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How Do You Like Me Now? Social Media Bridging the Distance in Online Education

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How Do You Like Me Now? Social Media Bridging the Distance in Online Education

by
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An Applied Dissertation Submitted to the
Abraham S. Fischler College of Education
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Approval Page

This applied dissertation was submitted by Lee M. Heller under the direction of the persons listed below. It was submitted to the Abraham S. Fischler College of Education and approved in partial fulfillment of the requirements for the degree of Doctor of Education at Nova Southeastern University.

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Statement of Original Work

I declare the following:

I have read the Code of Student Conduct and Academic Responsibility as described in the Student Handbook of Nova Southeastern University. This applied dissertation represents my original work, except where I have acknowledged the ideas, words, or material of other authors.

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Lee M. Heller
Name

March 21, 2019
Date

Acknowledgments

This has been a very long journey. There was a time when my doctoral journey ended because of personal tragedies. My father and grandmother, passed away within 11 months of each other. During this same period, I suffered a major heart attack, and I essentially quit. Not officially, but I did not take any more courses. A few years later, I got a letter from Nova Southeastern University that explained I was running out of time to finish. Family prompted me to return to Nova and finish what I started. With their support, the support of my friends, and the support of my committee I was able to reach this point. So, never give up, no matter how long it takes.

I would like to thank Dr. Simonson, who has been with me from beginning to the end, for his help and advice throughout this entire journey. I will always be grateful. I would also like to thank Dr. Walrod for her countless hours of help and advice. Dr. Walrod stepped in to chair my committee after I had been out of the loop for so long. I am not sure that without her nurturing, her guidance, and her advice that I would have made it to this point. I will forever be indebted to you and only hope that I can pass your kindness forward to someone else. I would to thank Dr. Guzman for all of his help, time, dedication, and multiple explanations. It is with your help that this was possible.

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Abstract

How Do You Like Me Now? Social Media Bridging the Distance in Online Education. Lee. M. Heller, 2019: Applied Dissertation, Nova Southeastern University, Abraham S. Fischler College of Education. Keywords: Facebook, social media, higher education, online education, transactional distance, student isolation, student satisfaction, student engagement, student connectedness

Distance education has disrupted our educational norm, with students taking more online courses than ever before. Some research has assumed that online students experience a feeling of isolation, disconnect with their institution, and overall, have a diminished educational experience. During the last 10 years, another phenomenon, social media, has also experienced explosive growth, including the largest and most interwoven into modern society: Facebook.

With almost 92% of respondents in this study reporting they use Facebook daily, this study found there was statistical significance (1) between using Facebook for social use and the feelings of isolation; (2) between belonging and participating in an academic Facebook group and the feelings of isolation among online students; (3) between Facebook use with the engagement of online students; (4) between social use of Facebook and connectedness; (5) between belonging and participating in an academic Facebook group and the connectedness of online students; (6) between using Facebook for social use and the satisfaction among online students; and (7) between belonging and participating in an academic Facebook group and satisfaction among online students. Also, this study confirmed that there was indeed a positive relationship in four areas involving a school's Facebook page, including visiting and participating on a school's Facebook page and (1) the feelings of isolation among online students; (2) the engagement of online students; (3) the connectedness among online students; and (4) the satisfaction among online students.

Table of Contents

Chapter 1: Introduction

Two global movements have transformed human lives: online education and social media. Together these innovations have the potential to improve student satisfaction, student engagement, and student connectedness, and decrease student loneliness. Can these two major trends unite to support online students?

During the past 10 years, 2007-2017, growth in the popularity of online education has been substantial; as of fall 2014, over 2.8 million students were enrolled in fully online education programs in the United States (Allen & Seaman, 2016). *U.S. News and World Report* reported in 2012, over 62% of colleges offered online degree programs (Sheehy, 2013). However, in 2015, The Babson Survey Research Group found that more than one in four students took a distance education course and that there were almost 6 million students taking at least one online course, which was an increase of just over 200,000 students from the previous year (Allen & Seaman, 2016). A 5.2% increase in enrollment was calculated between fall 2012 and fall 2016 (Allen, & Seaman, 2016).

Rise of social media. During the same 10-year period, social media websites such as Facebook, Twitter, and Instagram rose in popularity. Social media websites include features such as user-driven profile pages that contain personal information such as likes and dislikes, birthdate, email, family members, friends, life events, and other information the user chooses to share. Social media promotes socialization with others by sharing user comments, pictures, and videos (Greenhow & Lewin, 2016). *Bloomberg Technology* reported that Facebook recently topped 1.7 billion monthly users (Frier, 2016). Around the same time, June 2016, another popular social media site, Instagram, had over 500

million monthly users (Rosoff, 2016). Twitter, the smallest of these three social media sites, reported numbers over 320 million active monthly users (Guynn, 2016).

Online education growth through technology. Brazina and Ugras (2014) explained that there are different forms of online education, such as asynchronous courses (completing assignments at your own pace), synchronous courses (classes online at the same time as the rest of your classmates and instructor), and blended courses that are both asynchronous and synchronous. Online students may be in the same city, state, or in entirely different geographic locations taking the same course.

The driving factors behind the rapid growth in online education are cost and convenience for the students. Sikes (2015) explained that today's students expect their university experience to be technology enhanced as technology is an integral part of their lives. Many online programs allow students to take asynchronous courses, which are appealing to students who are drawn to the flexibility that these types of courses provide. However, students are also drawn to the blended learning courses that offer increased contact with their professors and their classmates. Woerner (2015) added that students today have greater than ever means of accessing their learning with the use of technologies such as smartphones, tablets, and smartwatches through which they can access a university's online learning management system (LMS). One major advantage for students is that many of these online programs offer the ability to earn a degree faster than through a traditional brick and mortar program (McPherson & Bacow, 2015).

Ease and convenience for students has fueled the rapid growth of online degree programs, but there are benefits to the universities and colleges as well. For example, universities and colleges can profit by offering online degree programs to a section of

society, that due to circumstances, may not have been able to enroll in a degree program otherwise (Thomas, 2016). Institutions can offer convenient educational programs that many potential students may not have been able to access before (Wu, 2014). Furthermore, professors benefit because teaching online courses allows them freedom to teach from anywhere at any time (McPherson & Bacow, 2015).

Social media is one of the most common activities on the Internet. It has brought people new ways to communicate with people and share ideas, as well as access and spread information (Brooks, 2013). College students expect that social media will play a role in their educational process as it does with their normal everyday lives (Sesterhenn, 2012). Social media can be useful in maintaining friendships and creating new ones as it allows users to check on friends and family, send them messages, search for others with common interests, plan social activities, and allows others to view their background and interests. Social networks allow users to benefit from their membership, such as support, increased well-being, access to information, and opportunities to bond and form relationships (Burkart, 2013; Yang & Brown, 2012).

The use of social media has increased so much that many argue that its use should be included in education (DuBose, 2012). Sesterhenn (2012) stated that universities and colleges need to interact with students through the social media outlets the universities and colleges are already using. Social media has become a focus for students, faculty, and administrators at many, if not most, universities and colleges. Social media allows the opportunity for students to connect with fellow students in different ways, such as setting up social activities, sharing gossip, forming study groups, forming support groups,

reaching others who have taken the same classes or are in the same degree program, and so on (Tilton, 2012).

Statement of the Problem

Despite the rise in university and college students taking courses online, Allen and Seaman (2016) and Banbara, Harbour, and Athey (2009) reported that more than one in four students are dissatisfied with the online educational experience, and attrition rates have increased as high as 50% in online educational degree programs. Attrition occurs when a student withdraws from his or her program of study and does not graduate. When students leave a degree program, before graduating, it can have a negative financial impact on the student, the university or college, and the community (Burkart, 2013). High attrition rates could be a signal that student needs are not being met by the university/college and the student feels disconnected and leaves (Wise, 2012). Students must be able to graduate from their online programs (Hamidy, 2014). Attrition is one of the biggest problems in online higher education, and research is critical to decrease attrition in online degree programs as continued increasing attrition rates cause universities to lose prestige (Anderson, 2012). Students who opt to take their courses online should be able to have the same collegiate experience as their resident or commuter peers, but this is often not the case. Students feel a sense of community when they can connect with peers, have relationships with faculty, and attend extracurricular functions (Powless, 2011).

Burkart (2013) stated that student engagement can be broken down into two parts, academic and social. When students are academically engaged, they are involved in their classes, they have relationships with their professors, and they have connections to their

classmates. On the other hand, social engagement occurs when students are involved in clubs, fraternities or sororities, sports, and other university sponsored social engagements. The amount of both types of engagements either increase or decrease a student's feeling of belonging and overall satisfaction with their university or college. However, Olson-Wenneker (2012) expressed that students of online education may experience feelings of isolation because online courses provide fewer emotional and social signals. This escalation may be due to isolation that some online students feel. Online educational degree programs may seem convenient because the programs tend to lack the socialization that would normally take place in a traditional program (Hamidy, 2014).

Gupta, Singh, and Marwaha (2013) found that social media does have a positive impact on improving the relationship between online students and their universities and colleges. However, as Milheim (2012) reported, the problem is that students' feelings of connectedness are not typical because online students lack interaction with their professors and with their peers. Bordelon (2011) measured perceived achievement and success, based on student-to-student and student-to-professor interaction, and found that there was, indeed, a link between the two. The greater the social interaction, the higher the satisfaction with the course and the higher academic achievement. Hoskins (2012) concurred with Bordelon that more interaction leads to opportunities for increased student satisfaction within the course. Higher levels of satisfaction lead to opportunities for greater academic success and higher retention rates within online education degree programs.

The Research Problem

This study sought to examine for associations between the use of social media, specifically Facebook, as a tool used by universities and students, and a decrease in the distance in online higher educational programs. For this study, distance will be used to describe the feeling of isolation from their institution, the absence of being socially and academically connected to peers and professors, overall satisfaction, and engagement among online students. Burkart (2013) stated that 60% of all students enrolled in a 4-year university/college degree program will drop out before graduating.

One of the reasons students leave their degree program is a feeling of isolation due to a lack of connection to their classmates and professors. Seppala, Rossomando, and Doty (2013) stated that without social connection, which is of great importance to a person's psychological well-being, feelings of loneliness increase. Zhang (2012) claimed that social media sites, such as Facebook, may be helpful to students with low self-esteem or low satisfaction because social media helps create ties to others with ease and convenience. Social media gives students greater in-person social experiences due to increased opportunities for involvement. Social interaction is a basic need for humans, and any successful online program should include opportunities for interaction. Greater interaction between students and their peers and students and their professors may lead to lower feelings of isolation and loneliness and may lead to greater overall satisfaction with the online program, as well as a greater possibility of students staying in the program through graduation (Hoskins, 2012).

A large body of research is available that explores students' experience between online education and face-to-face classes. A smaller body of research examines the use of

social media for educational purposes within the structure of online courses. However, little research explores whether social media can help reduce the distance that many students feel in online higher education. Powless (2011) stated that the higher level of involvement a student has, socially and academically, the more connected to their university or college they feel and the greater the satisfaction they have with their educational experience.

Understanding what factors relate to student satisfaction in their online courses is important to the success of online learning. Increasing student satisfaction may improve retention rates, but there is limited research available that explores social media and student satisfaction (Anderson, 2013; Bookout, 2010). Social media was effective and improved student engagement within traditional classrooms, but there does not exist empirical research to determine if social media would have the same effect in online courses (Hamidy, 2014). Cardona-Divale (2012) added that there is a weakness in the existing literature that examines feelings of isolation and connection to their instructors. This study seeks to analyze if using the social media website, Facebook, will help reduce feelings of isolation, increase involvement, and increase satisfaction within online higher education students.

Significance of the Study

This study is significant to the field of higher education because it adds to the small body of existing research by examining the use of Facebook as a tool for fulfilling the need for social connection between professors and students in online higher education, the satisfaction students feel towards their universities or colleges, the need to

diminish the feeling of isolation among online higher education students, and finally the need to reverse rising attrition rates within online higher education programs.

Many first-year students enrolled in 4-year university/college degree programs will not graduate (Burkart, 2013). One reason students leave before graduating is the lack of social connection within online programs. Students may feel alienated from their universities, their peers, and their professors, causing deep disconnect and loneliness. Social interaction is a basic need for humans, and any successful online program should include opportunities for interaction. The higher level of student involvement, socially and academically, the more connected to their university or college they feel, and the greater the satisfaction they have with their educational experience (Hoskins, 2012; Powless, 2011).

Online education has become an important revenue stream for universities. Universities/colleges are attracting students, who would not have normally enrolled, to register for at least one online course. Online education helps universities and colleges offer education courses and programs to many students who lacked access these educational programs, for example, those who have geographical limitations, work full-time, have physical disabilities, or other factors that prevent enrollment into a traditional on-campus program (Thomas, 2016; Wu, 2014).

Investors and private companies also have made huge profits by partnering with universities. For example, education technology companies are bringing in almost 1.1 billion dollars in profit (Newton, 2016). For these reasons, it is important to universities and colleges to understand ways to improve attrition rates within online programs, improve student satisfaction with online courses by increasing student involvement, and

continue to grow the availability on online choices. Burkart (2013) stated that attrition rates affect university/college revenues and impact state and federal funding. Attrition rates also negatively impact the student who doesn't graduate by limiting future earning potential and possible overwhelming debt from student loans needing repayment. Furthermore, it negatively impacts the community, which loses out on qualified college graduates to fill open positions.

Deficiencies in the evidence. Students are interacting via social networks, but there is a weakness in the existing literature that examines feelings of isolation and the lack of feeling connected among online education students. There is also a lack of research that examines whether social media can help reduce a student's feelings of isolation. Cardona-Divale (2012) reminded us that social interaction is important to building a sense of community. Hamidy (2014) explained that even though social media was effective and improved student engagement within traditional classrooms, empirical research does not exist to determine the effect in online courses. Also, the attrition rate for online students is 25% higher than their traditional classroom counterparts, and it is possible that engagement through social media may improve satisfaction and retention rates in online degree programs. Mariano (2012) agreed that social awareness has a positive impact on a student's feeling of connectedness but added that more research is needed in this area. Sikes (2015) agreed that there are very few studies that investigate how Facebook might affect student engagement.

Powless (2011) stated that there is indeed a lack of data that explores the involvement of the average college student. Powless explained that academia needs to keep up with changes that effect college involvement and that they must continue to seek

out new ways to increase involvement and increase student satisfaction. A common belief is that due to the limited interaction within an online course, a high level of satisfaction is lacking, which may limit learning. However, finding factors that improve student satisfaction and student learning will help universities and colleges build higher quality online degree programs (Bordelon, 2011). Anderson (2013) stated that it is important to conduct research to determine ways to decrease attrition rates of online students as it is vitally important to both the revenue of universities but also their reputation of quality education. Greenhow and Lewin (2016) added that there has been little research that investigates the relationship between social media and formal or informal learning despite the research that has been done that shows there may be positive social impacts with social media.

However, Whitehurst (2015) explained that previous Facebook studies offer little direction on how social media may be integrated or implemented within higher educational settings. Scialdone (2014) agreed that there is a lack of social media research, adding that more research is needed to understand if the use of social media will help increase the engagement between students and their universities. He also pointed out that universities and colleges have a duty to research how social media impacts students and their collegiate experience. This study seeks to fill the void within current literature by determining whether using the social media website, Facebook, improves online higher education student engagement and satisfaction.

Audience. This study of the relationship between online education and social media should be of interest to a variety of stakeholders in the educational and psychology fields. First, university and college administrators may learn the impact Facebook may

have on the success of online courses and degree programs. As previously stated, universities and colleges are enjoying increases in enrollment, through online course offerings, which, ultimately, boost revenue to the university or college (Thomas, 2016; Wu, 2014). For this reason, it is vital to find ways to keep online students connected and engaged in their educational experience. Currently, attrition rates are on the rise, and universities need to explore different strategies to reverse this trend.

University and college professors may find interest in this study due to the possible impact the results may have on the methods of instruction in online courses. Also of interest, is the possible effect using social media may have on the potential success of their students. Another reason would be understanding the effects of connections with online students. This study offers important insights as to how instructors, instructional designers, and administrators may help online students bond to their universities or colleges. Finally, this study should provide important information instructors require to guide their students to an overall positive experience that creates student satisfaction and promotes retention and graduation.

This study offers important findings to the field of instructional design. Although research examining social media use within online course instruction is available, this study will add to the literature available and possibly influence the way courses are designed. While this study does not investigate the use of Facebook embedded within a higher educational course, it will provide designers additional information about the effects Facebook usage has on student engagement, student loneliness, and student satisfaction and may provide insight as to how social media is used effectively within courses and college programs.

Psychologists and others within the psychology field may have interest in this study as it examines factors affecting online student connectedness and satisfaction. It is important to understand what makes students unhappy with their online educational experience and find ways to decrease the feelings of disconnect and isolation that lead to students leaving their online programs before completion. This study will investigate those feelings of connection, isolation, and satisfaction to understand if and how Facebook can be used to help online students feel connected and satisfied with their educational experience. This study should provide valuable information that will add to the small amount of existing literature and illuminate possible strategies and methods to explore.

Certainly, the most important stakeholder would be the student enrolled in online courses or online degree programs. Rising attrition rates point to something severely wrong with our online higher educational system. The effects of these high numbers are far reaching as attrition hurts the university or college, the community, and most of all the student who does not graduate. The possible use of Facebook as a tool to feel closer and more of an active part of their university or college, form greater connections with their professors and other students, and to contribute to academic success and graduation would be of great interest and value to the online higher education student.

Definition of Key Terms

Attrition. When a student who is enrolled in a degree program leaves that program before graduating and earning the degree (Burkart, 2013).

Distance education. Formal education where students and instructors are physically separated but connected by interactive telecommunication systems (Simonson, Smaldino, & Zvacek, 2015).

Facebook. This social media is the largest of all social media websites with 1.7 billion active users every month (Frier, 2016). According to Facebook (2019), daily active users were 1.52 billion on average for December, 2018, an increase of 9% over December, 2017. Monthly active users were 2.32 billion as of December 31, 2018, an increase of 9% over 2017 (Facebook, 2019).

Hierarchy of needs. Maslow's (1943) theory proposes that actions are driven by certain basic needs: physiological, safety, love/belonging, esteem, and self-actualization.

Loneliness. The lack of social relationships which causes feelings of depression, distress, withdrawal, and deep feelings of isolation from others (Lou, Yan, Nickerson, & McMorris, 2012)

Online education. Instruction through use of technology and the Internet for learning (Moore, Dickson-Deane, & Galyen, 2011).

Social connection. The ability for humans to have positive relationships with other humans in a social environment (Seppala, Rossomando, & Doty, 2013).

Social integration. The depth at which a person feels connected and interacts with a certain group of other people (Mariano, 2012).

Social media. Internet based websites that allow users to communicate and interact with each other despite time and distance; examples include Facebook and Twitter (Christensson, 2013).

Social network. A community of interconnected people who bond together based on similar interests. The network may be large, for example a community or it may be as small as a family network (Burkart, 2013).

Social Networking Sites (SNS). These are websites that are designed to promote social interaction among users. These sites allow users to connect and share information through text, pictures, and video (Powless, 2011).

Student isolation. A student is separated from their peers and their instructor creating a feeling of isolation (Bordelon, 2011).

Student engagement. The amount of time and energy a student spends actively involved in coursework, participating in class, and actively participating in school events and activities (Conner, 2016).

Student satisfaction. The amount of satisfaction a student feels with their higher education course, their instructor, and their overall college experience (Powless, 2011).

Theory of involvement. Astin's theory explains that the more involved a student is with their university or college, the higher their satisfaction will be and the greater chance of retention (Powless, 2011).

Transactional distance. Moore's theory refers to the behaviors of the student within the learning environment, the communication between students and communication with the instructor, as well as the structure of the class or program (Moore, 1997).

Purpose of the Study

The purpose of this study was to explore for connections between the use of Facebook as a tool used between students for academic networking and as a tool for

universities to connect to students and decrease the distance online students' experience. For this study, distance will include the feelings of isolation, lack of connection and engagement, and lack of satisfaction that online students experience. Too many first-year students drop out of school before graduating (Burkart, 2013). Zhang (2012) claimed that social media sites, such as Facebook, may be helpful because social media helps create ties to others with ease and convenience. Social media gives students a chance to have greater in-person social experiences due to increased opportunities for involvement. Greater opportunities for socialization may indeed lead to lower occurrences of the feelings of isolation and loneliness. Powless (2011) explained that students feel connected with their university when they can connect with peers, have relationships with faculty, and attend extracurricular functions. Online students should feel connected to their university or college, and they should have the same opportunities to connect to their classmates, their professors, and engage in social activities. Research is critical to discover ways to decrease attrition in online programs. Students who opt to take their courses online should be able to have the same collegiate experience as their resident or commuter peers, but this is often not the case (Zhang, 2012). Little research available examines the use of social media, specifically Facebook, to analyze the effect it might have on fulfilling the need for social and academic connection in online university or college students. This study will provide much needed research in the area.

Summary

There has been explosive growth in online education, but many students are unhappy with their experience and feel disconnected with their university or college and isolation. These experiences are part of the reason the attrition rates are rising.

Universities and colleges depend on the success of their online degree programs. Not only are reputations on the line, but there are large financial stakes as well. It is important for education administrators to understand what tools will help make their programs more successful.

Chapter 2 is a comprehensive review of the current literature surrounding the focus of this study. It begins with a review of the theoretical groundwork on which this study is based. Maslow's (1943) hierarchy of needs theory, Moore's (1997) transactional distance theory, and Astin's (1984) theory of student involvement are discussed in depth. Next, a brief history of online learning and social media is discussed. The remainder of the chapter is broken down into three main sections: student satisfaction, student isolation, and social networking. An exhaustive review of current literature is given in each of the three sections.

Chapter 2: Literature Review

Current trends occurring in higher education include the growth of online learning and the dissatisfaction of students who take online courses or enroll in online degree programs. At the same time, technology has fostered the growth of social media and the popularity of Facebook, where users connect with friends and family and build relationships. The explosive growth and popularity of online education is undeniable. Almost 30% of all higher education students took at least one course online (Allen & Seaman, 2016). Despite the growth of online educational programs, many students have negative feelings about their online educational experience, which is due, in part, to a lack of connection to instructors, peers, and their university or college.

To understand this phenomenon, it is important to understand the perceptions that online students have and how those perceptions affect their academic and social success in online education. For theoretical framework, this study will look at the work of Abraham Maslow's hierarchy of needs theory, Michael Moore's transactional distance theory, and Alexander Astin's theory of involvement.

Theoretical Framework

Maslow. Maslow's research in the field of psychology led to the creation of the hierarchy of needs model of human motivation. Maslow designed this model as a clear way to understand human needs and humans' motivation to act on those needs (Milheim, 2012). Maslow's theory organizes human needs into five categories, physiological, safety, love/belonging, esteem, and self-actualization. Maslow contended that humans focus on the most basic needs first, before moving on to pursue other needs (Dunmore, 2013). In Maslow's theory, need motivates behavior. As each need is

satisfied, humans will then seek to satisfy the next need. The following (Figure 1)

examines each level of needs starting with the most basic and building to the highest

level of need, self-actualization (Winston, 2016).

Self
Actualzation

Esteem Needs

Social (Love/Belonging)
Needs

Safety and Security Needs

Physiological Needs
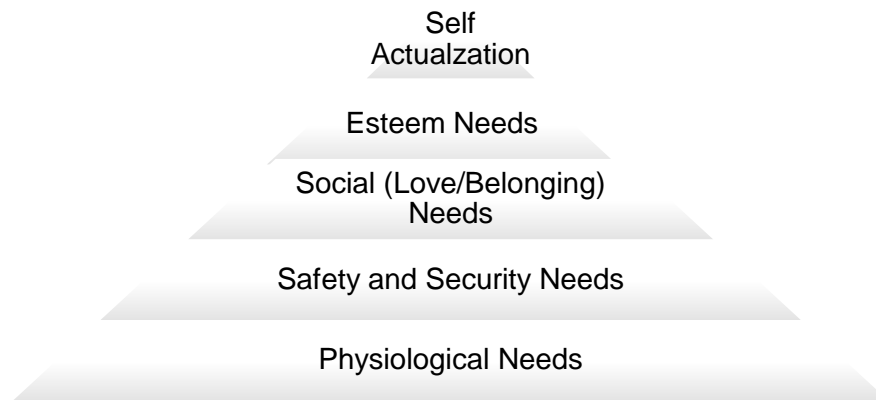
Figure 1. Representation of Maslow's hierarchy of needs (Researcher created, 2017).

***Physiological needs*.** These are the most basic of all needs and survival depends

on the satisfaction of these needs, including food and water. Humans will continue to

have these needs until they have been met adequately and that when faced with other

needs, a human would focus on the physiological needs first, if not already met. Maslow

explained that when a person is hungry, no other desires or distractions will remove that

feeling of hunger. Hunger, then, will occupy all focus until that need is finally met.

Maslow pointed stated the likelihood of life or death, hunger would be rare, but if it were

the case, wishing for endless amounts of food would be the ultimate desire (Maslow,

1943).

***Safety needs*.** After physiological needs are met, then humans will feel a new

need, that of safety. Safety needs cover a variety of desires, such as the desire to be free

from fear, to have shelter, to feel safe, and to have order. However, absolute hunger and

safety needs, while they can be seen in certain circumstances, are mostly rare within our

society. Safety needs will take over as top motivator once all physiological needs are met (Maslow, 1943).

Love/Belongingness. At this stage, both physiological and safety needs have been satisfied, and humans will feel the need to belong, to feel companionship, to feel love. At this stage, the hunger switches from food to the hunger for relationships with others. Although families move away or break apart, as friends come and go, and as urban cities expand, there is a deep need for companionship, and the hunger is real and cannot simply be ignored (Maslow, 1943).

Esteem. At this stage, again all lower needs being met, humans will seek to feel good about themselves and to feel good about others. Two parts to esteem needs include; the desire to feel accomplished and to achieve. The second part to the esteem need is to have attention, recognition, and/or appreciation. The in ability to satisfy these esteem needs will cause a human to feel helplessness and discouragement (Maslow, 1943).

Self-Actualization. This is the highest stage in Maslow's hierarchy of needs. At this stage, humans could fulfill their destiny, for example, through music or art, but to reach one's destiny, they must first already be in the position they were meant to be in. This is the stage at which a human strives to be the very best that he or she can be (Maslow, 1943).

Maslow's hierarchy of needs is important when exploring student motivation and satisfaction in online education, just as the theory has been used to explore facets in other disciplines (Milheim, 2012). In Maslow's hierarchy, the first two levels do not explain the lack of connectedness many online students feel with their universities/colleges. However, the third stage, love/belongingness, gives possible explanations for students'

feelings of disconnect and dissatisfaction with their online programs. Maslow (1943) explained that at this stage, people feel the need to belong, to feel companionship, and feel love.

With the most basic physiological and safety needs met, online students will seek to fulfill the need for companionship, but this need can be more challenging for an online student than for a resident student. For example, a resident student will typically live in a dormitory or other student housing and will spend a great deal of time surrounded by other students and professors on campus. However, the distance education student lacks these physical interactions and connections and are thereby deprived of Maslow's third level of human needs, love and belonging.

Rutledge (2011) suggested that Maslow's hierarchy needed updating. Rutledge argued that the feeling of belongingness is the most predominant human need and not a third level need as Maslow suggested. The feeling of belonging permeates all other needs, and without human connection and interaction, survival is not possible. Winston (2016) added that there is also a key point of difference between those who cannot meet their needs due to circumstances such as poverty and, on the other hand, the voluntary choice to ignore those needs, such as a person with anorexia.

Kremer and Hammond (2013) pointed out that there are exceptions to the levels in the hierarchy of needs, for example, the poet or artist that has reached self-actualization but is starving. Another example is the person who purposefully chooses to withdraw from society or the person who shuns safety to feel an adrenaline rush. Kremer and Hammond added that Maslow confused things even more when he stated that people's needs might appear in a different order than the hierarchy of needs. However,

despite criticism of Maslow's levels of human needs, it can be agreed that the need to feel connected to others and have a sense of belonging is an important human need. Seppala et al. (2013) explained that human connection is critical for health and general well-being and stated that:

> One can glean the importance of social connection from the fact that every branch of psychological research, from developmental through clinical, social, and personality research, has produced copious amounts of research on the topic in the last decades. Psychological theorists and practitioners have empirically demonstrated that social connection is a critically important human need, echoing the theories of one of the founding fathers of personality psychology, Abraham Maslow, who famously theorized that when basic physiological and safety requirements are met, a person's primary psychological need is a sense of affectionate and loving connection to others. (pp. 412-413)

Milheim (2012) added that Maslow's hierarchy of needs can be used in the study of student motivation and student satisfaction with online classes. Students can communicate and connect with professors and with other students, but much of that connection depends on the design of the course, the professor's involvement in the course, and the student's understanding of how to connect with others. Milheim stated that a lack of communication can leave students feeling isolated but that social media tools can help increase communication and connection, thereby helping to satisfy the third level of Maslow's hierarchy of needs and increase overall satisfaction with the online learning experience. Milheim suggested future research is still needed using Maslow's hierarchy of needs to design courses and tools to meet student needs and

increase satisfaction.

      Moore. Moore (1997) developed the theory of transactional distance to examine the relationship between instructors and students in distance education and stated that there was more to distance education than just the physical separation. The word *transaction* tells us something is being exchanged, such as ideas. The term *transactional distance* simply means that an exchange is happening at a distance. However, Moore's theory examines more than just physical space. The theory examines instructional dialogue that occurs between instructor and student, program structure, and the student's autonomy within the learning process (Shearer, 2009).

      Instructional dialogue. This dialogue is the purposeful communication where instruction is given, and students receive and respond to that instruction. Dialogue, however, can be influenced by the degree of interest, or lack of interest, the instructor has, the environment in which the student is involved in the dialogue, and the personalities of the instructor and the learners (Moore, 1997).

      Program structure. This term explains the way a course is designed and how flexible it is regarding learning objectives, teaching methods, and the ability to accommodate learner's needs. Structure needed in distance courses would include the following: presentations, support for learner motivation, development of critical analysis and criticism skills, counseling students, application/testing, and the opportunity for student creativity (Moore, 1997).

      Autonomy of the learner. This term refers to when the learner takes control in setting educational goals and choosing evaluation methods and learning experiences within the course. However, most students are not autonomous and need the instructor's

help. In distance education, autonomy is then described as how much control a student has compared to an instructor's set framework (Moore, 1997).

Moore explained that greater communication between instructor and student leads to instruction that is more effective. Shearer (2009) added that even though distance is constant within the transactional distance theory, efficiency of learning and a greater sense of connectedness occurs as the distance between instructor and student diminishes. The theory suggests that increased communication can have a diminishing effect in transactional distance, increasing efficiency and connectedness despite physical distance. Furthermore, a student's feeling of connection to the learning process can affect transactional distance.

Olson-Wenneker (2012) stated, in addition to Moore's original three interactions (instructional dialogue, structure, and autonomy), there is also learner-interface interaction. This is the ability of the student to effectively navigate and use the tools of the online course successfully. Learner-interface interaction may indeed be a small underlying factor that causes student frustration, isolation, and eventual withdrawal, especially with non-traditional students. Unlike traditional classrooms where a professor can directly communicate face-to face with a student, online programs require students to be able to understand, and they can navigate through the learning management system to communicate with professors, peers, and submit assignments.

Forte (2015) stated that instructor presence is vital, along with a strongly structured class that provides instructor-led dialogue and peer interaction. Transactional distance and student dissatisfaction will increase without strong, instructor-led structure. Forte explained that strong structure is one of the major factors in dissatisfaction of

online courses. The problem is that many instructors do not feel comfortable enough with teaching online and have difficulty adapting and creating the much-needed structure to make a class successful. The effects of this type of situation can snowball quickly. If the instructor is already disengaged, then the students may follow and thereby create a fractured learning environment and one that is conducive to high student dissatisfaction and student withdrawal.

Allen and Seaman (2013) explained that retention is a growing concern for universities and colleges that seek to increase online course and degree program offerings. It can be generalized that in a circular chain of events, which is perpetual, universities and colleges entice students into online courses and degree programs which feeds the cycle below (Figure 2):
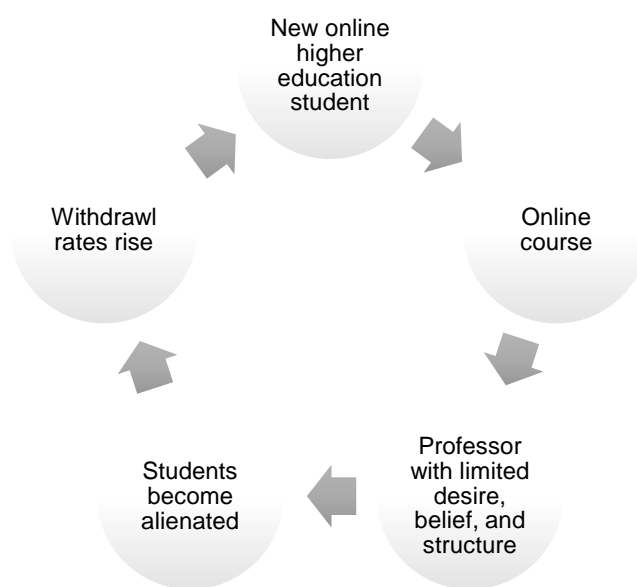

Figure 2. Cycle of growing retention problems in higher education. (Researcher created 2017).

Allen and Seaman (2013), in their annual survey, investigated faculty members' views on the legitimacy of online courses and online programs. They reported that, despite the explosion of online courses and online degree programs, many faculty

members surveyed felt neutral about the legitimacy of online classes and programs. This confirms the issue brought up by Forte (2015) in that many instructors do not feel comfortable with online education. These percentages make it difficult to combat the transactional distance online students' face, thereby challenging higher education to engage students and reduce rising attrition rates. Allen and Seaman (2013) added that these percentages also create a problem for universities and colleges, which view online educational programs as extremely important and the acceptance of online programs vital. Allen and Seaman (Table 1) illustrated that the majority of faculty surveyed to do not believe in the value and legitimacy of online education.

Table 1

Faculty at My School Accept the Value and Legitimacy of Online Education

Attitude	Fall 2002	Fall 2004	Fall 2005	Fall 2006	Fall 2007	Fall 2009	Fall 2011	Fall 2012
Agree	27. 6%	30. 4%	27. 6%	32. 9%	33. 5%	30. 9%	32. 0%	30. 2%
Neutral	65. 1%	59. 3%	57. 8%	56. 1%	51. 9%	51. 8%	56. 5%	57. 2%
Disagree	7. 4%	10. 3%	14. 7%	11. 0%	14. 6%	17. 3%	11. 4%	12. 6%

Note. Reported faculty opinions on the legitimacy of online education.

Olson-Wenneker (2012) stated that online courses should be designed in such a way to create maximum interaction between instructor and student. Although, the course by itself is not enough, a special set of teaching skills is required to ensure interaction. As mentioned previously, students will feel isolation and may withdraw from the course without high levels of interaction between students and between students and the instructor. Cardona-Divale (2012) agreed by explaining that there must be an appropriate

level of structure within a course that provides for high levels of communication to combat the transactional distance that students experience with online education.

  Astin. Astin's (1984) student involvement theory suggests the greater amount of time and energy a student spends in curricular work, extracurricular activities, and interacting with faculty and peers, the more successful that student will be. Of course, it must be added that the quality of the interaction is highly important as well as the frequency. Astin's (1984) theory is broken down into five claims:

1. Student involvement is the amount of physical and psychological energy that is invested.

2. The amount of involvement will vary from student to student.

3. Student involvement may be measured quantitatively and qualitatively.

4. The amount of developmental gains experienced by a student is directly proportional to the amount of involvement.

5. The effectiveness of any educational policy is directly related to the amount of student involvement it may bring.

  Astin's (1984) theory begins with the first major claim that any form of student involvement requires an amount of physical and psychological energy to be spent by the student in an activity, for example, the amount of energy expended in the act of studying for a test or participating in a sorority or fraternity. To put this in simpler terms, to be involved in an activity means that one must be mentally and physically engaged in the activity. The second claim in Astin's theory of involvement is that the amount of physical and psychological involvement will not be the same for every student. Sikes (2015) explained that one student may have needed less time to study for a test than another

student who spent considerably more time studying, and both students ended up with the same exact grade on the test. Astin's third claim tells us that involvement can be measured quantitatively, such as how many hours a student spent studying for an exam or how many hours a student spent attending sorority or fraternity functions.

However, student involvement can also be measured qualitatively in such a way that we can consider what the student learned while studying or the connections or friendships a student has made while participating in sorority or fraternity functions. The fourth claim in Astin's (1984) involvement theory explained that the greater amount of energy a student spends in an activity, the greater the outcome will be. Sikes (2015) stated that if students spend a great deal of time and energy towards an activity, they will have greater experience and a deeper connection than a student who spends less time and energy. The final claim in Astin's theory of involvement stated that educational policy should strive to find ways to increase student involvement. As attrition rates are on the rise, universities and colleges need to reevaluate current policies and cultures to increase student involvement and begin to reverse the rising numbers of students leaving school without graduating.

Burkart (2013) explained that the amount of student engagement in academics and socialization can have an impact on whether a student persists and graduates or becomes isolated and withdrawn, without graduating, and that resources, such as Facebook, if targeted towards making access to academic and social engagement easier, may help students stay until graduation. Burkart added that the largest number of students leave their respective universities and colleges within the first year and do not graduate from their program, and Facebook, although not an educational tool, may be useful to

help students engage. Universities and colleges can be social networks, and the online social network, Facebook, can help drive the campus social climate and thereby help to increase student involvement. Burkart added that social networks help to promote a person's well-being, provide a network of resources, and offer opportunities for things like friendships that may have been unavailable before.

Sesterhenn (2012) agreed that the higher students' involvement in their academics and extracurricular activities, the higher the likelihood that they will persist through graduation. Powless (2011) added that universities and colleges are challenged to ensure they are providing positive experiences for their students, and if they do not, students are less likely to continue. As Astin's (1984) theory suggests, the greater the opportunities for students to be connected and involved with their family, friends, peers, faculty, and events at the school, the higher the chance of overall success. Hamidy (2014) added that social media can be effective for student engagement because interactions are not limited to class hours. Social media can be accessed all day, every day, which makes it very easy for students to connect. It is also noted that Facebook may provide students with the needed opportunities to connect with their peers and with their universities or colleges.

Powless (2011) stated that the culture on college campuses has changed. For example, more students either commute or attend classes online. More students work while enrolled, and it is important for universities and colleges to find ways to connect with their students. Social media can be an asset to universities and colleges in assisting students to connect. Hamidy (2014) explained that most first-year higher education students are already familiar with social networking sites. The familiarity of social networking sites, such as Facebook, make it easier for universities and colleges to help

students engage. Sesterhenn (2012) explained that engagement is a complex relationship and must be fluid and evolving to meet the new student dynamic that has an expectation that technology will continue to be a major part of their lives while at college. It is up to universities and colleges to offer familiar ways for students to connect.

Online Learning and Social Media

It makes sense, at this point, to consider the two rising trends, online education and Facebook, and review a brief history of each one. Online education begins with the commercialization and growth of the Internet. Hamidy (2014) explained the Internet took root within American households during the 1980s and 1990s as personal computers became more affordable and Internet service was decentralized. By 2010, 82% of homes within the United States had access to the Internet. Bookout (2010) added that it is estimated that almost 100% of all households within the United States have some form of computer. The Internet has become common place in society, in one manner of use or another.

With the explosion of the Internet during the 1980s and 1990s, a forward minded university began offering students the opportunity to take classes via the Internet. Distance education has evolved over many decades and has always used the latest technology available. Bordelon (2011) stated that distance education started with correspondence offerings through the mail, then evolved to courses offered via television broadcasts, and then video recordings were made available for students to watch. The growth of the Internet provided another opportunity to advance in distance education. Bordelon added that in 1989 the University of Phoenix offered the first online program; since then, the availability of online courses and online programs have grown each year.

By the early 2000s, social networking sites (SNS) began to emerge and attract the interest of millions of users. Powless (2011) explained that a SNS called Friendster was one of the first and started in 2003. Friendster eventually gained around 27 million users. However, another SNS started in the same year; Myspace quickly grew to be much larger than Friendster but had difficulties protecting the privacy and safety of their large user base. Despite the growth of both Friendster and Myspace, neither captured the public's attention like Facebook.

Facebook was created in 2004 by a small group of Harvard students led by Mark Zuckerberg. Facebook started as a social site for Harvard students to connect. Due to the popularity at Harvard, it was eventually opened to other universities (Burkart, 2013; Cardona-Divale, 2012; Powless, 2011). Powless (2011) stated that Facebook remained exclusive to college students, but by 2005, the popularity was so overwhelming that the decision was made to open access to high school students. Eventually in 2006, Facebook was made available to everyone with an email address. Alexander (2012) explained that by 2012, when Facebook stock was made available for the first time, the total value of the company was $50 billion. Frier (2016) added that the popularity of Facebook continued, and by 2016 monthly users topped 1.7 billion. Facebook (2019) upgraded the number of monthly users to 2.32 billion as of December 31, 2018.

Powless (2011) explained that part of the popularity of Facebook and its enormous growth is due to the ability of Facebook to continually offer new features that are relevant to their users and the unrelenting reliability of the site to function properly. Many of the popular features include the ability to create a personal profile page that allows a user to customize the page with personal information, pictures, and videos.

Other features allow users to add friends, join groups, like pages, and share information through the news feed (Cardona-Divale, 2012; Powless, 2011). Facebook continues to innovate and develop new features that keep the site relevant.

Student Satisfaction

It is important to define what student satisfaction means within this study. Powless (2011) explained student satisfaction as students feeling contented with their educational course or courses, the instructor teaching the course or courses, and the education institution as a whole. Satisfied students tend to stay enrolled and tend to promote their positive experiences to others, who then may enroll. However, one of the main problems that has appeared due to the explosive growth of online education and online degree programs is the rising level of dissatisfaction that many students feel while attending or after attending.

Next, with student satisfaction defined, it is important to look at student satisfaction within the transactional distance of online education. Moore (1997) stated that transactional distance includes dialogue, course structure, and learner autonomy. For this study, transactional distance will include the lack of social and academic engagement, the feelings of being isolated as parts of dialogue, structure, and autonomy, thereby creating a lower overall satisfaction with the university/college experience. Following will be a deeper look into instructor-to-student interaction, student-to-student interaction, and student engagement (dialogue, structure, and autonomy). The focus of this section will be the causes that lead to student dissatisfaction with their educational experience and the reasons that ultimately lead a student to withdraw without graduating.

Instructor-student interaction. Hamidy (2014) explained that there are many distinct advantages to online education, but there are also problems, such as escalating attrition rates. Students may have several reasons to choose not to continue with their online class or program; however, a lack of feeling connected or a missing sense of belonging are certainly key factors. Higher levels of involvement will result in higher levels of satisfaction, but the opposite is true if the student feels disconnected, disengaged, and uninvolved (Powless, 2011).

The problem of rising dissatisfaction may be broken down into several elements. The first element of the problem falls on the instructor. Many professors have been thrust into the role of online instructor regardless of desire, experience, or comfort with the technology or online environment. Major (2010) synthesized nine studies, which included 117 online faculty members, to understand online education from the instructor's point of view. Several key findings were discovered. The first is that instructors tend to become more passive and take on a role that is more of a coach or facilitator rather than instructor, and that requires students to take the lead in almost every facet during the entire course, rather than the instructor. Further noted is that some instructors simply do not feel comfortable with the role of being an online instructor and find it too difficult to adapt. However, there were exceptions as some instructors did become comfortable with online instruction and embraced the role.

Another major finding in Major's (2010) synthesis was that instructors felt the need to increase structure within their courses to promote learning, although this was not consistently successful. The need to increase structure stifled creativity and spontaneity, and the technology itself limited the ability to teach in the same in-depth manner that a

face-to-face course might offer. One example given was the loss of the ability to have in-depth conversations with students as it is difficult to do that in writing.

Yet another finding in Major's (2010) synthesis is that instructors found that teaching online was much more difficult as they had to deal with more problems than that of just teaching. For example, instructors noted that they now had to help students navigate through the technology, help students with passwords, Internet issues, and so on. These additional problems only add to the workload. Faculty members also reported that teaching online took a lot more time as online education has no set hours. Instructors felt consumed by the number of hours required to tend to their online courses. Instructors felt that they had to set strict guidelines of when to work or the work may otherwise become too overwhelming.

High levels of student-instructor interaction are greatly linked to student satisfaction, more than any other form of involvement. Students will feel more satisfaction with their educational experience the more they can interact with their instructors (Astin, 1984). Bookout (2010) stated that the situation within universities and colleges can become quite uncomfortable. As described above, there are genuine concerns and problems that face online instructors, but administration may not necessarily be supportive or sympathetic. This may lead to frustration and negative attitudes towards the online teaching assignment. Online instruction requires a high level of instructor-student interaction, which may be compromised if the instructor does not feel comfortable, feels overwhelmed, or unsupported by administration. It is easy to see how this, indeed, would play a role in student disengagement.

Bordelon (2011) agreed that major factors in the success of an online course, and ultimately the success of the student in that course, are the perception and the experience of the instructor. In Bordelon's study, 155 educators enrolled in graduate courses were surveyed to investigate the role of interaction on students' perceived success and satisfaction. Results showed that student-instructor interaction had the greatest influence on perceived success and satisfaction. Student-content interaction was also found to be of great influence on student perceived success and satisfaction. Bordelon's study was an example of the importance of positive instructor-student interaction in online courses.

Anderson's (2013) study included 171 participants that were administered a Likert-type survey to investigate learner-instructor satisfaction, learner-social media interaction, as well as overall course satisfaction. One of the findings indicated a strong correlation between learner-instructor and general course satisfaction. Anderson concluded that a student's perceived course satisfaction is largely affected by the amount of learner-instructor interaction during the course and that an instructor has a powerful ability to have a positive effect. Anderson added that students will become dissatisfied without high levels of student-instructor interaction. Wise's (2012) study of 73 students, at the University of West Florida, enrolled in online courses agreed with Anderson (2013), Bordelon (2011), and Major (2010). Wise stated that instructor interaction with students and instructor support of students were key factors in student satisfaction. Wise added that administrators should help with policies and course designs as well as instructor support to help instructors increase student satisfaction with online courses.

Johnson, Cascio, and Massiah's (2014) study of 767 students at a southeastern university showed that instructor-to-student interaction helped increase student

satisfaction; the same was not true for student-to-student interaction. This study showed that student-to-student interaction did not have a significant effect on student satisfaction. Johnson et al. (2014) contributed this finding to the personal preference of those who choose online courses rather than face-to-face courses. They explained that online students tend to not want to interact with other students they do not know or with whom they have no face-to-face contact. Despite this finding, Johnson et al. (2014) stated that instructors should look for ways to promote student interaction to increase learning and perceived course satisfaction.

Student needs. The whole idea of student satisfaction does not fall simply on the instructor's shoulders. Another area of student satisfaction to investigate are the basic needs of the student and why those unmet needs drive students to be dissatisfied. Maslow (1943) stated in his hierarchy of needs theory that after physiological needs, such as hunger and thirst, are met and a safe environment is obtained, humans will seek out companionship or relationships with others. If this need cannot be met, it leaves a person longing to fill that need and inability to move beyond that desire. When this theory is applied to online students, it may become clearer how dissatisfaction begins and grows.

Milheim (2012) explained that there is a lack of understanding how to transfer all the elements of a face-to-face course into an online course, and because of this, there remains a genuine reduction in student-to-student interaction compared to that of the traditional classroom. The lack of interaction offered during an online course or program leads to student dissatisfaction. Milheim stated that when we look at Maslow's need for human companionship or relationships, the need is not as easy to fill as with traditional classroom and campus settings. Students need to know how to build relationships online

with their peers and understand the tools that are available to help. Finally, Milheim added that further research and development needs to occur to create new tools and strategies that will address the online student's needs and help to promote online course and online program satisfaction.

Mariano (2012) agreed with Milheim (2012) by stating that the differences between face-to-face student interactions and the interactions that take place online can cause students to lose motivation, feel isolated, and possibly withdraw. Mariano's study of 84 undergraduate and graduate degree students found that social information shared among students helped to create a feeling of connectedness. Mariano added that sharing social information can be valuable in that it promotes student-to-student interaction. Further research and the development of tools to facilitate social information sharing among students may be valuable to curbing attrition rates and promoting student satisfaction.

Hoskins (2012) suggested that student-to-student interaction is a key factor in student satisfaction. The use of discussion boards may be one tool that can help build interaction between students, if used effectively within a course. There does not seem to be a way around the need for human interaction, and technology alone is not a substitute for the interaction students need and crave. Hoskins added that the quality and the quantity of student-to-student engagement is important for student retention. High levels of interaction strategies are needed within online courses and online programs to bring about the levels of student satisfaction and retention that universities and colleges are looking for.

Fedynich, Bradley, and Bradley's (2015) study of 249 graduate students at a south Texas University found that the greatest need students have is enough time to interact with others during their online course. They found that the lack of ample time for interaction brings about dissatisfaction and the feeling of isolation. Fedynich et al. suggested using chat, discussions, and Skype as possible ways for students to increase interaction while taking online courses. Miller-Lewis' (2011) study of 148 students attending online career technical education classes also found that both instructor-to-student and student-to-student-interaction had significant roles in perceived student satisfaction as well as student learning.

Drouin and Vartanian (2010) studied 198 undergraduates in a mid-sized Midwestern university to examine the different amounts of desire for a sense of community between face-to-face students and online students. Their study agreed with previous studies mentioned in that face-to-face students felt a greater feeling of connectedness compared to their online peers. They further found that face-to-face students had a greater desire for a sense of community than their online peers. Drouin and Vartanian attributed this to personal choice. For example, those who tend to want social connectivity take face-to-face classes, while those who prefer more independence or less social interaction prefer online classes. However, Drouin and Vartanian also explained that the ability to connect and communicate with other students was significant to the overall feeling of connectedness.

Pugh's (2010) qualitative study of 15 graduate students agreed with Drouin and Vartanian (2010); Fedynich et al. (2015); Hoskins (2012); Mariano (2012); Milheim (2012); and Miller-Lewis (2011). In Pugh's study, students reported a need for interaction

and stated that an absence of interaction would lead to a lack of connection. Students in the study explained that they purposefully sought out contact with other students to fill the need for social connection, which tends to be absent in online courses. In this study, students were shown to be opportunistic in seeking out interaction with other students.

Gray and DiLoreto (2016) found similar results in their study of 187 graduate students at a southeastern university. In their study, student interaction did not have a significant role in student satisfaction but did impact perceived student learning. It was further stipulated that courses should include opportunities for interaction as students will be more optimistic about their learning and interaction will increase overall course satisfaction. Although Pugh and Gray and DiLoreto found negative results for student-to-student interaction directly impacting student satisfaction, they both show that, ultimately, student-to-student interaction still plays a vital role in overall student satisfaction.

Last, how much effort the student is putting forth in the desire for student engagement is important. Astin (1984) defined student involvement as the amount of physical and psychological energy that is invested and that the greater amount of energy invested, the greater the outcome. A lack of student satisfaction with online courses and programs may be contributed to low student-to-instructor interaction and student-to-student interaction, but a lack of student effort as well. Hoskins (2012) stated that the greater amount of time a student spends working with the subject matter, building interest and curiosity, the greater sense of satisfaction a student will have.

At the heart of student engagement must be the student's intrinsic motivation to engage and purposefully be involved. Pugh (2010) explained that with online learning, a

student must have interpersonal skills to actively engage in an online course. Students must be motivated and consistent with their efforts. If a student lacks the skills to self-motivate, there is a risk of that student becoming isolated and dissatisfied. Gray and DiLoreto (2016) agreed that courses should be designed to promote engagement, but a student must have the motivation to learn and engage with the materials and others. The greater a student is motivated, the better the results. Gray and DiLoreto's study of 187 online graduate students found that student engagement had a positive effect on student satisfaction.

Thomas (2016) agreed with Hoskins (2012); Gray and DiLoreto (2016); and Pugh (2010). Thomas' study sampled 186 undergraduate students from 36 online bachelor programs to learn if a connection existed between student engagement developmental outcomes. The findings show a positive correlation between student engagement and overall growth within online courses. Thomas suggested online programs should use strategies that promote student engagement.

Student Isolation

Student isolation is when students are separated from their peers and their instructor, and distance creates a feeling of isolation (Bordelon, 2011). In the previous section, current literature on student satisfaction was reviewed to discover causes for students to feel dissatisfied with their online course or online program. In general, both student-to-instructor interaction and student-to-student interaction were very important to overall student satisfaction. The next step is to investigate isolation, another cause for student dissatisfaction. Bordelon stated that students tend to feel isolation when separated from their instructor and peers and miss the interaction that face-to-face interaction gives.

This feeling of being cut off is exasperated by the lack of verbal communication that the online environment offers. For example, it is difficult to convey feelings and emotions through text, and this is just another symptom that leads to the lack of relationships or connections with peers.

Griffith (2014) investigated how the feeling of isolation affects student satisfaction. In the study, there were 106 undergraduate students at Brigham Young University-Idaho who participated in the 14-week study. Compared in the study were students enrolled in a hybrid English course (students meet face-to-face and online) and in the same English course delivered only online. Students were already enrolled in their chosen class as it was not picked for them. At the end of the 14-week course, students completed surveys.

Findings in Griffith's (2014) study showed that students who were enrolled in the hybrid course felt less isolated and more satisfied with the course. Those students who took the online only course did not feel as satisfied. Further, the study shows that students felt a sense of connection and community while taking the hybrid course as opposed to those taking the online only course. These findings suggest that student interaction is important to prevent the feelings of isolation and important in fostering student satisfaction. One major implication of this study is that having even the smallest amount of face-to-face time between students makes a big difference in the prevention of isolation and the promotion of overall student satisfaction.

Kwon, D'Angelo, and McLeod's (2013) study investigated 152 undergraduates at the University of Wisconsin-Madison to understand the use of Facebook to bridge social capital and to bond social capital. The authors described bridging social capital as weak

social ties and bonding social capital as strong social ties. The Facebook Intensity scale developed by Ellison, Steinfield, and Lampe (2007) was used in combination with a collection of other questions from other studies to make a 5-point Likert-type survey that was presented to the students.

The first part of the study found that there was a positive relationship between Facebook usage and bridging of social capital. However, Kwon et al. (2013) suggested that this result does not explain if the higher usage of Facebook promotes isolation or less of a connection with others. This study did not find a connection between the use of Facebook and bonding social capital. The authors suggest that the lack of a positive relationship may be due to the fact close relationships rely on more than just social media to communicate. The second portion of the study investigated different motivations for using Facebook and if those motivations either supported or hindered the bridging or bonding of social capital. This study found that that there were indeed Facebook motivations that were significantly tied to bridging social capital. However, just as in the first part of the study, a positive association between Facebook motives and bonding social capital did not exist. Again, Kwon et al. suggested that close relationships are complex and rely on many different forms of communication.

Lou, Yan, Nickerson, and McMorris (2012) explained that loneliness is a problem among college students, especially the first-year student. They pointed out that students can face loneliness due to many reasons, such as being away from home, loss of friends, limited interaction, and so on. They performed a study to investigate if Facebook could help decrease the feelings of loneliness and if the opposite were true, if Facebook had any role in increasing loneliness. Lou et al. (2012) studied 340 college freshmen at two

universities to determine if there was any correlation between Facebook and loneliness. Lou et al. found that intensity of Facebook use had a positive effect on student loneliness. They attribute this finding to the ability to maintain communication and contact with friends and family. The use of Facebook also provides ways to engage socially and make new friends. Conversely, it was found that loneliness did not influence the intensity or motive for Facebook use. Lou et al. recommended that universities find ways to incorporate the use of Facebook or other social network sites to reduce levels of loneliness among students.

Dickstein-Fischer's (2012) study of 305 undergraduate and graduate students in a national sample looked for connections between Facebook and gender, introversion-extroversion, and sense of belonging. Dickstein-Fischer defined personal involvement as being a part of something, a sense of belonging, which is a fundamental human need according to Maslow's (1943) hierarchy of needs. Having a sense of belonging is vital to human mental health and is important to prevent feelings of loneliness and depression. Having peer relationships to foster that sense of belonging is important to human self-esteem and overall satisfaction.

Dickstein-Fischer (2012) found that Facebook and the number of friends on Facebook did positively correlate to a sense of belonging. Results indicated that a larger group of friends on Facebook gave a greater feeling of belonging. This is in general agreement with the study performed by Lou et al. (2012). These findings are further indication that human interaction is a vital component of overall student satisfaction, and without meaningful interaction, students, disengage, become isolated, and withdraw.

Dickstein-Fischer suggested that the use of Facebook to increase a sense of belonging should be further studied.

Social Networking

As a social networking site, Facebook allows users to create a personal page that contains information they wish to share with others. At the same time, it allows others to share information with you. For example, people can post that they are eating dinner at their favorite restaurant. This will be seen by others, and they will have the opportunity to comment or react to this post. Facebook allows you to join groups with others that share a particular interest as well as chat with others. It is an easy and reliable way to socialize with family and friends. Facebook's extreme popularity was the reason it was chosen for this study. The following will examine current research on the use of Facebook in higher education.

Facebook for academics. Powless's (2011) study investigated what effect the use of Facebook might have on student satisfaction. In the study, 843 undergraduate students were asked to fill out a survey based upon their Facebook usage. The use of Facebook was broken down into two categories, academic Facebook usage and general Facebook usage. Powless found that academic Facebook use positively affected student satisfaction. It was also found that academic Facebook use also positively affected feelings of connectedness. On the other hand, general Facebook usage was found to not significantly impact student satisfaction. However, general Facebook usage did have a positive effect on feelings of connectedness. Powless explained that higher levels of connection lead to greater levels of satisfaction for students. Using Facebook for academic purposes may

allow students to feel connected to their university and more satisfied with their educational experience.

Clements' (2015) case study investigated first-year students in an introductory class and how certain forms of communication affected student engagement. Students in the class could use three methods to access course related information: student email, the university learning management system (LMS), or Facebook. The study measured student activity across the three platforms, and each student was asked to fill out a survey at the end of the course based upon their experiences.

Clements found that students engaged more using Facebook than either email or LMS and noted that students responded most favorably to Facebook based upon its ease of use, convenience, and familiarity. Clements explained that the use of Facebook increased student engagement and that there was an increase in academic performance. Clements attributed this to Facebook allowing students to interact and engage with each other and the instructor through course materials.

Hamidy (2014) performed a study of 100 undergraduate students who took online courses at a San Diego community college to investigate the effects of using Facebook on student engagement and if Facebook might be a tool to curb rising attrition rates. The sample was divided into two groups, one who used Facebook during the course and another group who did not use Facebook during the course. The results showed that the use of Facebook had a positive effect on student engagement. Hamidy reported that students have interactions with friends and family, which helped push student engagement. The use of Facebook also allowed students to control their educational experience by removing any barriers that might have existed through online courses.

Fagioli, Rios-Aguilar, and Deil-Amen (2015) explored the use of Facebook to help academic success and engagement leading to student persistence in community college students. This large study used a Facebook-based application that was available in seven community colleges within the United States. The study compared the academic performance and persistence of 98,000 students who used the Facebook application as they progressed through their academic programs and those who did not use Facebook and compared the progress of both groups.

Fagioli et al. (2015) found that there was a positive relationship between using the Facebook-based application and student persistence. The authors explained that meaningful online engagement and even passive engagement both showed to have positive effects on a student moving on from one semester to the next. The study also showed that the use of the Facebook application also had positive effects on student achievement, but the authors noted that this effect can be considered small. The authors concluded that social media can be used to create a community of learners and that social media provides colleges with tool to help academic results.

Junco (2012) studied 2,368 undergraduate college students to investigate the relationship between Facebook use and student engagement. Within the sample of this study, 31% of the students were freshman. A 19-question survey was created by using questions from the National Survey of Student Engagement. The study found that the amount of time a student spent on Facebook was negatively predictive of student engagement. And that there was no relationship between Facebook frequency and time preparing for class.

However, the study showed that there is a relationship between Facebook frequency and co-curricular activities. Also, certain activities on Facebook, such as playing games and posting photos, were a positive predictor of student engagement. Junco stated that while Facebook is not a predictor of student success, it can be an advantage for the student. Junco explained that there are positive and negative relations of Facebook to student engagement, but as students use Facebook, in general, they are shown to be more engaged. Junco added that administrators need to help students with uses for Facebook that will increase engagement and improve overall academic experiences.

Hilscher (2013) investigated the perceptions of using Facebook as a learning community with peer mentors. Ten peer mentors at a research university were chosen to participate in the qualitative study in which mentors used Facebook groups. The mentors were chosen from an original sample of 38 mentors based upon their self-reported Facebook usage. Semi structured interviews were used to determine how mentors used Facebook to build community, how mentors viewed their role within the Facebook group, how Facebook was used to build social capital, and how they viewed the role as the program facilitator within the Facebook group.

Hilscher (2013) found that the student mentors in the study viewed Facebook as a quick and easy tool for communication. The mentors also noted that they felt more connected and more engaged by using Facebook as a tool. Mentors explained that they felt empowered being able to communicate, answer questions, and solve issues. They also stated that using Facebook helped them with their communication skills. Mentors also stated that the use of Facebook gave them the ability to network and build a list of

contacts. One mentor noted that it was nice to be able to communicate this way without having to give out phone numbers or other personal contact information. The mentors stated that it was nice to get to know new people, keep relationships with people, and find people later. Finally, Hilscher explained that the mentors viewed the program facilitator as just a support person and that they were the leaders within the Facebook group.

Yang and Brown (2012) searched for associations between Facebook activities, motives for using Facebook, and adjustment to the college environment. The sample was made up of 193 undergraduate students at a Midwestern university. The first major finding was that among this sample, the average Facebook usage was 3.6 hours per week, but this time varied throughout the participants. Students reported using that time to look at other people's photos, leave comments for others, read updated statuses, read, write, and respond to messages, and view their newsfeed.

Yang and Brown (2012) discovered that students had a stronger interest in maintaining current relationships through Facebook rather than use it to look for new relationships. Students that reported using Facebook to maintain relationships were shown as scoring positively higher for social adjustment and lower on the loneliness scale. The opposite was true for those that used Facebook to seek out new relationships. Yang and Brown suggested that peer interaction can exist beyond face-to-face interactions and that these interactions are effective for social networking and college adjustment.

Friday (2010) conducted a qualitative study at a community college in Northeastern Pennsylvania to investigate if Facebook was a viable means for students to communicate, socialize, and engage with their college. The sample of 30 undergraduate

students were interviewed and each asked a series of 12 questions regarding their experiences using Facebook. The study found that students used Facebook for many of the same reasons, for example, staying connected to friends and family and finding out about events on campus, and it is an easy way to communicate. Friday found that half of the students used Facebook for assignments or group projects and even fewer used it to communicate with their instructor. Students stated that they felt uncomfortable using Facebook to contact their instructor. Students also reported that the college Facebook page left them feeling left out. However, the study revealed that all students in the study felt like Facebook was a great tool for communication with friends and family. Facebook offered a convenient way to connect with other students and plan academic or social meetings. Friday concluded that the study offered evidence that Facebook is a useful communication tool but did not show a clear and direct link to student engagement. Friday recommended that administrators try to understand the social media that their students use in an effort to increase student engagement.

Amador (2011) also conducted a qualitative study of six students in a university in the western United States. The goal of the study was to examine the use of Facebook for academics, academic help, and academic advising. Students in the study were given two interviews each, one in-depth interview and one behavioral interview. The first interview was focused on seeking help through social networking and academics. The second interview focused on decisions and actions regarding Facebook.

Amador (2011) found that students used Facebook to interact with friends in much the same way as they would face-to-face. Another interesting finding from this study is that students blended the lines of academic and social in their Facebook use.

Students in the study were fully comfortable with using Facebook in their daily lives, and using Facebook for academic purposes was just an extension of what they were already doing socially on Facebook. The study also found that students used Facebook to share their academic lives, celebrate their academic successes, and report their emotional status. These actions allowed the students to have a sense of connectivity with their friends. Students in the study had no problems using Facebook for academic advising as they felt it was the most convenient way to communicate. Finally, the study found that students used Facebook for support and for help with assignments, although it was viewed as a social activity rather than academic. Amador concluded students were comfortable using Facebook for academic and emotional support.

Sikes (2015) did a qualitative case study to examine how students used Facebook to connect and how it influenced their participation on campus. Sikes interviewed 15 undergraduate students at the College of William and Mary with a series of general questions to establish rapport and six to 10 questions about Facebook usage. Among the 15 students in the study, daily Facebook usage averaged 2 hours. In agreement with Yang and Brown (2012) and Friday (2010), these students spent their time using Facebook to view pictures, view newsfeed, read and make comments, read updated statuses, connect to friends and family, and message. Sikes stated that use of social media helps students express who they are, and Facebook is the most popular site.

Sikes (2015) added that participants in the study used Facebook as an easy way to connect to others on campus and social organizations. It allowed them to connect socially, which gave them a deeper feeling of being connected to their college. However, Facebook also had academic advantages. Students reported using Facebook to

collaborate, share resources, set meetings, and provide a distraction when needed. It was also an easy way to find others sharing the same class. Sikes concluded that Facebook was a useful tool to help students feel more connected to the college and administrators, and faculty should strive to understand how students use Facebook and use that knowledge to help students have a positive college experience.

Zhang (2012) interviewed 20 Chinese undergraduate and graduate students living in the United States to determine the effects of social media and acculturation. Zhang stated that living and going to a school in a different country can be difficult, especially when cultures are different as with Chinese students in the United States. Social media can be a useful tool to reconnect with your native culture. For example, students used social media to stay connected to their friends and family back home. Students also used social media to keep up with news events that were happening within their country.

Zhang (2012) also explained that social media was a tool to help cultivate an American identity, for example, students connecting and making American friends. In addition, social media provides resources such as United States news events, information about money, health, popular culture. Zhang also added that social media can be helpful as a tool to learn English. Zhang also included a survey study of 253 Chinese students living in the United States. The follow-up survey study reconfirmed the social media usage results of the interview study. Zhang concluded that social media is important for building a new cultural identity while maintaining and strengthening your original identity.

Woodley and Meredith (2012) explained that Facebook is a tool that could help engage students who might otherwise become isolated. Social media is not the only

method to help students engage, but it is a viable option. Woodley and Meredith stated that more needs to be done to use Facebook in positive ways that create engagement. For example, it can be used to provide information about the university, services available, social events, courses, and so on. The key is that it is interactive and most of all, that students are aware of it. Facebook can be a community building tool that helps students, faculty, and staff connect. Woodley and Meredith explained that Facebook can provide academic, social, and emotional support to students and help prevent students from feeling isolated and disconnected with their university.

Brobst (2013) looked at the use of Facebook to support a sense of community among university and college interns. Twenty-five interns were interviewed and asked to complete a survey based upon their opinions of Facebook, using Facebook for academics, and using a Facebook group to support interns. Interns reported an absence of community due to problems such as geographical distance and university or college limitations, which hindered attempts. Students also noted that intern events had other focusses rather than community building. Both interns and stakeholders were optimistic about using Facebook groups to build community.

Brobst (2013) revealed that the student interns in the study liked having the group Facebook page. Students noted it was important to have as many interns and stakeholders as members of the Facebook group as possible. Students also noted that features such as commenting on pictures, responding to other posts, and answering poll questions were among several most likely used features. Brobst explained that building a sense of community among interns takes more than just social media, but adding the use of social media to other efforts is a benefit. However, Brobst questioned how long Facebook will

remain a relevant piece of technology, suggesting that the popularity and usefulness of Facebook may disappear over time.

   Negative views of Facebook for academics. Cardona-Divale (2012) studied 1,089 students and faculty members at a large northeastern university to investigate how social media is incorporated in classes, if the use of social media in online and hybrid courses help develop a better sense of connectedness, and if instructors incorporate social media in their classes. The first question of the study produced very interesting findings. First, most students and faculty used Facebook, and about half of the students in the study reported that they used Facebook either often or daily to ask questions or get advice from other students. Cardona-Divale stated that despite the Learning Management system (LMS) having the built-in tools, such as discussion threads, to create connectedness, it is not as easy and convenient as social media. Cardona-Divale added that universities and colleges need to offer students ways to connect that they are accustomed to using.

   The second research question in Cardona-Divale (2012) examined if the use of Facebook could help students in online and hybrid course feel more connected to their classmates in comparison to those taking face-to-face-classes. The study revealed that students who were taking classes face-to-face felt a greater sense of connectedness over those who were enrolled in online and hybrid courses. Cardona-Divale explained that this was an expected result but also stated that the use of Facebook was not shown to increase connectedness with online and hybrid students. The last research question asked instructors how they incorporate social media, like Facebook, within their courses. The findings were not unexpected as very few reported that they used social media within their courses. Many instructors in the study felt that the LMS tools were enough or that

the use of Facebook within a course was inappropriate. Cardona-Divale summarized that all participants were familiar with and used social media, but the goal is to try to find ways to have instructors feel more comfortable with using sites like Facebook as a tool within their courses, as a tool to engage students, and as a tool to create greater connections with their students.

Woerner (2015) completed a qualitative study of 13 undergraduates, ranging in ages from 19 to 57 and all attending a 4-year Midwestern university. The study examined the use of Facebook and how it might help social connectivity in and outside of the classroom. The second part of the study investigated how different generations use Facebook in the classroom. The first major finding of this study is that not all students viewed Facebook as a tool for classroom learning. Despite that finding, students reported that they could see using some form of social media for academic use. Woerner explained that results from this study showed that students like having the ability to use Facebook to connect with other students and with faculty. However, the students in the study agreed that they would like to keep their social and academic use of Facebook separated.

The study also revealed that students over the age of 50 did not see the benefit of using Facebook in the classroom while other students under the age of 50 reported that Facebook would be a helpful tool. However, there was only one person in the study that was over the age of 50. This student did not feel comfortable with technology and social media and stated that face-to-face contact was preferred. Woerner (2015) explained that older generations may not have a choice but to become proficient with technology and social media as both continue to grow and fill their everyday lives. The use of Facebook

increased student-to-student interaction for academic purposes. Students felt supported knowing that they could reach out to other students at any time. Woerner suggested that further research is needed as social media expands in numbers of users and features.

Ciampa, Thrasher, and Revels' (2016) study of 245 undergraduate students investigated student preferences to communication based upon the reasoning for that communication and to determine if students wanted social media used in academics and how it would be used. According to the study, students listed Facebook as the most popular social media platform, and communicating with friends and entertainment were the two top reasons for using Facebook. The study also revealed that students still prefer email and face-to-face encounters for communicating with their professors and the use of Blackboard and face-to-face encounters for submitting assignments.

However, when Ciampa et al. (2016) asked students about the use of Facebook for academic purposes, the answers brought interesting results. More than half reported that they believed the use of social media would enhance their academic course and increase chances of success in that course. Almost half reported positively that they thought their professors should use social media for communication with students. Ciampa et al. explained that the results were mixed about using social media in academics and as a method for communication with professors. The authors explained that students generally do not wish to mix their social and their academic platforms.

Dyson, Vickers, Turtle, Cowan, and Tassone (2014) investigated if the use of Facebook could increase student engagement and understanding when incorporated into a class. For the study, Facebook use among 1,200 students in five different Introduction to Psychology classes was investigated. All the classes used Facebook but at different times

during the semester. In this study, Facebook was used to introduce a topic a few days before class and allow students to make comments. During the next class period, the first 15 minutes were used to discuss the topic, discuss posts, and ask questions.

Dyson et al. (2014) found that the use of Facebook did not have an impact on understanding of the course materials or engagement. The study also found that frequency of Facebook use did not have an effect on the understanding of course materials of engagement. Dyson et al. suggested that the delivery of materials might have been better using a different timing method such as a summary tool. It was also suggested that students may not be willing to cross the lines between academic and personal by using Facebook for both. However, despite the findings, Dyson et al. suggested that further research be conducted to investigate engagement and academic success using Facebook as a tool.

Burkart (2013) investigated the use of Facebook as an engagement tool and as a retention tool on 141 college freshmen at the University of West Florida. The study used both the Facebook Intensity Scale (Ellison et al., 2007 and a relevant portion of the National Survey of Student Engagement (Indiana University). The study found that freshmen had an average of 201 to 250 friends and spent an average of 31-60 minutes per day on Facebook. The study also revealed that despite different levels of Facebook usage among the participants of the study, there was no significant effect on engagement. Burkart explained that one reason for the lack of significance on engagement may be that the use of Facebook is so common place that it showed little effect as a tool for engagement, at least as self-reported by this group of students.

However, despite the lack of significance between the use of Facebook and engagement, Burkart (2013) stated that Facebook is a useful tool and could be used to help freshmen both socially and academically. For example, Facebook could be used to meet new friends, organize study groups, plan academic activities, find others that share similar interests and hobbies, and use it as a self-marketing tool for employment. Burkart added that Facebook could be utilized by faculty as a tool to communicate important information to students and provide valuable resources. Facebook could also be used as a tool to link freshmen with each other to facilitate a freshmen support network and provide access to others in the same situation. Burkart concluded that Facebook can be a valuable tool for student engagement and retention, and further research and best practices need exploration.

McAliney (2013) investigated the use of social media as a tool for groups completing project-based tasks. Specifically, the study sought to understand which social media sites students used as help during their project and if students were happy with the social media they used. Eleven students participated in this qualitative study, and data was gathered from sources such as group discussion logs, social media pages, individual logs, observations, focus groups, and individual interviews. Blackboard was also used as a tool during the course projects. McAliney (2013) found that study participants preferred face-to-face interactions with their group members. Students explained that it was easier and more comfortable to meet face-to-face.

Despite the preference for face-to-face interactions in the McAliney (2013) study, groups used social media as a tool to help with their projects. Facebook was one of the key social media sites used by the groups in the study. Students stated that Facebook was

easy to use and allowed group members to come together and share personal information like phone numbers and email addresses. Facebook was also used to create group pages on which to meet and share ideas. However, McAliney noted that Facebook was not the only social tool used. Others such as texting, YouTube, and Google Docs were also used to help students complete their projects. McAliney concluded that, overall, students were happy with the use of social media as a tool for helping to complete their project work. McAliney added that students, even though they were happy with using social media, did not feel it was a major factor in the success of their projects.

Scialdone's (2014) case studies investigated the use of social media in hybrid and online classes. Specifically, Scialdone asked how social media affects the educational experiences of online and hybrid students. Additionally, Scialdone asked how social media affects student experiences inside and outside of the classroom. The study included a total of nine case studies that investigated the opinions of five students taking hybrid classes and four students taking online classes.

Within the hybrid case studies, attitudes were similar. Students felt the use of social media could be helpful but could also be a problem. Students reported that it was somewhat important to keep their personal and academic lives separated. For classroom use, students felt like social media could be a helpful tool to show understanding, ask questions, discuss topics, and so forth. However, students also felt as though it could be used negatively, such as joking around during class. One student explained that it could be the equivalent of passing notes in class and not really paying attention to what is going on in class.

Within the online case studies, it was agreed that having a relationship with other students was important. Students were unanimous that social media was helpful in helping to build a sense of community among students. Also, students reported that the use of social media, like the hybrid group, was useful outside of the classroom and added to their educational experience. The online group also reported, just as the hybrid group did, that they were concerned about privacy issues and mixing personal and academic spaces together. One of the four students, an older student, felt uncomfortable with the technology, but by the end of the course felt more comfortable using social media. Scialdone (2014) concluded that the use of social media was a valuable tool for students to exchange ideas and information.

Whitehurst (2015) studied the boundaries that using Facebook as an instructional tool might bring. For example, Whitehurst explained that faculty members have a genuine concern over privacy for faculty and students. Whitehurst also explained that the initial intention of the study was to investigate the use of Facebook within the classroom but met resistance from both faculty and students. Due to this issue, the study was refocused to investigate the concerns that using Facebook in the classroom created. Six faculty members at a southern research university were interviewed on the use of Facebook in the classroom.

Three of the six faculty members in the Whitehurst (2015) study agreed to use Facebook as a tool within the class. However, each of the faculty members who agreed reported concerns with the use of Facebook. Each of the three faculty members were given complete control as to how the use was implemented. For example, one professor used Facebook alongside other social media, another used Facebook to share videos on

relevant topics, and the third used Facebook for conversations about class information. The other three faculty members in the study refused any attempt at using Facebook within the classroom.

In Whitehurst (2015), one of the major findings was that students were not comfortable using Facebook for academic purposes. As noted within other studies, (Dyson et al., 2014; Scialdone, 2014; Woerner, 2015) students tend to not want to blur the lines between their personal and academic lives when it comes to social media use. Whitehurst noted another major finding was some faculty members in the study did not see Facebook as having any academic qualities and would not use it as part of their instruction or course structure. A predominant concern among all faculty in the study was for personal and student privacy. Lastly, Whitehurst stated that Facebook would be an added burden to both faculty and students who have enough to do already.

The research that has been presented in this chapter represents the current research available using social media as a tool in the areas of student satisfaction with their courses, programs, and universities/colleges, student's feelings of isolation while enrolled in distance education programs, and social networking to increase student engagement and connectedness. Rather than investigating individually, this study seeks to investigate the effect that using Facebook will have on all three areas. The research questions were designed to investigate the degree of influence the use of Facebook for social use, participating in an academic group page on Facebook, for social and academic support, and visiting or participating on a schools' Facebook page has on student satisfaction with online education, reducing students' feelings of isolation from their

university/college and other students, and students' level of engagement and social

connection.

Research Questions

The following research questions will direct the study of how social media such

as Facebook bridges the distance in online education.

1. What is the relationship between the use of Facebook for social use and the feelings of

isolation among online students?

2. What is the relationship between belonging and participating in an academic Facebook

group and the feelings of isolation among online students?

3. What is the relationship between visiting and participating on a school's Facebook

page and the feelings of isolation among online students?

4. What is the relationship between the use of Facebook for social use and the

engagement among online students?

5. What is the relationship between belonging and participating in an academic Facebook

group and the engagement among online students?

6. What is the relationship between visiting and participating on a school's Facebook

page and the engagement among online students?

7. What is the relationship between the use of Facebook for social use and the

connectedness among online students?

8. What is the relationship between belonging and participating in an academic Facebook

group and the connectedness among online students?

9. What is the relationship between visiting and participating on a school's Facebook

page and the connectedness among online students?

10. What is the relationship between the use of Facebook for social use and the satisfaction among online students?

11. What is the relationship between belonging and participating in an academic Facebook group and the satisfaction among online students?

12. What is the relationship between visiting and participating on a school's Facebook page and the satisfaction among online students?

Summary

Chapter 2 provided the theoretical framework of this study. An intensive review was provided on Maslow's hierarchy of needs theory, Moore's transactional distance theory, and Astin's theory of engagement. Following the theoretical framework, a brief history of online learning and social media was provided. The largest portion of chapter 2 provided an exhaustive review of current literature in the areas of online and hybrid student satisfaction, online and hybrid student isolation, and social networking, specifically the use of Facebook as a tool for online and hybrid course students. Finally, the study's research questions were provided.

Chapter 3: Methodology

The purpose of this study was to investigate what relationship exists between the use of Facebook and the isolation, connectedness, engagement, and satisfaction of online higher education students. As a foundation to investigate, this study used Maslow's (1943) theory of the hierarchy of needs, Moore's (1997) theory of transactional distance, and Astin's (1984) student involvement theory. Specifically, this study sought to measure the relationship between general Facebook usage and course or program satisfaction, feelings of being connected (to other students, professors, and the university/college), student engagement, and feelings of being isolated from other students and their university/college. This study measured the relationship between being a member of an academic Facebook group, and participating on a school's Facebook page and course or program satisfaction, feelings of being connected (to other students, professors, and university/college), student engagement, and feelings of being isolated from other students and their university/college. Chapter 3 outlines the steps of this study.

Research Approach

For this study, a quantitative nonintervention correlational approach was used to investigate variable relationship. Creswell (2008) explained that a quantitative approach is appropriate when the goal is to understand how certain variables effect other variables, as opposed to qualitative research, in which the variables are not known and further research is needed to describe a phenomenon. Creswell added that correlational designs measure the amount of association between variables and whether or not one can predict the other. In this study, a correlational research design was appropriate to determine the association between Facebook for social use, Facebook academic groups, and university

or college Facebook pages on student isolation, connectedness, engagement, and satisfaction of distance education students.

Participants

The target population for this study was undergraduate and graduate students who belonged to an academic Facebook group and are enrolled either part-time or full-time in online courses at six specific universities with a large distance education presence. Nine different academic Facebook groups were identified representing the six different universities. A total of 10,446 (at the time of writing) students were members of these groups and make up the target population for this study. The researcher was granted membership into these Facebook groups and given direct access to the members in each group. In order to answer the research questions of the study, random sampling was used to ensure participants were representative of the target population and diminish researcher bias. A priori power analysis using G*Power was conducted (Faul, Erdfelder, Lang, & Buchner 2007) using a correlation bivariate normal model, with an exact test. The effect size was set to medium 0.3, with an alpha error probability of 0.05, and power set at 0.80. The sample size to achieve statistical validity was determined to be 84 participants.

To ensure enough participants were in the study, a sample of 500 students was obtained using random sampling. This was done to ensure that results can be generalized to the entire population. Creswell (2008) stated that random sampling is used to define a sample that represents the total population and that each individual has the opportunity, or probability, of being selected for the study. Each of the 10,446 students were assigned a number. A random number generator was used to select numbers

(http://stattrek.com/statistics/random-number-generator.aspx). Based upon certain

criteria, selected students in each of the academic Facebook groups were asked to

participate via Facebook Messenger in the survey. The first criterion was that participants

must be an online student attending one of the target online universities or a recent

graduate from an online program at one of the target universities, Grand Canyon

University, Walden University, Southern New Hampshire University, Western Governors

University, Capella University, or Ashford University. The second criterion was that they

must belong to one of the identified academic Facebook groups: Capella Doctoral

Cohort, SNHU Online Only, GCU Social Page, GCU Doctoral Network, Walden

University Ph.D./Ed.D/D.BA, SNHU Online Students, Capella Psychology and

Counseling, and Ashford University Online. Students' age, year in school, and gender

were not qualifying factors to determine eligibility for the study but were collected and

used as variables to study. Students that did not meet the above criteria were excluded

from the study and replaced by other randomly chosen students.

Instrument

For this study, a survey was used to gather information from study participants.

After researching and reviewing existing studies and survey instruments, it was

determined that although there are several surveys that exist to measure individually for

isolation, student satisfaction, connectedness, engagement, and Facebook usage, there is

not one that can measure the association between all the variables. For this reason, a new

survey was created, the CESI Facebook Survey (**C**onnectedness, **E**ngagement,

Satisfaction, **I**solation). The survey collected certain student information for classification

and for use as variables within the study such as age, ethnicity, gender, and year in

school. The survey also asked qualifying questions pertaining to general Facebook usage, membership in an academic Facebook group, and enrolled part-time or full-time as an online student. The rest of the survey is a 7-point Likert scale using the following points: strongly agree, agree somewhat agree, neutral, somewhat disagree, disagree, and strongly disagree. The survey used 36 statements to measure the effects of Facebook on these variables: the independent variables are the use of Facebook for social use, the use of academic Facebook groups, and the use of university/college Facebook pages, age, year in school, and gender. The dependent variables are student isolation, student connectedness, student engagement, and student satisfaction.

Bradburn, Sudman, & Wansink (2004) explained that surveys often ask demographic questions, and these questions are usually placed at the end of a survey. However, if the demographic questions are also being used to screen participants, it proper to place those questions at the beginning of the survey. The CESI Facebook Survey begins with demographic and screening questions to ensure that participants meet the set criteria for participation in the study. The structure of the CESI Facebook Survey was designed using suggestions given by Bradburn et al. such as the use of a Likert scale. Bradburn et al. explained that there are two scale models that are often used in surveys, an odd number scaled survey with a wider range and a defined mid-point or smaller condensed version that use 4 or 6 points, but more detailed scales such as the 7-point scale used in the CESI Facebook Survey are preferred. Bradburn et al. added that the identified points on the scale should include mostly agree, somewhat agree, somewhat disagree, and mostly disagree and that the most useful scales are anchored with strongly disagree and strongly agree. The CESI Facebook Survey employs this strategy by

incorporating strongly disagree, disagree, somewhat disagree, neutral, somewhat agree, agree, and strongly agree as the seven points. Bradburn et al. stated that psychographic questions or opinion questions help us understand what people think.

Bradburn et al. explained that it is important in psychographics to have measures of frequency in the survey. The CESI Facebook Survey uses several statements to measure frequency such as: I use Facebook often, Facebook helps me keep my mind occupied, I access the Facebook group often, and I look at my school's Facebook page often. Bradburn et al. also added that it is critically important to add behavior questions that are related to the area of interest. The CESI Facebook Survey was designed with this in mind and uses statements to elicit responses regarding Facebook and individual behavior, such as I have met friends using the Facebook page or I use Facebook to communicate with my instructors. Bradburn et al. further suggested that the survey should be tested, through the use of a pilot study, to refine the survey before it is used in the study. After approval from the dissertation committee and the Institutional Review Board (IRB), the CESI Facebook Survey was pilot tested for validity and reliability. Reliability was measured using Cronbach's Alpha measure (.950) and validity was established by inviting pilot study participants to critique the questions and the format of the survey. Only minor grammatical changes and minor adjustments to the survey were made based upon the suggestions from the participants of the pilot study, including changing the name of the survey from CISE to CESI. The CESI Facebook Survey is included in Appendix A of this study.

Data Collection

The data were collected using the Survey Monkey platform. Survey Monkey was chosen due to the features it offered, the convenience for participants, and for the program's ability to integrate with IBM's Statistical Package for the Social Sciences (SPSS). All participants remained anonymous throughout the study. No personal information was collected except for a few general demographic and qualifying questions. All data collected was kept in an encrypted file stored on the researcher's computer that is password protected. The data will remain stored and protected for a period of 36 months. Afterwards, the encrypted file will be erased from the hard drive on the researcher's computer.

Procedures

The first step in this study was to seek approval from the dissertation committee and the Institutional Review Board (IRB) at Nova Southeastern University to perform the pilot study and main study. After consideration, permission was granted by the dissertation committee to proceed to seek IRB approval. After gaining IRB approval, the pilot study and main study followed. The rest of the procedures used will be broken down into procedures for the pilot study and procedures for the research study.

Pilot study. The next step was to pilot the newly created CESI Facebook Survey. For this purpose, the researcher recruited 39 undergraduate and graduate participants that are attending a university or college by taking online classes and belong to an academic Facebook group. Radhakrishna (2007) explained that it is appropriate to use 20-30 participants who are not included in the sample as subjects for the pilot test. Invitations were sent through Facebook Messenger and posts made directly to certain academic

groups were used to make initial contact with potential participants. Students were asked to participate in the pilot study. The pilot survey was administered over the course of a 2-week time period. The pilot study helped ensure validity by making sure that the survey is appropriate for examining the association between the study's variables and also for reliability for responses. The result of the Coefficient alpha test for the pilot test was .950, indicating a high degree on internal consistency among item scale. Results of the Coefficient alpha test are list in Appendix B. The pilot study also helped to identify poorly worded or spelling errors within the directions or questions and slight changes and adjustments to the survey were made based upon the feedback of participants.

Research study. Following the pilot study, the refined survey was uploaded to Survey Monkey for distribution. Enough copies of the survey were made so that each individual participant would have a unique survey link. A random number generator was used to select 500 students from the total population. Each student was assigned a link to access the survey on Survey Monkey. Students were then messaged through Facebook Messenger and asked to complete the survey. Each student was provided with an explanation of the study and a link to access the survey online. Each selected student had the opportunity to click on the link and take the survey or to ignore/delete the Facebook message.

A time limit of up to 4 weeks was provided for participants to complete the survey. A shorter response time would have been more ideal, but the speed at which messages could be sent via Facebook Messenger hindered this process. Facebook Messenger would only allow a small number of messages to be sent each day, which greatly slowed down the process of distributing invitations and then making follow up

requests. Facebook Messenger has built-in consequences for trying to go over the number of allotted messages per day. There were multiple times the researcher was blocked from using Facebook Messenger services for sending too many messages in one day. The blocks ranged from 24-hours to 7 days.

Three additional follow-up attempts were made to each of those who had not completed the survey after the initial contact, through a Facebook Messenger message, to increase participation in the study. Again, upwards of 4 weeks was provided to respond to each follow-up attempt. Facebook friend requests were also sent to random selected students to gain trust and legitimacy and as another attempt to obtain more completed surveys. In certain cases, original randomly chosen students needed to be replaced by other randomly chosen students due to factors such as no longer belonging to that particular Facebook group or no longer studying at one of the six universities. Random replacement was also used to replace original participants who blocked follow-up attempts through the Facebook Messenger message blocking feature. Random replacement numbers were used to ensure enough participants in sample to stay with the sample size of 500.

To prevent bias from those who did not respond to the survey, several steps were taken: The first step was to make sure that all those who were sampled were similar in situation. All members of the sample attended one of the six identified universities, and all belonged to one or more of the eight corresponding academic Facebook groups. All sample members were undergraduate or graduate students enrolled in online programs or graduates from an online program for one of the six universities. Second, there are conditional questions in the demographics section of the CESI Facebook Survey to

identify those that did not meet the criteria, and all those who did not meet that criteria were excluded from the sample. Additionally, those who were in the sample but later blocked contact or left the academic Facebook group were deleted and replaced by other randomly selected participants. Finally, attempts were made to become Facebook friends with random members of the sample to gain further insight into why someone chose to respond or not respond but also to gain trust and increase survey response rate.

The majority of those that responded to the Facebook friendship request did so to gain a contact and to help someone they could relate to. There were some that either accepted the Facebook friendship request or responded positively to the Facebook Messenger request through back-and-forth conversation with the researcher but despite multiple follow-up attempts did not complete the survey. No actual explanation was ever given as to why the survey was never filled out, but the assumption is that the survey is anonymous, and there was a belief that the researcher would never know they did not actually fill out the survey. One explanation given by some who either ignored or deleted the requests was the perceived computer security risks, even though unwarranted. The fear of clicking an unknown link was greater than the will to help others. Another issue with using Facebook Messenger is that unsolicited messages, such as these survey requests, could be delivered into the equivalent of a spam box where the messages are not seen by the intended person. However, it is believed that enough steps were taken to prevent bias from non-responders.

The data were collected and entered into SPSS for the purpose of conducting statistical analysis. For this study, the independent variables, Facebook social usage, Facebook academic group participation and visitation to the school's Facebook page,

were examined for association with students' feelings of isolation, student engagement, student connectedness, and student satisfaction. Each question was answered by analyzing the relationship between the CESI questions and the dependent variables. SPSS calculated the mean score for each dependent variable. SPSS also created a dummy variable for each independent variable. The following tables detail how each question is matched with a dependent variable to answer each of the study's 12 questions.

Table 2

Dependent Variable: Student Isolation

Research Question	Corresponding CESI Statement		
R1. What is the relationship between the use of Facebook for social use and the feelings of isolation among online students?	1. Facebook helps me to feel less lonely taking online classes	2. I access Facebook often	3. I use Facebook to keep my mind occupied
R2. What is the relationship between belonging and participating in an academic Facebook group and the feelings of isolation among online students?	14. The Facebook group helps me overcome my loneliness in taking online classes.	15. I access the Facebook group often	18. The Facebook group has helped me meet new friends.
R3. What is the relationship between visiting and participating on a school's Facebook page and the feelings of isolation among online students?	25. I look at my school's Facebook page often	32. I have met new people/friends in person by using the Facebook page	33. The Facebook page helps me feel less isolated in taking online classes

Note. Survey questions (1-36) correspond to the dependent variable in order to answer the research question.

Table 3

Dependent Variable: Student Engagement

Research Question	Corresponding CESI Statement		
R4. What is the relationship between the use of Facebook for social use and student engagement among online students?	4. I have used Facebook to communicate with my instructors	5. Using Facebook helps me get involved at my school and in my community	6. I have used Facebook to post pictures or update my status regarding something that was happening with school
R5. What is the relationship between belonging and participating in an academic Facebook group and student engagement among online students?	19. The Facebook group has helped me socialize with other students' offline.	21. The Facebook group has helped me attend study groups or other academic and social events	3. I seek out contact with other students at my school through the Facebook group
R6. What is the relationship between visiting and participating on a school's Facebook page and student engagement among online students?	28. I feel part of the academic and social community by participating in my school's Facebook page	29. I attend academic and social activities suggested on my school's Facebook page	35. I purposefully seek out contact with other students through the school's Facebook page

Note. Survey questions (1-36) correspond to the dependent variable in order to answer the research question.

Internal and external validity. One threat to internal validity is when the change in the dependent variables are caused by something other than the independent variables in the study. There may be many causes for a student to feel less isolated or to feel more connected to their school and other students, or to become more engaged socially and academically. However, to help control the threats to internal validity, this study used qualifying criteria to accept participants into the study. This method helped control

outside factors that may have influence on the validity. This study also used the CESI

Facebook Survey, which is narrow in scope and only seeks data based upon the three

independent variables of the study, using Facebook socially, using Facebook groups that

are academically based to network with other students, and interacting or using the

school's Facebook page.

Table 4

Dependent Variable: Student Connectedness

Research Question	Corresponding CESI Statement		
R7. What is the relationship between the use of Facebook for social use and the connectedness among online students?	7. I use Facebook to stay connected to family and friends	8. Facebook helps me meet new friends at my school	12. I think it is important to keep my personal and academic lives separate
R8. What is the relationship between belonging and participating in an academic Facebook group and the connectedness among online students?	16. The Facebook group helps me feel connected to my classmates	17. The Facebook group helps me feel like I am as connected as if I were taking classes face-to-face	22. I think it is important to keep my personal and academic lives separate
R9. What is the relationship between visiting and participating on a school's Facebook page and the connectedness among online students?	30. The Facebook page helps me feel connected to others at my school	31. The Facebook page helps me feel just as connected to my school as I would if I were taking face-to-face classes	34. It is important to keep my personal and academic lives separate

Note. Survey questions (1-36) correspond to the dependent variable in order to answer the research question.

Table 5

Dependent Variable: Student Satisfaction

Research Question	Corresponding CESI Statement		
R10. What is the relationship between the use of Facebook for social use and the satisfaction among online students?	9. Facebook adds to my academic experience	10. I feel comfortable having my instructors as friends on Facebook	11. Using Facebook helps make going to school online easier
R11. What is the relationship between belonging and participating in an academic Facebook group and the satisfaction among online students?	13. The Facebook group is helpful for answering questions about courses and getting information about professors	20. The Facebook group has helped me to feel satisfied in my academic experience	24. I feel better about being an online student because of the Facebook group
R12. What is the relationship between visiting and participating on a school's Facebook page and the satisfaction among online students?	26. I appreciate knowing what activities are scheduled at my school during the school year.	27. I enjoy following the news and events at my school	36. Viewing the activity of my school's Facebook page makes me proud to be a student there

Note. Survey questions (1-36) correspond to the dependent variable in order to answer the research question.

One threat to external validity is selection bias, which refers to whether or not the sample chosen represents the population. Selection bias in this study was controlled by selecting a random sample that is representative of the total population. All participants of the sample were randomly chosen using a random number generator. All participants belong to one of the nine Facebook groups as the members of the population; all of the participants are online students or recent graduates of the six identified universities.

Limitations

One limitation of this study was the sample size as it was limited to those students who are members of an academic Facebook group and are taking online classes or recently took online classes. This study had the sample size of 500. While the total population was large, over 10,000, it was not feasible to have a bigger sample size within the time frame of this study. With more time allowed, it would be possible to have a much larger sample size and generalizable results. This study, again due to time restraints, was limited to online students at six specific universities and nine academic Facebook groups. There were also limitations by using Facebook Messenger as the method of contact with potential participants. The process of sending surveys was slow and in many cases messages went unnoticed by the recipient. Despite multiple and varied attempts, only 185 completed surveys were returned out of the 500. This limited the data that could be extracted and then studied.

Data Analysis

The researcher collected the raw data from the administered surveys and organized the results based upon variable groupings as described above in tables 2, 3, 4, and 5. Reliability was tested using Cronbach's alpha to compare with the results from the pilot study to ensure consistency. SPSS was also used to calculate the mean score for each dependent variable. SPSS was also used to create a dummy variable for each independent variable. SPSS was used to determine demographic statistics, then testing for statistical associations between the variables by using the Pearson r correlation method. Lani (2017) stated that correlation measures the association between variables and the rank correlation method is appropriate to use when measuring for a degree of association

and at least one variable is ordinal as in a Likert scale survey. Therefore, the Pearson *r*

Correlation is appropriate to use in this study to measure how the variables are related for

two reasons; the first is that the instrument used in this study is a 7-point Likert scale

survey. Second, variables in this study are expected to be monotonically related, meaning

that if one variable value goes up, then another variable value either also goes up or

decreases. With a 7-point scale 4 being neutral, it was theorized that the population would

be neutral, and this allowed the comparison of the means from the population to

determine how they differed from 4 (neutral).

Summary

Chapter 3 reviewed the problem and purpose of this study and then explained why

a quantitative approach was the appropriate choice for this study. Next, the selection

methods for participants for the study and how students were recruited were discussed.

Students for the study were either undergraduate or graduate students, but they must be

taking online classes at one of the six identified universities, and they must be members

of one of the seven academic Facebook groups.

Chapter 3 also explained the survey instrument that was used for the study and

how the survey was tested, refined, and distributed to participants. The survey consists of

36 Likert-type questions to gain insight into the participants' feelings and experiences.

Data analysis procedures were explained, and the limitations of the study were presented.

Chapter 4: Results

This chapter presents the steps taken and the results of the data collection. This chapter also provides the descriptive statistics, hypotheses, and the results and analysis of the research questions. The purpose of this quantitative nonintervention correlation design was to determine if using Facebook had any relationship to the connectedness, the engagement, the satisfaction, and the feelings of isolation among online students.

To examine for relationships, 12 research questions were developed: (1) What is the relationship between the use of Facebook for social use and the feelings of isolation among online students? (2) What is the relationship between belonging and participating in an academic Facebook group and the feelings of isolation among online students? (3) What is the relationship between visiting and participating on a school's Facebook page and the feelings of isolation among online students? (4) What is the relationship between the use of Facebook for social use and the engagement among online students? (5) What is the relationship between belonging and participating in an academic Facebook group and engagement among online students? (6) What is the relationship between visiting and participating on a school's Facebook page and engagement among online students? (7) What is the relationship between the use of Facebook for social use and the connectedness among online students? (8) What is the relationship between belonging and participating in an academic Facebook group and the connectedness among online students? (9) What is the relationship between visiting and participating on a school's Facebook page and the connectedness among online students? (10) What is the relationship between the use of Facebook for social use and the satisfaction among online students? (11) What is the relationship between belonging and participating in an

academic Facebook group and the satisfaction among online students? (12) What is the relationship between visiting and participating on a school's Facebook page and the satisfaction among online students?

The CESI Facebook survey was created in response to the need for a survey instrument that would be able to measure the opinions of online students in the areas of feeling connected to their school, engagement with their school professors, and classmates, satisfaction with their school, and feelings of isolation from their school. There are surveys that exist that measure for individual areas, but the CESI Facebook survey is the first to measure all four. The survey was developed using a Likert scale ranging from 1 to 7 with respondents given the choice of strongly agree, agree somewhat agree, neutral, somewhat disagree, disagree, strongly disagree.

The survey was uploaded to Survey Monkey. Over 10,000 students made up the total population pool. A random number generator was used to pick 500 names from the population. Each of the 500 was assigned a specific individualized link to the survey. The survey was then forwarded to each of the 500 people through Facebook Messenger. Recipients could follow the link and take the survey, they could ignore the request, or block the sender from further contact. Random replacement numbers were chosen to replace names of those who no longer belonged to the Facebook group, blocked sender from contact, or did not belong to Facebook Messenger. Three follow-up attempts were made to each recipient to boost response rate. At the end of data collection, 185 recipients (37%) had responded with completed surveys.

The survey data were collected through Survey Monkey, then exported into Microsoft Excel for data cleaning. During this process, the data was visually inspected

for missing elements and that all Likert scale data conformed within the range of 1 to 7. With no reverse coding, there was no need to recode any response items. After visual inspection, it was uploaded unto SPSS for the data analyses.

One goal of this study was to have 500 participants fill out surveys; however, only 185 of the 500 participants responded despite multiple attempts to obtain completed surveys. The surveys were distributed, using a unique web link for each participant through Facebook Messenger. Participants were given upwards of 4 weeks to complete the survey. Three additional reminder attempts were made to increase participation also through Facebook Messenger. Random replacement numbers were used to replace those selected participants that did not belong to Facebook Messenger, did not belong to the six universities, left the Facebook academic group after initial contact, or had blocked the researcher from further contact.

Attempts were made, when possible, to understand why some participants chose not to respond to the survey. For example, Facebook friend requests were sent to individual participants and additional Facebook Messenger messages. Although all these steps were taken, only 185 (37%) of surveys were completed in time to complete this study.

Demographics

The average age of the sample participants was 40 years old, with the youngest respondent age of 22 and the oldest respondent age being 70 years old. The majority of responses, 86.5%, were from female participants (N=160), and 13.5% were from male participants (N= 25). Most respondents also were further along in their educational journey; 45.9% (N=85) reported being at the doctoral level, and 27.6% (51), reported as

being at the master's level. The remaining 26.5% (N=49) reported as being at the

undergraduate level. Those that responded also reported that the majority, 88.6%

(N=164) lived off-campus and only 11.4% (N=21) lived on campus; 91. 9% (N=170)

responded that they used Facebook daily; and 87% (N=161) reported that they have

visited their school's Facebook page. Demographical statistics are presented in the

following tables 6-11 and Table 12 offers Descriptive statistics for the study variables.

Table 6

Age of Participants

Age Statistics	*Mean*	*Std. Deviation*	*Minimum*	*Maximum*
Age at the time of survey	*40.19*	*10.028*	*22*	*70*

Table 7

Gender of Participants

Gender	Frequency	Percent
Male	25	13.5
Female	160	85.5
Total	185	100.0

Table 8

College Experience of Participants

College Status	Frequency	Percent
Freshman	12	6.5
Sophomore	10	5.4
Junior	10	5.4
Senior	17	9.2
Masters	51	27.6
Doctoral	85	45.9
Total	185	100.0

Table 9

Live Off Campus

Residence	Frequency	Percent
Yes	164	88.6
No	21	11.4
Total	185	100.0

Table 10

Full/part-time Online Student

Full time or part time	Frequency	Percent
Full Time	165	89.2
Part Time	20	10.8
Total	185	100.0

Table 11

School Facebook Page by Participants

View Facebook page	Frequency	Percent
Yes	161	87.0
No	24	13.0
Total	185	100.0

Table 12

Variable Descriptive Statistics

Descriptive	FB for Social use	FB Academic Group	School FB Page	Isolation	Connectedness	Engagement	Satisfaction
Mean	4.56	4.30	3.70	4.48	4.50	3.68	4.20
Std. Deviation	.919	1.36	1.47	1.21	1.07	1.31	1.27
Minimum	1.25	1.09	1.00	1.00	1.67	1.00	1.00
Maximum	6.50	7.00	7.00	7.00	7.00	7.00	7.00
Range	6	6	6	6	6	6	6

Note: FB-Facebook, Social Use-Facebook account used for social entertainment, Academic Group-Belonging to an Academic Facebook Group, School Page-Visiting and Participating on a School's Facebook Page. Isolation- The feelings of loneliness among online students, Engagement-The amount of Activity a Student Spends in School Activities (Social and Academic), Connectedness-How Much an Online Student Interacts with Peers and Professors, Satisfaction-The Happiness a Student feels with their Online Program and University or College.

Data Analysis

The next section of this chapter will examine the results for each research question. Pearson correlation was chosen and used to determine if a relationship exists between the independent and dependent variables. For this study, it was important to identify what, if any, relationships exist among the study's variables. However, one

weakness of correlation analysis is that it does not express causality but instead defines relationship strength, if there is one.

Each research question had three CESI Facebook survey statements that corresponded so that the results could be analyzed and determine an answer for each research question. Each sub scale statement, for each research question, was summed, and the mean score was calculated using the compute command in SPSS. Research question 1: (1) Facebook helps me to feel less lonely taking online classes, (2) I access Facebook often, and (3) I use Facebook to keep my mind occupied. Research question 2: (14) The Facebook group helps me overcome my loneliness in taking online classes, (15) I access the Facebook group often, and (18) The Facebook group has helped me meet new friends. Research question 3: (25) I look at my school's Facebook page often, (32) I have met new people/friends in person by using the Facebook page, and (33) The Facebook page helps me feel less isolated in taking online classes. Research question 4: (4) I have used Facebook to communicate with my instructors, (5) Using Facebook helps me get involved at my school and in my community, and (6) I have used Facebook to post pictures or update my status regarding something that was happening with school. Research question 5: (19) The Facebook group has helped me socialize with other students offline, (21) The Facebook group has helped me attend study groups or other academic and social events, and (23) I seek out contact with other students at my school through the Facebook group. Research question 6: (28) I feel part of the academic and social community by participating in my school's Facebook page, (29) I attend academic and social activities suggested on my school's Facebook page, and (35) I purposefully seek out contact with other students through the school's Facebook page. Research

question 7: (7) I use Facebook to stay connected to family and friends, (8) Facebook helps me meet new friends at my school, and (12) I think it is important to keep my personal and academic lives separate. Research question 8: (16) The Facebook group helps me feel connected to my classmates, (17) The Facebook group helps me feel like I am as connected as if I were taking classes face-to-face, and (22) I think it is important to keep my personal and academic lives separate. Research question 9: (30) The Facebook page helps me feel connected to others at my school, (31) The Facebook page helps me feel just as connected to my school as I would if I were taking face-to-face classes, and (34) It is important to keep my personal and academic lives separate. Research question 10: (9) Facebook adds to my academic experience, (10) I feel comfortable having my instructors as friends on Facebook, and (11) Using Facebook helps make going to school online easier. Research question 11: (13) The Facebook group is helpful for answering questions about courses and getting information about professors, (20) The Facebook group has helped me to feel satisfied in my academic experience, and (24) I feel better about being an online student because of the Facebook group. Research question 12: (26) I appreciate knowing what activities are scheduled at my school during the school year, (27) I enjoy following the news and events at my school, and (36) Viewing the activity of my school's Facebook page makes me proud to be a student there.

The survey was made up of 36 statements. Each statement within the CESI Facebook survey allowed respondents to answer based upon a 7-point scale: strongly disagree, disagree, somewhat disagree, neutral, somewhat agree, agree, strongly agree. The first three research questions explored the feelings of student isolation, the next three research questions explored student engagement, the next three examined connectedness,

and the last three explored student satisfaction. Table 12, below, displays the results from the Pearson correlations, which were conducted, of the study variables and further explanation is provided according to each of the research question.

Table 13

Pearson Correlation Matrix

Variables		FB Social Use	FB Academic Group	Visit School FB Page	Isolation	Engagement	Connect	Satisfaction
FB Social Use	Pearson Correlation	-						
	Sig. (2-tailed)							
FB Academic Group	Pearson Correlation	.800*	-					
	Sig. (2-tailed)	<.01						
Visit School FB Page	Pearson Correlation	.581*	.708*	-				
	Sig. (2-tailed)	<.01	<.01					
Isolation	Pearson Correlation	.847*	.874*	.771*	-			
	Sig. (2-tailed)	<.01	<.01	<.01				
Engagement	Pearson Correlation	.789*	.861*	.850*	.815*	-		
	Sig. (2-tailed)	<.01	<.01	<.01	<.01			
Connect	Pearson Correlation	.614*	.784*	.777*	.675*	.695*	-	
	Sig. (2-tailed)	<.01	<.01	<.01	<.01	<.01		
Satisfaction	Pearson Correlation	.835*	.855*	.818*	.857*	.864*	.664*	-
	Sig. (2-tailed)	<.01	<.01	<.01	<.01	<.01	<.01	

Note. Pearson correlations indicating statistical relationships between variables.
* Correlation is significant at the 0.01 level (2-tailed). FB-Facebook, Social Use-Facebook account used for social entertainment, Academic Group-Belonging to an Academic Facebook Group, School Page-Visiting and Participating on a School's Facebook Page. Isolation- The feelings of loneliness among online students, Engagement-The amount of Activity a Student Spends in School Activities (Social and Academic), Connect(Connectedness)-How Much an Online Student Interacts with Peers and Professors, Satisfaction-The Happiness a Student feels with their Online Program and University or College.

Research Questions

1. What is the relationship between the use of Facebook for social use and the feelings of isolation among online students?

To evaluate for a relationship between Facebook for social use and the feelings of isolation among the online students (N=185), a Pearson correlation test was conducted and the results of that test are indicated in Table 13. The Pearson correlation test revealed that there is a significant statistical relationship for using Facebook for social use and isolation, r (183) = .847, p <.01. According to Cohen (1988) there are three measurements of effect size in correlation: .1 for small, .3 for medium, and .5 for large. The G*Power for the effect size of .847 and the sample size is n = 77 therefore avoiding type I and type II errors. Based on Cohen's guidelines, there is a large positive correlation between using Facebook for social use and the feelings of isolation. Therefore, there is a strong relationship between participating on a school's Facebook page and the feelings of isolation among online students.

2. What is the relationship between belonging and participating in an academic Facebook group and the feelings of isolation among online students?

All members of the sample group (N=185) belong to one of the identified Facebook academic groups, and all sample group members are currently online students or recently graduated from online programs. A Pearson r correlation test was used to examine for a relationship between participating in an academic Facebook group and the feelings of isolation from being an online student. As shown in Table 13, all sample students belong to an academic Facebook group and all have experience as an online student, and the Pearson r correlation indicated that there is a significant relationship

between using Facebook academic groups and the feelings of isolation, r (183) = .874, p

<.01. G*Power was used with the effect size of .874, and the sample size needed is 84 for

correlation and to avoid type I and type II errors. According to Cohen (1988) there is a

large effect size and there is and a strong relationship between belonging and

participating in an academic Facebook group and the feelings of isolation among online

students.

3. What is the relationship between visiting and participating on a school's Facebook

page and the feelings of isolation among online students?

     All sample group members (N=185) are either current online students or recent

graduates of online programs. A large percentage of sample group members, 87%

(N=161) reported that they have visited their school's Facebook page. A Pearson r

correlation test was conducted as shown in Table 13, and there is a significant positive

relationship for online student visiting school's Facebook page and isolation, r (183) =

.771, p <.01. G*Power was used with the effect size of .771, and the sample size needed

to avoid type I and type II errors was 62. Using Cohen's (1988) effect size, there is a

large positive correlation between visiting a school's Facebook page and the feelings of

isolation. Therefore, there is a strong positive relationship between participating on a

school's Facebook page and the feelings of isolation among online students.

4. What is the relationship between the use of Facebook for social use and the

engagement among online students?

     A large percentage, 91.9% (N=170), of the sample participants reported that they

use Facebook daily. The variable engagement, in this study, was defined as meeting with

other students from the same school, attending school or social events, posting school

related events on their Facebook page, and interacting with professors. As displayed in

Table 13, a Pearson *r* correlation test was used to determine if there is a relationship

between the variables. The Pearson *r* correlation indicated that there is a significant

relationship between Facebook for social use and engagement, $r(183) = .789, p < .01$.

G*Power was used with the effect size of .789, and the sample size needed is 65 for

correlation and to avoid type I and type II errors. This is a large Cohen's (1988) effect

size which shows a strong significant relationship between the use of Facebook for social

use and the engagement among online students.

5. What is the relationship between belonging and participating in an academic Facebook

group and the engagement among online students?

All sample members (N=185) belong to at least one of the identified academic

Facebook groups. As stated in research question 4, engagement, in this study, is defined

as meeting with other students from the same school, attending school or social events,

posting school related events on their Facebook page, and interacting with professors. A

Pearson *r* correlation test was used to determine relationship, as displayed in Table 13,

and the Pearson *r* correlation indicated that there is a significant relationship between

belonging and participating in an academic Facebook group and engagement, $r(183) =$

$.861, p < .01$. G*Power was run with the effect size of .861, and the sample size needed to

avoid type I and type II errors was 80. The Cohen (1988) effect size is large. Therefore,

there is a strong relationship between belonging and participating in an academic

Facebook group and the engagement among online students.

6. What is the relationship between visiting and participating on a school's Facebook

page and the engagement among online students?

A large percentage of sample group members, 87% (N=161), reported that they have visited their school's Facebook page. As stated in research questions 4 and 5, engagement, in this study, is defined as meeting with other students from the same school, attending school or social events, posting school related events on their Facebook page, and interacting with professors. A Pearson r correlation test was conducted to determine if a relationship exists as shown in Table 13. The Pearson r correlation indicated that there is a significant positive relationship between participating on a school's Facebook page and engagement, $r(183) = .850$, $p < .01$. G*Power was used with the effect size of .850, and the sample size needed is 77 for correlation and to avoid type I and type II errors. Based on Cohen's (1988) effect guidelines, there is a large correlation between visiting a school's Facebook page and engagement. Therefore, there is a strong relationship between participating on a school's Facebook page and the engagement among online students.

7. What is the relationship between the use of Facebook for social use and the connectedness among online students?

A large number of participants reported that they use Facebook daily, 91.9% (N=170). Connectedness, in this study, is defined as how students use Facebook to talk to and set up social plans with other students from the same school, use Facebook to connect with family and friends, and use Facebook to interact with professors. A Pearson r correlation test was used to determine relationship as displayed in Table 13. The Pearson r correlation indicated that there is a significant relationship between using Facebook for social use and the connectedness of online students, $r(183) = .614$, $p < .01$. G*Power was run with the effect size of .614, and the sample size needed is 41 for

correlation and to avoid type I and type II errors. Using the Cohen (1988) effect size, there is a large effect indicating a significant relationship between the use of Facebook for social use and the connectedness among online students.

8. What is the relationship between belonging and participating in an academic Facebook group and the connectedness among online students?

All sample members (N=185) belong to at least one of the chosen academic Facebook groups. As discussed in research question 7, connectedness, in this study, is defined as how students use Facebook to talk to and set up social plans with other students from the same school, use Facebook to connect with family and friends, and use Facebook to interact with professors. A Pearson r correlation test was used to determine if there is a relationship between belonging and participating in an academic Facebook group and connectedness as shown in Table 13. The Pearson r correlation indicated that there is no significant relationship, r (183) = .784, p <.01. G*Power was used with the effect size of .784, and the sample size needed is 64 for correlation and to avoid type I and type II errors. Again, according to the Cohen (1988) guidelines, there is a large effect size which indicates a strong significant relationship between belonging and participating in an academic Facebook group and the connectedness among online students.

9. What is the relationship between visiting and participating on a school's Facebook page and the connectedness among online students?

A large percentage of sample group members, 87% (N=161), reported that they have visited their school's Facebook page, and as stated in research questions 7 and 8, connectedness, in this study, is defined as how students use Facebook to talk to and set up social plans with other students from the same school, use Facebook to connect with

family and friends, and use Facebook to interact with professors. A Pearson *r* correlation

test was conducted to determine if a relationship exists as displayed in Table 13. The

Pearson *r* correlation indicated that there is a significant positive relationship between

participating on a school's Facebook page and engagement, *r* (183) = .777, *p* <.01.

G*Power was used with the effect size of .777, and the sample size needed is 63 for

correlation and to avoid type I and type II errors. Based on Cohen's (1988) effect

guidelines, there is a large positive correlation between visiting a school's Facebook page

and connectedness. So, the answer to research question 9 is that there is a strong positive

relationship between participating on a school's Facebook page and the engagement

among online students.

10. What effect does the use of Facebook for social use have on satisfaction among

online students?

Satisfaction, in this study, is defined in terms of how Facebook adds to the overall

academic experience, feeling comfortable having instructors as friends on Facebook, and

that Facebook makes going to school online easier. There are a large number of sample

member participants that reported that they use Facebook daily 91.9% (N=170). To

investigate the research question, A Pearson *r* correlation test was used to determine if

there was a relationship, as displayed in Table 13, and the Pearson *r* correlation indicated

that there is a significant relationship between using Facebook for social use and the

satisfaction among online students, *r* (183) = .835, *p* <.01. G*Power was used with the

effect size of .835 and the sample size needed is 74 for correlation and to avoid type I and

type II errors. According to Cohen's (1988) guidelines, there is a large effect size. In

response to research question 10, there is a strong significant relationship between the use of Facebook for social use and the satisfaction among online students.

11. What effect does belonging and participating in an academic Facebook group have on satisfaction among online students?

All the sample members (N=185) belong to at least one of the identified academic Facebook groups. As discussed in research question 10, satisfaction, in this study, is defined in terms of how Facebook adds to the overall academic experience, feeling comfortable having instructors as friends on Facebook, and that Facebook makes going to school online easier. A Pearson r correlation test was used to determine if there is a relationship between belonging and participating in an academic Facebook group and satisfaction as shown in Table 13. The Pearson r correlation indicated that there is a significant relationship, r (183) = .855, p <.01. G*Power was run with the effect size of .855, and the sample size needed is 79 for correlation and to avoid type I and type II errors. Using Cohen's (1988) effect guidelines there is a large effect size which shows a strong significant relationship between belonging and participating in an academic Facebook group and the satisfaction among online students.

12. What effect does visiting and participating on a school's Facebook page have on satisfaction among online students?

A large percentage of sample group members, 87% (N=161), reported that they have visited their school's Facebook page, and as stated in research questions 10 and 11, satisfaction, in this study, is defined in terms of how Facebook adds to the overall academic experience, feeling comfortable having instructors as friends on Facebook, and that Facebook makes going to school online easier. A Pearson r correlation test was

conducted to determine if a relationship exists as displayed in Table 13. The Pearson *r*

correlation indicated that there is a significant positive relationship between participating

on a school's Facebook page and satisfaction, *r* (183) = .818, *p* <.01. G*Power was run

with the effect size of .818, and the sample size needed is 70 for correlation and to avoid

type I and type II errors. Based on Cohen's (1988) effect guidelines, there is a large

positive correlation between visiting a school's Facebook page and satisfaction. So, the

answer to research question 12 is that there is a strong relationship between participating

on a school's Facebook page and the engagement among online students.

Below, Table 14 is a summary of the significant correlations found in this study.

The relationships are listed according to Pearson *r* correlation values. According to

Cohen (1988) there are three measurements of effect size in correlation: .1 for small, .3

for medium, and .5 for large. All correlations here are measured as large. It is interesting

to note that significant relationships found included the use of a school's Facebook page.

Table 14

Significant Correlations

Variables	Correlations
Using Facebook Academic Groups and Isolation	.874*
Using Facebook Academic Groups and Engagement	.861*
Using Facebook Academic Groups and Satisfaction	.855*
Visiting School's Facebook Page and Engagement	.850*
Facebook for Social Use and Isolation	.847*
Facebook for Social Use and Satisfaction	.835*
Visiting School's Facebook Page and Satisfaction	.818*
Facebook for Social Use and Engagement	.789*
Using Facebook Academic Groups and Connectedness	.784*
Visiting School's Facebook Page and Connectedness	.777*
Visiting School's Facebook Page and Isolation	.771*
Facebook for Social Use and Connectedness	.614*

Note. Significant correlations range from .874 to .614 Pearson *r* Correlation.
* Correlation is significant at the 0.01 level (2-tailed).

Summary

This chapter reported the statistical findings from all the data collected from the sample (N=185) in response to the statements of the CESI Facebook Survey. For each of the 12 research questions, demographics were used to examine frequencies. Then a Pearson Correlation test was used to look for significant relationships among the research question variables. While Chapter 4 only reported the findings within the data, Chapter 5 will discuss those results in greater detail.

Chapter 5: Discussion

This study came to be for a couple of reasons. First, there is an alarming rise in the attrition rates among online students. Allen and Seaman (2015) and Banbara et al. (2009) reported that more than one in four students are dissatisfied with the online educational experience, and attrition rates have increased as high as 50% in online educational degree programs. Second, there is a lack of research in the area of using social media as a tool to possibly combat these rising attrition rates. This study looked at four areas: student connectedness, student engagement, student satisfaction, and student isolation as the distance barriers in online education, to slowing or reversing the attrition rate trend.

This study used the framework of classical theories such as Maslow's theory of the hierarchy of needs, Moore's transactional distance theory, and Astin's theory of engagement. The literature review took an in-depth look at each of these theories, and it also reported on all the relevant research that had come before to steer this study and drive its importance. As a result, this study provides the much-needed additional research data that is missing from this field of investigation.

Chapter 3 provided the methods in which this study was carried out. Over 10,000 undergraduate, graduate, and alumni, who were members of nine specific academic Facebook groups and also members of six specific universities, made up the target population for this study. From 10,000+, a sample of 500 was randomly chosen using a random number generator. A new survey was created, the CESI Facebook Survey, to answer the research questions. The survey was pilot tested and checked for both reliability, using Cronbach's Alpha test (α=.950), and validity, where slight changes and

adjustments were made. Each of the 500 sample participants was sent a unique web link to access the CESI Facebook Survey. Random replacement was used to replace sample participants that no longer met the criteria of the study or blocked research attempts. From the 500 participants, 185 completed surveys were returned.

To give their opinion on whether or not Facebook could help with distance that so many online students deal with, 185 participants filled out online surveys. Specifically, student isolation, student engagement, student connectedness, and student satisfaction were investigated. The ultimate goal is to find ways to reverse the trend of rising attrition rates among online students. Chapter 4 presented all the data that was taken from the surveys collected. The data was categorized and presented according to demographic data or data that was aligned with one of the 12 research questions. Demographic statistics were provided, and a Pearson r correlation test was used to evaluate the data.

Chapter 5 provides an in-depth discussion of the statistical analysis presented in chapter 4. This chapter also compares the findings of this study to other relevant past studies. Finally, this chapter will discuss the implications of the data, examine the limitations of this study, and offer suggestions for future research.

Summary of Findings: Demographics

Age. The average age in this sample group, as expected, was 40. However, ages ranged greatly from the lowest age of 22 to the highest age of 70. It can be speculated that age had something to do with whether or not a person responded or not to the survey, but that would only be speculation.

Gender. The majority of study participants 86.5% (N=160) were female, and the remaining were male 13.5% (N=25). Most members that comprised these academic

Facebook groups were female. Hence, the majority of the overall population and the 500 randomly selected study participants were female. One reason for this may be that males may not want to seek out help, such as an academic Facebook group, and therefore, the number of males in these groups are lower than females.

Status in college. 45.9% (N=85) of respondents were doctoral students or graduates, while another 27.6% (N=51) were master's students or graduates. The remaining 26.5% (N=49) reported as being at the undergraduate level.

Living on/off campus. The majority of respondents, 88.6% (N=164), reported that they lived off-campus. Only 11.4% (N=21) reported that they lived on-campus. Most participants were either doctoral students or graduates or master's degree students or graduates. It would make sense that this sample would report a majority living off-campus.

Facebook access. One reason for choosing Facebook over the many choices of social media was the far spreading reach that Facebook has and Facebook's large active user base. Respondents in this study (N=185) mimicked what is widely known about the draw that Facebook has. In this study, 91.9% (N=170) of participants access Facebook on a daily basis.

I have visited my school's Facebook page. Finally, the majority of sample participants, 87% (N=161), reported that they had visited their school's Facebook page. Later in this chapter, the use of school Facebook pages will be further discussed in detail.

Summary of Findings: Research Questions

The CESI Facebook Survey is comprised, after the demographics section, of 36 targeted statements that correspond to 12 research questions asked in this study.

Respondents were to pick a response, for each statement, based upon how the statement made them feel. To answer these, respondents had seven choices from which to pick: (1) strongly disagree, (2) disagree, (3) somewhat disagree, (4) neutral, (5) somewhat agree, (6) agree, (7) strongly agree.

1. What is the relationship between Facebook for social use and the feelings of isolation among online students?

There are three CESI Facebook survey statements that correspond to this question, which falls under the variable of student isolation: (1) Facebook helps me feel less lonely taking online classes. (2) I access Facebook often. (3) I use Facebook to keep my mind occupied. Despite the large reported use of Facebook, it was determined that there is a strong statistical relationship between using Facebook for Social use and the feelings of isolation among online students, r (183) = .847, p <.01. This was one of the strongest correlations found in the study.

2. What is the relationship between belonging and participating in an academic Facebook group and the feelings of isolation among online students?

There are three CESI Facebook Survey statements that correspond to this research question on student isolation: (14) The Facebook group helps me overcome my loneliness in taking online classes, (15) I access the Facebook group often, (18) The Facebook group has helped me meet new friends. All members of the sample group were members of one or more of the nine identified academic Facebook groups. The correlation test revealed that there was a very strong statistical relationship between belonging and participating in an academic Facebook group and the feelings of isolation among online

students, r (183) = .874, p <.01. This was the most significant relationship found within this study.

3. What is the relationship between visiting and participating on a school's Facebook page and the feelings of isolation among online students?

This is the last research question that falls under student isolation. The three corresponding CESI Facebook statements are: (25) I look at my school's Facebook page often, (32) I have met new people/friends in person by using the Facebook page, (33) The Facebook page helps me feel less isolated in taking online classes. This Pearson r correlation test revealed a large positive correlation, r (183) = .771, p <.01. This confirmed that a relationship exists between participating on a school's Facebook page and the feelings of isolation among online students.

4. What is the relationship between the use of Facebook for social use and the engagement among online students?

This is the first of three research questions in the study that explores student engagement. The CESI Facebook Survey statements that correspond with this research question are: (4) I have used Facebook to communicate with my instructors, (5) Using Facebook helps me get involved at my school and in my community, (6) I have used Facebook to post pictures or update my status regarding something that was happening with school. Again, most of the sample group participants indicated that they use Facebook daily and the Person r correlation test showed that there was a significant statistical relationship between the use of Facebook for social use and the engagement of online students, r (183) = .789, p <.01.

5. What is the relationship between belonging and participating in an academic Facebook group and the engagement among online students?

This research question, also dealing with student engagement, had these three CESI Facebook survey statements: (19) The Facebook group has helped me socialize with other students offline, (21) The Facebook group has helped me attend study groups or other academic or social events, (23) I seek out contact with other students at my school through the Facebook group. The Pearson r correlation test indicated that there is a large statistical relationship between belonging and participating in an academic Facebook group and the engagement among online students, $r(183) = .861$, $p < .01$. Again, in this research question, all sample group members belong to one or more academic Facebook groups, and there was a strong relationship between the variables found.

6. What is the relationship between visiting and participating on a school's Facebook page and the engagement among online students?

This was the final research question of the study that dealt with student engagement. The three corresponding CESI Facebook Survey statements were: (28) I feel part of the academic and social community by participating in my school's Facebook page, (29) I attend academic and social activities suggested on my school's Facebook page, (35) I purposefully seek out contact with other students through the school's Facebook page. Here, the Pearson r correlation test indicated large positive correlation between visiting and participating on a school's Facebook page and the engagement among online students, $r(183) = .850$, $p < .01$. This result is similar to research question 3

in which visiting and participating on a school's Facebook page had a strong relationship with the feelings of isolation among online students.

7. What is the relationship between the use of Facebook for social use and the connectedness among online students?

This is the first research question in the study that examined student connectedness. Three corresponding CESI Facebook Survey statements are: (7) I use Facebook to stay connected to friends and family, (8) Facebook helps me meet new friends at my school, (12) I think it is important to keep my personal and academic lives separate. With this research question, the Pearson r correlation test displayed a large significant statistical relationship between the use of Facebook for social use and the connectedness among online students, r (183) = .614, p <.01. Although consider large using Cohen's (1988) effect guidelines, this was one of the lowest r values found in the study.

8. What is the relationship between belonging and participating in an academic Facebook group and the connectedness among online students?

Next, with student connectedness, the CESI Facebook presented these three statements, corresponding to this research question, to participants: (16) The Facebook group helps me feel connected to my classmates, (17) The Facebook group helps me feel like I am as connected as if I were taking classes face-to-face, (22) I think it is important to keep my personal and academic lives separate. All members of the sample group belong to one or more of the identified eight academic Facebook groups and a significant statistical relationship was found between the variables, r (183) = .784, p <.01. These results from the Pearson r correlation test show that there is a strong statistical

relationship between belonging and participating in an academic Facebook group and the connectedness among online students.

9. What is the relationship between visiting and participating on a school's Facebook page and the connectedness among online students?

This was the last research question in the study that explored student connectedness. The research question and the corresponding CESI Facebook survey statements explored the usefulness of university Facebook pages as a tool to increase connectedness. The corresponding statements were: (30) The Facebook page helps me feel connected to others at my school, (31) The Facebook page helps me feel just as connected to my school as if I were taking face-to-face classes, (34) It is important to keep my personal and academic lives separate. The Pearson r correlation test indicated that there was a large positive correlation between the variables, r (183) = .777, p <.01. This means that there is a strong relationship between visiting and participating on a school's Facebook page and the connectedness among online students.

10. What is the relationship between the use of Facebook for social use and the satisfaction among online students?

This is the first of three questions that explored Facebook as an aid for students to feel more satisfied with their online program. As with the other research questions in the study, there were three corresponding CESI Facebook survey statements: (9) Facebook adds to my academic experience, (10) I feel comfortable having my instructors as friends on Facebook, (11) Using Facebook helps make going to school online easier. Again, as with the other research questions with Facebook for social use as a variable, there was a relationship found between the variables. The Pearson r correlation test indicated a very

strong statistical relationship, r (183) = .835, p <.01 between the use of Facebook for social use and the satisfaction among online students.

11. What is the relationship between belonging and participating in an academic Facebook group and the satisfaction among online students?

This is the second research question exploring student satisfaction. Three corresponding statements were presented to the study participants: (13) The Facebook group is helpful for answering questions about courses and getting information about professors, (20) The Facebook group has helped me to feel satisfied in my academic experience, (24) I feel better about being an online student because of the Facebook group. This question had the same results as research questions 2, 5, and 8. Again, all sample members belong to at least one academic Facebook group. The Pearson r correlation test showed that there is a statistical relationship, r (183) = .855, p <.01, between the variables belonging and participating in an academic Facebook group and the satisfaction among online students. This relationship was also one of the strongest in the study.

12. What is the relationship between visiting and participating on a school's Facebook page and the satisfaction among online students?

This is the final research question of the study. This question investigated the effect of a school's Facebook page on student satisfaction. As with all the research questions in the study, there are three corresponding statements from the CESI Facebook survey: (26) I appreciate knowing what activities are scheduled at my school during the school year, (27) I enjoy following the news and events at my school, (36) Viewing the activity of my school's Facebook page makes me proud to be a student there. This is also

the final research question that has the variable of visiting and participating on a school's Facebook page. Like the others, this has the same positive relationship result, although this was the strongest relationship of them all. The Pearson *r* correlation test indicated that there was a large positive correlation, $r(183) = .818$, $p < .01$ between visiting and participating on a school's Facebook page and the satisfaction among online students.

Interpretation of Findings: Research Questions

The goal of this study was to investigate the relationship between Facebook and student isolation, student engagement, student connectedness, and student satisfaction to find ways of decreasing the growing online student attrition rates. The previous section gave a summary of the results from each of the research questions. This section will take a deeper look into those results. It is important to note that with correlations will not show that A causes B or B causes A. The results from the correlation tests do, however, tell us if a relationship exist between the variables, and that can be the stepping stone to further research.

The first research question asked what the relationship is between using Facebook for social use and the feelings of isolation among online students. The first important observation is that most sample participants, 91.9% (N=170), reported that they use Facebook daily. It was expected that there would be a positive relationship between Facebook for social use and the feelings of isolation among online students. The results from the Pearson *r* correlation test did support this and confirmed a strong relationship.

The second research question asked what the relationship between belonging and participating in an academic Facebook group and the feelings of isolation of online students is. It was expected that with all members of the sample group belonging to at

least one of the identified academic Facebook groups, there would be a strong relationship with the feelings of isolation. This was confirmed by the Pearson *r* correlation test. The correlation test revealed that there is a strong statistical relationship between belonging and participating in an academic Facebook group and the feelings of isolation among online students.

The last research question under student isolation asked what the relationship between visiting and participating on a school's Facebook page and the feelings of isolation in online students is. Most sample group members, 87% (N=161), responded that they had visited and participated on their school's Facebook page. Given these responses, it was expected that there would be a relationship between the two variables. In this case, the Pearson *r* correlation test did confirm that there was indeed a positive relationship between visiting and participating on a school's Facebook page and the feelings of isolation among online students.

Research question four looked at the relationship between using Facebook for social use and the engagement of online students. The results from this research question also provided an interesting result in that initial expectations were not supported. Again, most sample group members reported using Facebook daily and this Facebook use did have a strong correlation with the engagement of online students. It was anticipated, from the beginning, that Facebook usage would have a strong relationship with engagement and the results from the Pearson *r* correlation test found this relationship existed.

Research question five also explores student engagement and asked, what is the relationship between belonging and participating in an academic Facebook group and the engagement of online students? All sample group members belonging to at least one

academic Facebook group and there was a strong relationship found between the variables. This was the anticipated result. It was expected that with all members belonging to an academic Facebook group that there would be a relationship with student engagement. Results from the correlation test indicated that there was a statistical relationship between belonging and participating in an academic Facebook group and student engagement among online students.

The last research question that explores student engagement, question six asked, what is the relationship between visiting and participating on a school's Facebook page and the engagement among online students? It was expected from the beginning that the results of this research question would show a relationship between the variables. Indeed, the results of the Pearson r correlation test did confirm that there is a positive relationship between visiting and participating on a school's Facebook page and the engagement of online students.

Research question seven is the first, in the study, to examine student connectedness and specifically what the relationship between the use of Facebook for social use and the connectedness among online students is. This research question also brought an expected result. It was anticipated that with the strong numbers of daily Facebook usage among the sample group members that there would be a strong relationship between using Facebook for social use and connectedness. The results of the Pearson r correlation test confirmed that there is a strong statistical relationship.

The second research question examining student connectedness, question eight, asks what is the relationship between belonging and participating in an academic Facebook group and the student connectedness among online students? All members of

the sample group belong to at least one Facebook academic group and there was a strong relationship found between the variables. Again, this was the anticipated result. It was expected that there would be a relationship with Facebook helping to connect students. The results from the correlation test confirmed that there was a strong statistical relationship between belonging and participating in an academic Facebook group and the connectedness of online students.

This is the last research question, in the study, to examine connectedness among online students, question nine asked, what is the relationship between visiting and participating on a school's Facebook page and the connectedness among online students? It was anticipated that with a large majority of the sample group members, 87%, reporting that they had visited and participated on their school's Facebook page, there would be a relationship between the variables. The Pearson *r* correlation test did confirm what was initially expected, that there is a relationship between visiting and participating on a school's Facebook page and the connectedness among online students.

The next set of research questions explores student satisfaction among online students. Question ten asked, what is the relationship between the use of Facebook for social use and the satisfaction among online students? It was expected that with the large numbers of sample group members that use Facebook every day and the capabilities to connect to others so easily, there would indeed be a relationship found between the variables. The results from the Pearson *r* correlation test indicated that a strong statistical relationship did exist.

This next research question, number eleven, examined if there was a relationship between belonging and participating in an academic Facebook group and the satisfaction

among online students. This research question was also expected to result in a relationship between the variables. With all sample group members belonging to at least one academic Facebook group, the correlation test confirmed a strong statistical relationship between belonging and participating in an academic Facebook group and the satisfaction among online students.

The final research question of the study explored the relationship between visiting and participating on a school's Facebook page and the satisfaction among online students. Initial beliefs that there would be a relationship between the variables were confirmed with the Pearson *r* correlation test. The correlation test indicated that there was a positive relationship between visiting and participating on a school's Facebook page and the satisfaction among online students.

Context of Findings

This study set out to answer 12 questions in an initial attempt to find ways to slow, or reverse, the growing trend of online student attrition. The previous section looked at the statistical results. This section will review the results of the research questions and compare those results to other current and relevant research findings to look for similarities and differences.

Isolation. This study first examined isolation among online students. (1) This study found that there was a strong statistical relationship between the social use of Facebook and the feelings of isolation among online students. (2) This study found that belonging to an academic Facebook group does have a statistical relationship with the feelings of isolation among online students. (3) This study found that there was a relationship between visiting or participating on a school's Facebook page and the

feelings of isolation among online students. To compare with previous research, Griffith (2014) studied the feelings of isolation between hybrid students and online only students during a 14-week course. This study found that hybrid students felt less isolation compared to those fully online. Griffith (2014) highlighted the need to find ways to help online students feel less isolated.

Another study found that there was a positive correlation between the use of Facebook and building what they called social capital. Dickstein-Fischer (2012) reported that there was a positive correlation between the number of friends on Facebook and a sense of belonging. Woodley and Meredith (2012) research conclusions were similar to this study when they concluded that the use of Facebook can provide academic, social, and emotional support to help prevent students from feeling isolated. Lou et al. and McMorris (2012) findings agreed with this study. They found that the use of Facebook and the intensity of Facebook use had a positive effect on student loneliness.

Engagement. This study examined online student engagement next. (1) This study found that there is a relationship between the social use of Facebook and the engagement of online students. (2) This study found that there is a relationship between belonging to and participating in an academic Facebook group and the engagement of online students. (3) This study also found that there was a relationship between visiting or participating on a school's Facebook page and the engagement of online students.

In contrast to previous research, Dyson et al. (2014) found that the use of Facebook did not impact student engagement. Burkart (2013) found that despite the amount of Facebook usage, it did not have a positive effect on student engagement. Junco (2012) found that the use of Facebook was not predicative of student engagement.

However, Hamidy (2014) found an opposite result: the use of Facebook did have a positive effect on student engagement. Clements (2015) also found the same result as Hamidy (2014) that Facebook use did have a positive effect on student engagement.

Connectedness. This study also explored student connectedness. (1) This study found that there is a relationship between the social use of Facebook and the connectedness among online students. (2) This study found a relationship existed between belonging to and participating in an academic Facebook group and the connectedness among online students. (3) This study found that there is a relationship between visiting and participating on a school's Facebook page and the connectedness among online students.

In comparison to other research, Sikes (2015) showed that the use of Facebook, socially, had a positive effect on student connectedness. Mariano (2012) found similarly that social information shared among online students did help with feelings of connectedness. Powless (2011) also found that general Facebook usage did have a positive effect on student connectedness. Brobst (2013) found with Facebook groups. Brobst found that the use of Facebook groups helped create a sense of community. That was a similar result with this study which found a relationship between Facebook groups and student connectedness.

Satisfaction. Finally, this study examined student satisfaction as the last area to improving the rising attrition rates among online students. (1) This study found that the social use of Facebook had a relationship with the satisfaction among online students. (2) This study found that there is a relationship between belonging to and participating in an academic Facebook group and the satisfaction among online students. (3) This study

found that there was a positive relationship between visiting and participating on a school's Facebook page and the satisfaction among online students. In comparison to other research, Fagioli et al. (2015) found that the use of groups on Facebook had a positive effect on student satisfaction and even found that it helped continuing to the next semester.

   Privacy. One last important finding to compare with previous research is that of privacy. Although it is documented in previous research that students wish to have their personal lives separated from their academic lives, the expectation was that this study would find that to no longer be true. However, along with Ciampa, Thrasher, and Revels (2016); Woerner (2015); Whitehurst (2015); Dyson et al. (2014); and Scialdone (2014), this study also found that students are still not ready to intermingle their personal lives with their academic lives.

Implications of Findings

   This study found that there was a relationship between the social use of Facebook and the use of academic Facebook groups on the feelings of isolation among online students. This, however, does not mean that further research is not warranted. Maslow (1943) suggested that humans need to belong and were not meant to be isolated. Moore (1997) also suggested that increased communication leads to closing the isolation gap. This agrees with several other studies: Kwon, D'Angelo, and McLeod's (2013); Dickstein-Fischer (2012); and Lou et al. (2012). These findings are important because they are a starting point to find methods that can be used to reduce one of the problems that lead to online students leaving their programs of study.

This study did find a relationship between the social use of Facebook and student engagement. This study also showed a relationship with using academic groups and student engagement, as with other studies such as Hamidy (2014). This study also found that there was a relationship between the social use of Facebook and feeling connected to others and their school. Other studies, such as Sikes (2015) and Mariano (2012), found that the use of Facebook helped online students feel more connected. This study found a relationship between the use of Facebook and student satisfaction as with others such as Fagioli et al. (2015), that did as well.

There should be serious instructional design attempts to harness the power of social media. Universities and colleges have attempted to be more social by creating Facebook pages, Twitter pages, and so on. However, as discovered in this study, online students need help and social media is here to stay. As with all things, it will look differently as time goes on and media evolves. This study and the others that came before it has shown that students generally respond well to social media because it is big part of everyday life. The tremendous need is there to use what we know about social media to help online students deal with the distance of online education.

Limitations of the Study

Like most studies, there are limitations, and this study was no different. One limitation of this study was the sample size of 500. While the total population was large, over 10,000, it was not feasible to have a bigger sample size within the time frame of this study. With more time allowed, it would be possible to have a much larger sample size and generalizable results. This study, again due to time restraints, was limited to online students at six specific universities and nine academic Facebook groups. So much more

may be learned by increasing the number of universities involved and the number of academic Facebook groups.

Another limitation of this study was the use of Facebook Messenger as the method of contact. While Facebook Messenger is widespread and easy to use, there are new contacts-per day limitations that made initial contact and follow-ups difficult and very slow. This created a very slow pace to the data collection, which limited response results. It also lengthened the process of conducting follow-ups and lengthened the whole data collection period.

Also, despite Facebook Messenger being wide spread, there were many initially randomly chosen participants who had to be later excused from the study due to not having Facebook Messenger and not being able to receive the initial survey request contacts. In addition, Facebook Messenger users had the option to delete requests, ignore requests, or block from receiving any more requests. Understandably, this can be said about most methods of survey distribution, but most methods of distribution and rate of contact are not as slow as using Facebook Messenger. These limitations paved the way for less than desirable survey return rate results. As discussed earlier in the study, despite multiple follow-up requests, friendship requests, and extended time for completion, the return rate was only 37%.

Future Research

Despite the limitations of this study, the information learned is valuable, and so much more can be learned from the future study of using social media to help with the distance online students' experience. One suggestion would be to repeat this study using a much larger target population, including many more universities and academic

Facebook groups. Another suggestion would be to include traditional R1 research universities in the study as most, if not all, have online degree programs.

Another suggestion for future research would be to explore other forms of social media to see how the effects compare to the effects found with using Facebook. Perhaps there are social media applications that would provide much needed valuable information when studied for using as a tool to help with some of the issues of being an online student.

Yet another course of study would be to explore, using the CESI Facebook Survey, the differences in responses between traditional or hybrid students who are taking online courses and those that are online only students, as in this study. It would be interesting and valuable to see and understand the differences, if there are any.

Summary

This chapter reviewed the findings from the data collected and then interpreted those findings so that answers could be applied to the research questions asked in this study. With almost 92% of respondents in this study said they use Facebook daily, there was statistical significance (1) between using Facebook for social use and the feelings of isolation; (2) between belonging and participating in an academic Facebook group and the feelings of isolation among online students; (3) between Facebook use with the engagement of online students; (4) between social use of Facebook and connectedness; (5) between belonging and participating in an academic Facebook group and the connectedness of online students; (6) between using Facebook for social use and the satisfaction among online students; (7) between belonging and participating in an academic Facebook group and satisfaction among online students. The study confirmed

that there was indeed a positive relationship in four areas involving a school's Facebook page, including between visiting and participating on a school's Facebook page and (1) the feelings of isolation among online students; (2) the engagement of online students. (3) the connectedness among online students; and (4) the satisfaction among online students.

Once the answers were deduced, those answers were then compared to previous research to establish patterns within the research. This study added to the data that was available regarding the use of social media to help online students. It is hoped that further studies will be conducted on the use of social media and that higher education administrations and instructional designers find ways to harness the power of social media.

References

Alexander, C. M. (2013). Facebook usage and academic achievement of high school

students: A quantitative analysis. Retrieved from ProQuest (UMI No. 3540667)

Allen, I. E., & Seaman, J. (2013). *Changing course: Ten years of tracking online

education in the United States.* Babson, Park, MA: Quahog Research Group, LLC

and Babson Research Group.

Allen, I. E., & Seaman, J. (2016*). Online report card: Tracking online education in the

United States.* Babson, Park, MA: Quahog Research Group, LLC and Babson

Research Group.

Amador, P. V. (2011). College students' use and understanding of an electronic social

network for academics, academic help seeking, and academic advising. Retrieved

from ProQuest. (UMI No. 3472806)

Anderson, J. C. (2013). *Learner satisfaction in online learning: An analysis of the

perceived impact of learner-social media and learner-instructor interaction.*

Retrieved from ProQuest. (UMI No. 3570281)

Astin, A. W. (1984). Student involvement: A developmental theory for higher education.

Journal of College Student Personnel, *25*(4), 297-308.

Bambara, C., Harbour, C., Davies, T., & Athey, S. (2009). Delicate engagement: The

lived experience of community college students enrolled in high-risk online

courses. *Community College Review*, *36*(3), 219.

Bookout, J. M. (2010). *An examination of relationships between psychosocial satisfaction

scales in an online student learning environment.* Retrieved from ProQuest. (UMI

No. 3423011)

Bordelon, K. L. (2011). *Perceptions of achievement and satisfaction as related to interactions in online courses.* Retrieved from ProQuest. (UMI No. 3486057)

Bradburn, N. M., Sudman, S., & Wansink, B. (2004). Asking questions: The definitive guide to questionnaire design- for market research, political polls, and social and health questionnaires (Rev. ed). San Francisco, CA: Wiley & Sons, Inc.

Brazina, P. R., & Ugras, J. Y. (2014). Growth and changes in online education. *Pennsylvania CPA Journal*. *85*(3), 34-38.

Brobst, J. A. (2013). *A little help from my friends: Testing the utility of Facebook groups as online communities in an undergraduate research internship*. Retrieved from ProQuest. (UMI No. 3612932)

Brooks, S. L. (2013). *Social media usage: examination of influencers and effects.* Retrieved from ProQuest. (UMI No. 3598043)

Burkart, E. J. (2013). *Facebook use and engagement of college freshmen*. Retrieved from ProQuest. (UMI No. 3560608)

Cardona-Divale, M. V. (2012). *Student interaction and community building: An evaluation of social networking in online learning environments.* Retrieved from ProQuest. (UMI No. 3505771)

Christensson, P. (2013, August 7). Social media definition. Retrieved November 15, 2016, from http://techterms.com/definition/social_media

Ciampa, M., Thrasher, E. H., & Revels, M. A. (2016). Social media use in academics: Undergraduate perceptions and practices. *I-Manager's Journal of Educational Technology*, *12*(4) 10-19.

Clements, J. C. (2015). Using Facebook to enhance independent student engagement: A case study of fist-year undergraduates. *Higher Education Studies*, 5(4) 131-146

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences.* (2nd ed.). Hillsdale, NJ: Erlbaum.

Conner, T. (2016). Relationships: The key to student engagement. *International journal of Education and Learning*, *5*(1), 13-22.

Creswell, J. W. (2008). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (3rd ed.). Upper Saddle River, NJ: Pearson.

Dickstein-Fischer, L. (2012). *Facebook use in relation to gender, introversion-extroversion, and sense of belonging among college students*. Retrieved from ProQuest. (UMI No. 3524489)

Drouin, M., & Vartanian, L. R. (2010). Students' feelings of and desire for sense of community in face-to-face and online courses. *The Quarterly Review of Distance Education*, *11*(3), 147-159.

DuBose, C. (2012). *Faculty perceptions and use of social media in the medical imaging curriculum in the United States.* Retrieved from ProQuest. (UMI No. 3546143)

Dunmore, D. A. (2013). *Has technology become a need? A qualitative study exploring three generational cohorts' perception of technology in regards to Maslow's Hierarchy of Needs.* Retrieved from ProQuest. (UMI No. 3607006)

Dyson, B., Vickers, K., Turtle, J., Cowan., S., & Tassone, A. (2014). Evaluating the use of Facebook to increase student engagement and understanding in lecture-based classes. *The Journal of Higher Education*, 69, 303-313. doi: 10.1007/s10734-014-9776-3

Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook "friends":
Social capital and college students use of online social network sites. *Journal of Computer-Mediated Communication,* 12, 1143-1168

Facebook. (2019). *Facebook Reports Fourth Quarter and Full Year 2018 Results.*
Retrieved from
https://s21.q4cdn.com/399680738/files/doc_financials/2018/Q4/Q4-2018-
Earnings-Release.pdf

Fagioli, L. P., Rios-Aguilar, C., & Deil-Amen, R. (2015). Changing the context of
student engagement: Using Facebook to increase community college student
persistence and success. *Teachers College Record* (117).

Faul, F., Erdfelder, E., & Lang, AG. et al. (2007) *Behavior Research Methods, 39*:
175. https://doi.org/10.3758/BF03193146

Fedynich, L., Bradley, K. S., & Bradley, J. (2015). Graduate students' perceptions of
online learning. *Research in Higher Education Journal*, 27, 1-15

Forte, G. (2015). *An analysis of variance between students' evaluations of teaching
methods and styles of distance and face-to-face classes through the lens of
transactional distance theory.* Retrieved from ProQuest. (ProQuest No. 3728929)

Friday, B. E. (2010). *Student perceptions of Facebook, an online social networking site at
a non-residential, community branch college in Northeastern Pennsylvania: A
phenomenological study.* Retrieved from ProQuest. (UMI No. 3452824)

Frier, S. (2016, July 27). Facebook revenue, users top estimates as mobile ads surge.
Retrieved October 29, 2016, from

https://www.bloomberg.com/news/articles/2016-07-27/facebook-sales-user-growth-top-estimates-as-mobile-ads-surge

Gray, J. A., & DiLoreto, M. (2016). The effects of student engagement, student satisfaction, and perceived learning in online learning environments. *NCPEA International Journal of Educational Leadership Preparation*, *11*(1)

Greenhow, C., & Lewin, C. (2016). Social media and education: Reconceptualizing the boundaries of formal and informal learning. *Learning, Media, and Technology*, *41*(1), 6-30. doi: 10.1080/17439884.2015.1064954

Griffith, J. D. (2014). *A quasi-experimental comparison of student satisfaction in hybrid versus an online-only course*. Retrieved from ProQuest (UMI No. 3579722)

Gupta, C. P., Singh, B., & Marwaha, T. (2013). Relationship between social media and academic performance in distance education. *Universal Journal of Educational Research, 1*(3), 185-190. doi: 10.13189/ujer.2013.010307

Guynn, J. (2016, February 11). Twitter growth grinds to a halt. Retrieved October 29, 2016 from http://www.usatoday.com/story/tech/news/2016/02/10/twitter-fourth-quarter-earnings-user-decline/80178140/

Hamidy, W. (2014). *A comparative study of the role of social media in the engagement of students in online courses.* Retrieved from ProQuest. (UMI No. 3669106)

Hilscher, J. (2013). *A case study examining how students make meaning out of using Facebook as a virtual learning community at a Midwestern university*. Retrieved from ProQuest. (UMI No. 3566011)

Hoskins, B. J. (2012). Connections, engagement, and presence. *The Journal of Continuing Higher Education, 60*(1), 51-53. doi:10.1080/07377363.2012.650573

Johnson, Z. S., Cascio, R., & Massiah, C. A. (2014). Explaining student interaction and satisfaction: An empirical investigation of delivery mode influence. *Marketing Education Review*, *24*(3), 227-237.

Junco, R. (2012). The relationship between frequency of Facebook use, participation in Facebook activities, and student engagement. Computers & Education, 58(1), 162-171.

Kremer, W., & Hammond, C. (2013). Abraham Maslow and the pyramid that beguiled business. *BBC World Service Magazine.* Retrieved November 17, 2016, from http://www.bbc.com/news/magazine-23902918

Kwon, M. W., D'Angelo, J., & McLeod, D. M. (2013). Facebook use and social capital: To bond, to bridge, or to escape. *Bulletin of Science, Technology, & Society*, *33*(1-2), 35-43.

Lani, J. (2017). Correlation (Pearson, Kendall, Spearman). Retrieved on October 11, 2017, from http://www.statisticssolutions.com/correlation-pearson-kendall-spearman/

Lou, L. L., Yan, Z., Nickerson, A., & McMorris, R. (2012). An examination of the reciprocal relationship of loneliness and Facebook use among first-year college students. *The Journal of Educational Computing Research, 46*(1), 105-117. doi:10.2190/EC.46.1e

Major, C. H. (2010). Do virtual professors dream of electronic students? University faculty experiences with online distance education. *Teachers College Record*, *112*(8), 2154-2208.

Mariano, D. G. (2012). *The effectiveness of creating a sense of community in online learning with social awareness information.* Retrieved from ProQuest. (UMI No. 3504980)

Maslow, A. H. (1943). A theory of human motivation. *Psychological Review,* 50, 370-396.

McAliney, P. J. (2013). *How undergraduate students use social media technologies to support group project work*. Retrieved from ProQuest. (UMI No. 3599884)

McPherson, M. S., & Bacow, L. S. (2015). Online higher education: beyond the hype cycle. *Journal of Economic Perspectives*, *29*(4), 135-154.

Milheim, K. L. (2012). Towards a better experience: Examining student needs in the online classroom through Maslow's Hierarchy of Needs Model. *Journal of Online Learning and Teaching, 8*(2), 159-171.

Miller-Lewis, J. L. (2011). *The computer ate my classroom: Assessing student interactions, perceived learning, and satisfaction in online community college career technical education courses.* Retrieved from ProQuest (UMI No. 3455445)

Moore, J. L., Dickson-Deane, C., & Galyen, K. (2011). E-learning, online learning, and distance learning environments: Are they the same? *Internet and Higher Education, 14*(2011), 129-135.

Moore, M. (1997). Theory of transactional distance. In Keegan, D., ed. *Theoretical Principles of Distance Education*. Routledge, (pp. 22-38).

Newton, D. (2016). How companies profit of education at nonprofit schools. *The Atlantic.* Retrieved January 14, 2017, from

https://www.theatlantic.com/education/archive/2016/06/for-profit-companies-nonprofit-colleges/485930/

Olson-Wenneker, T. R. (2012). *The relation of social presence to online students' perceived learning and satisfaction with their instructor*. Retrieved from ProQuest. (UMI No. 3512968)

Powless, S. J. (2011). *College student satisfaction: The impact of Facebook and other factors* (Doctoral dissertation, The University of Toledo). Retrieved from http://utdr.utoledo.edu/cgi/viewcontent.cgi?article=1703&context=theses-dissertations

Pugh, D. (2010). *Student perceptions of experiences of interaction in online graduate education course*. Retrieved from ProQuest. (UMI No. 3436503)

Radhakrishna, R. B. (2007). Tips for developing and testing questionnaires/instruments. *Journal of Extension,* 45(1).

Rosoff, M. (2016, June 22). Instagram's growth is astounding, if you ignore the US. Retrieved October 29, 2016, from http://www.businessinsider.com/instagram-user-growth-2016-6

Rutledge, P. B. (2011). Social Networks: What Maslow misses. *Psychology Today*. Retrieved November 12, 2016, from https://www.psychologytoday.com/blog/positively-media/201111/social-networks-what-maslow-misses-0

Scialdone, M. J. (2014). *Understanding the use and impact of social media features on the educational experiences of higher-education students in blended and distance-learning environments*. Retrieved from ProQuest. (UMI No. 3620497)

Seppala, E., Rossomando, T., & Doty, J. R. (2013). Social connection and compassion: Important predictors of health and well-being. *Social Research, 80*(2), 411-430.

Sesterhenn, S. M. (2012). *How the net generation student uses social media in academic and social college experiences*. Retrieved from ProQuest. (UMI No. 3504984)

Shearer, R. L. (2009). *Transactional distance and dialogue: An exploratory study to refine the theoretical construct of dialogue in online learning* (Doctoral dissertation, The Pennsylvania State University, 2009). Dissertation Abstracts International, 71/03.

Sheehy, K. (2013, January 8). Online course enrollment climbs for 10th straight year: A new study finds that online education continues to grow despite faculty support. Retrieved November 10, 2016, from http://www.usnews.com/education/online-education/articles/2013/01/08/online-course-enollment-climbs-for-10th-straight-year

Sikes, S. M. (2015). *"Facebook is my extracurricular life!": A phenomenological examination of undergraduate Facebook usage and student involvement.* Retrieved from ProQuest. (UMI No. 3663004)

Simonson, M., Smaldino, S., & Zvacek, S. (2015). *Teaching and learning at a distance: Foundations of distance education* (6 ed.), Charlotte, NC: Information Age Publishing.

Thomas, J. (2016). *The engagement and development of students in online bachelor degree programs*. Retrieved from ProQuest. (ProQuest No. 10103816)

Tilton, S. (2012). *First year students in a foreign fabric: A triangulation study on Facebook as a method of coping/adjustment.* Retrieved from ProQuest. (UMI No. 3561420)

Whitehurst, J. N. (2015). *Boundaries to instructional use of Facebook in higher education: a grounded theory collective case study.* Retrieved from ProQuest. (ProQuest No. 10013300)

Winston, C. N. (2016). An existential-humanistic-positive theory of human motivation. *The Human Psychologist, 44*(2), 142-163.

Wise, T. L. (2012). *The influence of interactivity and instructional strategies on retentions and satisfaction in distance learning environments*. Retrieved from ProQuest. (UMI No. 3547468)

Woerner, J. S. (2015). *A qualitative case study of Facebook and its perceived impact on social connectivity.* Retrieved from ProQuest. (ProQuest No. 3740269)

Woodley, C., & Meredith, C. (2012). Supporting student transition through social media. *American Journal of Distance Education*, *26*(2), 86-95. doi: 10.1080/08923647.2012.655055

Wu, J. Y. (2014). *Faculty perceptions of instructional satisfaction and support when teaching distance education*. Retrieved from ProQuest. (UMI No. 3631875)

Yang, C. C., & Brown, B. B. (2012). Motives for using Facebook, patterns of Facebook activities, and late adolescents' social adjustment to college. *Journal of Youth Adolescence*, 2013; 42, 403-416

Zhang, S. (2012). *Babel or great wall: Social media use in an acculturation context.* Retrieved from ProQuest. (UMI No. 3534701)

Appendix A

CESI Facebook Survey

CESI Facebook Survey

Part I Demographics

Please answer the following questions:

1. Age at the time of the survey _____

2. Male or Female _____

3. Status in college (freshman, sophomore, junior, senior, masters, doctoral) _____

4. Full-time online student (yes or no) _____

5. Live off campus (yes or no) _____

6. I have a Facebook account (yes or no) _____

7. I access Facebook (daily, weekly, monthly, rarely) _____

8a. Belong to an academic Facebook group (yes or no) _____

8b. Which academic Facebook group(s) do you belong to?

_____

_____

9a. I have visited my school's Facebook page (yes or no) _____

9b. Which university do you attend? _____

Part II Facebook for social use

Read each item carefully and then mark the response that best reflects your feelings about the statement	Strongly Disagree 1	Disagree 2	Somewhat Disagree 3	Neutral 4	Somewhat Agree 5	Agree 6	Strongly Agree 7
1. Facebook helps me feel less lonely taking online classes							
2. I access Facebook often							
3. I use Facebook to keep my mind occupied							
4. I have used Facebook to communicate with my instructors							
5. Using Facebook helps me get involved at my school and in my community							
6. I have used Facebook to post pictures or update my status regarding something that was happening with school							
7. I use Facebook to stay connected to family and friends							
8. Facebook helps me meet new friends at my school							
9. Facebook adds to my academic experience							
10. I feel comfortable having my instructors as Facebook friends							
11. Using Facebook helps make going to school online easier							
12. I think it is important to keep my personal and academic lives separate							

Part III Facebook academic group for academic and social support

Read each item carefully and then mark the response that best reflects your feelings about the statement	Strongly Disagree 1	Disagree 2	Somewhat Disagree 3	Neutral 4	Somewhat Agree 5	Agree 6	Strongly Agree 7
13. The group helps with questions about courses and getting information about professors							
14. The group helps me overcome my loneliness in taking online classes							
15. I access the Facebook group often							
16. The group helps me feel connected to my classmates							
17. The group helps me feel as connected as if I were taking classes face-to-face							
18. The group has helped me meet new friends							
19. The group has helped me socialize with other students offline.							
20. The group has helped me to feel satisfied in my academic experience							
21. The group helps me attend academic and social events							
22. It is important to keep my personal and academic lives separated							
23. I seek out contact with other students at my school through the Facebook group							
24. Using the Facebook group makes me feel better about being an online student							

Part IV University or college Facebook page

Read each item carefully and then mark the response that best reflects your feelings about the statement.	Strongly Disagree 1	Disagree 2	Somewhat Disagree 3	Neutral 4	Somewhat Agree 5	Agree 6	Strongly Agree 7
25. I look at my school's Facebook page often							
26. I appreciate knowing what activities are scheduled at my school during the school year.							
27. I enjoy following the news and events at my school							
28. I feel part of the academic and social community by participating in my school's Facebook page							
29. I attend academic and social activities suggested on my school's Facebook page							
30. The Facebook page helps me feel connected to others at my school							
31. The Facebook page helps me feel just as connected to my school as I would if I were taking face-to-face classes							
32. I have met new people/friends in person by using the Facebook page							
33. The Facebook page helps me feel less isolated in taking online classes							
34. It is important to keep my academic and personal lives separate							
35. I purposefully seek contact with other students through the Facebook page							
36. Viewing the activity of my school's Facebook page makes me proud to be a student there							

Appendix B

Cronbach's Alpha Reliability Results

Reliability Statistics

Reliability Test	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Number of Items
	.950	.949	36

Item-Total Statistics

Survey Questions	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Facebook helps me feel less lonely taking online classes	147.05	1522.551	.438	.520	.950
I access Facebook often	145.56	1545.106	.352	.368	.950
I use Facebook to keep my mind occupied	146.54	1548.261	.260	.363	.951
I have used Facebook to communicate with my instructors	149.78	1546.573	.334	.283	.950
Using Facebook helps me get involved at my school and in my community	147.42	1483.244	.682	.665	.948
I have used Facebook to post pictures or update my status regarding something that was happening with school	146.82	1525.618	.362	.470	.951
I use Facebook to stay connected to family and friends	145.18	1563.995	.250	.338	.951
Facebook helps me meet new friends at my school	147.01	1469.641	.780	.760	.947
Facebook adds to my academic experience	147.34	1479.595	.704	.714	.948
I feel comfortable having my instructors Facebook friends	148.55	1545.564	.242	.344	.952
Using Facebook helps make going to school online easier	147.56	1486.867	.667	.729	.948

I think it is important to keep my personal and academic lives separate	146.97	1595.755	-.092	.760	.954
Academic Facebook groups help with questions about courses and getting information about instructors	146.41	1518.014	.493	.444	.950
Academic Facebook groups help me overcome my loneliness in taking online classes	147.24	1485.269	.687	.745	.948
I access academic Facebook groups often	146.98	1488.255	.676	.674	.948
Academic Facebook groups help me feel connected to my classmates	147.01	1475.674	.768	.764	.948
Academic Facebook groups help me feel as connected to my school as if I were taking classes face-to-face	147.90	1475.099	.717	.733	.948
Academic Facebook groups have helped me meet new friends	147.19	1478.959	.739	.750	.948
Academic Facebook groups help me socialize with other students offline	147.65	1473.956	.710	.690	.948
Academic Facebook groups help me feel satisfied in my academic experience	147.44	1477.748	.752	.741	.948
Academic Facebook groups help me attend academic and social events	148.17	1480.285	.702	.660	.948
It is important to keep my personal and academic lives separated	147.10	1581.730	.003	.786	.953
I seek out contact with other students at my school through academic Facebook groups	147.54	1472.804	.735	.724	.948
Being in academic Facebook groups makes me feel better about being an online student	147.28	1484.266	.708	.731	.948

I look at my school's Facebook page often	148.09	1488.166	.619	.659	.949
I appreciate knowing what activities are scheduled at my school during the year by reading the school's Facebook page	147.88	1484.642	.658	.789	.948
I enjoy following the news and events at my school through the Facebook page	147.64	1483.600	.683	.812	.948
I feel part of the academic and social community by participating in my school's Facebook page	147.74	1469.617	.772	.800	.947
I attend academic and social activities suggested on my school's Facebook page	148.74	1494.065	.658	.709	.948
My school's Facebook page helps me feel connected to others at my school	147.89	1468.373	.764	.774	.948
My school's Facebook page helps me feel just as connected to my school as I would if I were taking classes face-to-face	148.46	1472.065	.748	.823	.948
I have met new people/friends in person by using my school's Facebook page	148.48	1477.153	.665	.700	.948
My school's Facebook page helps me feel less isolated in taking online classes	147.96	1462.944	.801	.827	.947
It is important to keep my academic and personal lives separate	147.31	1565.410	.105	.725	.953
I purposefully seek contact with other students through my school's Facebook page	148.40	1473.557	.754	.809	.948
Viewing the activity on my school's Facebook page makes me proud to be a student there	147.52	1487.240	.679	.720	.948