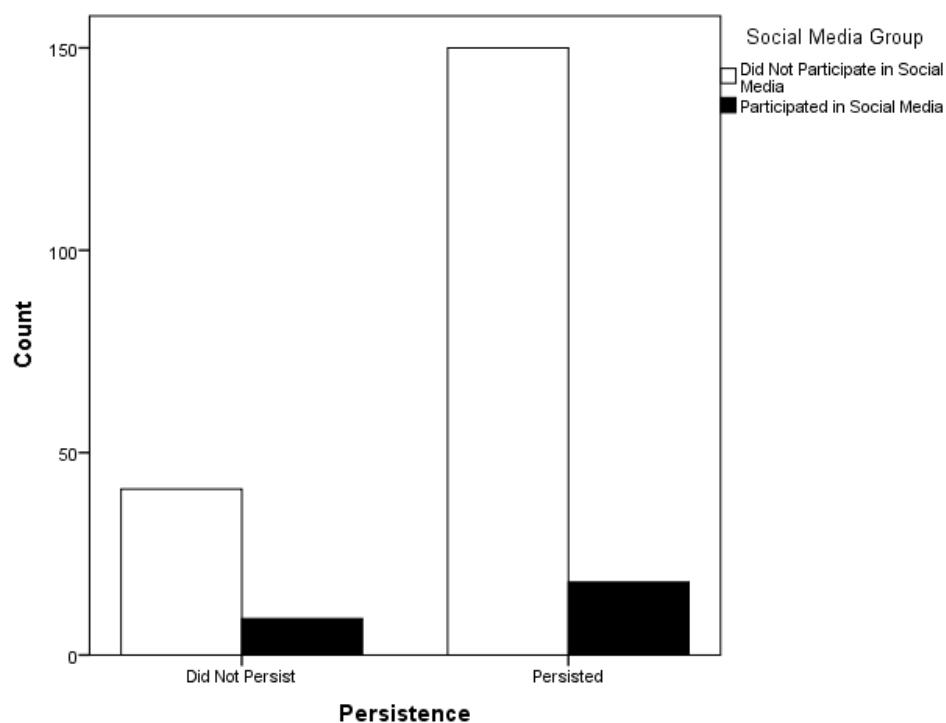
Figure 21. Bar chart of persistence among graduate students in Health Services by social media participation.

Section 5. Summary of Findings

For research question 1, which asked about the use of the institutional social media by students, descriptive statistics showed that the data were strongly skewed towards undergraduate and females. Undergraduate grades covered for full range of possible grades and about half of the undergraduates persisted. Undergraduate males were less likely to persist than were undergraduate females. Those who participated in social media averaged two friends, though the range of friends was considerable, and those who participated in social media averaged 12 page views. Graduate student grades ranged in the top end (A's and B's), and the majority of graduate students persisted.

Male graduate students were more likely to persist than female graduate students. Graduate students averaged one friend, with a smaller range of the numbers of friends than was true for undergraduates who averaged 22 page views.

For research question 2, which asked whether students who participated in institutional social media succeeded (had better grades) at higher rates than students who did not participate in institutional social media, results showed differences between undergraduates and graduate students, as well as differences between colleges. Grades for undergraduates who participated in social media were better than those who did not participate. Grades for graduate students in the colleges of Business and Psychology who participated in social media did not differ from those who did not participate. Grades for graduate students in Education and Health differed but not in the predicted direction: female Education and Health graduate students who participated in social media had significantly lower grades than those who did not participate.

For research question 3, which asked whether students who participated in institutional social media persisted at higher rates than students who did not participate in institutional social media, results showed differences between undergraduates and graduate students, as well as differences between colleges. Persistence for undergraduates who participated in social media was higher than those who did not participate. Similarly, persistence for male graduate students in the College of Business who participated in social media was higher than it was for males who did not participate. Groups that did not show a difference in persistence included female graduate students in the College of Business, both male and female graduate students in the College of Psychology, male graduate students in the College of Education and Health Services

graduate students: those who participated in social media did not differ in persistence from those who did not participate. Finally, persistence for female graduate students in Education differed significantly but not in the predicted direction: female Education graduate students who participated in social media had significantly lower persistence than those who did not participate in it.

CHAPTER FIVE: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

Higher education is transforming into the digital age through the use of technology in the classroom, massive open online classes, and online courses. Student success and persistence has been shown to be a major contributing factor to the skyrocketing student default rates (Jenkins, 2012). Due to the transformation of higher education into an online setting, it is critical that administrators determine what students need to be successful and persist through their online coursework.

There has been considerable research on what factors contribute to student success and persistence within the traditional brick and mortar institutions, but there has been very little research into how those factors can translate into an online setting. The socialization of students has been shown to be an influence on the students' success and persistence including starting college and continuing through to graduation of the student (Tinto, 2012). The overarching research question of this study was: what, if any influence does social media have on student success and persistence within online asynchronous courses?

The following specific questions were addressed in the study:

RQ1: What is the use of institutional social media by students?

RQ2: Do students participating in institutional social media succeed at higher rates than students who do not participate in social media?

RQ3: Do students participating in institutional social media persist at higher rates than students who do not participate in social media?

Data were collected on a total of $N = 7987$ students. The mean grade for class

taken during the term that was sampled for this study was a high C average, $M = 2.81$, SD

$= 1.52$. There were more records for females in the study than males, $n = 5768$ females,

72%; $n = 2219$ males, 28%. There were also more records for undergraduates, $N = 5728$

undergraduates, 72%, than graduate students, $N = 2259$ graduate students (28%).

This study used a quantitative methodology using SPSS for Windows to examine

the relationship between the use of social media, academic success, and academic

persistence among university students completing asynchronous online courses.

Descriptive statistics were performed to determine the use of social media by students.

Two-way ANOVA tests were run based on two independent variables (social media

participation and gender) to analyze the grades of the students. Chi-square tests of

independence were used to test the statistical association between two dichotomous

categorical variables: social media participation and persistence.

Conclusions

Research Question 1

Research question 1 was: What is the use of institutional social media by

students? This question was answered using descriptive statistics so no hypothesis was

tested. Overall, the demographics of the students showed that there were many more

female students both undergraduate and graduate.

Ninety five percent of the undergraduate students had only one or two friends in

the social media web site which demonstrated that students are using the website in a

duo-purpose of strictly social sense as well as building intimate learning communities.

Through the learning community, a student's academic and social involvement coalesces

into a cohesive unit where all students in the community begin to see the academic and social benefits (Kaya, 2004). As long as the students' academic and social involvement is combined within discussions, two or more students can constitute a learning community (Tinto, 2012).

The average number of social media friends among graduate students was a fraction of the number of social media friends among undergraduates. This reflects a substantial difference in the social tendencies between the two groups. This can be attributed to a number of different factors including awareness of the social media site, the students' biases of social media, and the institution's support of the social media web site as a tool for learning. The graduate students who did use the social media web site viewed twice as many pages than the undergraduate students. Therefore, the graduate students, pulling from their experience from other institutions of higher education, are using the social media web site as a potential learning community.

There was no difference in the overall use of the social media web site between the undergraduate and graduate students. By far, the vast majority of both undergraduate and graduate students do not use the web site. Knowles et al. (2005) stated that adult students need to know why they are going to learn something before they learn it. Students have not been informed on the potential benefits of the social media web site at this point.

Research Question 2

Research question 2 was: Do students participating in institutional social media succeed at higher rates than students who do not participate in social media? This question was answered by testing the following null hypothesis:

H_0: There is no statistically significant difference in academic success (grades) between students who participate in institutional social media and students who did not participate in institutional social media.

Interaction Effect Between Social Media Participation and Gender on Grades

The null hypothesis for the interaction effect was:

H_0: There is no statistically significant effect of an interaction between social media participation and gender on grades.

For undergraduate students, the null hypothesis for the interaction effect was rejected, and it was concluded that regardless of gender there is a statistically significant interaction between social media participation and gender on grades. This finding suggests that regardless of gender, the undergraduate students who use the social media web site will be more successful in their coursework than those students who did not use social media. This finding supports conclusions drawn by Tinto (2012) that the demographic attributes of the students participating in the learning community have been shown to have little to no effect on the success of the student or the group; thereby, all demographical differentiation of students participating in the learning community are able to find some benefit.

For graduate students the hypothesis was divided into four categories, including the College of Business, College of Psychology, College of Education, and College of Health Services. It was concluded that regardless of gender, there was no statistically significant interaction between social media participation and gender on grades; therefore, the null hypothesis was retained for the College of Business, Psychology, and Health Services.

However, the College of Education students showed a significant interaction effect between social media participation and gender on grades; thus, the null hypothesis was rejected for the College of Education. The outcome for the grades was not in the predicated direction of higher grades among students who used social media. Female College of Education students who participated in social media had significantly lower grades than their male counterparts and the males and females who did not use the social media.

Main Effect of Social Media Participation on Grades

The null hypothesis for the main effect of social media participation was:

H_0: There is no statistically significant main effect of social media participation on grades.

For undergraduate students the null hypothesis was rejected, and it concluded that there is a statistically significant interaction between students' social media participation and their grades. This finding supports conclusions drawn on by Tinto (2012) where students with formal and informal social connections with faculty and peers had a higher student success and persistence in college. In addition the current study reinforces the conclusions drawn by Barnett (2011) that the integration of the student into the social culture of the institution have been shown to positively increase student success within the classroom.

For graduate students the hypothesis was again divided into four categories, including the College of Business, College of Psychology, College of Education, and College of Health Services. It was concluded that there was no statistically significant

main effect of social media participation on grades; therefore, the null hypothesis was retained for the College of Business and Psychology.

However, the College of Education students showed a significant main effect of social media participation on grades. The outcomes for grades were not in the predicted direction of higher grades among students who used social media. Female College of Education students who participated in social media had significantly lower grades than their male counterparts and the males and females who did not use the social media.

The College of Health Services students had a strong and significant effect of social media participation on grades; thus, the null hypothesis for the main effect of social media was rejected. Just as the College of Education students, the students using social media's grades did not trend in the predictive direction and had significantly lower grades than the students who did not use social media.

Main Effect of Gender on Grades

The null hypothesis for the main effect of gender was:

H_0: There is no statistically significant main effect of gender on grades.

For undergraduate students, gender has a non-significant effect on grades; thus, the null hypothesis for a main effect on gender was retained. This finding suggests that gender was not a factor in the overall grades earned by students. This finding supports conclusions drawn by Tinto (2012) that the demographic attributes of the students participating in the learning community have been shown to have little to no effect on the success of the student or the group; thereby, all demographical differentiation of students participating in the learning community are able to find some benefit.

For graduate students the hypothesis was again divided into four categories, including the College of Business, College of Psychology, College of Education, and College of Health Services. It was concluded that there was no statistically significant main effect of gender on grades; therefore, the null hypothesis was retained for the College of Business and Psychology.

However, the College of Education students showed a significant main effect of gender on grades. The outcomes for grades were not in the predicted direction of higher grades among students who used social media. Female College of Education students who participated in social media had significantly lower grades than their male counterparts and the males and females who did not use the social media.

The College of Health Services students had a statistical trend which was close to being significant, but the null hypothesis was retained. The mean grades among male graduate students in Health Services were higher than they were for female graduate students in Health Services.

Research Question 3

Research question 3 was: Do students participating in institutional social media persist at higher rates than students who do not participate in social media? This question was answered by testing the following null hypothesis:

H_0: There is no statistically significant difference in persistence between students who participate in institutional social media and students who did not participate in institutional social media.

Undergraduates

Among the undergraduate males who did not participate in social media, they were evenly divided between persisting and not persisting. However, among the undergraduate males who did participate in social media, 85% of the students persisted. Therefore the null hypothesis was rejected for undergraduate males. Undergraduate females who did not participate in social media were evenly divided between persisting and not persisting. However, among the undergraduate females who did participate in social media, 72% of the students persisted. These findings are consistent with Porto et al. (2011) who found that for online distance education courses, social media plays a critical role in building learning communities used for the support and motivation of the students which leads to persistence and student success. Furthermore, Morgado (2011) found that the formation of personal learning networks by using the classroom to form open and collaborative learning environments is a way social media can aid the online student through their courses.

Graduates

There was a significant association between persistence and social media for graduate male students in the College of Business and the female students in the College of Education; therefore, the null hypothesis was rejected for their groups. The observed frequencies did not go in the predicted direction of greater persistence among social media participants. The male Business and female Education graduate students were less likely to persist if they were using social media compared to those male students who were not using social media.

Female graduate students in the College of Business did not have a significant association between persistence and social media participation; therefore, the null was

retained. Both male and female students in the College of Psychology did not have a

significant association between persistence and social media use. Male students in the

College of Education did not have a significant association between persistence and

social media use. All students in the College of Health Services were reviewed as a

whole since there were not sufficient frequencies to run the test. The null was retained for

the College of Health Services because there was not a significant association between

persistence and social media use.

Implications for Practice

The socialization and formation of formal and/or informal learning communities

have been shown to increase student success and persistence within higher education.

The results of this quantitative study strongly suggest that the social media web site at the

studied institution is building learning communities for the undergraduate students and

positively influencing student success and persistence. Based on the results of this study,

it is recommended that the institution implement the following practices:

1. Promote the social media web site as a way for students to get help with their

   coursework from peers, staff, and faculty.

2. Implement assignments within the orientation course and first four courses of

   the undergraduate programs directing the student to the social media web site

   to aid the student in incorporating the site into their scholastic routine.

3. Allow for feedback from the students to find ways to increase the participation

   into the social media web site.

These recommendations highlight the need for the institution to socialize more of

their asynchronous online students which will in turn help increase the students' success

in the classroom and persistence through their coursework. The end goal may be more graduates and less student debt default.

As higher education continues to transform itself using the technological advances founded through the internet, college administrators should continually consider what makes their traditional students successful and determine ways to incorporate those traits into technological opportunities. The growth and continuation of online classes can only be sustained if students are given the same opportunities to learn through the classroom and with each other as their traditional counterparts. The current study suggests that the social media web site is an excellent substitution for the student's ability to socialize and develop learning communities with each other.

Administration support is the first step for the success of the social media web site. The development, training, and implementation of the social media web site as a learning community will provide the stakeholders with the need to know why it is important to promote and utilize the web site. The success of the social media web site is dependent on both the staff members of the institution and the students promoting, joining, and utilizing the web site.

Using the social media web site as a way to further engage students in their first undergraduate courses would come at a critical time when the majority of online students leave school. Students will feel more connected to the institution. They will succeed and persist at higher levels which will lead to more graduates and satisfied students. Delivering assignments in the first courses that pertain directly to the social media web site will initiate students into a culture of the utilization of social media as a tool for their education.

One of the questions of all programs within the transforming higher educational institutions should be: how can this web site be better for our students? Inquiring the current students on their opinions to what can be done differently to enhance the social media web site should be viewed as an opportunity to grow with the influx of technology growth. Obtaining the input from the staff and administration will also be a key factor in the implementation of new socialization tools in the future. Graduate asynchronous students were not affected by the social media web site in the least.

Recommendations for Future Research

Further research needs to be conducted to determine what other forms of social networking may correlate with student success and persistence within online asynchronous higher education courses. This study reviewed an internal social media site, so it would be worthwhile to explore if like results would happen through chat sessions, audio postings, or video postings. Previous research has shown that multiple forms of technology can be incorporated into an asynchronous online course. Studying the effects of these other forms of technology on student success and persistence would be a worthy exploration.

A qualitative study into the undergraduate students' perceived benefits and detriments of the social media web site could help improve the institution's social media web site and possibly help improve on student success and persistence. Gaining insight into those students who use the social media web site can garner what about the web site works for the students and what does not. Then through the study, improvements can be made to ensure a better student experience in the social media web site.

Since all graduate students participating and not participating in the social media web site did not have positive gains in their student success and persistence, further research could determine what support systems the graduate students use to remain successful in their coursework. A qualitative study could help administrators of online higher education institutions find ways to aid the graduate learners in their progress through their coursework. Determining the support systems needed for the graduate students in online asynchronous courses would benefit the institution in developing tools to help student success and persistence.

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