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Triadic Interaction between Social Cognitive Theory, Social Presence Theory, and Community of Inquiry: An Online Course Instructional Design Assessment Model Evaluating Students’ Perceptions of Social Presence, Collaborative Learning, Social Interaction, and Satisfaction with their Learning Experience

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Community colleges have a mission of affording students open access to higher education. Student attrition in online courses at community colleges directly reduces student access to higher education and successful course and program completion and negatively impacts student success and institutional outcomes. From a social cognitive theory, social presence theory, and community of inquiry perspective, students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning experience are critical components of student learning. This quasi-experimental study examines the impact of an instructional strategy, team-based learning, on students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning experience in an online medical terminology course at a community college in Upstate New York. An online course instructional design assessment model emerged to assess students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning experience through the intersection of social cognitive theory, social presence theory, and community of inquiry. Students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning experience in an online course increased as a result of the student team-based instructional course design strategy. Recommendations support preparation of course designers, instructors, and implementation and evaluation of online courses. A circle of responsibility and success emerged in which student success is contingent on institutional commitment to research and best practices, course designer and instructor professional development, and student orientation and resources. Increasing higher education access and successful course and program completion is significant as a pathway out of poverty to improve social justice and equality. Recommendations include direct practice application, policy development, and future research.

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Triadic Interaction between Social Cognitive Theory, Social Presence Theory, and Community of Inquiry: An Online Course Instructional Design Assessment Model Evaluating Students’ Perceptions of Social Presence, Collaborative Learning, Social Interaction, and Satisfaction with their Learning Experience

By

Jamie L. Cuda

Submitted in partial fulfillment of the requirements for the degree Ed.D. in Executive Leadership

Supervised by

C. Michael Robinson, Ed.D.

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August 2016
Dedication

I dedicate my research to my family who have provided me with unconditional love and support. I would like to express my sincere appreciation and gratitude to my husband, Vinny, and my children, Kasper, Vincent, and Karissa, for their unwavering support and understanding throughout the dissertation process. I am especially grateful for your assistance with getting me packed, car loaded, and out the door for my weekend commutes to class. A special thank you to my personal assistants who provided me with a hot tea in hand for the road trips 😊. Without your assistance I never would have had what I needed each weekend but more importantly without your willingness and sacrifices in my absence this would not have been possible. I love you all dearly and am grateful to have been blessed with you in my life.

To my mother and father who raised me with a strong moral compass and the confidence and strength to stand up to injustices. You have instilled the value of life-long learning and that an investment in education is time well spent. Thank you for your love and guidance. I am eternally grateful and blessed to have such wonderful parents and exemplary role models. If I can instill in others a fraction of the good you have in your lifetime I will be extremely fortunate. I thank my siblings for their support and thank God for the gift of my family.

I would like to express my deepest admiration and a very special thank you to Lynn Kattato. I greatly appreciate your support, encouragement, and friendship throughout this journey. I value the time we spent together, our scholarly conversations,
and am a better person because of our interactions. I am lucky to have experienced this program with you.

To Syracuse Cohort 2, I could not have asked for a better cohort. Each member of our cohort brought value to the experience and I have learned from each of you. I especially would like to thank my group, C4, Rob DiFlorio, Denise DiRienzo, and Matt LaLonde. I enjoyed learning with you. Our team exemplified effective collaboration, focused on our strengths, and celebrated our successes as a cohesive team!

Last but not least, I would like to express my sincere appreciation to C. Michael Robinson, Syracuse Site Director and my Committee Chair. Thank you for your instruction and guidance. I deeply value and appreciate your direction. I would also like to thank Dr. Esther Bankert who served as my Executive Mentor, colleague, and friend. Your guidance and direction were invaluable. Thank you for all the time and dedication to ensure a scholarly dissertation. In closing, I would like to thank Nancy Caputo, Professor Emerita, for her exemplary leadership, friendship, and support.
Biographical Sketch

Jamie Cuda is currently an Assistant Professor in the Center for Health and Life Sciences at Mohawk Valley Community College. She has served as program coordinator overseeing six Allied Health Professions programs and assumed all administrative operations thereof. Mrs. Cuda has secured approximately half a million dollars in grant funding for curriculum development and high needs programs. She has successfully developed curriculum and transitioned hospital-based programs to college-based programs. She has over twenty-five years of experience as a higher education instructor specializing in online course design and instruction. She also specializes in program and curriculum development. Mrs. Cuda earned her Master’s of Science in Education from the State University of New York College at Oswego, Bachelor’s of Science in Business Public Management from the State University of New York Institute of Technology at Utica/Rome, and an Associate in Applied Science in Accounting from Mohawk Valley Community College. Mrs. Cuda began her studies at St. John Fisher College in Summer 2014 in the Education Doctorate in Executive Leadership program. She pursued her research in Triadic Interaction between Social Cognitive Theory, Social Presence Theory, and Community of Inquiry: An Online Course Instructional Design Assessment Model Evaluating Students’ Perceptions of Social Presence, Collaborative Learning, Social Interaction, and Satisfaction with their Online Learning Experience under the direction of Dr. C. Michael Robinson and Dr. Kim VanDerLinden and received the Ed. D. Degree in 2016.
Abstract

Community colleges have a mission of affording students open access to higher education. Student attrition in online courses at community colleges directly reduces student access to higher education and successful course and program completion and negatively impacts student success and institutional outcomes. From a social cognitive theory, social presence theory, and community of inquiry perspective, students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning experience are critical components of student learning. This quasi-experimental study examines the impact of an instructional strategy, team-based learning, on students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning experience in an online medical terminology course at a community college in Upstate New York. An online course instructional design assessment model emerged to assess students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning environment through the intersection of social cognitive theory, social presence theory, and community of inquiry. Students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning experience in an online course increased as a result of the student team-based instructional course design strategy. Recommendations support preparation of course designers, instructors, and implementation and evaluation of online courses. A circle of responsibility and success emerged in which student success is contingent on institutional commitment to research.
and best practices, course designer and instructor professional development, and student orientation and resources. Increasing higher education access and successful course and program completion is significant as a pathway out of poverty to improve social justice and equality. Recommendations include direct practice application, policy development, and future research.
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Chapter 1: Introduction

The popularity and number of online course offerings continue to increase in order to meet the demands of society (Moore, 2014). Alternate means of instructional delivery are necessary to meet the needs of students and colleges (Carr, 2000, 2014). More students are enrolling in college courses wishing to further their education to enhance their career and many wish to do so without interfering with their family and work commitments. Therefore, more students are choosing online courses at community colleges because they are flexible and can accommodate their work and family schedules.

In the fall of 2002, 1.6 million students enrolled in at least one online course (Allen & Seaman, 2011). By 2010, the number of students enrolled in at least one online course grew to over 6.1 million. Online enrollment growth rate has been significantly higher than the growth rate of enrollment in higher education overall. In a comparison from 2009 to 2010, online course enrollment increased 10% while overall higher education enrollment increased less than 1%. In 2010, 31% of all higher education students were enrolled in at least one online course. It is predicted that online course growth will continue to grow at a fast rate (Allen & Seaman, 2011), with an estimated 50% of all learning achieved online by the year 2050 (Draves, 2002).

Challenges in education. Colleges compete for enrollment and have limited physical resources such as building space (Carr, 2014). Online courses have become a solution for colleges to increase student enrollment and limit physical space issues. Therefore, colleges are increasing the number of online courses, yet college
undergraduate students are more likely to drop out of an online course in comparison to a
traditional face-to-face course (Carr, 2000; Moody, 2004; Patterson & McFadden, 2009;
Xu & Jaggars, 2013). Online course attrition rates can be up to 7 times higher than
traditional face-to-face courses (Xu & Jaggars, 2013). A major challenge with online
education in undergraduate courses is creating a social presence between students and
instructor (Dow, 2008), and thus, students may feel disconnected and less engaged in
online courses. Empirical research studies define social presence in many ways. For the
purpose of this study, social presence is defined as the students’ ability to project
themselves socially and effectively in an online course leading to connectedness to their
instructor and classmates.

The main difference of online instruction from traditional face-to-face instruction
is student and instructor separation. Student and instructor separation creates a challenge
to design and instruct a course where students feel connected to their instructor and
classmates. The absence of social presence and student connectedness may contribute to
high attrition rates in online courses (Moore, 2014). Therefore, creating a social presence
in an online classroom is important.

**Enhancing educational environment.** Social presence may directly relate to
student satisfaction, success, and course completion (Moore, 2014). Students are more
likely to complete a course when they feel connected to their instructor and classmates
(Seiver & Troja, 2014). Empirical research studies found a positive correlation between
students’ perceptions of social presence and student satisfaction (Coaplen, Hollis, &
Bailey, 2013; Richardson & Swan, 2003; Seiver & Troja, 2014; Swan & Shih, 2003).
Likewise, a positive correlation was found between students’ perceptions of social
presence and academic success (Garrison, Cleveland-Innes, & Fung, 2010; Hege, 2011; Liu, Gomez, & Yen, 2009; Wei, Chen, & Kinshuk, 2012; Yen & Tu, 2011). Furthermore, increasing social presence in an online course decreases student attrition (Carr, 2000; Liu et al., 2009).

Colleges are adding more online courses to accommodate the growth in online enrollment; however, there is limited research addressing the relationship between course design, instruction, social presence, and student attrition. Creating social presence in online courses may result in enhanced student satisfaction, decreased student attrition, and increased student success. Therefore, a model to assess these components is imperative to student success.

**Problem Statement**

High attrition in online courses directly impacts many aspects of higher education. Colleges lose money on online course development, instruction, and assessment as well as tuition revenue (Moody, 2004). Revenue loss has a negative impact on colleges’ economic survival (Liu et al., 2009; Moody, 2004; Summers, 2003). Limited public resources increase the call for community college accountability for the use of funds (Allen & Seaman, 2011; Summers, 2003). Accountability is most frequently measured through the lens of institutional effectiveness, financial, enrollment management, and student learning metrics. Regardless of how it is measured, attrition is a significant challenge for community colleges (Summers, 2003). Attrition rates differ between online and campus courses (Carr, 2000; Moody, 2004; Patterson & McFadden, 2009; Xu & Jaggars, 2013). Online course attrition rates may be up to 7 times higher than campus-based courses (Xu & Jaggars, 2013). Therefore, there is a need for the consideration of
an assessment model to promote attention to social presence in online course development, delivery, and evaluation.

There is high student attrition at community colleges; therefore, it limits community colleges’ ability to meet President Barack Obama’s (2009) call for increased higher education of Americans. Likewise, high student attrition presents challenges for community colleges to meet the 21st Century Initiative to increase student completion rates 50% by 2020 (American Association of Community Colleges [AACC], 2010). Students enrolled in online courses are more likely to drop out than students enrolled in traditional face-to-face courses (Patterson & McFadden, 2009). Forty-three percent of students enrolled in online courses drop out compared to 11% of students enrolled in traditional face-to-face courses. Therefore, high student attrition reduces potential level of student access to higher education and successful course and program completion. Further research is needed to investigate the high rate of attrition in online higher education courses at community colleges which negatively impacts student success and institutional outcomes. Students who do not receive the necessary education and degree(s) are not prepared to meet the demands of the labor force. Failing to meet the economic demand will result in a shortfall of educated and skilled laborers, which may negatively affect the social and economic state of Americans and the American economy.

**Theoretical Rationale**

Social cognitive theory (SCT), social presence theory (SPT), and the community of inquiry (CoI) speak to the importance of social presence, collaborative learning, social interaction, and student satisfaction with their learning experience. The concept and importance of social presence originates with SCT. SPT focuses on the importance of
social presence and communication. CoI focuses on three tenets of presence in an online course: teaching presence; social presence; and cognitive presence. SCT, SPT, and CoI all play a fundamental role in human interaction and learning of behavior and individual perceptions. The three perspectives further understanding of the formation of student perceptions and their impact on learning and success in a virtual learning environment.

**History of social cognitive theory.** Bandura (1986) states that social cognitive theory (SCT) suggests human behavior is a result of an individual’s continuous reciprocal interaction between personal thoughts, behaviors, and environmental events. Through this continuous interaction between personal, behavioral, and environmental influences, individuals are able to grow and develop as well as adapt and change. Individuals are thought to produce their environment and are not merely a result of their environment. Individual thoughts and feelings have a significant impact on one’s own behavior as well as his or her environment (Bandura, 1989, 1998). Individuals learn behavior through interacting with other individuals and that behavior influences the way an individual interacts with him or her (Bandura, 1977b, 1978). This interaction is dynamic, each impacting how the other will act and then react.

Social cognitive theory (SCT) of human behavior theorizes how children learn behavior in a social context through modeling and observing another’s behavior. Bandura (1986) notes that individuals have a great capacity to learn through observational learning. SCT includes six concepts regarding how an individual’s personal and social behaviors develop: reciprocal determination; behavioral capability; modeling and observational learning; reinforcements; expectations; and self-efficacy.
Through an SCT perspective individuals learn through human interaction and connections in social contexts (Bandura, 2001).

**How social cognitive theory applies to online learning.** Social cognitive theory (SCT) focuses on how individuals learn in various social settings. SCT has significant implications for teaching procedures (Bigge & Shermis, 1992). SCT provides a foundation for online course design to enhance students’ learning. The instructional implications of SCT are that students benefit when provided with frequent opportunities to connect, interact, collaborate, and learn through observation and modeling of desired behaviors. Online instructors should take steps to model the behaviors and cognitive processes they want students to learn (Denier, Wolters, & Benzon, 2014). Instructors need to demonstrate to students that learning the content leads to personal valued outcomes leading to increased self-efficacy. Students will be more active learners when their perceived self-efficacy for learning is high. Instruction needs to be designed to help develop student self-efficacy for learning. Also, instructors need to assist students in becoming self-aware of their observations, judgments, and reactions (Zimmerman, Bonner, & Kovach, 1996; Zimmerman & Schunk, 2001). SCT contends that individuals have the ability to influence their own behavior and the environment with purpose and direction to achieve their goals (Bandura, 2001). Online instructional design strategies based on SCT and creating a social presence may increase student satisfaction and success. This, in turn, may result in lower student attrition in online courses.

**Best practices in traditional learning.** In an effort to improve undergraduate education, Chickering and Gamson (1987) researched best practices in teaching and learning in colleges and universities throughout the United States. Their efforts resulted
in widely acclaimed seven principles of good practice in education. The principles are intended to be used as a guideline to good practice for administration, educators, and students alike. Additionally, when the recommended practices are used simultaneously, they have a greater impact on learning. Good practice “encourages student-faculty contact; encourages cooperation among students; encourages active learning; gives prompt feedback; emphasizes time on task; communicates high expectations; and respects diverse talents and ways of learning” (p. 6). In this study, focus is on applying these principles as seen in collaborative learning and active participation.

Successful online learning environments incorporate Chickering and Gamson’s (1987) good practice to encourage connectedness and cooperation among students and active engagement in learning through frequent student-to-student and student-to-instructor interactions. They also include incorporating opportunities for students to actively participate in learning (Knowles, 1972, 1992; Knowles, Holton, & Swanson, 2015). Additionally, a successful online course incorporates Bandura’s (2001) social cognitive theory to create a social environment conducive to the way students learn through triadic reciprocal determination, modeling and observational learning, reinforcements, and self-efficacy (Bandura, 1986). Therefore, online course designers can facilitate student learning through intentionally creating a virtual environment that utilizes these principles of social learning. Through intentional instructional design and instructor presence, student learning is enhanced (Garrison & Cleveland-Innes, 2005).

Statement of Purpose

The intent of the study is to examine to what extent, if any, does the level of students’ perceptions of social presence, collaborative learning, social interaction, and
satisfaction with their learning experience change as a result of the utilization of a student team-based instructional course design strategy in an online undergraduate course. There is limited research addressing course design, specifically the utilization of a student team-based instructional course design strategy, within an online course and students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction with their personal learning experience. Additionally, the study examines the need for the assessment of instructional design strategies and delivery of instruction in an online course. There is a need for assessment of instructional design strategies and the effectiveness of assessing students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning experience in an online course. The purpose of the study is to collect data to demonstrate application of an online course instructional design assessment model to determine if the online course development, delivery, and evaluation tends to the promotion of social presence.

**Research Questions**

The study proposed to answer the following questions:

1. To what extent, if any, does the level of students’ perceptions of social presence change as a result of the utilization of a student team-based instructional course design strategy for 5 weeks in an online undergraduate course?

2. To what extent, if any, does the level of students’ perceptions of collaborative learning change as a result of the utilization of a student team-based instructional course design strategy for 5 weeks in an online undergraduate course?
3. To what extent, if any, does the level of students’ perceptions of social interaction change as a result of the utilization of a student team-based instructional course design strategy for 5 weeks in an online undergraduate course?

4. To what extent, if any, does student satisfaction with their learning experience change as a result of the utilization of a student team-based instructional course design strategy for 5 weeks in an online undergraduate course?

5. After implementing instructional course design strategies to enhance student learning in an online course, how can social cognitive theory, social presence theory, and community of inquiry provide the foundation for better assessing the online learning environment?

Significance of the Study

As the number of students enrolling in online courses continues to increase, higher education leaders, online instructional course designers, and online course instructors are concerned with the high cost of student attrition (Liu, Gomez, Khan, & Yen, 2007). The significance of the study is to inform online course designers of the importance of the utilization of a student team-based instructional course design strategy on increasing students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning experience in an online course in an effort to decrease student attrition.

Furthermore, this research informs higher education leaders of the importance of online instructional design strategies and creating a social presence in an online course to aid in student satisfaction and success. Approximately 66% of public, private nonprofit,
and private for-profit education leaders believe online education is critical to the success of their organization (Allen & Seaman, 2011). This rate reflects a steady increase from 63% in 2010. Additionally, the rate of higher education executive leaders in public education institutions who believe online education is critical to the success of their organization continued to steadily increase. In comparison of 2009, 2010, and 2011, the percentage of public higher education leaders who reported online education as being critical to the long-term strategy of their institution increased respectively from approximately 76%, 77%, and 79%. Three surveys with presidents and chancellors for the Association of Public and Land-Grant Universities Sloan National Commission on Online Learning revealed approximately two-thirds of responding educational leaders reported their institution believes online programs are strategically important.

Therefore, informing higher education leaders, online course designers, and online instructors of the importance of creating a social presence in an online course is significant. Instructional design strategies that create or increase students’ perceptions of social presence will enhance students’ perceptions of their overall satisfaction with their learning experience. Online learning environments that encompass the components of collaborative learning and student-to-instructor and student-to-student interaction increase student satisfaction with their learning experience. Assessment of instructional design strategies and their effect on students’ perceptions of social presence, collaborative learning, student interaction, and satisfaction with their learning experience is important to decreasing high student attrition in online courses. Instructional design strategies play a significant role in creating social presence in a virtual environment and,
therefore, have the potential to increase student satisfaction and success in the online learning environment.

**Definitions of Terms**

The following are definitions of terms that are used throughout this study:

*Access* – gaining entry and receiving the benefit of the entrance.

*Attrition* - a decrease in the number of students enrolled in a course from the beginning to the end of the course.

*Blended or hybrid course* - a combination of traditional campus face-to-face and an online course with between 30% to 80% of the course held in an online environment (Allen & Seaman, 2011). Thus, 20% to 70% of a blended or hybrid course is held on campus.

*Collaborative learning* - working and solving problems with others to increase individual and group understanding through interaction with others with varied upbringings and experiences to facilitate learning.

*Community colleges* - regionally accredited public 2-year colleges that primarily award associate degrees (AACC, 2015a).

*Connectedness* - having social relationships, involvement, and interactions between students.

*Instructional design* - systematic presentation of instructional strategies and activities based on theory to ensure the quality of instruction and enhance the learning environment.
Online course - a course that has a minimum of 80% of the course held in an online environment (Allen & Seaman, 2011). In this context, 100% of the course is held in an online environment.

Social interaction - a student’s actions and reactions to his or her instructor and classmates; this includes communication, exchanging information, cooperative learning, and competition.

Social presence - a student’s ability to project himself or herself socially and effectively in an online course leading to connectedness to his or her instructor and classmates.

Student satisfaction – a student’s perception towards his or her college experience and perceived significance of the education that he or she receives from the college (Astin, 1993). In this context student satisfaction also refers to a student’s perceived perception of self-worth, fulfillment, gratification, and contentment with the benefit of the learning experience.

Traditional face-to-face course - a course scheduled to meet in a classroom with an instructor at specific dates and times with a minimum of 30% to 70% of the course held on campus (Allen & Seaman, 2011).

Chapter Summary

The popularity and number of online course offerings at community colleges continue to increase in order to meet the demands of society (Moore, 2014). There is a significant increase in the number of students enrolled in at least one online course in higher education (Allen & Seaman, 2011). Colleges are adding more online courses to accommodate the growth in online enrollment; however, attrition rates are higher in
online courses than in campus courses (Carr, 2000; Patterson & McFadden, 2009; Moody, 2004; Xu & Jaggars, 2013). Therefore, high attrition reduces the potential level of student access to higher education and successful course and program completion. There is limited research addressing course design and instruction and students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction in an online undergraduate course. Creating social presence in online courses may result in enhanced student satisfaction, decreased student attrition, and increased student success.

The study explores the utilization of a student team-based instructional course design strategy and students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning experience in an online undergraduate course. The assessment of an instructional course design strategy and its effect on students’ perception of social presence, collaborative learning, social interaction, and satisfaction with their learning experience is important for the development of an online course instructional design assessment model. Assessing students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning experience perceived in an instructional course design strategy will aid in identifying instructional design strategies where students’ perceptions of social presence are high. Utilizing instructional design strategies that foster social presence will aid in increasing student success in an online course and thus decrease student attrition.

The following is a brief summary of the remaining chapters. Chapter 2 provides a review of research to aid in understanding the dissertation topic and problem of attrition in online undergraduate courses at community colleges. After review of community
colleges and online instruction, the literature review examines social presence, collaborative learning, social interaction, and satisfaction in online courses. The theoretical framework and evolution of social cognitive theory, social presence theory, and community of inquiry, and social presence measures are examined. The impact social presence plays on student attrition in online courses is discussed. The chapter concludes with a review of instructional course design. Chapter 3 includes detailed information on the research methodology, context, participants, instruments used in data collection, and the procedures used for data collection and analysis. The chapter concludes with a detailed description of the intervention, student team-based instructional design strategy. Chapter 4 includes a detailed description of the research results. Descriptive statistics are used to describe and summarize the study data. Data analysis and findings are presented. Lastly, chapter 5 includes implications of the findings, a new model of assessment, and limitations. Several recommendations for improving practice, informing policy, and future research are included.
Chapter 2: Review of the Literature

Introduction and Purpose

The review of the literature contains empirical research aiding in increased understanding of the dissertation topic and problem of attrition in higher education online undergraduate courses at community colleges. A major challenge in online education is creating a social presence between students and instructor (Dow, 2008) to facilitate student satisfaction and success. As online course offerings continue to expand meeting the demands of society, there is a greater focus on designing and instructing online courses that promote student satisfaction and success. The research literature suggests that creating a social presence in an online course may increase student connectedness and satisfaction, hence reducing online course attrition. There are a number of studies examining attrition rates in online courses; however, there is limited research addressing the use of online course instructional design elements to make a concerted effort to increase collaborative learning and form student-to-student and student-to-instructor connections in an online course to facilitate social presence and student satisfaction.

After a review of community colleges and online instruction, the literature review frames the dissertation topic by examining social presence, collaborative learning, social interaction, and satisfaction in online courses. The theoretical framework and evolution of social cognitive theory, social presence theory, and community of inquiry, and social presence measures are examined. Differences between online courses and traditional face-to-face courses are included. Also, the impact social presence plays on student
attrition in online courses is discussed. The chapter concludes with a review of instructional course design.

**Reviews of the Literature**

Quality higher education in America has been on a steady decline. America, once number one in the world, leading the world in economic and social advancements, has decreased in higher education attainment for individuals ages 25-34 to its current state of number 14 (Organisation for Economic Co-operation and Development [OECD], 2012). In 1995, America was ranked 2nd in the world for higher education degree attainment. By 2010, America had dropped to 13th. The American people and economy have seen a significant decrease in the middle class (Autor & Dorn, 2013; Autor, Katz, & Kearney, 2006) throughout this educational decrease. The top 1% of Americans take home approximately one quarter of the nation’s income, tripling their growth rate since 1976 (Shaw & Stone, 2012). The middle class has decreased over the past decade (Autor & Dorn, 2013; Autor et al., 2006).

While this current state of educational decline (The National Center for Public Policy and Higher Education, 2011) is a national concern, American leaders have strived to improve the education system (Spring, 2016). The creation of community colleges resulted from President Harry S. Truman’s United States President’s Commission on Higher Education, which joined technology and junior colleges (United States & Zook, 1947). The Commission’s charge was to examine the current state of American higher education and increase access for all those who were able and seeking education. The community college focus was on access to higher education that would lead to equal access to employment and opportunities to improve standard of living. The American
education system has made an effort to supersede and advance social justice in the face of the American social and economic state. Pathways to education, as well as degree attainment, have become paramount and the primary focus of American leaders, organizations, and philanthropists in an effort to improve social equality and the American economy overall (AACC, 2010; “Who We Are,” n.d; Obama, 2009).

Community colleges. Since its inception in the early 1900s, community colleges in the United States have attracted many students (Beach, 2010). Traditionally, community colleges have appealed to students seeking technical or vocational education, students who may not have excelled in high school, those entering or re-entering the workforce, and students wishing to save money on undergraduate coursework before entering a Bachelor’s program (CollegeView, 2015). Community colleges have traditionally provided open access to education. Their mission is to serve society by providing an open admission policy (Vaughn, 2000). Community colleges provide access to higher education to all students regardless of race, gender, and social economic status. Community colleges offer students a more affordable alternative to private higher education. The average annual tuition cost of college for a 2-year community college is $3,347.00 per year, one-third less than public 4-year colleges and one-tenth the cost of private 4-year colleges (College Board, 2015a). Thus, community colleges are accessible and an affordable avenue to higher education for many students.

Community colleges’ commitment to accessible, affordable higher education affords many students postsecondary education. Since the early 1960s, community colleges have increased in the United States by 150% and community college enrollment increased by 15% (Cohen, Brawer, & Kisker, 2014), affording access to education for

Traditionally, community colleges offered courses only on college campuses. In the last decade, many community colleges have expanded their course offerings to include virtual platforms as well to support the growing demand for online courses. Courses offered on a virtual platform provide students with an additional avenue to access higher education. The increased opportunities for students to enroll in online courses supports community colleges’ mission of open access. Due to increasing demands on students many students choose the convenience and flexibility of online courses. More than half of all students enrolled in online courses are enrolled in online courses at community colleges (Mitchell, 2010).

Approximately 18 million students were enrolled in higher education in fall 2013 (United States Department of Education, 2015). The United States Department of Education National Center for Education Statistics predicts the number of undergraduate students will increase to 19.6 million by the year 2024. Furthermore, approximately seven million students were enrolled in community colleges in fall 2013. Approximately 10% were exclusively enrolled in online courses. The anticipated growth in community college enrollment solidifies the importance for community colleges to continue to expand online course offerings to maintain accessible and affordable education to students for years to come.
President Obama (2009) stressed the need for more Americans to have a postsecondary education to meet the labor demands of the 21st century. “In a global economy, where the most valuable skill you can sell is your knowledge, a good education is no longer just a pathway to opportunity, it is a prerequisite.” Community colleges are a viable option to provide affordable and equal access to postsecondary education, especially for low-income students (College Board, 2015a; CollegeView, 2015; Vaughn, 2000). President Obama made the push for free community college to all who maintain minimum performance guidelines furthering access to higher education.

United States Secretary of Education, Margaret Spelling (2006), reported the need for increasing student community college completion in the United States. Today community colleges offer accessible, affordable education with an increased focus on successful completion (Obama, 2009). In response to President Obama’s call for increased higher education of Americans, an agreement was made between six national community college organizations (American Association of Community Colleges, Association of Community College Trustees, Center for Community College Student Engagement, League for Innovation in the Community College, National Institute for Staff and Organizational Development, and Phi Theta Kappa) to increase student completion rates by 50% by 2020 (AACC, 2010). These organizations serve 1,200 community colleges in the United States. Additionally, the American Association of Community Colleges (AACC) created the 21st Century Initiative (AACC, 2015b). The 21st Century Commission on the Future of Community College’s final report also called for community college completion rates to increase by 50% by 2020 (AACC, 2014).
Community college has undergone several changes since its inception in the early 1900s. Holistic education is incumbent in community colleges (Cohen et al., 2014), as is community colleges’ goal of developing civic-minded democratic citizens (Cohen et al, 2014; Ronan, 2012). Community colleges seek to aid students in the development of societal values and respect for cultural diversity through education. Through education individuals are able to obtain the necessary knowledge to become responsible members of society. The initial purpose of community colleges was to develop civic-minded citizens. Although still a part of community college’s breadth, a notable change is the shift to accountability and documentation of student and institutional outcomes which began approximately 25 years ago and has gained more focus in recent years (Cohen et al., 2014). Over this time American leaders began to require documentation of access to education as well as community college, program, and student goals and outcomes. Documentation on student completion rates and contributions to social and economic responsibilities are now included. Graduation rates are now a measure of community college effectiveness. Focus on increasing the number of individuals who complete college is at the forefront of American educational leaders, yet college completion rates remain low (College Board, 2008; Kraemer, 2013; United States Department of Education, 2013). Less than 30% of students enrolled in community colleges earned a degree in four years of starting college. Only 13% of students earned a degree in two years and only 22% earned a community college degree within three years (Kraemer, 2013; United States Department of Education, 2013).

The American higher education sector is concerned with outcomes assessment. In addition to President Obama’s (2009) call for increased education of all Americans,
private sector organizations and philanthropists joined the quest and have made substantial investments to the assessment and improvement of the American higher education sector. The Lumina Foundation supports education and has called for the increase to 60% of individuals in America with a higher education degree by 2025 (Lumina, 2012). The Bill and Melinda Gates Foundation also supports increased education and degree attainment of Americans (www.gatesfoundation.org, n.d.). Access to education provides the pathway out of poverty. The Bill and Melinda Gates Foundation’s goal is to ensure that Americans with the fewest resources have access to education and life skills to succeed in life. The Foundation believes that “by giving people the tools to lead healthy, productive lives, we can help them lift themselves out of poverty” (www.gatesfoundation.org/home, n.d.).

Society benefits with increased education of its citizens (Bloom, Hartley, & Rosovsky, 2007; Cunningham, 2006; Gutman & Ben Porath, 2014; Hout, 2012; Spring, 2016). Benefits include increased tax revenue, decreased need for social programs, decreased number of individuals incarcerated, increased civic engagement, (Cunningham, 2016), increased economic success, improved health (Cunningham, 2016; Hout, 2012), and increased skilled labor force (Gutman & Ben-Porath, 2014; Hout, 2012; Spring, 2016). The Campaign for College Opportunity (2012) estimates that for every dollar the state invests supporting higher education the net return on investment is $4.50. Furthermore, individuals who receive a college education have an economic advantage (Cunningham, 2016; Hout, 2012). College students under 25 years old who were employed during their last year of college doubled their earning three years after program completion (Sanchez & Laanan, 1998). The median salary for an individual who
 Completes a community college associate’s degree program is $7,500 higher than an individual with a high school diploma (United States Department of Education, 2015). The earnings ratio between a community college graduate and an individual who did not graduate from high school is 3 to 1 (College Board, 2015c). It is estimated that a college-educated individual will earn $400,000 more in his or her lifetime than an individual without a college education. Therefore, community college education is a viable pathway out of poverty. Community colleges improve the social and economic status of America (Cunningham, 2006).

Online education. The World Wide Web emerged in 1992 setting the way for a new paradigm in learning. During this time there was much innovation and growth in online education. Colleges, universities, instructors, and students eagerly embraced this new paradigm. Table 2.1 provides a timeline of online education history. While many believe online education recently emerged, it actually began with the invention of e-mail communication and computer conferencing some time ago. Additionally, computer networking systems created a connected platform providing a social and cognitive environment (Hafner & Lyon, 1996).

In 1984, de la Sola Pool expressed computer networking was one of four major inventions to date that changed the way human beings communicate, therefore altering society. He compared the invention of communicating via computer networks to significant advancements in society such as the invention of writing, printing, and telegraphy (de la Sola Pool, 1984). E-mail and computer conferencing provided a collaborative learning environment for online education. Both created a venue for communicating and exchanging information (Hiltz & Turoff, 1978). During the 1980s
computer conferencing in higher education courses aided in the development of collaborative learning in the new online education paradigm (Bradsher, 1996; Hiltz & Wellman, 1997; Khan, 1997). These early developments led to the first online course in 1981.

Table 2.1

Timeline of Online Education

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1971</td>
<td>Invention of e-mail.</td>
</tr>
<tr>
<td>1972</td>
<td>Invention of computer conferencing.</td>
</tr>
<tr>
<td>1981</td>
<td>First online course in adult education.</td>
</tr>
<tr>
<td>1982</td>
<td>First online program in executive education.</td>
</tr>
<tr>
<td>1984</td>
<td>First online undergraduate course.</td>
</tr>
<tr>
<td>1986</td>
<td>First online degree program in higher education.</td>
</tr>
<tr>
<td>1989</td>
<td>Internet is underway.</td>
</tr>
</tbody>
</table>

There are many studies comparing online courses to traditional face-to-face courses (Dutton, Dutton, & Perry, 2001; Moore, 2014; Zhan & Mei, 2013). Two-thirds of academic leaders reported that online course learning outcomes are comparable or better than in traditional face-to-face courses (Allen & Seaman, 2011). This proportion of online learning outcomes compared to face-to-face outcomes has been fairly consistent over the past decade. Additionally, academic leaders reported they believed the level of student satisfaction is the same or higher in an online course as opposed to a traditional face-to-face course.
Zhan and Mei (2013) note that data collected from the Academic Self-Concept Scale, Social Presence Inventory, and the Course Interest Scale reveal students in online courses perceived greater social presence in traditional face-to-face courses than the online courses. Moore (2014) reports that there is a great urgency for social presence in an online course in order to avoid students’ feelings of isolation. Moore notes that when students feel isolated it will negatively impact students’ ability to learn. Similarly, Dutton, Dutton, and Perry (2001) report that social presence and instructor-to-student and student-to-student interaction, support, and encouragement is less in online courses as opposed to traditional face-to-face courses. Higher education leaders surveyed indicated they believe that traditional face-to-face courses provide a better platform for student-to-student communication than online courses (Allen & Seaman, 2011). Dutton et al. note that, although the online students outperformed the traditional face-to-face students, online course attrition rates were higher than the traditional face-to-face course.

Another difference in modes of instruction is the flexibility. Carr (2000) notes that online courses offered more institution, instructor, and student flexibility than traditional face-to-face courses. In addition, scheduling flexibility was reported to be significantly greater in online courses as opposed to traditional face-to-face courses.

A critical issue facing community colleges is student attrition (Aragon & Johnson, 2008; Liu et al., 2009; Patterson & McFadden; 2009; Xu & Jaggers, 2013). Attrition rates are higher in online courses than traditional face-to-face courses (Patterson & McFadden, 2009; Xu & Jaggers, 2013). In some courses, attrition rates were 6 to 7 times higher in online courses than in traditional face-to-face sections (Xu & Jaggers, 2013). Patterson and McFadden (2009) note differences in attrition between online and campus
courses. In a study consisting of 640 students there was an 11% dropout rate in face-to-face courses versus a 43% dropout rate in the online course section of the same course.

Social presence is defined numerous ways throughout empirical research studies. Bandura’s social cognitive theory (SCT) theorizes that individuals learn in the context of their social environment. Picciano (2002) defines social presence as a “student’s sense of being in and belonging to a course” (p. 22). Garrison, Anderson, and Archer (2000) describe social presence as the ability to project oneself socially and emotionally in an online course. Short, Williams, and Christie (1976) state social presence is the “degree of salience of the other person in a mediated communication and the consequent salience of their interpersonal interactions” (p. 65). Likewise, Tu and McIsaac (2002) define social presence as “the degree of feeling, perception, and reaction to another intellectual entity in the computer-mediated communication environment” (p. 146). For the purpose of this study, social presence is defined as a student’s ability to project himself or herself socially and effectively in an online course leading to connectedness to the course instructor and classmates.

Social presence is a student’s ability to project himself or herself socially and effectively in an online course leading to connectedness to his or her instructor and classmates. Liu et al. (2009) state that social presence is a significant factor impacting student attrition in an online course. Students with a positive perception of social presence were more likely to complete an online college course. Xu and Jaggars (2013) suggest that the absence of social presence in an online course contributes to high attrition. Students expressed a lack of social presence and feelings of isolation in online courses compared to traditional face-to-face courses (Carr, 2014; Moore, 2014). Tu and
McIsaac (2002) note that students’ perceptions of social presence had a direct positive influence on student-to-student and student-to-instructor interaction in an online course. Garrison et al. (2010), using the Community of Inquiry Survey, found social presence was expressed as an atmosphere of trust, open communication, and cohesiveness between the students and instructor.

Social presence plays an integral part in successful online courses (Carr, 2014; Garrison et al., 2010; Tu & McIsaac, 2002) but creating a social presence in an online course is a major challenge (Dow, 2008). Social presence is noted through student-to-instructor and student-to-student interaction and student connectedness. Carr suggests social presence in an online course can be enhanced by providing frequent opportunities for student-to-instructor and student-to-student interactions and student engagement. Similarly, Tu and McIsaac (2002) suggest that promoting informal relationships using emoticons, greetings, and praise in an online course provides avenues for student-to-student and student-to-instructor interaction which may lead to increased interactions and a student’s perception of social presence in an online course. Likewise, Garrison et al. (2010) note that students’ perceptions of social presence is important to provide an environment for learning in order to increase integration within the course. Additionally, social presence helps students develop learning strategies similar to face-to-face courses and, in turn, will promote success in an online course (Mackey & Freyberg, 2010).

The theory of social presence is continually evolving. Researchers began studying social presence in telecommunication and computer-mediated communication research in the 1970s and 80s and continued in online instruction in the 1990s through present day. Despite the agreed-upon importance of social presence in learning,
definitions of social presence vary. Social presence researchers do not agree on the
definition of social presence (Tu, 2002) nor its measure (Lowenthal, 2009). Furthermore,
although researchers credit Short, Williams, and Christie as the initial investigators of
social presence, there are various views where social presence theory derived. Tu (2000)
credits social presence theory as a transition for social learning theory, whereas Short et
al. credit the transition from communication theory.

**Theoretical framework.** Social cognitive theory, social presence theory, and the
community of inquiry speak to the importance of social presence, collaborative learning,
social interaction, and student satisfaction with their learning experience in an online
course. The following section discusses each perspective and its influences on learning.

**Social cognitive theory.** Canadian-American Psychologist Albert Bandura is a
prominent researcher and proponent of social cognitive theory (SCT). SCT theorizes
human behavior is a result of an individual’s continuous reciprocal interaction between
personal thoughts, behaviors, and environmental events (Bandura, 1986). The
continuous, multi-directional interaction between these three areas influences how an
individual behaves. Through this continuous interaction between personal, behavioral,
and environmental influences, individuals are able to grow and develop as well as adapt
and change. In this theory, individuals are thought to produce their environment and are
not merely a result of their environment.

Social cognitive theory (SCT) came to fruition in the mid-1980s, although it
originates from social learning theory (SLT) in the 1960s. SLT is one of the most well-
known, comprehensive, and influential models for understanding human behavior
(Roeckelein, 1998). SLT origin is in the works of behaviorists B. F. Skinner, Ivan
Pavlov, and J. B. Watson and closely relates to Skinner’s principles of operant conditioning. Skinner’s operant conditioning theorizes that behavior is a direct result of environmental events. The major difference between Bandura’s SCT and SLT is that SCT postulates individual thoughts and feelings have a significant impact on their behavior as well as their environment.

Social learning theory (SLT) explains how children learn behavior in a social context through modeling and observing another’s behavior. The theory evolved to the social cognitive theory (SCT) of human behavior. Originally SLT consisted of five concepts regarding how an individual’s personal and social behaviors develop: Reciprocal determination; behavioral capability; modeling and observational learning; reinforcements; and expectations. As the theory evolved to the SCT a sixth concept was added: self-efficacy (Bandura, 1986).

Reciprocal determination is the concept that an individual’s behavior causes a social reaction which then may cause the individual to change his or her own behavior (Bandura, 1977b, 1978). Individuals learn behavior through interacting with other individuals and that behavior influences the way an individual interacts with them. This interaction is dynamic, each impacting how the other will act and then react. This leads to the continuous reciprocal interaction between the personal, behavioral, and environmental influences that social cognitive theory identifies as triadic reciprocal causation.

Bandura notes that individuals have a great capacity to learn through observational learning. Social cognitive theory (SCT) states there are four procedures that must take place in observational learning. An individual has to notice and observe
the modeled behavior, translate the modeled behavior to remember it, note the consequences of the modeled behavior, and understand and determine the appropriate course of action, to imitate the behavior or not. When the modeled behavior results in punishment the likelihood of the observer imitating the behavior decreases, vicarious punishment. When the modeled behavior results in positive reinforcements the likelihood of observer imitating the behavior increases, vicarious reinforcement (Bandura, 1965, 1969, 1973).

Bandura (1977a, 1982) notes self-efficacy is an individual’s belief that they are able to achieve desired results from their own actions and hence control the course of their own lives. Self-efficacy motivates people, which leads them to accomplish desired results. If people do not believe they can achieve their desired results they will not be motivated to try or succeed in difficult situations. Individuals who are successful have high self-efficacy (Bandura, 1986).

Individuals self-regulate their behaviors through their thoughts (Bandura, 1977b, 1989). Self-regulation involves the process where an individual cognitively punishes and reinforces his or her own behavior based on whether desired results are met. Individuals create goals and follow behavior that will help achieve desired outcomes while avoiding undesirable outcomes. Individuals grow and accomplish desired outcomes while acting morally. Individuals avoid behaviors that violate their values and standards.

Although there are many supporters of social cognitive theory there are a few criticisms of the theory. Cahill (1987) contends that Bandura’s social cognitive theory (SCT) contains extensive research on human behavior but focus is placed on individuals who are thought to be self-reflective and self-regulating. Cahill states this is not an
automatic response to social and environmental events. Cahill also notes that Bandura’s SCT triadic reciprocal causation has not been thoroughly analyzed. The theory does not clarify the extent to which each area influences behavior or if one area has more of an influence than another. Until this is done it is a preliminary finding and hypothesis.

Another main criticism of social cognitive theory (SCT) is many aspects of the theory do not connect to create an interconnected theory of behavior. For example, a connection between observational learning and self-efficacy has not been identified. SCT is very broad and many of its components are not fully understood (Kazdin, 2000).

Another concern is that social cognitive theory does not consider an individual’s age and developmental stage. It also does not explain how changes in an individual’s motivation and personality affect his or her behavior (Kazdin, 2000).

Additionally, social cognitive theory (SCT) assumes changes in the environment lead to changes in the person, which may not be the case. Lastly, a significant criticism of SCT is emphasis is on the process of learning in social contexts and biological influences are ignored (“Evaluating the Social,” 2014).

Social presence theory. Short, Williams, and Christie (1976) initially investigated social presence in telecommunications in 1976. Short et al. state that social presence is the “degree of salience of the other person in a mediated communication and the consequent salience of their interpersonal interactions” (p. 65). The principle behind social presence theory is that the communication medium social effect is based on the degree of social presence the user experiences with that medium. Therefore, social presence is subjective, the result of the communication medium and the communicator’s attitude, comfort, and ease of use of the medium. A person experiences a high level of
social presence when he or she has a greater sense of awareness of the person with whom he or she is communicating. Furthermore, the quality of the communication medium affects the communicator’s perception of social presence. There is a communication continuum where media such as video and synchronous communication result in a communicator’s feeling a high sense of social presence. Media such as audio and asynchronous communication result in a communicator’s perception of low social presence. The communication medium’s ability to project verbal and nonverbal cues directly contributes to the degree of social presence the communicator perceives. Communicators describe communication mediums perceived to have a high level of social presence as warm and personal compared to cold and impersonal when perceived to have a low level of social presence.

Short et al. (1976) further based their research on social presence on the concept of teacher immediacy behaviors and communication. Communication consists of intimacy (Argyle & Dean, 1965) and immediacy (Wiener & Mehrabian, 1968). The feeling of intimacy in communication relies upon verbal and nonverbal communication features in face-to-face communication such as communication topics and eye contact, facial features, and expressions (Argyle & Dean, 1965). Immediacy is the psychological distance a communicator places between him or herself and the person with whom he or she is communicating (Weiner & Mehrabian, 1968).

Gunawardena and Zittle (1997) research social presence and agree with the findings of Short et al. that the quality of the communication medium affects the communicator’s perception of social presence. Gunawardena and Zittle state that social presence refers to “the degree to which a person is perceived as real in mediated
communication” (p. 9). This differs from Short et al. (1976) in that Gunawardena and Zittle believe that social presence is perceived through not only the communication medium but the interactions between the communicators. The communicator’s presence in a sequence of interaction fosters increased social presence. The sequence of interaction is similar to Bandura’s social cognitive theory triadic reciprocation concept. Therefore, Gunawardena and Zittle suggest students who engage in asynchronous communication with instructors and classmates utilize immediacy behaviors such as storytelling and emoticons (icons of facial expressions or textual descriptions depicting the writer’s mode), which fosters social presence in an online course.

Likewise, Tu and McIsaac (2002) define social presence as “the degree of feeling, perception, and reaction to another intellectual entity in the computer-mediated communication environment” (p. 146). Tu (2001) postulates that there is a transition from social cognitive theory in online learning to social presence theory. Social presence is a critical element to promote interaction in an online course (Tu, 2000). There are three elements of social presence: Social context; online communication; and interactivity (Tu, 2000, 2001). Social presence is formed through interaction and communication in the social context of an online course. Through this ongoing interaction and communication learning takes place.

An important factor in student satisfaction in an online course is social presence. Swan and Shih (2003) note a positive correlation between students’ perceptions of social presence and student satisfaction. Richardson and Swan (2003) echo these findings and report that social presence is a significant predictor of student satisfaction in an online course. Additionally, students who perceived a greater sense of social presence felt
connected to classmates and the instructor, and therefore experienced a greater sense of student satisfaction (Seiver & Troja, 2014).

Frequent feedback and interaction with the instructor through both public discussion posts and private comments and e-mails resulted in greater student satisfaction (Coaplen, Hollis & Bailey, 2013). In fact, students perceived faculty responsiveness as the most important variable in satisfaction in an online course (Herbert, 2006). Students expect faculty to interact and support them throughout the course regardless of the venue. Lack of instructor presence and delay in instructor response to student questions left online course students less satisfied (Summers, Waigandt, & Whittaker, 2005). Also, online students expressed significantly less satisfaction with the online course than the traditional face-to-face course in the areas of instructor’s explanation, enthusiasm, openness and concern towards students and interest in student learning.

Community of inquiry. Rourke, Anderson, Garrison, & Archer (1999) define social presence as the ability of learners to project themselves socially and emotionally in a community of inquiry. Garrison et al. (2000) developed an instructional design model for online learning to provide a framework for an online learning environment. The community of inquiry model (Figure 2.1) consists of three areas: Cognitive presence; social presence; and teaching presence. Through coding computer conferencing transcripts, key words were identified as indicators of each area of presence. Rourke et al. state that social presence aids in creating an educational experience where the interaction of the three areas of presence creates discourse leading to learning. In the community of inquiry model learning occurs in a social context or community of inquiry of instructors and students.
A necessary condition to create social presence in an online course is effective communication (Richardson & Swan, 2003). Richardson and Swan (2003) note students’ perceptions of social presence increased through interactions and communication, both with instructor-to-student and student-to-student. In an earlier study, Rourke et al. (1999) also note that instructional media enhanced communication and frequent interaction between student-to-student and student-to-instructor in an online course. Frequent interaction between student-to-student and student-to-instructor resulted in a positive correlation between communication and social presence in an online course. Furthermore, Moore (1992) notes that frequent communication leads to increased interaction between student and instructor limiting the communication gap, which leads to increased learning.

Additionally, students’ perceived social presence affected their level of communication (Leh, 2001). When students perceived high social presence they communicated more frequently. When students perceived low social presence they
communicated less frequently. Likewise, Angelaki and Mavroidis (2013) also note that communication in an online course directly impacted students’ perceptions of social presence. Students perceived forming social relationships, student-to-student interaction, and being part of a group as the most important factors in effective communication with their classmates. Additionally, Rovai and Barnum (2003) note that when student-to-student interaction increased students expressed increased motivation and commitment to learning. Frequent communication from instructors promoted feelings of connectedness among online students and greater perceived social presence (Hosler & Arend, 2012; Karaksha, Grant, Anoopkumar-Dukie, Nirthanan, & Davey, 2013). Online communication impacted student attrition (Serwatka, 2005).

Many empirical research studies note the importance of collaborative learning in advancing knowledge acquisition to greater levels than traditional instruction. Kuh (2008a) describes the goals of collaborative learning as “learning to work and solve problems in the company of others, and sharpening one’s own understanding by listening seriously to the insights of others, especially those with different backgrounds and life experiences” (p. 10). Through collaborative learning students are afforded the opportunity for frequent interaction with the instructor and classmates. Students are able to experience learning through different settings. These experiences enrich the learning process by providing opportunities for theory integration, synthesis, and application (Kuh, 2008b). Collaborative learning motivates students and promotes confidence (Stacey, 1999). Furthermore, collaboration helps students develop group connections and establish social presence that enables student learning.
Garrison et al. (2010) note that social presence directly impacted cognitive presence which was a main factor contributing to an environment for learning. Social presence enhanced learning and promoted student connectedness, which led to improved grades in an online course (Leh, 2001; Lomicka & Lord, 2007; Summers et al., 2005; Wei et al., 2012). Wei et al. (2012) suggest that social presence directly affects students’ perceptions of learning which in turn directly affects their academic achievement as measured by successful completion of the course with a passing grade. Lomicka and Lord (2007) note the impact of discussion board reflection journaling on social presence and academic achievement. The discussion board activity built social presence in an online course and increased academic performance and course grades.

**Social presence measures.** Just as there are many schools of thought and definitions of social presence there is no agreement of a measure of social presence. Gunawardena and Zittle (1997) developed the Social Presence Scale. Tu (2002) developed the Social Presence and Privacy Questionnaire. Furthermore, Kreijns, Kirschner, Jochems, and Buuren (2011) developed a self-reporting Social Presence Scale.

**Instructional course design.** In some cases, it is the course design that promotes the perception of social presence. Online course design impacted student attrition (Serwatka, 2005). Twenty-eight percent of students note course design as their reason for not completing an online course (Aragon & Johnson, 2008). The students note a lack of social interaction activities and lack of information regarding when and how communication would occur as reasons for not completing the course. Students do not complete an online course due to poor online course design (Rochester & Pradel, 2008). Students note feeling isolated, lack of student-to-student and student-to-instructor
interaction, and lack of social presence as significant factors influencing their decision to
not complete an online course.

Carr (2014) found that the use of teamwork to complete assignments was a
worthwhile tool for student connectedness in an online course. Greater student
connectedness led to greater perceptions of social presence, which led to reduced attrition
in an online course. Over a three-year study, as more student-to-student and student-to-
instructor tools were added students reported a greater sense of social presence.
Furthermore, course design that included remote video and audio connection and
interactive video conferencing increased social presence. Earlier research also notes that
course design including social activities and tutor-student platforms increased
communication and contributed to a greater sense of social presence (Angelaki &
Mavroidis, 2013). In addition, students in courses with a group discussion board
reflection journal reported a greater perception of social presence (Lomicka & Lord,
2007). These students note that frequent group interaction and support contributed to
creating social presence.

Other important aspects of course design impact social presence. For example,
courses with clear design, easy-to-follow layout, organization, understandable goals, and
relevant assignments all contribute to creating social presence online (Hosler & Arend,
2012). Likewise, according to Song, Singleton, Hill, and Koh (2004), course designs that
were easy to follow, user-friendly, and include typical technological problems and
appropriate remedies contribute to fewer feelings of isolation among students and greater
feelings of social presence. Additionally, course design with learning communities also
developed social presence (Hall & Herrington, 2010). The use of frequent chat sessions,
interactive face-to-face orientation, and group projects contributed to a sense of community and a greater sense of social presence online. Additionally, students report greater comfort developing relationships and interacting with classmates due to the face-to-face orientation session. Frequent student-to-student interaction at set intervals enhanced a sense of community among students leading to stronger bonds between students and increased connectedness (Lord & Lomicka, 2008).

Instructional design provides a foundation for successful student team-based activities. There are many benefits of student team-based instructional design in face-to-face courses (Almond, 2009; Ohl & Cates, 2006). Students’ interpersonal communication and conflict management skills increased when working in teams (Almond, 2009). Students also experienced greater levels of motivation and accountability for learning the course material (Ohl & Cates, 2006). Additionally, students develop critical thinking and problem-solving skills through team-based activities. Online course designers must take the necessary steps to plan, analyze, and develop an online course (Oblinger & Hawkins, 2006) to create a social presence.

Chapter Summary

The popularity and number of online course offerings continue to increase in order to meet the demands of society (Moore, 2014). There is a significant increase in the number of students enrolled in at least one online course in higher education (Allen & Seaman, 2011). Attrition rates are higher in online courses than campus courses (Xu & Jaggars, 2013). More colleges have concentrated efforts to expand online course offerings. As online course offerings continue to expand, there will be greater focus on decreasing course attrition rates. The research literature discusses the link between social
presence and student satisfaction and success in online courses. Social presence promotes student interaction online (Wei et al., 2012). Social presence and student interaction may lead to successful course completion and lower attrition. Consequently, it is vital for instructors to establish a social presence in online courses to increase student satisfaction and success and decrease attrition (Moore, 2014). Different methods of instruction and instructor tools are necessary to limit attrition in an online course (Serwatka, 2005). Identifying ways to effectively create social presence in online courses may help course designers address the high rate of student attrition and establish an online course model for success. Making a concerted effort to form connections to create social presence online to decrease attrition rates is missing from the research. Further research in this area is warranted.
Chapter 3: Research Design Methodology

Introduction and General Perspective

Community colleges have a long-standing history of affording students with open access to higher education. High attrition in online courses directly impacts many aspects of higher education. Colleges lose money with online course development, instruction, and assessment as well as tuition revenue (Moody, 2004). Revenue loss has a negative impact on colleges’ economic survival (Liu et al., 2009; Moody, 2004; Summers, 2003). Limited public resources increase the call for community college accountability and the appropriate allocation of funds (Allen & Seaman, 2011; Summers, 2003). Accountability is most frequently measured through the lens of institutional effectiveness, financial, enrollment management, and student learning metrics. Regardless of how it is measured, attrition is a significant challenge for community colleges (Summers, 2003). Despite efforts to decrease attrition, it continues to increase. Students enrolled in online courses are more likely to drop out than students enrolled in traditional face-to-face courses (Patterson & McFadden, 2009). High student attrition in online courses at community colleges directly reduces the potential level of student access to higher education. Further research is needed to investigate the high rate of attrition in online undergraduate courses at community colleges that negatively impacts student success and institutional outcomes.

Higher education institutions are expanding the number of online courses in order to meet the demands of society (Allen & Seaman, 2011, Moore, 2014). The number of
students enrolling in online courses continues to steadily increase. Colleges are adding more online courses to accommodate the growth in online enrollment; however, there is limited research addressing the relationship between course design, social presence, and attrition rates. Creating social presence in online courses may result in enhanced student satisfaction, decreased studentattrition, and increased student success. The study answered to what, if any, does the level of students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning experience change as a result of the utilization of a student team-based instructional course design strategy for 5 weeks in an online undergraduate course.

The research design selected for this study was a quasi-experimental quantitative methodology. A quantitative research methodology studies phenomena through collecting and analyzing numerical data (Johnson & Christensen, 2014). Descriptive statistics were used to describe and summarize the study data (Johnson & Christensen, 2014). A quantitative research method was selected to research the relationship between the utilization of a student team-based instructional course design strategy and students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning experience in an online course and in student attrition.

A quasi-experimental research design resembles an experimental design but lacks a treatment and control group and has no random assignment of study participants (Johnson & Christensen, 2014). A quasi-experimental research study examines whether an intervention has the theorized relationship on the study participants. Following this research design the study utilized this approach in examining the relationship of an intervention, the utilization of student team-based instructional course design strategy on
students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning experience in an online course. The research design met ethical considerations as the intervention was offered to all study participants. The study contained a pre-test and post-test allowing a comparison between students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning experience in an online course. The pre-test assessed baseline data prior to the intervention. The following research methods were utilized to study these relationships.

Surveys provide a systematic method to collect data through the use of representative samples of a population. A survey is a consistent tool utilized in quantitative research design to gather data from survey participants (Creswell, 2013). Surveys are designed to collect information and measure perceptions, attitudes, and behaviors and provide statistical data to analyze. For the purpose of this study, survey results were analyzed through descriptive statistics.

This research design was chosen in part due to small sample size and lack of randomization or control group. Additionally, the impact of the independent variable can be evaluated in a natural setting, the online course. The dependent variables are social presence, collaborative learning, social interaction, and satisfaction and the independent variable is the utilization of student team-based instructional course design strategy within the online course.

Research Context

The research study was conducted at a community college in Upstate New York, which currently enrolls approximately 7,149 full-time and part-time students (State University of New York [SUNY], 2015). It was the first community college in New
York State and is one of the 30 community colleges that are part of 64 colleges and universities in the State University of New York education system and is publicly supported and funded. The College offers 2-year degree programs as well as one- and 2-year certificate programs. These programs prepare students for technical and semi-professional careers in business, industry, health care, and many other fields, as well as transfer opportunities to 4-year institutions. Campuses are located at two sites and also include a virtual platform. The College offers approximately 100 online courses each academic year.

During the 2014-15 academic year, fall 2014 through summer 2015, the College offered 125 online courses. In an unduplicated count, there were 2,568 students enrolled in online courses. Many of these 2,568 students registered for more than one online course. The total number of online course registrations was 6,160. Therefore, the average student enrolled in 2.4 online courses during the 2014-15 academic year. The attrition rate in online courses during this time was 11.9%. Furthermore, 30.1% of students who enrolled in an online course during the 2014-15 academic year did not successfully complete the course and either withdrew from the course or earned a grade of “F.” The College is continuing its efforts to expand online course offerings, despite high student attrition and limited student success.

Research Participants

The research participants were comprised of students enrolled in an online undergraduate medical terminology course in the fall 2015. The sample size was 19 students. The course was offered through the Life and Health Science Center under the Allied Health Professions programs. The course was 16 weeks in duration and was
offered completely online via the Blackboard Learn (Bb) Web-based learning management system (LMS). A convenience sample of the entire population of students enrolled in the medical terminology was utilized. In an effort to increase participation a $5 coffee card was offered to participants. Potential participants received an introduction letter to the research study (see Appendix A). A pre-survey (see Appendix B) and post-survey invitation (see Appendix B) and informed consent form (see Appendix C) to participate in the survey through Qualtrics was sent to the potential participants via the Bb LMS online course announcement and College student e-mail. Safeguards were in place through Qualtrics to secure only one submission per participant. All potential participants in the study were over 18 years old. Participants were guaranteed anonymity by providing a direct link to the online survey in Qualtrics. No identifying information was collected.

**Instruments Used in Data Collection**

A survey gathered data on students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning experience in an online course (see Appendix D). As there are many variations in the definition of these variables, there is no single agreed-upon measure. Therefore, the instrument that was used in this study to collect data was a social presence survey utilized by Spears (2012) in a graduate dissertation, “Social Presence, Social Interaction, Collaborative Learning, and Satisfaction in Online and Face-to-Face Courses,” at Iowa State University. Spears constructed the survey from four sources: Social Presence Scale (Gunawardena & Zittle, 1997); Social Interaction instrument (Picciano, 2002); Satisfaction Scale (Gunawardena
Gunawardena and Zittle (1997) developed the Social Presence Scale and Satisfaction Scale as part of the GlobalEd Questionnaire to evaluate and assess the effectiveness of social presence in predicting satisfaction in a computer-mediated communication. The Social Presence Scale consists of 14 items to assess social presence and the Satisfaction Scale consists of nine questions to assess satisfaction. Spears (2012) modified both scales slightly to include verbiage consistent with online instruction. The social presence and satisfaction scales were validated by Gunawardena and Zittle through bivariate correlational analysis comparing the scale with social indicators in mediated communication by Short et al. (1976). Reliability was established through Cronbach’s alpha of .88. The third component, an instrument designed by Picciano (2002) based on a social presence questionnaire developed by Tu (2001), was used to measure interaction and social presence in an online course. Reliability was established through Cronbach’s alpha of .70. Picciano’s survey was adapted by Spears to include general terms to replace specific program terminology. The fourth component, CLSS questionnaire, measures students’ perceptions of collaborative learning, social presence, and satisfaction (So & Brush, 2008). The survey was modified to include verbiage specific to an online course. Reliability was established through Cronbach’s alpha of .85 for the Satisfaction Scale and .72 for the Collaborative Learning Scale. An Iowa State University panel consisting of four experts validated Spear’s constructed social presence survey. The survey uses a five-point Likert scale ranging from strongly agree to strongly disagree (1-strongly agree, 2-agree, 3-neutral, 4-disagree, 5-strongly disagree). A Likert scale, developed by Rensis...
Likert, is a summated rating scale containing multiple items used to measure one abstract construct (Johnson & Christensen, 2014). Using a Likert scale allows respondents to select how strongly they agree or disagree with a statement which limits the chance of respondent bias.

Additionally, a demographic section was included in the social presence survey to collect student gender, age, and race data. For the purpose of this study, Spear’s (2012) survey was modified to include the word course instead of courses and the online learning experience section was removed. The constructed social presence survey aligns with the research questions and provides data to analyze students’ perceptions of social presence, social interaction, collaborative learning, and satisfaction with their learning experience in an online course.

The social presence survey served as the pre-test and post-test for this study. The social presence survey was divided into five sections: social presence; collaborative learning; social interaction; and demographics. The social presence survey consisted of 36 comprehensive questions to measure students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning experience in an online course. Individuals are more likely to participate in a survey based on the ease of operation of the survey. Therefore, consideration for design components enhancing layout and functionality were included. In order to obtain the most reliable, accurate information the survey was reconstructed in a Web-based survey software program, Qualtrics, providing a survey platform that is easy, clear, and concise to use. Participant confidentiality and anonymity were maintained. Survey results were securely stored in Qualtrics throughout the study and protected through a secure log-in process.
Electronic data was stored on an external storage device and will be erased a minimum of three years after the study completion. Physical data was kept in a locked cabinet throughout the research and will be securely disposed of a minimum of three years after the study completion.

**Procedures for Data Collection and Analysis**

Descriptive statistics were utilized to analyze results. Descriptive statistics indicate the frequency, spread or range of data, averages, and comparison of data sets (Creswell, 2013). Quantitative outcome data included the social presence, collaborative learning, social interaction, and satisfaction survey results. Data was statistically analyzed using comparison of means of a single group of data, the pre-test and post-test, through descriptive statistics. This allowed for comparison of the average performance of data from the pre-test and post-test on several dependent variables in order to see if there is a difference in the means. Each section of the social presence survey constituted one variable: Social presence; collaborative learning; social interaction; and satisfaction. The Statistical Package for the Social Sciences (SPSS) predictive analytics software program was utilized to compute the statistics. SPSS provided descriptive statistical data computations and graphics to compute and visually presented with clarity the study data.

During week 10 of the 16-week fall 2015 semester an introduction and consent form describing the study and its benefits was posted in the Blackboard Learn (Bb) learning management system (LMS) course announcements section and e-mailed to students enrolled in an online medical terminology course via the College student e-mail. Also, during week 10 of the semester an invitation to participate and a direct link to the social presence survey was provided to participants in the Bb LMS online course.
announcement section and through the College student e-mail. Additionally, participants received an informed consent information through the Bb LMS online course announcement section and College student e-mail. The intervention was implemented during week 11 of the semester. The intervention constituted the creation of student teams to participate in weekly team-based activities during weeks 11 through 15. All students received the intervention, not just those who opted in. The post-test, the social presence survey, was distributed to students during week 16. Two follow-up reminder announcements and e-mails were sent to participants for the pre-test survey (see Appendix E) and post-test survey (see Appendix F) three and six days after the survey invitation. A $5 coffee card incentive was offered to participants in an effort to increase the response rate. A thank-you announcement was posted and e-mailed to students two weeks after the pre-survey invitation (see Appendix G) and post-survey (see Appendix H) invitation. An announcement and e-mail was sent to participants at the conclusion of the study (see Appendix J).

The National Institute of Health Office certified that the researcher successfully completed the “Protecting Human Research Participants” training course prior to beginning the study (see Appendix K). St. John Fisher College Institutional Review Board approved the study and survey instrument prior to beginning the study (see Appendix L). Also, the College Research Review Team approval was secured prior to beginning the study (see Appendix M).

**Team-based Instructional Design Strategy**

The intervention constituted the creation of student teams to participate in weekly team-based activities for 5 weeks. The students were prepared for the transition to the
team-based instructional design, assigned to teams, and provided with detailed communication on student learning outcomes and the team assignments.

**Preparation for student team-based instructional design.** Due to the introduction of the intervention, the instructor prepared the students for the transition to the new instructional design. The five-week intervention, student team-based instructional course design strategy, began with an instructor-facilitated discussion of both the instructor and student expectations. Communication and interaction during the intervention took place via Blackboard Learn (Bb) learning management system (LMS) course discussions, Wikis, virtual classroom, virtual and campus office hours, College student e-mail, and/or phone conferences. The instructor’s role broadened to include facilitation and management of the student groups as students embarked on the team-based assignments. The instructor expressed the expectation for students to take an active part in the learning process. Students were informed of their responsibilities, both individual and as part of the team. The learning objectives for the team-based learning and assignments were clearly communicated to the students. Students had the opportunity to ask and have their questions answered. Students were asked to sign an acknowledgement form that they received information on the team assignments and that they understood the expectations and submit the form via the Bb LMS course assignments section. Furthermore, students were asked to acknowledge that they had an opportunity to ask and receive comprehensive responses to any part of the transition or assignment that they did not understand.

**Formation of student teams.** Students were divided into heterogeneous groups based on individual strengths. The instructor, having the advantage of instructing and
interacting with the students for several weeks, had a good understanding of the students’ backgrounds and needs. In an effort to speed up connections of the team members, the instructor relied on instructor-to-student interaction to determine any special needs or potential problems that could surface. Students are required to complete a strengths assessment as part of the College freshman orientation course which identifies the student’s top five strengths. The instructor requested in an earlier discussion that students share their top five strengths when introducing themselves to the instructor and classmates. Instructor knowledge of students’ top five strengths aided in the instructor assigned teams. This knowledge allowed the instructor to take a proactive approach to minimize potential barriers to students expediently forming connections as a team. Due to the time constraints of the intervention it was imperative that steps be taken to help students form connections with team members quickly to aid in team productivity. The instructor formed teams consisting of four or five students with varying strengths and communicated the information of the teams to the students. Three teams consisted of five students, one team of four students. The group size would allow for collaboration on a complex assignment where the assignment was too large for an individual student to complete. Thus, students would have to rely on collaborative efforts and the expertise of team members to complete the challenging assignment. The assignment was large enough and the group size was adequate to promote discussion between group members and outcomes. Students were informed that they would remain in their assigned teams throughout the 5-week intervention and there would be no change of team assignments.

**Group assignments.** Students received notice of the group assignments and an outline for the 5 weeks. Five weekly assignments that built upon the previous one were
assigned. Groups were provided a Blackboard Learn (Bb) learning management system (LMS) course private Wiki and discussion board forums for group communication and interaction. Students also had access to a virtual chat room in the Bb LMS online course. Students were required to record action minutes outlining division of tasks and time of meetings for each meeting and provide a detailed summary of individual student responsibility of the team project. Each team member was required to submit the summary to the instructor independently of the other team members aiding in individual team member accountability towards the team assignment.

Students needed to be accountable to not only themselves and the instructor, but to members of their team as well. Therefore, student preparedness was imperative to team success. Students needed to work individually to prepare for the team assignment and work collaboratively with the team on the assignment. At the onset of the team-based instructional course design strategy, teams were allowed to select a body system and potential disease(s) affecting the body system to be the focus of their team-based assignment. Team selection of the disease allowed students the opportunity to select a disease and corresponding body system that had personal meaning and significance to them. In doing so, team members were able to tie the assignment to their personal experiences, which increased the likelihood of retention of material. Selection required instructor approval before proceeding so there was no duplication of disease selection. Once the disease was selected the team was assigned the module that corresponded with the body system. Each individual team member was responsible for the information and assignments in the module. The module quiz was assigned to be completed individually by each team member so the instructor could assess individual team member
preparedness. If an individual team member was not successful on the quiz they needed to repeat the quiz until they demonstrated competency by earning a composite score of 85% or higher. Once achieved the group communication platform was opened allowing the team to begin engaging in the team assignment.

The first team-based assignment required a presentation to introduce the team and each member to the other teams in the course. Each team member was responsible for their personal bio, personal quote or motto, and for identifying the resources and support they had to succeed. Through collaborative efforts the team was required to select a team name and motto or quote for their team. The assignment also called for the creation of a case study outlining the disease, causes, prevention, corrective procedures and treatments, and/or maintenance associated with the disease as well as the body system affected. The primary focus was on the knowledge and understanding of the medical terminology associated with the case. Each team would teach the other teams on the disease and body system chosen. One team member was responsible to submit the assignment to the Blackboard Learn (Bb) learning management system (LMS) course discussion board. The end product was evaluated through peer and instructor assessment via the Bb LMS course assessments section. The assessment system required each team and team member to be accountable and an active participant in the learning process.

Following the system outlined above, the remaining assignments included team creation of a patient information sheet that focused on the disease prevention. A brief introduction was to be prepared informing the teams of the disease and target audience for the patient information sheet. Specific instructions and guidelines were provided for the development, presentation, and assessment of the patient information sheet. The next
assignment consisted of the creation of three procedure information sheets on the disease selected. The first procedure information sheet contained information on the corrective or maintenance procedure associated with the disease and body system. The second was a pre-procedure information sheet which outlined what the expectations are for the patient to follow prior to the procedure. The third was the preparation of a post-procedure information sheet which detailed information on what the patient could expect following the procedure. The last assignment required the teams to prepare an informative summary of the case, procedures, treatment, maintenance, and drug interventions associated with the disease. The last assignment also called for the creation of an assessment tool to assess classmates on the knowledge they acquired on the disease and body system. Each classmate had three assessments to complete, one from each team. The student team-based instructional course design strategy concluded with the instructor evaluation of the students on the four topics covered throughout the intervention. Each team was required to complete the module quiz for the four modules allowing the instructor to assess overall learning of the four topics covered throughout the intervention. There was high interaction and ample communication throughout the team-based learning as well as immediate formative instructor feedback.

**Summary**

The popularity and number of online course offerings continue to increase in order to meet the demands of society (Moore, 2014). There is a significant increase in the number of students enrolled in at least one online course in higher education (Allen & Seaman, 2011). Colleges are adding more online courses to accommodate the growth in online enrollment; however, attrition rates are higher in online courses than in campus
courses (Xu & Jaggars, 2013). There is limited research addressing the relationship between course design, social presence, and attrition rates. Creating social presence in online courses may result in enhanced student satisfaction, decreased student attrition, and increased student success. The study explored, through a quantitative quasi-experimental research design, the relationship between the utilization of a student team-based instructional course design strategy and students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning experience.
Chapter 4: Results

Introduction

High attrition in online courses directly impacts many aspects of higher education. Moody (2004) states that colleges lose money on online course development, instruction, and assessment as well as tuition revenue. Online course attrition rates may be up to seven times higher than campus-based courses (Xu & Jaggars, 2013). High student attrition limits community colleges’ abilities to meet President Obama’s (2009) call for increased higher education of Americans. Likewise, high student attrition presents challenges for community colleges to meet the 21st Century Initiative to increase student completion rates 50% by 2020 (AACC, 2010). High student attrition reduces potential level of student access to higher education and successful program completion. High rate of attrition in online higher education courses at community colleges negatively impacts student success and institutional outcomes.

Descriptive statistics were used to describe and summarize the study data. The study contained a pre-test and post-test which allowed for comparison between students’ perceptions of social presence, collaborative learning, student interaction, and satisfaction with their learning experience in an online course. Pre-test data provided the baseline data prior to the intervention, the student team-based instructional course design strategy. A survey served as the pre-test and post-test.

Research Questions

The study proposed to answer the following questions:
1. To what extent, if any, does the level of students’ perceptions of social presence change as a result of the utilization of a student team-based instructional course design strategy for 5 weeks in an online undergraduate course?

2. To what extent, if any, does the level of students’ perceptions of collaborative learning change as a result of the utilization of a student team-based instructional course design strategy for 5 weeks in an online undergraduate course?

3. To what extent, if any, does the level of students’ perceptions of social interaction change as a result of the utilization of a student team-based instructional course design strategy for 5 weeks in an online undergraduate course?

4. To what extent, if any, does student satisfaction with their learning experience change as a result of the utilization of a student team-based instructional course design strategy for 5 weeks in an online undergraduate course?

5. After implementing instructional course design strategies to enhance student learning in an online course, how can social cognitive theory, social presence theory, and community of inquiry provide the foundation for better assessing the online learning environment?

**Data Analysis and Findings**

Descriptive statistics were utilized to analyze the study results. Quantitative data included students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning experience as noted on the pre-test and
post-test results. Comparison of the means of a single group of data, the pre-test and post-test, were statistically analyzed for each dependent variable allowing for comparison of the average performance on the dependent variables, social presence, collaborative learning, social interaction, and satisfaction in order to see if there was a difference in the means.

The research participants were students enrolled in an online undergraduate medical terminology course in fall 2015. The sample size was 19 students. A convenience sample of the entire population of students enrolled in the medical terminology course was utilized. A total of 18 responses were received for the pre-test and post-test resulting in 16 reportable respondents. Therefore, the research data reflects 16 participants. All participants in the study were over 18 years old. Participants were guaranteed anonymity and no identifying information was collected. Students were provided a direct link to the survey in Qualtrics. Qualtrics is independent of the College-owned or licensed software and was not interfaced with the College. Survey results did not identify specific participants and individual privacy was maintained. Survey results were presented in aggregate format and no individual responses are reported.

Information on participants’ gender and age are provided. Tables 4.1 and 4.2 describe the participants’ demographic information. The majority of the participants in the study were female, 81.25%, compared to 18.75% male. The participants’ gender ratio differs greatly from the College Fall 2015 student population gender ratio, 50% female, 50% male (Mohawk Valley Community College, 2015). The participants’ age ranged from 18 to 45 years old. The majority of participants were in the 26 to 35 age range, 50%. The second highest age range for participants was 18 to 25 years old, 43.75%. 
Only one participant was in the 36-45 age range. No participants were over 45 years old.

The typical average age of students enrolled in the College is 24 for full-time students and 23 for part-time students (College Board, 2015b). The majority of the students enrolled in the online medical terminology course were older than the average college student.

Table 4.1

*Demographic Information, Participants’ Gender*

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>3</td>
<td>18.75</td>
</tr>
<tr>
<td>Female</td>
<td>13</td>
<td>81.25</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4.2

*Demographic Information, Participants’ Age*

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Frequency</th>
<th>%</th>
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<tbody>
<tr>
<td>18-25</td>
<td>7</td>
<td>43.75</td>
</tr>
<tr>
<td>26-35</td>
<td>8</td>
<td>50.00</td>
</tr>
<tr>
<td>36-45</td>
<td>1</td>
<td>6.25</td>
</tr>
<tr>
<td>Over 45</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
<td>100</td>
</tr>
</tbody>
</table>
Information on participants’ perception of social presence is provided. Tables 4.3 through 4.5 describe the participants’ perception of social presence. Students were asked to respond to nine statements regarding their perception of social presence in the online course.

Table 4.3 describes the participants’ perception of social presence on the pre-test. The table shows the frequency of the participants who strongly agreed, agreed, neither agreed nor disagreed, disagreed, and strongly disagreed with the statement as well as the question mean response. The majority of the participants’ perception of social presence on the pre-test agreed or strongly agreed that they felt comfortable conversing in the course, 93.75%, compared to 6.25% that neither agreed nor disagreed. Similarly, the majority of the participants agreed or strongly agreed that they felt comfortable introducing themselves in the course, 93.75%, compared to 6.25% that neither agreed nor disagreed. Likewise, the majority of the participants felt the course introductions enabled them to form a sense of community, 87.5%, compared to 12.5% that neither agreed nor disagreed. Furthermore, 75% of the participants agreed or strongly agreed that they are able to form distinct individual impressions of some students in the course; whereas, 25% of the participants neither agreed nor disagreed that they can form distinct individual impressions of some students in the course. Additionally, the majority of participants agreed or strongly agreed that the instructor creates a feeling of community, 93.75%, in contrast to 6.25% that neither agreed nor disagreed.
Table 4.3

*Pre-test Information, Participants’ Perception of Social Presence*

<table>
<thead>
<tr>
<th>Social Presence</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1. Communication in the course is impersonal.</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>2.44</td>
</tr>
<tr>
<td>Q2. I feel comfortable conversing in the course.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>12</td>
<td>4.69</td>
</tr>
<tr>
<td>Q3. I felt comfortable introducing myself in the course.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>5</td>
<td>10</td>
<td>4.56</td>
</tr>
<tr>
<td>Q4. The course introductions enabled me to form a sense of community.</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>7</td>
<td>7</td>
<td>4.31</td>
</tr>
<tr>
<td>Q5. I feel comfortable participating in course discussions.</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>10</td>
<td>4.50</td>
</tr>
<tr>
<td>Q6. The instructor creates a feeling of community.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>12</td>
<td>4.69</td>
</tr>
<tr>
<td>Q7. The instructor facilitates discussion in the course.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>6</td>
<td>9</td>
<td>4.50</td>
</tr>
<tr>
<td>Q8. I feel that my point of view was acknowledged by other students in the course.</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>10</td>
<td>4.50</td>
</tr>
<tr>
<td>Q9. I am able to form distinct individual impressions of some students in the course.</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>5</td>
<td>7</td>
<td>4.19</td>
</tr>
</tbody>
</table>
Table 4.4 describes the participants’ perception of social presence on the post-test. The table shows the frequency of the participants who strongly agreed, agreed, neither agreed nor disagreed, disagreed, and strongly disagreed with the statement as well as the mean of the question responses. The majority of the participants’ perception of social presence on the post-test agreed or strongly agreed that they felt comfortable conversing in the course, 87.5%, compared to 12.5% that neither agreed nor disagreed. Similarly, the majority of the participants agreed or strongly agreed that they felt comfortable introducing themselves in the course, 8.75%, compared to 12.5% that neither agreed nor disagreed. Likewise, the majority of the participants felt the course introductions enabled them to form a sense of community, 81.25%, compared to 18.75% that neither agreed nor disagreed. Furthermore, the majority of the participants agreed or strongly agreed that they are able to form distinct individual impressions of some students in the course, 93.75%, whereas only 6.25% of the participants neither agreed nor disagreed that they can form distinct individual impressions of some students in the course. The majority of the participants responded that the instructor creates a feeling of community, 93.75%, in contrast to 6.25% that neither agreed nor disagreed.
### Table 4.4

*Post-test Information, Participants’ Perception of Social Presence*

<table>
<thead>
<tr>
<th>Social Presence</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1. Communication in the course is impersonal.</td>
<td>6</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2.44</td>
</tr>
<tr>
<td>Q2. I feel comfortable conversing in the course.</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>10</td>
<td>4.38</td>
</tr>
<tr>
<td>Q3. I felt comfortable introducing myself in the course.</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>11</td>
<td>4.56</td>
</tr>
<tr>
<td>Q4. The course introductions enabled me to form a sense of community.</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>10</td>
<td>4.44</td>
</tr>
<tr>
<td>Q5. I feel comfortable participating in course discussions.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>5</td>
<td>10</td>
<td>4.56</td>
</tr>
<tr>
<td>Q6. The instructor creates a feeling of community.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>12</td>
<td>4.69</td>
</tr>
<tr>
<td>Q7. The instructor facilitates discussion in the course.</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>11</td>
<td>4.56</td>
</tr>
<tr>
<td>Q8. I feel that my point of view was acknowledged by other students in the course.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>5</td>
<td>10</td>
<td>4.56</td>
</tr>
<tr>
<td>Q9. I am able to form distinct individual impressions of some students in the course.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>11</td>
<td>4.63</td>
</tr>
</tbody>
</table>
Table 4.5 describes the difference of the means of participants’ perception of social presence in the online course on the pre-test and post-test. Questions 1, 3, and 6 revealed no change in the mean. Although questions 1 and 3 revealed no change in mean, there was an increase in the number of participants who strongly disagreed with the statement, communication in the course is impersonal, and an increase in participants who agreed or strongly agreed that they felt comfortable introducing themselves in the course.

Questions 4, 5, 7, 8, and 9 revealed an increase in the mean. The greatest increase was seen in Question 9, I am able to form distinct individual impressions of some students in the course, +.44, and Question 4, the course introductions enabled me to form a sense of community, +.13.

Table 4.5

*Social Presence Comparison of the Means*

<table>
<thead>
<tr>
<th>Social Presence</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>2.44</td>
<td>2.44</td>
<td>0</td>
</tr>
<tr>
<td>Q2</td>
<td>4.69</td>
<td>4.38</td>
<td>-.31</td>
</tr>
<tr>
<td>Q3</td>
<td>4.56</td>
<td>4.56</td>
<td>0</td>
</tr>
<tr>
<td>Q4</td>
<td>4.31</td>
<td>4.44</td>
<td>+.13</td>
</tr>
<tr>
<td>Q5</td>
<td>4.50</td>
<td>4.56</td>
<td>+.06</td>
</tr>
<tr>
<td>Q6</td>
<td>4.69</td>
<td>4.69</td>
<td>0</td>
</tr>
<tr>
<td>Q7</td>
<td>4.50</td>
<td>4.56</td>
<td>+.06</td>
</tr>
<tr>
<td>Q8</td>
<td>4.50</td>
<td>4.56</td>
<td>+.06</td>
</tr>
<tr>
<td>Q9</td>
<td>4.19</td>
<td>4.63</td>
<td>+.44</td>
</tr>
</tbody>
</table>
Information on participants’ perception of collaborative learning is provided. Tables 4.6 through 4.8 describe the participants’ perception of collaborative learning. Students were asked to respond to seven statements regarding his or her perception of collaborative learning in the online course.

Table 4.6 describes the participants’ perception of collaborative learning on the pre-test. The table shows the frequency of the participants who strongly agreed, agreed, neither agreed nor disagreed, disagreed, and strongly disagreed with the statement as well as the question mean response. The majority of the participants indicated they agreed or strongly agreed that they felt part of a community in the course, 75%, compared to 25% that neither agreed nor disagreed. Similarly, 75% of the participants agreed or strongly agreed that they actively exchanged ideas in the course compared to 25% that neither agreed nor disagreed. Likewise, the majority of the participants indicated they felt that they were able to develop problem-solving skills through peer collaboration, 88.75%, compared to 31.25% that neither agreed nor disagreed.
Table 4.6

*Pre-test Information, Participants’ Perception of Collaborative Learning*

<table>
<thead>
<tr>
<th>Collaborative Learning</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1. I felt part of a community in my course.</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>5</td>
<td>7</td>
<td>4.19</td>
</tr>
<tr>
<td>Q2. I actively exchanged ideas in my course.</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>7</td>
<td>5</td>
<td>4.06</td>
</tr>
<tr>
<td>Q3. I was able to develop new skills and knowledge from other members in my course.</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>7</td>
<td>7</td>
<td>4.31</td>
</tr>
<tr>
<td>Q4. I was able to develop problem-solving skills through peer collaboration.</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>6</td>
<td>5</td>
<td>4.00</td>
</tr>
<tr>
<td>Q5. Collaborative learning in my course was effective.</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>7</td>
<td>7</td>
<td>4.31</td>
</tr>
<tr>
<td>Q6. Collaborative learning in the course was time-consuming.</td>
<td>0</td>
<td>3</td>
<td>6</td>
<td>5</td>
<td>2</td>
<td>3.38</td>
</tr>
<tr>
<td>Q7. Overall, I am satisfied with my collaborative learning experience in the course.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>7</td>
<td>8</td>
<td>4.44</td>
</tr>
</tbody>
</table>


Table 4.7 describes the participants’ perception of collaborative learning on the post-test. The table shows the frequency of the participants who strongly agreed, agreed, neither agreed nor disagreed, disagreed, and strongly disagreed with the statement as well as the question mean response. The majority of the participants agreed or strongly agreed that they felt part of a community in the course, 87.75%, compared to 12.25% that neither agreed nor disagreed. Similarly, the majority of participants agreed or strongly agreed that they actively exchanged ideas in the course, 87.75%, compared to 12.25% that neither agreed nor disagreed. Likewise, the majority of the participants felt they were able to develop problem-solving skills through peer collaboration, 87.75%, compared to 12.25% that neither agreed nor disagreed.
Table 4.7

*Post-test Information, Participants' Perception of Collaborative Learning*

<table>
<thead>
<tr>
<th>Collaborative Learning</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1. I felt part of a community in my course.</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>10</td>
<td>4.50</td>
</tr>
<tr>
<td>Q2. I actively exchanged ideas in my course.</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>11</td>
<td>4.56</td>
</tr>
<tr>
<td>Q3. I was able to develop new skills and knowledge from other members in my course.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>11</td>
<td>4.63</td>
</tr>
<tr>
<td>Q4. I was able to develop problem-solving skills through peer collaboration.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>10</td>
<td>4.60</td>
</tr>
<tr>
<td>Q5. Collaborative learning in my course was effective.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>11</td>
<td>4.63</td>
</tr>
<tr>
<td>Q6. Collaborative learning in the course was time-consuming.</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>3.44</td>
</tr>
<tr>
<td>Q7. Overall, I am satisfied with my collaborative learning experience in the course.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>10</td>
<td>4.60</td>
</tr>
</tbody>
</table>
Table 4.8 describes the difference of the means of participants’ perception of collaborative learning on the pre-test and post-test. All questions revealed an increase in the mean. The greatest increase in the mean was seen in Question 4, I was able to develop problem-solving skills through peer collaboration, +.60, and Question 2, I actively exchanged ideas in the course, +.50.

Table 4.8

*Collaborative Learning Comparison of the Means*

<table>
<thead>
<tr>
<th>Collaborative Learning</th>
<th>Pre-test Mean</th>
<th>Post-test Mean</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>4.19</td>
<td>4.50</td>
<td>+.31</td>
</tr>
<tr>
<td>Q2</td>
<td>4.06</td>
<td>4.56</td>
<td>+.50</td>
</tr>
<tr>
<td>Q3</td>
<td>4.31</td>
<td>4.63</td>
<td>+.32</td>
</tr>
<tr>
<td>Q4</td>
<td>4.00</td>
<td>4.60</td>
<td>+.60</td>
</tr>
<tr>
<td>Q5</td>
<td>4.31</td>
<td>4.63</td>
<td>+.32</td>
</tr>
<tr>
<td>Q6</td>
<td>3.38</td>
<td>3.44</td>
<td>+.06</td>
</tr>
<tr>
<td>Q7</td>
<td>4.44</td>
<td>4.60</td>
<td>+.16</td>
</tr>
</tbody>
</table>
Information on participants’ perception of social interaction is provided. Tables 4.9 through 4.11 describe the participants’ perception of social interaction. Students were asked to respond to six statements regarding his or her perception of social interaction in the online course.

Table 4.9 describes the participants’ perception of social interaction on the pre-test. The table shows the frequency of the participants who strongly agreed, agreed, neither agreed nor disagreed, disagreed, and strongly disagreed with the statement as well as the question mean response. The majority of the participants’ perception of social interaction on the pre-test agreed or strongly agreed that they felt comfortable interacting with other students in the course, 93.75%, compared to 6.25% that neither agreed nor disagreed. Similarly, the majority of the participants agreed or strongly agreed that the quality of interaction with other students in the course is appropriate, 87.5%, compared to 12.5% that neither agreed nor disagreed. Likewise, the majority of the participants felt the quality of interaction with the instructor in the course was appropriate, 87.5%, compared to 12.5% that neither agreed nor disagreed.
Table 4.9

*Pre-test Information, Participants’ Perception of Social Interaction*

<table>
<thead>
<tr>
<th>Social Interaction</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1. Courses are an excellent means of social interaction.</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>8</td>
<td>5</td>
<td>4.13</td>
</tr>
<tr>
<td>Q2. I feel comfortable interacting with other students in the course.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>8</td>
<td>7</td>
<td>4.38</td>
</tr>
<tr>
<td>Q3. The amount of interaction with other students in the course is appropriate.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>7</td>
<td>8</td>
<td>4.44</td>
</tr>
<tr>
<td>Q4. The quality of interaction with other students in the course is appropriate.</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>7</td>
<td>7</td>
<td>4.31</td>
</tr>
<tr>
<td>Q5. The amount of interaction with the instructor in the course was appropriate.</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>5</td>
<td>9</td>
<td>4.44</td>
</tr>
<tr>
<td>Q6. The quality of interaction with the instructor in the course was appropriate.</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>10</td>
<td>4.50</td>
</tr>
</tbody>
</table>
Table 4.10 describes the participants’ perception of social interaction on the post-test. The table shows the frequency of the participants who strongly agreed, agreed, neither agreed nor disagreed, disagreed, and strongly disagreed with the statement as well as the question mean response. The majority of the participants’ perception of social interaction agreed or strongly agreed that they felt comfortable interacting with other students in the course, 93.75%, compared to 6.25% that neither agreed nor disagreed. Similarly, the majority of the participants agreed or strongly agreed that the quality of interaction with other students in the course is appropriate, 87.5%, compared to 12.5% that neither agreed nor disagreed. Likewise, the majority of the participants felt the quality of interaction with the instructor in the course was appropriate, 93.75%, compared to 6.25% that neither agreed nor disagreed.
Table 4.10

Post-test Information, Participants’ Perception of Social Interaction

<table>
<thead>
<tr>
<th>Social Interaction</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1. Courses are an excellent means of social interaction.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>7</td>
<td>6</td>
<td>4.13</td>
</tr>
<tr>
<td>Q2. I feel comfortable interacting with other students in the course.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>5</td>
<td>10</td>
<td>4.56</td>
</tr>
<tr>
<td>Q3. The amount of interaction with other students in the course is appropriate.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>6</td>
<td>9</td>
<td>4.50</td>
</tr>
<tr>
<td>Q4. The quality of interaction with other students in the course is appropriate.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>6</td>
<td>9</td>
<td>4.50</td>
</tr>
<tr>
<td>Q5. The amount of interaction with the instructor in the course was appropriate.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>5</td>
<td>10</td>
<td>4.56</td>
</tr>
<tr>
<td>Q6. The quality of interaction with the instructor in the course was appropriate.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>5</td>
<td>10</td>
<td>4.56</td>
</tr>
</tbody>
</table>
Table 4.11 describes the difference of the means of participants’ perception of social interaction on the pre-test and post-test. Question 1 revealed no change in mean. Questions 2 – 6 revealed an increase in the mean. The greatest increase in the mean was seen in Question 4, The quality of interaction with other students in the course is appropriate, +.19, and Question 2, I feel comfortable interacting with other students in the course, +.18. Furthermore, the number of participants who strongly agreed that they felt comfortable interacting with other students in the course increased from 43.75% on the pre-test to 62.5% on the post-test. Also, the number of participants who strongly agreed that the quality of interaction with other students in the course was appropriate increased from 43.75% on the pre-test to 56.25% on the post-test.

Table 4.11

*Social Interaction Comparison of the Means*

<table>
<thead>
<tr>
<th>Social Interaction</th>
<th>Pre-test Mean</th>
<th>Post-test Mean</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>4.13</td>
<td>4.13</td>
<td>0</td>
</tr>
<tr>
<td>Q2</td>
<td>4.38</td>
<td>4.56</td>
<td>+.18</td>
</tr>
<tr>
<td>Q3</td>
<td>4.44</td>
<td>4.50</td>
<td>+.06</td>
</tr>
<tr>
<td>Q4</td>
<td>4.31</td>
<td>4.50</td>
<td>+.19</td>
</tr>
<tr>
<td>Q5</td>
<td>4.44</td>
<td>4.56</td>
<td>+.06</td>
</tr>
<tr>
<td>Q6</td>
<td>4.50</td>
<td>4.56</td>
<td>+.06</td>
</tr>
</tbody>
</table>
Information on participants’ perception of satisfaction with their learning experience is provided. Tables 4.12 through 4.14 describe the participants’ satisfaction with their learning experience in the online course. Students were asked to respond to 11 statements regarding satisfaction with their learning experience in the online course.

Table 4.12 describes the participants’ perception of satisfaction with their learning experience on the pre-test. The table shows the frequency of the participants who strongly agreed, agreed, neither agreed nor disagreed, disagreed, and strongly disagreed with the statement as well as the question mean response. The majority of the participants indicated they felt stimulated to do additional reading or research on topics discussed in the online course, 75%, compared to 25% that neither agreed nor disagreed or disagreed. Only 31.25% of the participants felt that as a result of their experience in the online course they made acquaintances from other parts of the world or geographical region. The majority of participants agreed or strongly agreed that the instructor in the course met their learning expectations, 87.74%, compared to 12.25% who neither agreed nor disagreed.
Table 4.12

*Pre-test Information, Participants’ Perception of Satisfaction*

<table>
<thead>
<tr>
<th>Satisfaction</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1. I am able to learn in the online course.</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>11</td>
<td>4.56</td>
</tr>
<tr>
<td>Q2. I am able to learn from online course discussions.</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>11</td>
<td>4.56</td>
</tr>
<tr>
<td>Q3. I am stimulated to do additional reading or research on topics discussed in the online course.</td>
<td>0</td>
<td>3</td>
<td>1</td>
<td>5</td>
<td>7</td>
<td>4.00</td>
</tr>
<tr>
<td>Q4. Discussions assisted me in understanding other points of view.</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>10</td>
<td>4.50</td>
</tr>
<tr>
<td>Q5. As a result of my experience in the online course, I have made acquaintances from other parts of the world or geographical region.</td>
<td>2</td>
<td>2</td>
<td>7</td>
<td>4</td>
<td>1</td>
<td>3.00</td>
</tr>
<tr>
<td>Q6. The online course is a useful learning experience.</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>9</td>
<td>4.38</td>
</tr>
<tr>
<td>Q7. The diversity of topics in the course prompted me to participate in discussions.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>9</td>
<td>4.31</td>
</tr>
<tr>
<td>Q8. My level of learning that took place in this course was of the highest quality.</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>5</td>
<td>8</td>
<td>4.31</td>
</tr>
<tr>
<td>Q9. Overall, the learning activities and assignments in this course met my learning expectations.</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>11</td>
<td>4.50</td>
</tr>
<tr>
<td>Q10. Overall, the Instructor in this course met my learning expectations.</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>10</td>
<td>4.50</td>
</tr>
<tr>
<td>Q11. Overall, this course met my learning expectations.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>12</td>
<td>4.69</td>
</tr>
</tbody>
</table>
Table 4.13 describes the participants’ perception of satisfaction with their learning experience on the post-test. The table shows the frequency of the participants who strongly agreed, agreed, neither agreed nor disagreed, disagreed, and strongly disagreed with the statement as well as the question mean response. The majority of participants agreed or strongly agreed that they felt stimulated to do additional reading or research on topics discussed in the online course, 87.75%, compared to 12.25% who neither agreed nor disagreed or disagreed. The number of participants who indicated they felt that as a result of their experience in the online course they made acquaintances from other parts of the world or geographical region increased from 31.25% on the pre-test to 56.25%. The majority of participants agreed or strongly agreed that the instructor in the course met their learning expectations, 93.75%, compared to 6.25% who neither agreed nor disagreed.
Table 4.13

*Post-test Information, Participants’ Perception of Satisfaction*

<table>
<thead>
<tr>
<th>Satisfaction</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1. I am able to learn in the online course.</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>10</td>
<td>4.44</td>
</tr>
<tr>
<td>Q2. I am able to learn from online course discussions.</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>10</td>
<td>4.44</td>
</tr>
<tr>
<td>Q3. I am stimulated to do additional reading or research on topics discussed in the online course.</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>6</td>
<td>8</td>
<td>4.31</td>
</tr>
<tr>
<td>Q4. Discussions assisted me in understanding other points of view.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>5</td>
<td>10</td>
<td>4.56</td>
</tr>
<tr>
<td>Q5. As a result of my experience in the online course, I have made acquaintances from other parts of the world or geographical region.</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>3.63</td>
</tr>
<tr>
<td>Q6. The online course is a useful learning experience.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>5</td>
<td>10</td>
<td>4.56</td>
</tr>
<tr>
<td>Q7. The diversity of topics in the course prompted me to participate in discussions.</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>9</td>
<td>4.47</td>
</tr>
<tr>
<td>Q8. My level of learning that took place in this course was of the highest quality.</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>6</td>
<td>8</td>
<td>4.38</td>
</tr>
<tr>
<td>Q9. Overall, the learning activities and assignments in this course met my learning expectation.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>5</td>
<td>10</td>
<td>4.56</td>
</tr>
<tr>
<td>Q10. Overall, the instructor in this course met my learning expectations.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>12</td>
<td>4.69</td>
</tr>
<tr>
<td>Q11. Overall, this course met my learning expectations.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>11</td>
<td>4.63</td>
</tr>
</tbody>
</table>
Table 4.14 describes the difference of the means of participants’ satisfaction with their learning experience in the online course on the pre-test and post-test. Questions 3 – 10 revealed an increase in the mean. The greatest increase was seen in Question 5, "As a result of my experience in the online course, I have made acquaintances from other parts of the world or geographical region, +.63, and Question 3, I am stimulated to do additional reading or research on topics discussed in the online course, +.31.

Table 4.14

*Satisfaction Comparison of the Means*

<table>
<thead>
<tr>
<th>Satisfaction</th>
<th>Pre-test Mean</th>
<th>Post-test Mean</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>4.56</td>
<td>4.44</td>
<td>-.12</td>
</tr>
<tr>
<td>Q2</td>
<td>4.56</td>
<td>4.44</td>
<td>-.12</td>
</tr>
<tr>
<td>Q3</td>
<td>4.00</td>
<td>4.31</td>
<td>+.31</td>
</tr>
<tr>
<td>Q4</td>
<td>4.50</td>
<td>4.56</td>
<td>+.06</td>
</tr>
<tr>
<td>Q5</td>
<td>3.00</td>
<td>3.63</td>
<td>+.63</td>
</tr>
<tr>
<td>Q6</td>
<td>4.38</td>
<td>4.56</td>
<td>+.18</td>
</tr>
<tr>
<td>Q7</td>
<td>4.31</td>
<td>4.47</td>
<td>+.16</td>
</tr>
<tr>
<td>Q8</td>
<td>4.31</td>
<td>4.38</td>
<td>+.07</td>
</tr>
<tr>
<td>Q9</td>
<td>4.50</td>
<td>4.56</td>
<td>+.06</td>
</tr>
<tr>
<td>Q10</td>
<td>4.50</td>
<td>4.69</td>
<td>+.19</td>
</tr>
<tr>
<td>Q11</td>
<td>4.69</td>
<td>4.63</td>
<td>-.03</td>
</tr>
</tbody>
</table>
Table 4.15  

*Participants’ Overall Perception of Social Presence, Collaborative Learning, Social Interaction, and Satisfaction Comparison of the Means*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre-test Mean</th>
<th>Post-test Mean</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Presence</td>
<td>4.26</td>
<td>4.31</td>
<td>+.05</td>
</tr>
<tr>
<td>Collaborative Learning</td>
<td>4.10</td>
<td>4.20</td>
<td>+.10</td>
</tr>
<tr>
<td>Social Interaction</td>
<td>4.36</td>
<td>4.47</td>
<td>+.11</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>4.31</td>
<td>4.42</td>
<td>+.11</td>
</tr>
</tbody>
</table>

**Summary of Results**

The analysis and findings for each research question is presented below.

1. To what extent, if any, does the level of students’ perceptions of social presence change as a result of the utilization of a student team-based instructional course design strategy for 5 weeks in an online undergraduate course?

The findings indicate that students’ perceptions of social presence increased after the intervention, the utilizations of a student team-based instructional course design strategy for 5 weeks in the online course. Table 4.15 provides the statistical results of participants’ overall perception of social presence in the online course. Comparison of the overall group mean revealed a cumulative increase in the mean of .5. Table 4.11 provides the comparison of the pre-test and post-test means for each question in the social presence group. Questions 1, 3, and 6 revealed no change in the mean. Questions 4, 5, 7, 8, and 9 revealed an increase in the mean. The greatest increase was seen in Question 9, I
am able to form distinct impressions of some students in the course, +.44, and Question 4, The course introductions enabled me to form a sense of community, +.13.

2. To what extent, if any, does the level of students’ perceptions of collaborative learning change as a result of the utilization of a student team-based instructional course design strategy for 5 weeks in an online undergraduate course?

The findings indicate that students’ perceptions of collaborative learning increased after the intervention, the utilization of a student team-based instructional course design strategy for 5 weeks in the online course. Table 4.15 provides the statistical results of participants’ overall perception of collaborative learning in the online course. Comparison of the overall group mean revealed a cumulative increase in the mean of .10. Table 4.12 provides the statistical results of individual questions. All questions revealed an increase in the mean. The greatest increase was seen in Question 4, I was able to develop problem-solving skills through peer collaboration, +.60, and Question 2, I actively exchanged ideas in my course, +.50.

3. To what extent, if any, does the level of students’ perceptions of social interaction change as a result of the utilization of a student team-based instructional course design strategy for 5 weeks in an online undergraduate course?

The findings indicate that students’ perceptions of social interaction increased after the intervention, the utilization of a student team-based instructional course design strategy for 5 weeks in the online course. Table 4.15 provides the statistical results of the participants’ overall perception of social interaction in the online course. Comparison of
the overall group mean revealed a cumulative increase in the mean of .11. Table 4.13 provides the statistical results of individual questions. Question 1 revealed no change. The remaining questions in the social interaction group, Questions 2 – 6, revealed an increase in the mean. The greatest increase was seen in Question 4, The quality of interaction with other students in the course is appropriate, +.19, and Question 2, I feel comfortable interacting with other students in the course, +.18.

4. To what extent, if any, does student satisfaction with their learning experience change as a result of the utilization of a student team-based instructional course design strategy for 5 weeks in an online undergraduate course?

The findings indicate that students’ perceptions of satisfaction with their learning experience increased after the intervention, the utilizations of a student team-based instructional course design strategy for 5 weeks in the online course. Table 4.15 provides the statistical results of participants’ overall satisfaction with their learning experience in the online course. Comparison of the overall group mean revealed a cumulative increase in the mean of .11. Table 4.14 provides the statistical results of individual questions. Questions 3 - 10 revealed an increase in the mean. The greatest increase was seen in Question 5, As a result of my experience in the online course, I have made acquaintances from other parts of the world or geographical region, +.63, and Question 3, I am stimulated to do additional reading or research on topics discussed in the online course, +.31.

The survey instrument collected descriptive data from students in an online course to answer research questions 1 – 4. The survey instrument successfully provided pre- and post-data related to the online learning experience. Although the survey instrument was
validated by Spears (2012), the validity of the instrument should be solidified in future studies.

5. After implementing instructional course design strategies to enhance student learning in an online course, how can social cognitive theory, social presence theory, and community of inquiry provide the foundation for better assessing the online learning environment?

The study provides a conceptualization for an online learning environment whereby the course designer and/or instructor is assessing instructional course design strategies to enhance student learning in an online course. The conceptualization is guided by the tenets of social cognitive theory, social presence theory, and community of inquiry. The conceptualization has implications for both design of online courses and delivery of instructional material. The result of this conceptualization is an online course instructional design assessment model that can be utilized to evaluate students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning experience regardless of the specific instructional design strategies.

The quasi-experimental quantitative research study examined the relationship between the utilization of a student team-based instructional course design strategy and student’s perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning experience in an online course and in student attrition. Descriptive statistics were used to describe and analyze the study data. Students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning experience in an online course were compared utilizing pre-test and post-test data. The significance of the study was to examine the extent, if any, students’
perceptions of social presence changed as a result of the utilization of a student team-based instructional course design strategy for 5 weeks in an undergraduate online course.

The next chapter discusses the findings. Implications of the findings, limits of the study, conclusions, and recommendations for future studies are presented.
Chapter 5: Discussion

Introduction

The purpose of the study was to examine to what extent, if any, the level of students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning experience changed as a result of the utilization of a student team-based instructional course design strategy for 5 weeks in an online undergraduate course. The study also addressed the need for assessment of instructional design strategies and the effectiveness of assessing students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning experience. Furthermore, the study’s purpose was to collect data to demonstrate application of an online course instructional design assessment model to determine if the online course development, delivery, and evaluation tended to the promotion of social presence. The chapter contains implications of the findings, recommendations, and a conclusion.

There is a need to design and implement instructional design strategies for online instruction which attend to students’ perceptions of social presence in a virtual learning environment. A major challenge with online education in undergraduate courses is creating a social presence between students and instructor (Dow, 2008). Students may feel disconnected and less engaged in online courses than in face-to-face courses. The absence of social presence and student connectedness may contribute to high student attrition rates in an online course (Moore, 2014). Social presence may directly relate to
student satisfaction which in turn may further student success (Coaplen, Hollis, & Bailey, 2013; Richardson & Swan, 2003; Seiver & Troja, 2014; Swan & Shih, 2003). The likelihood of successful course completion increases when students feel connected to their instructor and classmates (Seiver & Troja, 2014). It is imperative to design a course that emulates how students learn and provides an environment for student connectedness and social presence. There is a need for online instructional course designers and online instructors who attend to instructional design strategies that foster social presence.

Data were gathered from participants enrolled in an online undergraduate medical terminology course at a community college in Upstate New York in fall 2015. The study examined, through a quantitative quasi-experimental research design, students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning experience in an online course before and after the intervention of a student team-based instructional course design strategy. Data were gathered through a pre-survey and post-survey. The study answered five questions:

1. To what extent, if any, did the level of students’ perceptions of social presence change as a result of the utilization of a student team-based instructional course design strategy for 5 weeks in an online undergraduate course?

2. To what extent, if any, does the level of students’ perceptions of collaborative learning change as a result of the utilization of a student team-based instructional course design strategy for 5 weeks in an online undergraduate course?

3. To what extent, if any, does the level of students’ perceptions of social interaction change as a result of the utilization of a student team-based
instructional course design strategy for 5 weeks in an online undergraduate course?

4. To what extent, if any, does student satisfaction with their learning experience change as a result of the utilization of a student team-based instructional course design strategy for 5 weeks in an online undergraduate course?

5. After implementing instructional course design strategies to enhance student learning in an online course, how can social cognitive theory, social presence theory, and community of inquiry provide the foundation for better assessing the online learning environment?

**Implications of Findings**

The implications of the findings support future research, direct practice application, and inform policy. Furthermore, the implications of the findings support preparation of instructors, course designers, and the implementation and evaluation of online courses and programs. As the number of students enrolling in online courses continues to increase, higher education leaders, online instructional course designers, and online course instructors are concerned with the high cost of student attrition (Liu et al., 2007). The implications of the findings support informing online course designers of the importance of the utilization of a student team-based instructional course design strategy on increasing students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning experience in an online course in an effort to decrease student attrition. Furthermore, the implications of the findings inform higher education leaders of the importance of online course design and creating a social presence in an online course to aid in student satisfaction and success.
Viewing students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning experience from social cognitive, social presence, and community of inquiry perspectives allows for a holistic education view. Online instructional course designers and instructors can design and implement, through instructional design strategies, an online course that addresses the need to support the development of students’ perceptions of social presence. The findings demonstrate that online courses can be designed and instructed with attention to social presence.

Furthermore, through the triadic interaction between social cognitive theory, social presence theory, and community of inquiry an online course instructional design assessment model can assess the level of change an instructional course design strategy has on students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning experience in an online course. The study provided a conceptualization for an online learning environment whereby the course designer and/or instructor is assessing instructional course design strategies. The conceptualization is guided by the tenets of social cognitive theory, social presence theory, and community of inquiry. The conceptualization has implications for both the design of online courses and delivery of instructional material. The result of this conceptualization is an online course instructional design assessment model that can be utilized to evaluate students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning experience regardless of the specific instructional design strategies. Through assessing students’ perceptions educational leaders, online course designers, and online course instructors may design and implement an online course that encourages the development of instructor-to-student and student-to-student interaction and collaborative
learning, to promote social presence and student satisfaction with their online learning experience, thus furthering student success and successful course completion.

Considering the potential limited access to education, successful course and program completion, and negative impact of student attrition in online courses at community colleges, policy changes may be warranted. Many students choose to enroll in online courses due to family and work commitments (Carr, 2000, 2014). Attrition in online courses is higher than campus courses (Carr, 2000; Moody, 2004, Patterson & McFadden, 2009; Xu & Jaggars, 2013). Therefore, students enrolling in online courses at community colleges are less likely to be successful.

The goal of community college is to provide accessible, affordable higher education (Vaughn, 2000) and successful course and program completion. As limited access to education and high student attrition completely defies the goals of community colleges it would be appropriate for national professional associations to serve as a catalyst and advocate for increasing awareness of the impact of student attrition and instituting change. Creating new, or expanding on the existing, professional associations would provide a venue for collaboration, sharing resources, and bringing stakeholders together with a goal of improving student attrition in online courses. Doing so would safeguard access to higher education and successful course and program completion for all students.

A new model of assessment. There are some similarities and differences between social cognitive theory (SCT), social presence theory (SPT), and community of inquiry (CoI). Both the SCT and SPT rely heavily on interaction with others as a means to create social presence (Bandura, 1977, 1978, 1986, 2001; Gunawardena & Zittle,
1997; Short et al., 1976; Tu, 2001). Specifically, SCT stresses the importance of continuous reciprocal interaction between individuals (Bandura, 1986). Both SCT and SPT note the importance of cues in the environment that impact communication (Bandura, 1986; Short et al, 1976). While SCT focuses on the importance of individual’s thoughts and behaviors in the environment (Bandura, 1989), SPT notes the importance of the communication medium, the communicators’ attitudes, the communicators’ comfort with the medium, and the ease of use of the communication medium (Lowenthal, 2009). Furthermore, both SCT and SPT note the influence of subjective traits on the dynamic environment that continuously changes with each action and reaction (Bandura, 1986; Short et al, 1976). Community of inquiry encompasses cognitive presence, social presence, and teaching presence (Garrison et al., 2000). It is the interaction of these three areas that create an educational experience. All three perspectives, although each with its own specifics, rely on various, continuously changing interactions to create social presence.

It is the conjunction of these three perspectives and the quality of interaction among individuals that promote social presence and a conducive learning environment. Consider each one of these perspectives as a side of an equilateral triangle, enclosing an environment of social presence, which leads to a positive educational experience. Just as a triangle would be incomplete with one or two sides missing, in this manner, the learning environment is not complete in the absence of one of these important perspectives. All three perspectives, connecting with each other, are necessary to establish an environment for social presence. Each section is of equal importance as it is
the combination and interplay of all three that leads to creating social presence in an online learning environment.

**Limitations**

A limitation of the study was the online course instructional design assessment model was applied to one instructional course design strategy. The model has not been applied to other instructional design strategies.

**Recommendations**

Several recommendations for improving practice, informing policy, and future research resulted from the study. Recommendations are included for community college strategic planning to promote student access, success, and degree attainment. An online course instructional design assessment model to assess instructional design strategies is also included. Recommendations further included preparation for stakeholders: online course designers, instructors, evaluators, and students. Recommendations were also included for online course design, implementation, and evaluation. Recommendations for higher education policy development to increase pathways to education and successful course and program completion to promote social justice are included. Lastly, recommendations for future research are included.

**Community college student success and completion.** It is recommended that community colleges align the institutional goals with student success. Colleges no longer measure success by access to education alone. College success is measured by access and successful program completion. Therefore, community colleges must include student success and degree attainment in the college’s strategic plan. Higher education institutions must focus on student access to higher education, success, and program
completion. When the educational level of Americans increases, it will create a ripple effect improving the standard of living of individuals. Access to education and successful course and program completion provides a pathway out of poverty and furthers social justice and equality.

Students are the essence of any education institution and as such should be held at the top of the institution’s organizational chart. Approximately 66% of public, private nonprofit, and private for-profit education leaders believe online education is critical to the success of their organization (Allen & Seaman, 2011). Approximately 80% of public higher education leaders report online education is critical to the long-term strategy of their institution. Three surveys with presidents and chancellors for the Association of Public and Land-Grant Universities Sloan National Commission on Online Learning revealed approximately two-thirds of responding educational leaders reported online programs were strategically important. However, less than one-half of the responding higher education executive leaders indicated online programs were part of their institution’s strategic plan.

Higher education institutions must align the goal of decreasing student attrition in online courses with the overall institutional goals and strategic plans. Student online course attrition rates will decrease, student success will increase, which will lead to an increase in successful program completion and degree attainment. This increase will aid in meeting the 21st Century Initiative to increase student completion rates 50% by 2020 (AACC, 2010).

Through promotion of social justice, students benefit from increased access to education and successful course and program completion. Institutional leaders, course
designers, and educators must not stop at access alone. Access without adequate course
designer, instructor, and student preparation limits student’s success in an online course.
Use of public and private funding without attention to student success is problematic.

All stakeholders play an important role in student success. The circle of
responsibility and success includes higher education leaders, online course designers,
instructors, and students assuming responsibility for student success (see Figure 5.1).
Higher education leaders must provide informative professional development programs
for online course designers and instructors. Best practices in online instruction must be
continually developed and embraced by online course designers and instructors. Higher
education leaders must consider student preparation as well. In order for the circle of
responsibility and success to be complete higher education leaders must adequately
prepare students to enroll and participate in an online course. Leaders must further best
practices through ongoing research and by providing adequate resources and support.
Assessment needs to be ongoing and include scheduled evaluation, planning, and courses
of action. Communication is vital for institutional, designer, instructor, and student
success as well as the success of any course. Awareness of best practices in online
design and instruction are essential for continual improvement and both student and
institutional success. Furthermore, higher education institutions must commit to student
success and make student success a top priority.
Online course instructional design assessment model. The findings indicated that the online course instructional design assessment model effectively evaluated the student team-based instructional course design strategy on students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction toward their learning experience. Intentionally designing, implementing, and evaluating an online course through the tenets of the triadic interaction between social cognitive theory (SCT), social
presence theory (SPT), and community of inquiry (CoI) creates an environment where social presence, collaborative learning, social interaction, and satisfaction can flourish. Given the similarities between SCT, SPT, and CoI viewing social presence, collaborative learning, social interaction, and satisfaction in an online course through the triadic intersection of these three perspectives can provide a complete assessment of students’ perspectives of social presence using the survey instrument.

The new model encompasses the merit from social cognitive theory (SCT), social presence theory (SPT), and community of inquiry (CoI). By assessing instructional design strategies through the triadic intersection of these perspectives a newly formed comprehensive approach emerged (see Figure 5.2). This model may be applied to any instructional course design strategy. Utilizing the new online course instructional design assessment model, any instructional course design strategy can be assessed for students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning experience. Additionally, the model can be applied to any online course in both 2- and 4-year colleges and beyond. All instructional design strategies are framed by the same model used in this study: SCT, SPT, and CoI.
Stakeholder preparation. The online course instructional design assessment model may be used to prepare online course designers, instructors, and students. Online course designers, instructors, and students need to be informed of the importance of students’ perceptions of social presence, collaborative learning, social interaction, and student satisfaction with their learning experience in an online course.
Professional development opportunities must be available and readily accessible for online course designers and online instructors. Adequate funding and release time must be provided to allow access and time for professional development. Online course designers and instructors must follow an established evidence-based rubric for best practice prior to implementation of online courses and before an instructor dives into online instruction. Higher education leaders must provide adequate online orientation for students prior to students enrolling in an online course. Students must engage in preparatory, knowledge-led orientation to online instruction and learning. All students must complete online course tutorials and orientations prior to enrolling in an online course. Higher education leaders must ensure that these tutorials and orientations are user-friendly and adequate to introduce the students to the online learning platform.

Oftentimes there are misconceptions of the commitment to instruct or participate in an online course. Instructors and students who enter an online course under these false assumptions are less likely to succeed in this platform.

Students’ lack of technical knowledge and familiarity with the learning management system can cripple students from attaining success in an online course. Furthermore, computer hardware and software vary significantly between manufacturers, styles, and brands. Course designers and instructors must provide online material in universally accessible means. Students must also be knowledgeable on universal conversions to access all college and educational resources. The course goals and student learning outcomes must be effectively communicated to the student. Students must make a notable effort to seek additional assistance when needed. However, students first need to be aware that they are in need of additional support and that developmental educational
resources exist. It is the course instructor’s responsibility to maintain ongoing effective communication with students to ensure students have full understanding of their progress and standing in the course. To address different student needs, a multitude of resources must be available for students. Students must be knowledgeable of these resources and how to access them. Supplemental instructional resources must be available to students in the course. Necessary resources may vary based on individual student needs. To obtain the most benefit of the resources, students must be knowledgeable of their learning style and which resources to access to complement their learning style. Higher education leaders must be committed to student success and have college policies and procedures in place to provide students resources to succeed. Educational institutions should have a specific department and staff available to assist online course designers, instructors, and students 24 hours a day, seven days a week. Many students require the flexibility of online courses to meet family and work demands (Carr, 2000, 2014; Moore, 2014). These students access online courses during non-traditional instructional hours. Having technological support 24 hours a day, seven days a week would provide support during these non-traditional hours. Furthermore, students feel isolated in an online course (Carr, 2014; Moore, 2014). Having a go-to person and point of contact on the physical and virtual campus is imperative to creating connections and social presence.

**Online course design.** The research demonstrated the importance of social presence, collaborative learning, social interaction, and student satisfaction with their learning experience in an online course. The need for instructional design strategies to attend to social presence, collaborative learning, social interaction, and student satisfaction with their online learning experience in an online course is evident.
Instructional design strategies are a critical element of online course development and serve a vital role in creating an online environment where social presence can thrive. Online course designers and instructors must deliberately create an environment where students may feel socially connected to their classmates and the instructor. Teamwork, communication, and instructor-to-student and student-to-student interaction are imperative to creating social presence in an online course. The effectiveness of instructional design strategies must be assessed using a data driven assessment model.

Executive leaders will benefit from deliberating ways to enhance the design of online courses so that the instructional design strategies embrace the principles of social presence. Assessing instructional design strategies that can enhance online course development may improve students’ experiences. Positive student experiences may lead to greater student satisfaction with their educational experience which in turn will lower student attrition rates.

**Implementation of online courses.** The online course instructional design assessment model can be used to assess other instructional design strategies. Various online course instructional design strategies should be utilized to appeal to the learning needs of a diverse student population. As student learning styles vary so should the use of instructional design strategies in an online course to incorporate strategies that encompass multiple learning styles. There is not one standardized instructional course design strategy and students’ learning needs are not homogenous. For example, some students may prefer visual text over narratives while other students prefer the unfolding of case studies for direct application of theory to practice. Any instructional course design strategy can be assessed using this new model.
Application of evidence-based best practices for instructional design strategies must be used to enhance learning. One type of instructional course design strategy alone does not meet the diversity of students’ learning needs. It is imperative for instructors to be familiar with seminal and current works in the literature related to best practices for student success. Incorporating these principles within online courses to mitigate isolation in virtual environments and to form a connected community of learners is imperative for student success. It is time to move from a teacher-centered paradigm to a learner-centered paradigm in higher education. Using Knowles’ (1972, 1992) and Knowles et al. (2015) principles as well as Chickering and Gamson’s (1987) work, online course designers and instructors can engage students as active participants in the learning process. When students are engaged and actively participate in the learning process student success increases.

**Evaluation of online course design and instruction.** Oftentimes faculty assume instructional design strategies will work only to find they fall short of their expectation. Educational practices can be evaluated using the online course instructional design assessment model to build upon best evidence in support of utilizing instructional design strategies. Additionally, the new online course instructional design assessment model may be used to enhance the scholarship of teaching through use of instructional course design strategy evaluation tools. A rubric may be developed to seek best practices in evaluating online learning environments and instruction or an existing rubric based on these principles may be utilized.

**Policy development.** There are great differences in online course development, instruction, and evaluation between higher education institutions. Differences between
institutions exist in who designs an online course, how quality is assessed, and parameters and standards that drive course design. These differences lead to inconsistencies and lack of standardized metrics resulting in differences in design, implementation, and evaluation of instructional design strategies and students’ perceptions of social presence. In order to provide instructional design strategies that enhance social presence it is recommended that higher education institutions assess students’ perceptions of social presence in online courses. Higher education institutions may benefit from adopting policies that require online course designers to develop online courses based on standards supported by evidence-based best practices identified in a rubric. The rubric must be developed based on best practice and ongoing research and assessment or an existing rubric based on these principles may be adopted. The use of the rubric will help ensure consistency and quality with online course development, instruction, and evaluation.

**Social justice.** It is recommended that higher education institutions improve student access and degree attainment to provide a pathway out of poverty to further social justice and equality. Access and successful course and program completion in higher education in America has been on a steady decline. America, once number one in the world in economic and social advancements, has decreased to its current state in higher education attainment for individuals ages 25-36 to number 14 (OECD, 2012). Americans have seen a significant decrease in the middle class (Autor & Dorn, 2013; Autor et al., 2006) throughout this educational decrease. The top 1% of Americans take home approximately one-quarter of the nation’s income, tripling their growth rate since 1976.
(Shaw & Stone, 2012). There has been an increase in the earning gap between the rich and poor over the past decade.

While this current state of educational decline is at the forefront, American leaders have strived to improve the education system. Community colleges provide open access to a community-based learning environment that provides educational opportunities to all individuals regardless of their race, gender, and social economic status (Vaughn, 2000). Current focus is on continued access and successful program completion to afford equal access to employment and opportunities to improve the quality and state of life of Americans. Pathways to education and degree attainment are paramount and necessary to improve social justice and equality.

Obama (2009) stresses the need to invest in human capital. It is necessary that individuals have adequate education to promote social justice. Americans need increased access to education and degree completion. There is the potential to increase access to higher education as well as successful course and program completion to improve the quality of living of all Americans, thus promoting social justice through equal access to employment and opportunities. Through collaborative efforts between higher education, government, business, and individuals there is the potential to increase access to higher education and degree attainment.

**Future research.** In this study the online course instructional design assessment model was used to assess the student team-based instructional course design strategy. Future research may include using the online course instructional design assessment model to evaluate other instructional design strategies. The research may be expanded to encompass a larger sample to create greater depth. It may also be expanded beyond
community college to 4-year institutions as well as private institutions. Research may also be conducted on the impact additional variables such as gender and socio-economic status have on students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning experience in an online course. Other variables may include employment status, motivation factors, learning styles, and self-reported disabilities. Furthermore, research from different disciplines, courses, class size, and semesters may be explored.

Conclusion

Community colleges have appealed to students providing open access (Vaughn, 2000) and affordable higher education (CollegeView, 2015). The popularity and number of online course offerings continue to increase in order to meet the demands of society (Moore, 2014). There is a significant increase in the number of students enrolled in at least one online course in higher education (Allen & Seaman, 2011). More colleges have concentrated efforts to expand online course offerings. Colleges are adding more online courses to accommodate the growth in online enrollment; however, attrition rates are higher in online courses than in campus courses (Carr, 2000; Moody, 2004; Patterson & McFadden, 2009; Xu & Jaggars, 2013). Therefore, high attrition reduces the potential level of student access to higher education and successful course and program completion.

The research literature discusses the link between social presence and student satisfaction and success in online courses. Social presence promotes student interaction online (Wei et al., 2012). Social presence and student interaction may lead to successful course completion and lower attrition (Moore, 2014). Different methods of instruction
and instructor tools are necessary to limit attrition in an online course (Serwatka, 2005).
Identifying ways to effectively create social presence in online courses may help online
course designers address the high rate of student attrition and establish an online course
model for success. Making a concerted effort to form connections to create social
presence online to decrease student attrition rates was missing from the research.

There was limited research addressing course design and students’ perceptions of
social presence, collaborative learning, social interaction, and satisfaction with their
learning experience in an online undergraduate community college course. This study
explored, through a quantitative quasi-experimental research design, the utilization of a
student team-based instructional course design strategy and students’ perceptions of
social presence, collaborative learning, social interaction, and satisfaction with their
learning experience in an online undergraduate course. The study answered to what
extent, if any, did the level of students’ perceptions of social presence, collaborative
learning, social interaction, and satisfaction with their learning experience change as a
result of the utilization of a student team-based instructional course design strategy for 5
weeks in an online undergraduate course. The study also answered, after implementing
instructional course design strategies to enhance student learning in an online course,
how social cognitive theory, social presence theory, and community of inquiry provided
the foundation for better assessing the online learning environment.

A new online course instructional design assessment model emerged to assess
instructional design strategies and the impact on students’ perceptions in a virtual
learning environment. Through the intersection of social cognitive theory, social
presence theory, and community of inquiry, students’ perceptions of social presence,
collaborative learning, social interaction, and satisfaction with their learning experience in an online course can be assessed.

Viewing instructional design strategies in this paradigm will aid higher education leaders, course designers, and course instructors to evaluate students’ perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning experience with the instructional course design strategy implemented. Best practices for online course development need to be incorporated into instructional design to promote and develop social presence. Improving upon ways to evaluate online instructional design strategies will serve as a meaningful tool to aid institutional leaders, course designers, and course instructors to assess students’ perceptions, thus increasing their likelihood for connectedness and success in the online course.

Several recommendations for improving practice, informing policy, and future research resulted from the study. It is recommended that community colleges include student success and degree attainment in the college’s strategic plan. Higher education institutions must focus on student success and program completion. Students are the essence of all educational institutions and must be held at the top of the institution’s organizational chart. Recommendations also included creating a circle of responsibility and success in which student success is contingent on institutional commitment to research best practices, course designer and instructor professional development, and student orientation and resources.

Another recommendation is to use the online course instructional design assessment model to assess instructional design strategies. The findings indicated that the online course instructional design assessment model effectively evaluated students’
perceptions of social presence, collaborative learning, social interaction, and satisfaction with their learning experience in the online course. Intentionally designing, implementing, and evaluating an online course through the tenets of the triadic interaction between social cognitive theory, social presence theory, and community of inquiry created an environment where social presence, collaborative learning, social interaction, and satisfaction with their learning experience can flourish.

Recommendations also included preparation for stakeholders: online course designers, instructors, evaluators, and students. The research demonstrated the importance of social presence, collaborative learning, social interaction, and satisfaction with their learning experience in an online course. Recommendations for online course design, implementation of online courses, and evaluation to promote social presence resulted. The need for instructional course design strategies to attend to social presence, collaborative learning, social interaction, and satisfaction with their online learning experience in an online course was evident. Instructional design strategies are a critical element of online course development and serve as a vital role in creating an online environment where social presence can thrive. Using the online course instructional design assessment model, online instructional design strategies can be assessed. It is time to move from a teacher-centered paradigm to that of a learner-centered paradigm in higher education. Using Knowles’ (1972, 1992) and Knowles, Holton, and Swanson’s (2015) principles and Chickering and Gamson’s (1987) work, online course designers and instructors can engage students as active participants in the learning process. Furthermore, educational practices can be evaluated using the online course instructional design assessment model. Recommendations for higher education institutions to improve
student access and degree attainment to provide a pathway out of poverty to further social
inge and equality were also included. Lastly, recommendations for future research
were included. The online course instructional design assessment model was used to
assess an instructional design strategy, student team-based learning. Future research may
include using the online course instructional design assessment model to evaluate other
instructional design strategies. Research may also be conducted on the impact additional
variables such as gender and socio-economic status have on students’ perceptions of
social presence, collaborative learning, social interaction, and satisfaction with their
learning experience in an online course. Research from different disciplines, courses,
class size, and semester can be explored.

Community colleges provide open access to higher education (Vaughn, 2002).
Community college focus has transitioned to include not only student access to higher
education but successful course and program completion. Higher education access and
degree attainment is a current measure of community college success. Community
college focus must be on continued access and successful course and program completion
to afford equal chances for employment and opportunities. Pathways out of poverty must
include access to higher education and successful course and program completion.
Degree attainment is necessary to improve social justice and equality.
References


Draves, W. A. (2002). Teaching online (2nd ed.). River Fall, WI: LERN.


Appendix A

Participant Introduction Letter

Dear Students:

My name is Jamie Cuda and I am a doctoral candidate at St. John Fisher College. I am writing to ask your assistance in my dissertation research exploring the relationship between the utilization of a student team-based instructional course design strategy and students’ perceptions of social presence, social interaction, collaboration, and satisfaction in an online course. This research is being conducted as part of the Ed. D. in Executive Leadership program at St. John Fisher College Ralph C. Wilson Jr. School of Education.

Recently I spoke with Mark Radlowski, Director of Institutional Research and Analysis at Mohawk Valley Community College (MVCC), regarding this research initiative. He supports this initiative and understands that neither he nor any member of the College, outside the researcher, will have any access to the data for any reason.

As a student participating in the MVCC Medical Terminology online course, I would like to invite you to participate in my research by completing a brief survey that is strictly voluntary. The survey consists of 36 questions and will take approximately fifteen minutes to complete. You will receive an e-mail that will provide you with a direct link to the survey in Qualtrics (provided by St. John Fisher College). Please note this software is independent of MVCC owned or licensed software and is not interfaced with MVCC. Survey results do not identify specific participants and assures anonymity of individuals who complete the survey. Your individual privacy will be strictly maintained. Survey results will be presented in aggregate format and no individual responses will be reported. Furthermore, survey results will not be accessed until after the course has ended and final grades are recorded.

The Institutional Review Board (IRB) at St. John Fisher College has reviewed and approved this research project. For any concerns regarding confidentiality, please call Jill Rathbun at 585.385.8012. She will direct your call to a member of the IRB at St. John Fisher College. In addition, the Director of Institutional Research and Analysis at MVCC has reviewed and approved this project. For any concerns regarding confidentiality, please call Mark Radlowski at 315.792.5467.

If you have any questions or require further information to determine your participation, feel free to contact me at [redacted] or via e-mail at jlc09984@sjfc.edu. Thank you for considering to participate in this research project.
Sincerely,

Jamie Cuda  
Doctoral Candidate  
St. John Fisher College  
jlc09984@sjfc.edu
Appendix B

Participant Pre-Survey Invitation Announcement and E-mail

Dear Students:

As you may know, I am a doctoral candidate at St. John Fisher College. I am currently gathering data for my dissertation research related to the utilization of a student team-based instructional course design strategy and students’ perceptions of social presence, social interaction, collaboration, and satisfaction in an online course.

I would like to invite you to participate in my research by completing a brief survey. The survey consists of 36 questions and will take approximately fifteen minutes to complete. Please complete the survey by Sunday, November 8th. Your responses are important and will aid in my dissertation research. As a token of my appreciation for completing the survey, you may enter your mailing address after the conclusion of the survey and a $5 coffee card will be mailed to you.

To participate in the survey, please click on the following anonymous survey link:

https://sjfc.co1.qualtrics.com/SE/?SID=SV_1zsilCvLDLu1wHP

You were selected to participate in this study because you are enrolled in the Mohawk Valley Community College, Center for Health and Life Sciences, Allied Health, Medical Terminology course this semester and are over 18 years old. Your experiences and perceptions related to the online course are important and will be used to inform higher education leaders and online course designers of the importance of online course design.

Survey results do not identify specific participants and assures anonymity of individuals who completed the survey. Furthermore, survey results will not be accessed until after the course has ended and final grades have been recorded. Survey results will be presented in aggregate format and no individual responses will be reported. Additionally, the Mohawk Valley Community College Research Review Team and the St. John Fisher College Institutional Review Board have reviewed and approved this research.

If you have any questions or require further information to determine your participation, feel free to contact me at [redacted] or via e-mail at jlc09984@sjfc.edu. Thank you in advance for participating in this survey.
Sincerely,

Jamie Cuda  
Doctoral Candidate  
St. John Fisher College  
jlc09984@sjfc.edu
Appendix C

Participant Post-Survey Invitation Announcement and E-mail

Dear Students:

As you may know, I am a doctoral candidate at St. John Fisher College. I am currently gathering data for my dissertation research related to the utilization of a student team-based course design strategy and students’ perceptions of social presence, social interaction, collaboration, and satisfaction in an online course.

I would like to invite you to participate in my research by completing a brief survey. The survey consists of 36 questions and will take approximately fifteen minutes to complete. Please complete the survey by Sunday, December 13th. Your responses are important and will aid in my dissertation research. As a token of my appreciation for completing the survey, you may enter your mailing address after the conclusion of the survey and a $5 coffee card will be mailed to you.

To participate in the survey, please click the following anonymous survey link:

https://sjfc.co1.qualtrics.com/SE/?SID=SV_510f2EsKNHXHHTL

You were selected to participate in this study because you are enrolled in the Mohawk Valley Community College, Center for Health and Life Sciences, Allied Health, Medical Terminology course this semester and are over 18 years old. Your experiences and perceptions related to the online course are important and will be used to inform higher education leaders and online course designers of the importance of online course design.

Survey results do not identify specific participants and assures anonymity of individuals who completed the survey. Furthermore, survey results will not be accessed until after the course has ended and final grades have been recorded. Survey results will be presented in aggregate format and no individual responses will be reported. Additionally, the Mohawk Valley Community College Research Review Team and the St. John Fisher College Institutional Review Board have reviewed and approved this research.

If you have any questions or require further information to determine your participation, feel free to contact me at [redacted] or via e-mail at jlc09984@sjfc.edu. Thank you in advance for participating in this survey.
Sincerely,

Jamie Cuda  
Doctoral Candidate  
St. John Fisher College  
jlc09984@sjfc.edu
Appendix D

Participant Informed Consent-Online Survey

Dear Participant:

I am conducting a quasi-experimental quantitative research study to explore the relationship between the utilization of a student team-based instructional course design strategy and students’ perceptions of social presence, social interaction, collaborative learning, and satisfaction in an online course. The study will be conducted to examine the relationship of an intervention, utilization of a student team-based instructional course design strategy, on students’ perceptions of social presence, social interaction, collaborative learning, and satisfaction. The research design selected meets ethical considerations since the intervention is offered to all study participants. The study contains two identical surveys allowing a comparison between students’ perceptions of social presence, social interaction, collaborative learning, and satisfaction. The first survey will assess baseline data prior to the intervention. The second survey will assess data following the intervention.

In this study you will be asked to reflect on your experiences in this online course during weeks 10 and 16 of the 16-week semester and indicate the extent to which you agree or disagree with the statements regarding your perception of social presence, social interaction, collaborative learning, and satisfaction in this online course. The intervention and utilization of a team-based instructional course design strategy will be introduced during week 11 and continue through week 15. The survey consists of 36 questions and should take approximately 15 minutes to complete.

There are no significant risks to you from your participation in this survey. As shared in the introduction letter, all responses will remain confidential and anonymous. Survey results will not be accessed until after the course has ended and final grades have been recorded.

As a research participant, you have the right to:

- Have the purpose of the study, and the expected risks and benefits, fully explained to you before you choose to participate;
- Withdraw from participation at any time without penalty;
- Refuse to answer a particular question without penalty;
- Be informed of appropriate alternative procedures or course of treatment, if any that might be advantageous to you; and
- Be informed of the results of this study.
Please feel free to contact Jamie Cuda at [redacted] or e-mail at jlc09984@sjfc.edu if you have any questions about the study.

In order to access the online survey you will be asked to answer “yes” or “no” to the Informed Consent Statement below. If you select “yes” and indicate informed consent to participate in the study you will be automatically advanced to the survey questions. If you select “no” and indicate you do not consent to participate in the study you will be automatically exited from the survey.

Informed Consent Statement
I have read and understand the study prescribed in the informed consent form and received a copy of the form. I am 18 years of age or older and I agree to participate in the above-named study.
  o  Yes
  o  No

If you have any further questions regarding this study, please contact the researcher listed above for appropriate referrals.

If you experience emotional or physical discomfort due to participation in this study, please contact the Office of Academic Affairs at 385-8034 or the Health & Wellness Center at 385-8280 for appropriate referrals.

The Institutional Review Board (IRB) of St. John Fisher College has reviewed this project. For any concerns regarding confidentiality, please call Jill Rathbun 585-385-8012. She will direct your call to a member of the IRB at St. John Fisher College.
Appendix E

Social Presence Survey

**Instructions:** The following survey questionnaire consists of 36 questions and will take approximately 15 minutes to complete. The survey is designed to measure your perception of the level of social presence, social interaction, collaborative learning, and satisfaction in an online course. There is no right or wrong answer for each question. However, it is important for you to respond as accurately as possible. Your thoughts and opinions are important.

Please reflect on your experiences in this online course and then indicate the extent to which you agree or disagree with each of the following statements. All responses will remain confidential and anonymous and will not be accessed by the researcher until after the course has ended and final grades have been recorded. Thank you for taking the time to participate in the survey.

**Social Presence**

1. Communication in the course is impersonal.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

2. I feel comfortable conversing in the course.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree
3. I felt comfortable introducing myself in the course.
   o Strongly Agree
   o Agree
   o Neutral
   o Disagree
   o Strongly Disagree

4. The course introductions enabled me to form a sense of community.
   o Strongly Agree
   o Agree
   o Neutral
   o Disagree
   o Strongly Disagree

5. I feel comfortable participating in course discussions.
   o Strongly Agree
   o Agree
   o Neutral
   o Disagree
   o Strongly Disagree

6. The instructor creates a feeling of community.
   o Strongly Agree
   o Agree
   o Neutral
   o Disagree
   o Strongly Disagree

7. The instructor facilitates discussion in the course.
   o Strongly Agree
   o Agree
   o Neutral
   o Disagree
   o Strongly Disagree
8. I feel that my point of view was acknowledged by other students in the course.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

9. I am able to form distinct individual impressions of some students in the course.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

Social Interaction

10. Courses are an excellent means for social interaction.
    - Strongly Agree
    - Agree
    - Neutral
    - Disagree
    - Strongly Disagree

11. I feel comfortable interacting with other students in the course.
    - Strongly Agree
    - Agree
    - Neutral
    - Disagree
    - Strongly Disagree

12. The amount of interaction with other students in the courses is appropriate.
    - Strongly Agree
    - Agree
    - Neutral
    - Disagree
    - Strongly Disagree
13. The quality of interaction with other students in the course is appropriate.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

14. The amount of interaction with the instructor in the course was appropriate.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

15. The quality of interaction with the instructor in the course was appropriate.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

**Collaborative Learning**

16. I felt part of a learning community in my course.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

17. I actively exchanged ideas in my courses.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree
18. I was able to develop new skills and knowledge from other members in my courses.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

19. I was able to develop problem solving skills through peer collaboration.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

20. Collaborative learning in my course was effective.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

21. Collaborative learning in the course was time-consuming.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

22. Overall, I am satisfied with my collaborative learning experience in the course.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree
Satisfaction

23. I am able to learn in the online course.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

24. I am able to learn from online course discussions.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

25. I am stimulated to do additional reading or research on topics discussed in the online course.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

26. Discussions assisted me in understanding other points of view.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

27. As a result of my experience in the online course, I have made acquaintances from other parts of the world.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree
28. The online course is a useful learning experience.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

29. The diversity of topics in the course prompted me to participate in discussions.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

30. My level of learning that took place in this course was of the highest quality.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

31. Overall, the learning activities and assignments in this course met my learning expectations.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

32. Overall, the instructor in this course met my learning expectations.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree
33. Overall, this course met my learning expectations.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

Demographics

34. What is your gender?
   - Male
   - Female

35. What is your age group?
   - Under 18
   - 18-25
   - 26-35
   - 36-45
   - Over 45

36. What is your race?
   - White/Caucasian
   - African American
   - Hispanic
   - Asian
   - Native American
   - Pacific Islander
   - Other
Appendix F

Participant Pre-Survey Reminder Announcement and E-mail

Dear Students:

A few days ago you received an e-mail inviting you to assist in assessing online learning environments by participating in a Web-based survey. If you have completed the survey, thank you!

If you have not had a chance to take the survey yet, the deadline to participate in the survey is Sunday, November 8th. I would appreciate your participation and completion of the survey. The survey should take no more than fifteen minutes to complete. Your responses are important and will aid in my dissertation research. As a token of my appreciation for completing the survey, you may enter your mailing address after the survey has ended and a $5 coffee card will be mailed to you.

To take the Web-based survey, please click on the following anonymous survey link:

https://sjfc.co1.qualtrics.com/SE/?SID=SV_1zsilCvLDLulwHP

I would like to remind you that survey results do not identify specific participants and assures anonymity of individuals who completed the survey. Furthermore, the survey results will not be accessed until after the course has ended and final grades have been recorded. The Institutional Review Board at St. John Fisher College has reviewed and approved this research.

If you have any questions or require further information to determine your participation, please feel free to contact me at [REDACTED] or via e-mail at jlc09984@sjfc.edu. Thank you in advance for participating in this survey. I appreciate your time!

Sincerely,

Jamie Cuda
Doctoral Candidate
St. John Fisher College
jlc09984@sjfc.edu
Appendix G

Participant Post-Survey Reminder Announcement and E-mail

Dear Students:

A few days ago you received an e-mail inviting you to assist in assessing online learning environments by participating in a Web-based survey. If you have completed the survey, thank you!

If you have not had a chance to take the survey yet, the deadline to participate in the survey is Sunday, December 13th. I would appreciate your participation and completion of the survey. The survey should take no more than fifteen minutes to complete. Your responses are important and will aid in my dissertation research. As a token of my appreciation for completing the survey, you may enter your mailing address after the survey has ended and a $5 coffee card will be mailed to you.

To take the Web-based survey, please click on the following anonymous survey link:

https://sjfc.co1.qualtrics.com/SE/?SID=SV_510f2EsKHXHHTL

I would like to remind you that survey results do not identify specific participants and assures anonymity of individuals who completed the survey. Furthermore, the survey results will not be accessed until after the course has ended and final grades have been recorded. The Institutional Review Board at St. John Fisher College has reviewed and approved this research.

If you have any questions or require further information to determine your participation, please feel free to contact me at [redacted] or via e-mail at jlc09984@sjfc.edu. Thank you in advance for participating in this survey. I appreciate your time!

Sincerely,

Jamie Cuda
Doctoral Candidate
St. John Fisher College
jlc09984@sjfc.edu
Appendix H

Participant Pre-Survey Thank You Announcement and E-mail

Dear Students,

Thank you to all who participated in the pre-survey. As a token of appreciation a $5 coffee card was mailed to participants who entered their mailing address at the conclusion of the survey.

At the beginning of Week 16 you will receive an invitation to participate in the post-survey via course announcement and student e-mail. In order to obtain reportable data, participants are encouraged to participate in both the pre- and post-survey. Please remember to enter the same number at the beginning of the post-survey that you entered for the pre-survey. Doing so will allow comparison of your pre and post-survey responses.

Thank you for aiding in my dissertation research. I greatly appreciate your time and dedication to my research. If you have any questions or concerns, please feel free to contact me at [email protected] or via e-mail at jlc09984@sjfc.edu.

Sincerely,

Jamie Cuda
Doctoral Candidate
St. John Fisher College
jlc09984@sjfc.edu
Appendix I

Participant Post-Survey Thank You Announcement and E-mail

Dear Students,

Thank you to all who participated in the post-survey. As a token of appreciation a $5 coffee card was mailed to participants who entered their mailing address at the conclusion of the survey.

Thank you for aiding in my dissertation research exploring the relationship between the utilization of a student team-based instructional course design strategy and students’ perceptions of social presence, social interaction, collaboration, and satisfaction in an online course. Your experiences and perceptions related to the online course are important and will be used to inform higher education leaders and online course designers of the importance of online course design.

I greatly appreciate your time and dedication to my research. If you have any questions or concerns, please feel free to contact me at [REDACTED] or via e-mail at jlc09984@sjfc.edu.

Sincerely,

Jamie Cuda  
Doctoral Candidate  
St. John Fisher College  
jlc09984@sjfc.edu
Appendix J

Participant Conclusion of Research Announcement and E-mail

Dear Students,

The dissertation research pre-survey and post-survey have closed and the study has concluded. Thank you to all who participated in my dissertation research exploring the relationship between the utilization of a student team-based instructional course design strategy and students’ perceptions of social presence, social interaction, collaboration, and satisfaction in an online course. Your experiences and perceptions related to the online course are important and will be used to inform higher education leaders and online course designers of the importance of online course design.

I greatly appreciate your time and dedication to my research. If you have any questions, concerns, or would like information on the survey or research results, please feel free to contact me at [redacted] or via e-mail at jlc09984@sjfc.edu.

I wish you success on your future endeavors. If I can further assist you on your journey, please feel free to contact me. Have a wonderful holiday break!

Sincerely,

Jamie Cuda
Doctoral Candidate
St. John Fisher College
jlc09984@sjfc.edu
Appendix K

Protecting Human Research Participants Certificate of Completion

Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that Jamie Cuda successfully completed the NIH Web-based training course "Protecting Human Research Participants".

Date of completion: 07/12/2015
Certification Number: 1797888
Appendix L

St. John Fisher Institutional Review Board Approval Letter

October 29, 2015

File No: 3494-101515-05

Jamie Cuda
St. John Fisher College

Dear Ms. Cuda:

Thank you for submitting your research proposal to the Institutional Review Board.

I am pleased to inform you that the Board has approved your Expedited Review project, “The Relationship between the Utilization of a Team-based Course Design Instructional Strategy and Social Presence, Social Interaction, Collaboration, and Satisfaction in an Online Course”.

Following federal guidelines, research related records should be maintained in a secure area for three years following the completion of the project at which time they may be destroyed.

Should you have any questions about this process or your responsibilities, please contact me at irb@sjfc.edu.
Sincerely,

Eileen Lynd-Balta

Eileen Lynd-Balta, Ph.D.
Chair, Institutional Review Board

ELB:jdr
Appendix M

Mohawk Valley Community College Research Review Team Approval

From: Mark Radlowski
Sent: Friday, September 4, 2015 1:47 PM
To: Jamie Cuda
Subject: RRT approval

Jamie,
This is to inform you that your research project has been approved by the RRT (Research Review Team) at Mohawk Valley Community College.
If you have any questions, please feel free to contact me.
Good luck with your research!

Mark E. Radlowski
Director of Institutional Research and Analysis
Mohawk Valley Community College
1101 Sherman Drive
Utica, NY 13501-5394
(315) 792-5467
mark.radlowski@mvcc.edu