A COMPARISON OF INSTRUCTOR AUDIO-VIDEO WITH TEXT-BASED FEEDBACK

VERSUS TEXT-BASED FEEDBACK ALONE ON STUDENTS' PERCEPTIONS OF

COMMUNITY OF INQUIRY AMONG RN-TO-BSN ONLINE STUDENTS

by

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Dedication

I dedicate this work to my husband, Steven James Lindley, who gave me the gifts of love, support and encouragement to make this academic achievement possible. I also dedicate this work to my late father, Brian Patrick Kelly, who inspired my passion for education.

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To my family, Steven and Patrick, I love you and thank you for the sacrifices that you have made along the way. I know that there have been many. I must also thank my mother, Marie Kelly and my sister, Julia Kelly for your constant encouragement and belief in me. Sister Eileen Kelly, you are my inspiration for life-long learning; I promise I will continue to grow and learn. My mother-in-law, Carol Rose, please know that your optimistic attitude and kinds words helped beyond measure. Laura Estes, thank you for listening to me talk about this for hours on end, for the past seven years. I am grateful to Christina Culifer and Kailee Covington for being there for my entire family. For my friends near and far, especially Vincent Cisternino, I am forever grateful for all of your support.

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Abstract

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The University of Texas at Arlington, 2014

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In order to meet the healthcare needs of the US population, Registered Nurses (RNs), with Bachelor of Science in Nursing degrees, are needed. This descriptive posttest study, with independent samples, examined the use of audio-video with text-based feedback versus text-based only feedback on student's perceptions of the community of inquiry (COI) among RN-BSN online students (n=125), enrolled in one course at one university. The COI survey performed reliably with Cronbach's alpha .94 on the pretest and .98 on the posttest. No statistically significant difference was found between the groups on the pretest for teaching presence (p=.31), social presence (p=.40) or cognitive presence (p=.38). On the posttest, statistically significant difference between the groups was found for each COI presence: teaching (p=.00, control M=3.84 , intervention M =4.45), social (p=.03, control M= 3.84, intervention M=4.31), and cognitive (p=.00, control M= 3.88, intervention M= 4.46). Students who report higher levels of cognitive presence are more likely to reenroll in subsequent semesters. Nurse educators and students may benefit from the use of AV feedback or other technologies to enhance COI presences in online courses and to promote student reenrollment. Further research is needed to explore student and faculty perceptions of the AV feedback's usefulness and relationship to course outcomes.

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Chapter 1

Introduction

In 2010, the Institute of Medicine (IOM) proposed that 80% of nurses in the workforce should hold a Bachelor of Science in nursing (BSN) or higher degree by 2020. Patients cared for by BSN-prepared registered nurses (RNs) have lower mortality rates (Aiken, Clarke, Cheung, Sloane, & Silber, 2003; Tourangeau et al., 2007). Only 50% of nurses are currently prepared, however, at the BSN level (American Association of Colleges of Nursing [AACN], 2012a). Schools of nursing need to increase enrollments to meet the IOM goal and to potentially lower patient mortality.

Nursing education programs can expand RN-BSN enrollments using online courses (Texas Center for Nursing Workforce Studies [TCNWS], 2006). Nurses who were prepared at the diploma or associate degree level attend RN-BSN programs to earn their BSN. There are 646 RN-BSN degree programs, with 390 of those programs having at least partially or completely online components (AACN, 2012b). Although online programs offer students convenience, online courses have attrition rates 10-20% higher when compared to traditional classroom courses (Angelino, Williams, & Natvig, 2007). To be effective, educators need to understand the dynamics of the online environment and attrition factors (Herbert, 2006).

The Community of Inquiry (COI) framework is a useful model to study online education (Garrison, 2009). The COI is composed of three presences: teaching, social, and cognitive presences. Students who have positive perceptions of the COI presences were more likely to re-enroll (Boston et al. 2010). One teaching technique of audio feedback increased students' perceptions of teaching presence (Ice, Curtis, Phillips, and Wells, 2007). Students report audio feedback is more effective than text-based feedback (Ice et al., 2007). This quasi-experimental study compared the effect of teacher audio-

video (AV) feedback to text-based feedback in an online RN-to-BSN course on students'
perceptions of the COI presences. The remainder of this chapter will explain the
importance of BSN education for patient outcomes, the need to understand online
nursing education, and the specific research questions of this study.

Background and Significance

Numerous factors, including faculty shortages and lack of clinical sites, have led
to the denial of qualified nursing students into nursing programs. In the 2010-2011
academic year, nursing programs accepted only 39.5% of qualified candidates (AACN,
2012a). *The Future of Nursing: the Focus on Education report* (IOM, 2010) included a
recommendation that nursing programs consider online education as one method to
expand student access to programs. The use of online courses eliminates the barrier of
geographic constraints, thereby increasing access for more students.

Enrolling students is not enough; the greater challenge may be in retention of
students and persistence through graduation. In Texas, only 58% of all undergraduates
completed a bachelor's degree in less than six years (Texas Higher Education
Coordinating Board, 2013). The national BSN undergraduate prelicensure attrition rate is
50%, which includes both online and traditional on-campus programs (Newton & Moore,
2009). Attrition rates for completely online RN programs are not available. No national
benchmarks for progression and graduation rates for RN-to-BSN students currently exist
(Robertson, Canary, Orr, Herberg, & Rutledge, 2010) but are expected to be similar to
prelicensure attrition.

Student attrition is costly to students, taxpayers, state and federal governments,
and private institutions. The national cost of first-year student attrition for all
undergraduates is $9 billion annually (American Institutes of Research, 2010). Although
the cost of RN-to-BSN student attrition is unknown, it does contribute to societal financial

burden. Student reenrollment is important to nurse educators and administrators who are working to meet the IOM call for more BSN-prepared nurses, meet overall workforce demands, have financially secure programs, and maximize quality outcomes (IOM, 2010).

BSN Education Benefits

The most important benefit of BSN-level education is that it can improve mortality rates for hospitalized patients. Higher levels of nursing education, such as the BSN, decrease patient mortality (Aiken et al., 2003; Estabrooks, Midodzi, Cummings, Ricker, & Giovannetti, 2005; Tourangeau et al., 2007). To provide the best care possible to patients, nurses need preparation to an education level that teaches systems thinking, finance, community, and public health systems (IOM, 2010). Nurses need BSN education to function more effectively in this complex healthcare system and to meet the multifaceted needs of their patients and reduce mortality for patients (AACN, 2012c).

Research Problem

As the rate of online BSN programs increases, nurse educators must discover and utilize methods to maximize student persistence to graduation in online BSN courses. Researchers have already shown that students can develop effective communities of learning in online text-based environments (Ice et al., 2007; Rourke, Anderson, Garrison, & Archer, 1999; Swan, Garrison, & Richardson, 2009). Boston et al. (2010) demonstrated that students who perceive positive levels of teaching, social, and cognitive presence in online courses have higher levels of retention. Nurse educators face a critical research question related to which teaching strategies may increase RN-to-BSN students' perceptions of the COI presences. This study is the foundation for a future national study to include different levels of nursing education and possibly other disciplines.

Theoretical Framework

Over the past decade, Garrison and Anderson (2003) developed and utilized the COI framework as a theoretical model for studying online education (see Figure 1). The three COI presences have been conceptually defined (see Table 1). The importance of teaching presence in the development of social and cognitive presences has become clear (Garrison, Cleveland-Innes, & Fung, 2010). Researchers have not yet fully investigated the interaction between the social and cognitive presences (Swan et al., 2009). The interaction between each of the presences still needs further investigation.
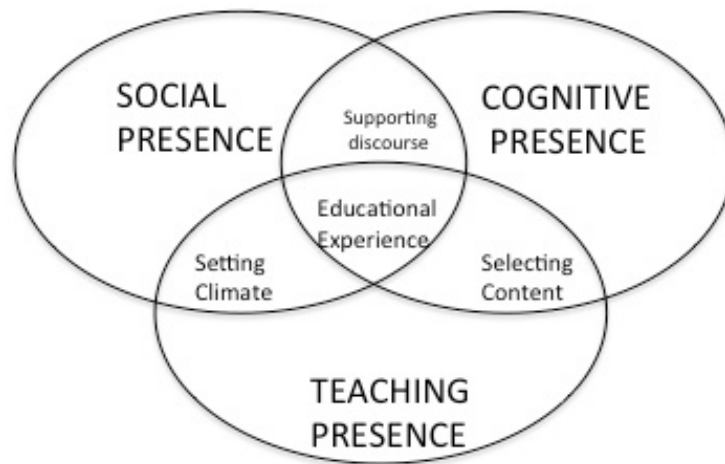
Figure 1 Community of Inquiry framework. Adapted from *E-learning in the 21st Century*, by D. R. Garrison and T. Anderson, 2003, p. 28. Copyright by D. R. Garrison and Terry Anderson.

Table 1 Community of Inquiry Framework Concepts

Concept	Conceptual definition
Social presence	Student perception of open communication, group cohesion, and affective elements (Garrison & Vaughan, 2008)
Teaching presence	Student perception of design and organization, facilitation of discourse, and direct instruction (Garrison & Vaughan, 2008)
Direct instruction	The delivery of information or feedback to a student from a teacher, who is a subject matter expert, with the goal for the student to achieve learning outcomes (Arbaugh & Hwang, 2005; Garrison et al., 2010a)
Cognitive presence	Student perception of triggering event, exploration, integration, and resolution (Garrison & Vaughan, 2008)
Program retention	Continuous enrollment in a nursing program until meeting graduation requirements (Jeffreys, 2012)

Note. Adapted from *Blended Learning in Higher Education*, by D. R. Garrison and N. Vaughan, 2008, p.19. Copyright by Wiley.

Figure 1 displays this author's synthesis of research findings regarding the interaction of the conceptual definitions and the theoretical framework for this study. Teaching presence includes the design and organization of a course, the teacher's ability to facilitate discourse, and the direct instruction that the teacher provides to students. Teaching presence has an influence on social and cognitive presences (Garrison et al., 2010a). If student perception of teaching presence increases, then student perception of cognitive presence is likely to increase.

Multiple opportunities to increase teaching presence exist. Instructors may take steps to improve the design and organization of their courses, enhance facilitation, or enrich direct instruction methods. Audio-video (AV) feedback to students via discussion boards in online courses is one example of a direct instruction method. Both teaching and social presence contribute to the prediction of cognitive presence (Archibald, 2010; Garrison, Anderson, & Archer, 2010). When students perceive higher levels of cognitive presence, they are more likely to persist in school (Boston et al., 2010).

This study focused on the use of AV communication and students' perceptions of the three presences. AV communication is an example of an intervention that an online educator can control. Many factors that affect program retention are outside the control of the educator, such as financial difficulty, child-care challenges, employer responsibilities, family responsibilities, and lack of emotional support (Jeffreys, 2012). The inability to control the extraneous factors is the reason that retention rates are not the outcome variable. This study focused on students' perceptions of the three presences in their online learning community, which are represented within the dotted line in Figure 2. The rationale, for the focus on perceptions of presences, is because the instructor may be able to directly affect each of the three presences.
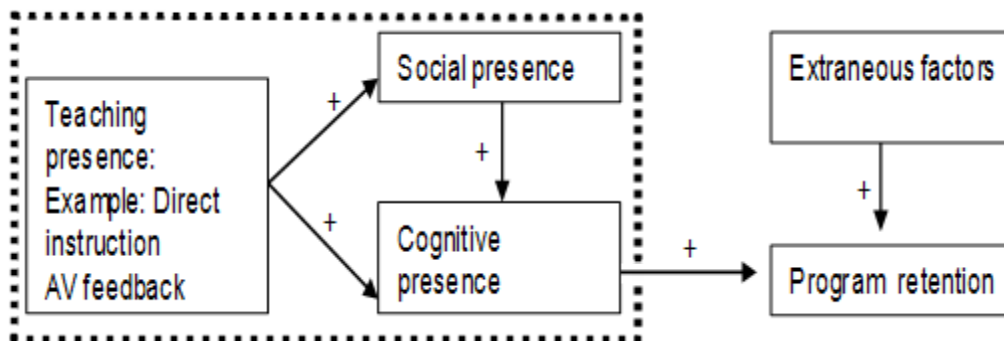
Figure 2 Relationships between conceptual definitions. M. K. Lindley, 2012

Propositions of the COI Presences

- Teaching presence, operationalized through the design and organization of the course, is a precursor to the development of social presence.
- Teaching presence, operationalized through facilitation of discourse and direct instruction, is a precursor to cognitive presence.
- Social presence allows for open communication among students and promotes student engagement in discourse, leading to cognitive presence.

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- Cognitive presence occurs when the teaching and social presences promote student discourse in the exploration of problems and resolutions.

- Students who perceive higher levels of all of the COI presences have higher levels of retention (Boston et al., 2010).

- Factors outside of the COI also influence a student's retention in a nursing program.

Purpose

The purpose of this exploratory, quasi-experimental study was to compare the effects of instructor AV feedback with text-based feedback to text-based only feedback on students' perceptions of teaching, social, and cognitive presences among online RN-to-BSN students.

Research Question

Do students who receive instructor AV with text-based feedback have different perceptions of teaching, social, and cognitive presences than do those students who receive standard text-based only feedback?

Assumptions

- Students have adequate technologic knowledge to engage with the intervention.

- Students took the time to answer the survey.

- Online students responded honestly to questions regarding their perceptions of the three presences.

- Instructors who use AV feedback as a design feature, method of facilitation, and direct instruction may primarily increase students' perceptions of teaching presence and, subsequently, increase students' perceptions of social and cognitive presences.

Delimitations

This study included RN-to-BSN students in an online course at one large state university. RN-to-BSN students are a unique subpopulation of college students and nursing students in particular. RN-to-BSN students are typically older and work more hours than do students who enter college right after high school.

Summary

This chapter introduced the importance of increasing the education level of nurses across the country to meet the specific challenges within the US healthcare system. The use of online programs can help alleviate the nursing shortage and elevate the education level of nurses. Nurse educators and administrators must increase enrollment while maintaining retention and graduation rates. The COI framework offers a way to study online communities and to test new teaching strategies aimed at improving the student experience of online education with the ultimate goal of improved retention.

The chapter concludes with an overview of this study, which used one such teaching strategy. This study compared of the effect of two different teaching modalities on the students' perceptions of their community of inquiry in an online learning environment.

Chapter 2

Critical Review of Relevant Literature

The concept of community, as it relates to education in the classroom, has been in the literature for decades. Today, classrooms exist online and in physical buildings. The U.S. Department of Education, National Center for Education (2011) reports that there were over 4.3 million undergraduate students enrolled in at least one online course, with 4% of undergraduates enrolling in entirely online programs. The rise in this pedagogy has resulted in a marked increase in the number of research studies regarding online communities of education.

Online educators need to be knowledgeable and comfortable using methods to promote a student's sense of belonging because, when students have an increased sense of belonging, they are more likely to continue in college (Boston et al., 2010). This concept is particularly important to educators in colleges of nursing who teach in undergraduate and RN-to-BSN programs because there are thousands of nursing students enrolled in online or partially online courses. Maintaining and improving retention rates in nursing programs is critical if colleges of nursing are to meet the future workforce demands and quality standards for those who receive nursing care.

Electronic literature databases used in this literature review included EBSCOhost, ERIC, CINAHL, MEDLINE, PsycINFO, Communications and Mass Media Complete, Academic Search Complete, Business Source Complete, Science and Technology, Teacher Reference Center, and Texas Reference Center. The keywords used were online, education, learning, sense of belonging, social presence, teaching presence, cognitive presence, community, attrition, nursing shortage, nursing students, RN, and BSN. The results were the identification of key studies exploring communities of inquiry and belonging in online education. The population of interest of this study, the

background of the concept of community of inquiry, and its relevance to online nursing programs are covered in this chapter.

Population of Interest

The population of interest for this study is registered nurses enrolled in RN-to-BSN online programs. Registered nurses may choose to return to college either to complete their BSN for their own professional growth or to meet an employer requirement. Many health care employers are seeking Magnet accreditation, which favors the BSN as the required educational preparation of RNs (AACN, 2012b). In part due to the increased demand by employers, student enrollment in RN–to-BSN programs increased by 15.8% in 2010-2011.

Demographics

Colleges of nursing consider RN-to-BSN students a subgroup of undergraduate nursing students. Some demographic data are available specifically for the RN–to-BSN student population, while other data are only available for all undergraduate nursing students. The RN–to-BSN student population consists of 86% women and 14% men (National League for Nursing [NLN], 2012). Sixty-nine percent of all RN-to-BSN students are over age 30, 18% are between ages 26 and 30 and 13% are under age 25 (NLN, 2012).

National-level demographic data exist for undergraduate nursing students but not specifically RN-to-BSN students. Minority students constitute 27% of the undergraduate nursing student population. The 27% minority group is composed of 12% African American, 8% Asian or Pacific Islander, 6% Hispanic, and 1% American Indian or Alaskan Native students (NLN, 2012). Socioeconomic status data specifically for RN to BSN students and undergraduate nursing students are not available at the national level.

This study was conducted at a university that collects demographic data of RN–to-BSN students. Similar to the national rates, women account for 85.7% of RN-to-BSN students and 73% of students are over age 30. Minority students, at the study university, account for 44% of the total number of RN-to-BSN students. This 44% minority is composed of African Americans (18%), Hispanics (14.5%), Asian and Pacific Islanders (6.8%), and others (5%).

Education and Attrition

One option for RNs returning to college for their BSN is online RN-to-BSN programs. At least 400 of the 646 RN-to-BSN programs in the United States have an online component (AACN, 2012a). Full-time working RNs take more than 75% of their coursework online (U.S. Department of Health and Human Services Health Resources and Services, 2010). These online programs allow for thousands of RNs to enroll in online RN-to-BSN courses every year.

The national attrition rate for all BSN students is 50% (Newton & Moore, 2009). Again, the RN-to-BSN subgroup of students is included in the number of undergraduate nursing students and specific data are not available. Once a student enrolls in the program, the goal for the student, faculty, and administrators is that the student completes his or her degree. Before the 2010 IOM *Future of Nursing* report and the rise in organizations seeking Magnet accreditation, the priority for colleges of nursing, state, and national organizations and government was to increase the number of students graduating and obtaining initial RN licensure. These environmental forces have motivated efforts to increase the enrollment and retention of RN-to-BSN students. Only in the past few years has the priority shifted to specifically increasing the number of BSN-prepared nurses and, hence, no current national benchmark for attrition specifically for RN-to-BSN

students is available (Robertson et al., 2010). This gap in data is an area that needs further investigation.

The RN-to-BSN student population is unrepresented in existing research in online communities of learning literature. Most research on sense of community and belonging included samples of students either from other fields or from prelicensure, masters, or doctoral-level nursing students. Only one study specifically addressed the subpopulation of RN-to-BSN undergraduate nursing students. The following section highlights the reasons and timeliness of online RN-to-BSN student retention and attrition as a critical area for researchers to study.

<div align="center">Background</div>

The Need to Increase Nursing Program Enrollments

In the 2010-2011 academic year, nursing programs accepted only 39.5% of qualified candidates for several reasons that included faculty shortages and lack of clinical sites (AACN, 2012c). The IOM (2010) suggested that colleges of nursing develop bridge programs, academic service partnerships, and online education programs to increase enrollments and the number of BSN-prepared RNs. At the state level in 2006, the TCNWS recommended that nursing education programs pursue distance education as one method to increase access to nursing programs. Presuming nursing programs have the resources to expand capacity, they then face the next challenge of promoting student persistence.

Attrition Rates of Online Students

Between the years 1998 and 2001, a remarkable 138% increase occurred in the number of available online education courses offered by higher education institutions (Angelino et al., 2007). From 1999 to 2008, the percentage of undergraduate students taking at least one online course increased by 12% (U.S. Department of Education,

National Center for Education, 2011). Online courses attracted traditional and nontraditional students.

The attrition rates of online RN–to-BSN students and of online undergraduate nursing students are unknown. Across all disciplines, online programs have a 10-20% higher attrition rate than do traditional classroom courses (Angelino et al., 2007). The number of students taking online course continues to increase despite the increased likelihood of not completing the degree (Herbert, 2006). The three issues that influence online student retention rates include student connection to the institution, quality of interactions between faculty and students, and student self-discipline (Heyman, 2010). Other factors affecting student attrition may include student academic skills, motivation, commitment, socioeconomics, social interactions, and academic institutional factors (Herbert, 2006; Heyman, 2010). Student attrition has significant economic implications.

The Cost of Attrition

The specific costs of RN-to-BSN and undergraduate nursing student attrition are unknown. Overall, college student attrition is costly to the student, the higher education institution, state governments, federal government, and taxpayers. Between 2003 and 2008, state subsidies, state grants, and federal grants combined for $9 billion in funding for first-year college students that did not return for a second year (American Institutes for Research, 2010). With only 60% of students completing their four-year degree in four to six years, the cost of attrition over the four- to six-year periods would be significantly higher than the $9 billion cost of first-year attrition. Addressing student attrition in RN-to-BSN programs may help reduce a portion of the societal financial burden attributable to the financial aid for students.

Higher attrition rates prompted researchers to look at the social variables and how online environments create a sense of belonging within communities of inquiry.

Creating online learning communities is of particular importance to nurse educators and academic nurse leaders who face the task of increasing the number of BSN graduates from their programs. The review that follows includes the evolution of our knowledge about the three presences of the COI framework.

<div align="center">Evolution of the Knowledge of Communities of Inquiry</div>

Technology in education made huge advancements in the late 1990s and early 2000s. The advancements led to the need for research on how online classrooms could replicate or improve upon on-campus course experiences. The COI in this context is a group of students brought together by the common quest for knowledge regarding the subject matter in a course. For a COI to exist, three presences must be evident: social presence, teaching presence, and cognitive presence. The most widely researched concept is that of social presence.

Defining Social Presence

A critical concept of social presence is a sense of belonging and acceptance in a group that leads to collaborative learning (Garrison & Anderson, 2003). In order for students to develop a sense of community in online environments, the faculty member who facilitates the course needs to create a structure that creates and enhances social presence. Faculty members should encourage collaboration and enable the students to have open communication. Students need to be able to express themselves in a risk-free manner. The faculty member needs to promote camaraderie and freedom to express emotions (Garrison & Anderson, 2003). If students have a sense of belonging, then they use words such "we " and "us," which demonstrate their feeling of inclusion in the group.

Online students and on-campus students have a need to feel connected to the course, the instructor, and fellow students. Of these three needs, the connection to the faculty member is of utmost importance in the online students' perceptions of the course

(Herbert, 2006). A feeling of connectedness is a component of sense of community. This feeling, along with learning outcomes, is what attracts and retains learners (Rovai, 2002).

The fundamental need to belong to a group applies to all group situations, whether the groups are social in nature, involve employees of an organization, or include students in an academic environment (Levett-Jones, Lathlean, Maguire, & McMillan, 2007). When teachers help students feel comfortable and positively reinforce good work, then students likely feel an increased sense of belonging (Anant, 1966). The relationship between a student's sense of belonging and a student's desire to remain in school was described in the seminal work of clinical psychologist Dr. Santokh Anant (1966). One can conclude that sense of belonging to a group generally promotes an individual's overall well-being and that it is an important concept to evaluate in the context of academic environments.

The classroom is a community of students and faculty who share a connection through the academic material. The classroom is, in its own way, a social environment. Tinto (1997) produced evidence that sense of belonging in traditional college programs influenced student retention. The classroom plays an important role in establishing a sense of belonging. The time students spend in the classroom offer students an opportunity to develop support systems and engage in collaborative learning. Students often put forth more effort in class in order to learn at the same rate as their peers. Students who establish this sense of belonging academically and socially tend to have higher persistence in college (Tinto, 1997). Since Tinto's research was done with traditional on-campus college students, it is not known if a positive sense of belonging would also lead to higher levels of persistence in the online RN-to-BSN student population.

Nontraditional students include adults returning to school, married students, students who have children, and students with full-time careers (Ashar & Skenes, 1993). By this definition, RN–to-BSN students are nontraditional. Ashar and Skenes (1993) conducted a quantitative study (*n*=25 classes, with average 12 students per class) with nontraditional students enrolled in business management classes. The students in these classes were adults already working as business professionals. The results of the study highlighted the importance of sense of belonging, as operationalized by social integration in the academic environment. Social integration and class size had a statistically significant positive effect on retention in those higher education business programs (Ashar & Skenes, 1993). Whether these results apply to RN-to-BSN students is currently unknown.

No research exists in nursing education literature specifically regarding social presence in online courses. Few nurse researchers have explored the concept of sense of belonging, a component of social presence, in nursing education (Cobb, 2011). One such study compared perceived stress and sense of belonging between on campus and online students. The online students (63.1) reported higher means on the sense of belonging tool, than the on campus based students (59.7) (Mintz-Binder, 2014).

Sense of belonging is a powerful motivator for behavior (Baumeister & Leary, 1995; Rovai, 2002; Tinto, 1997). One qualitative study of 18 undergraduate nursing students revealed that sense of belongingness affects the students' motivation to learn, the students' anxiety or confidence levels, and the students' willingness to ask questions (Levett-Jones & Lathlean, 2008). The undergraduates in this study were initial licensure students and did not include RN-to-BSN students. The results may differ if done with RN–to-BSN students because the RN-to-BSN student is a nontraditional student and many initial licensure students are traditional.

Researchers found a relationship between high levels of sense of belonging and low levels of stress (Baumeister & Leary, 1995; Hagerty, Lynch-Sauer, Patusky, Bouwsema, & Collier, 1992; Mintz-Binder, 2014). Reilly and Fitzpatrick (2009) studied online doctorate of nursing practice students (*n*=89), and the researchers' findings revealed the same inverse relationship. However, the RN-to-BSN student and the doctorate of nursing practice student populations differ in their mean age, years of nursing experience, and possibly their motivation for seeking their degree. These research findings may not apply to RN-to-BSN students.

The only study to specifically include RN-to-BSN students focused on the students' perceptions of community in online learning. Gallagher-Lepak, Reilly, and Killion (2009) conducted focus groups with RN-to-BSN students at one university (*n*=18). The researchers defined community as connectedness that involves group membership. The concept of sense of belonging includes the notion of connectedness. The structure of an online course and its organization, teaching strategies, teamwork, technology, socialization, and collaboration are components of online courses that students identified as important to developing a sense of community (Gallagher-Lepak et al., 2009). Replication of this study with a larger sample or at multiple institutions would improve the generalizability of the findings.

Defining Teaching Presence

Teaching presence is the "design, facilitation, and direction of cognitive and social presences for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes" (Anderson, Rourke, Garrison & Archer, 2001, p.1). The concept of teaching presence in education literature refers specifically to online course environments. Teaching presence is what the teacher does to develop the community of

inquiry (Garrison & Anderson, 2003). The first step the teacher needs to take is to design the course.

Design and organization

The design of a course delivered online is similar to designing a traditional on-campus course. The design of the course occurs before the first day of class. The teacher must define objectives, identify resources, and create assessment methods. Online courses may also be more time-consuming initially to create due to the multiple available methods of material delivery in the online environment (Garrison & Anderson, 2003). Methods include prerecorded Power Points or webinars, external links to supplemental materials, blogs, wikis, and discussion boards.

The instructor has an imperative to communicate the learning goals to the student. The course design should include opportunities for the student to reflect on the importance of the material and why the information is relevant (Jones, 2011). The organization of the course begins on the first day of the course and continues until the end of the course. The organization of a course allows the teacher to have flexibility to change material delivery, and to add or delete supplemental components based on the needs of the student (Garrison & Anderson, 2003). During the course, the instructor has another role, which is that of the facilitator.

Facilitation

The second role of the teacher in an online course is that of a facilitator (Jones, 2011). The instructor creates teaching presence by using the three Rs of reinforcing, recognizing, and rewarding students (Dringus, Snyder, & Terrell, 2010; Snyder, 2009). Reinforcement is the emphasis of the importance of certain concepts and material. Recognition is the acknowledgement of the student's presence in the course. Reward is the praise of the student when appropriate (Dringus et al., 2010). Instructors can use the

three Rs to ensure that there is adequate facilitation and teaching presence in the course. The quality and quantity of teacher-student interaction is key to student satisfaction with the course. The teacher adds quality to the interaction by providing substantive feedback regarding the student's contributions (Blignaut & Trollip, 2003).

Instructors respond to students online via messages that contain academic and nonacademic content. Examples of messages with content include asking follow-up questions, summarizing discussions, redirecting the discussion, and correcting student misperceptions (Blignaut & Trollip, 2003). Messages that do not contain academic information may be affective in nature, provide encouragement, and contribute to social presence in the course. Lastly, messages may contain administrative information or provide direct instruction.

Direct instruction

The third role of the instructor in establishing teaching presence is that of subject matter expert. The teacher shares his or her knowledge with students by using traditional lectures, providing supplemental readings, and using case studies (Jones, 2011). Direct instruction includes assessment of the discourse and the educational process within the course. The instructor must have knowledge of the content and have pedagogical expertise to know when and how to maximize the efficacy of the COI (Arbaugh & Hwang, 2005). Teaching and social presences predict the development of cognitive presence (Douglas, 2010; Garrison et al., 2010a).

Defining Cognitive Presence

Cognitive presence is "the extent to which learners are able to construct and confirm meaning through sustained reflection and discourse" (Garrison et al., 2010b). This concept is associated with critical thinking. Students operationalize cognitive presence through a process called the practical inquiry model (PIM) that consists of four

phases: triggering event, exploration, integration and resolution (Garrison et al., 2010b). Developers of the PIM based the model on the tenets of John Dewey's (1938) work on reflective inquiry. The PIM and John Dewey's work share the premise that learning occurs as a systematic process including problem identification and resolution. Teaching presence through design and facilitation should assist the student in moving through all four phases of the PIM and promote critical thinking abilities.

Cognitive presence is a concept found primarily in online education research and literature. Studies including cognitive presence do not exist in prelicensure or in RN-to-BSN online education literature. The importance of face-to-face communication in nursing education has been established.

<center>The Importance of Face-to-Face Communication</center>

The use of Internet-based social media for professional and personal purposes is popular among college students. In academic environments, the question of whether online interaction equates to face-to-face communication in building connections between teacher and student remains unanswered. The interaction between students and the interaction between students and instructors is critically important in traditional and online courses. These interactions can motivate students and can aid in the establishment of a social relationship and sense of belonging. Social relationships may influence the student's perception of group cohesion, satisfaction, or decision to continue in the course (Paechter & Maier, 2010; Richardson & Swan, 2003).

Researchers have studied the importance of face-to-face communication in online education in undergraduate students, but not specifically RN-to-BSN students. The results of these studies yield conflicting results. Online communication can offer benefits such as timely feedback, information dissemination, structured learning, and sharing of knowledge. Students prefer face-to-face communication when there is a need to

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establish social relationships, a need to collaborate, or a need to debate. In a descriptive quantitative study of Austrian undergraduate students (n = 2196), Paechter and Maier (2010) found that students preferred online communication for basic information dissemination and for rapid feedback from the instructor. The results from Paechter and Maier are contrary to Gruendemann's (2011) qualitative study results in which students (n=8) preferred face-to-face feedback from instructors because it was immediate and they did not have to wait for an e-mail response.

In addition to providing information dissemination and feedback, the teacher must help build an environment to support social relationships, which helps establish a sense of belonging within a group. Students report the relationship between student and teacher is paramount. A qualitative study (n=8) (Gruendemann (2011) of the lived experiences of nursing students focused on face-to-face learning and supported this notion of student and teacher connection. The students reported that the live classroom provided an environment of live "closeness" (Gruendemann, 2011). This closeness was not just one of physical proximity; it also refers to the relationship that builds between students.

The students added that they appreciated the "humanistic connections" and the ability to use all of their senses in their learning process (Gruendemann, 2011). Sight was the most important sense identified by the students. One student described how seeing someone talk allows one to truly sense the emotion with the words (Gruendemann, 2011). Students stated that they liked getting information "firsthand" (Gruendemann, 2011). Even with today's technological advances, students still cite the desire for some form of face-to-face communication (Farrell, Cubit, Bobrowki, & Salmon, 2007; Hall, 2009). Replication of the above studies with RN–to-BSN students would aid in understanding how significant face-to-face communication is for RN-to-BSN students.

The Use of Audio and Video Feedback

The use of audio feedback in online courses may offer one method for teachers to enhance a student's perception of social presence. The only published study, addressing audio feedback, utilized graduate students who were education majors. Ice et al. (2007) used a case study design (*n*=27) to determine if the use of audio feedback in an asynchronous course would enhance student perceptions regarding sense of community. The instructors in the course created .wav files created in Audacity freeware. The instructors then attached the audio file to the group discussion board or sent the file as an attachment via e-mail to a smaller group of students. Students in the study answered survey questions and participated in post course semi-structured interviews about their satisfaction with the course, their sense of community, their perceived learning, and the effectiveness of the audio feedback. Students reported that the audio feedback decreased their feelings of isolation in the online community and that the use of audio enhanced the feeling of being part of the group. A striking 25 of 27 students reported that they preferred audio feedback rather than text-based feedback (Ice, et al., 2007).

Students reported knowing the instructor a little better and feeling that the instructor cared more about them (Ice et al., 2007). Students stated that just by the instructor taking the time to provide audio feedback showed that the instructor wanted the group to be connected (Ice et al., 2007). Replication of the above study with RN-to-BSN students would enhance current knowledge of this method of feedback and RN-to-BSN students' perception of social presence.

The use of video as a communication method for feedback versus direct instruction is relatively new. Only one published study testing the use of video to enhance online social presence exists. The study was a case study design (*n*=18) comparing three

types of video strategies in college education courses. The study subjects were elementary and secondary schoolteachers (Borup, West, & Graham, 2012). The video strategies included the use of YouTube and Voice Thread for teacher-student interactions and student-student interactions. The results revealed that students had an increased perception of social presence. Subjects reported an improvement in instructor teaching and overall learning. Replications of this study in RN-to-BSN students and with larger samples may provide the necessary insights to maximize online course experiences.

<div align="center">Community of Inquiry Survey</div>

Garrison and Anderson (2003) developed a complex framework for studying online communities of learning, the COI framework. From this framework, researchers developed the COI survey to measure students' perceptions of COI. The COI survey is a comprehensive tool for assessing online learning environments. The COI survey includes items that measure students' perceptions of social presence, the teacher's presence and the student's own cognitive presence. All of these presences are interrelated, so having one tool that addresses all three is convenient and offers a broader view of the students' perceptions of their COI.

The early work with the COI survey included establishing construct validity and reliability. Specific reliability and validity values are discussed in Chapter 3. The initial studies using the COI survey had varying results regarding the number of factors for teaching presence. Shea and Bidjerano (2008; n=1106) reported four presences in the COI framework: social, cognitive, and two separate teaching presences. Díaz, Swan, Ice, and Kupczynski (2010; n=412) and Arbaugh, et al. (2008; n=287) also found that a four-factor solution explained more variance than a three-factor solution. The four-factor solution is contrary to Arbaugh, Bangert, and Cleveland-Innes (2010; n=1173) findings, in which the three-factor solution was most appropriate. In the largest sample of students

(*n*=4397), Akyol, Ice, Garrison, and Mitchell (2010) used the three-factor solution. A summary of these and other studies related to construct validity is presented in Chapter 3.

Using the three-factor solution, Garrison et al., (2010b) found that their structural equation model testing supported the hypothesized relationships between the three presences. The results showed that students' perceptions of teaching presence predicted students' perceptions of cognitive presence and that social presence had a mediating effect on cognitive presence. The current COI survey utilizes three presences, which fits the theoretical framework as originally proposed. Among the three presences within the COI, students rated teaching presence as most important, above the social and cognitive presences (Díaz et al., 2010). Students may take social presence for granted and see teaching presence as a precursor to cognitive presence (Díaz et al., 2010).

Following these initial studies, researchers began to explore the use of COI to answer research questions related to student variables such as age, full-time or part-time enrollment, and field of study. Shea and Bidjerano (2008) reported that students (*n*=1,106) ages 26 and over reported higher levels of cognitive presence than did students under age 26, regardless of registration status. Full-time students reported higher levels of social presence than did part-time students, regardless of age. Student age, and part-time and full-time enrollment showed no significant effect on teaching presence. Lastly, students who scored higher on cognitive and teaching presences also reported higher levels of overall course satisfaction, regardless of age or registration status (Shea & Bidjerano, 2008).

The COI model is appropriate to use for fields of study such as healthcare courses because it is a pragmatic and applied science. The results of Arbaugh et al.'s (2010) study demonstrated that students (*n*=1173) majoring in applied sciences scored

higher in cognitive presence than the hard, pure disciplines, such as science or math. The conclusion is that the COI is appropriate to use in courses such as education, healthcare, and business, where discourse is more highly facilitated (Arbaugh et al., 2010).

Summary

A COI exists when all three presences within the COI framework are apparent. Teachers need to create and sustain teaching presence and promote social presence. Students contribute to and experience social and cognitive presences. Researchers have proposed slightly different definitions of sense of belonging, community, and social presence. In the context of online classrooms, the different definitions of social presence all share the same underlying premise of connectedness. Researchers may use one term in their study, but in their results section, they ultimately discuss connectedness and social relationship building that occurs in the online community of students. Research results support the critical function that social and teaching presences play in online academic environments. Furthermore, researchers agree that when a student has higher perceptions of social and teacher presences, the student has higher levels of satisfaction and persistence.

Gaps in Research

Numerous gaps in knowledge of regarding RN-to-BSN students exist. Basic demographics, socioeconomic data, ethnicity data, national benchmarking, and economic impact of attrition rates are not known. Researchers have looked at the differences between online versus face-to-face communication comparing student perceptions, student preference for teaching modality, course outcomes, and grades. Rather than more descriptive and comparative studies, a need exists to conduct intervention-based studies, based on sound theoretical frameworks, such as the COI framework. Girasoli

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and Hannafin (2008) suggested that AV feedback offers more benefit than audio alone. Researchers need to conduct studies using AV feedback to determine its effect on students' perceptions of the COI.

The impact of RN-to-BSN students' perception of the importance of face-to-face interactions is another knowledge deficit. The effectiveness of audio, video, and AV feedback for this student population is another area of potential research. The influence of COI presences and persistence in online classrooms needs further investigation (Sener, 2005), particularly in the RN-to-BSN student population.

Chapter 3

Methods and Procedures

This chapter includes the methods and procedures used by the Principal Investigator (PI) in implementation of this study. This chapter also includes a description of the study design, sampling methods, and the rationale for providing a predictive power analysis table. A description of the measurement tool, the tool's reliability and validity, and the scoring of the tool are also covered in this chapter. A description of the intervention and the procedural steps for the study is presented. The description of the procedure is followed by an explanation of the methods for data analysis. This chapter concludes with permission for use of the COI survey tool and a chapter summary.

Research Design

This pilot study was designed as a quasi-experimental repeated measures design. Students were not randomly selected to participate in the study. Students who registered for the course on a specific start date had the opportunity to participate in the study and comprised the nonrandomized, convenience sample. Therefore, the study did not meet the criteria for a randomized experimental design. The instructor, however, randomly assigned which groups received the intervention. The intervention was assigned to half of the groups, and the other groups received the usual interaction between student and instructor.

Quasi-experimental designs have less control than experimental designs, but they are considered a robust design (Gliner, Morgan, & Leech, 2009). The procedure for this study was similar to chance and made this strong design the best choice (Gliner et al., 2009). Table 2 shows the study design and timeline used for the interventions and the pretests and posttests. The standard treatment in this study included text-based feedback

between the instructor and the student. The intervention treatment included instructor

text-based feedback and instructor AV feedback using YouTube media.

Table 2 Study Design and Timeline

Group	Course Starts	Pretest	Treatment Type	Posttest
Control	Week 1	Week 2	Standard treatment weeks 3-10	End of week 10
Intervention	Week 1	Week 2	Standard treatment weeks 3-10 plus Intervention Weeks 3,4,7	End of week10

Sample

The population of interest was students in online RN-to-BSN courses. The

sample included RN-to-BSN students enrolled in a completely online program at a large

state university. The sample in this study included those students enrolled in the first

nursing course of the program. The course was 11 weeks long including five weeks of

class followed by a one-week break, concluding with the last five weeks of the course.

The RN-to-BSN student is a nurse who was initially educated at the diploma or

associate-degree level. Many RN–to-BSN students return to school either while still

working or after working in the field for some period of time. These work experiences

allow the student to engage in discourse and experiential learning in a collaborative,

constructivist environment. The COI framework and survey have been found to be

effective in the study of students' perceptions of community in undergraduate and

graduate programs (Akyol et al., 2010). Researchers can use the COI survey for students

in courses that are collaborative-constructivist in nature.

Due to the absence of published studies using AV feedback and its effects on

students' perceptions of COI, the anticipated effect size of this study's treatment was

unknown. The sample was a convenience sample from a total class size of 500-600

students. Subjects included consenting students enrolled in an online *Transition to*

Professional Nursing, RN-to-BSN course at a large public state university. Assuming recruitment and attrition rates, the target sample size was set for 180, with 90 per group. The sample size was determined by using G*Power 3.1 software based on *n*=180, power at 0.8 and alpha at 0.5, because the effect size is unknown.

Table 3 Calculated Power Levels for a Sample Size *n*=180

Measure	Calculated power levels						
Cohen's *d*	0.2	0.3	0.4	0.5	0.6	0.7	0.8
Power	0.27	0.52	0.76	0.92	0.98	>0.99	>0.99

Table 3 shows levels of power for the target sample size, based on various effect sizes shown as Cohen's d (Faul, Erdfelder, Buchner, & Lang, 2009). For example, if the effect size is moderate at 0.5, the sample size is 180, and then the power would be 0.92. The actual sample results differed from the target sample and were related to the design plan, which is discussed next.

As part of the design plan to protect subject's identity, subjects were instructed to create their own personal identification number (PIN) that the subjects were to use for both the pretests and posttests. The PIN students used in this study were self-generated identification codes (SGIC). The use of SGICs has become more common in longitudinal research. The rationale for using a SGIC was that SGICs could contribute to a decrease in sample attrition when collecting personal information (Kristjannson, Sigfusdottir, Sigfusson, & Allegreante, 2013).

The potential sample consisted of 240 potential participants. Sixty-four subjects answered the pretest and 61 answered the posttest. However, only three PINs matched between the pretests and posttests for the control group. Six PINs matched on the pretests and posttests for the intervention group. Figure 3 shows the distribution of the sample between the groups and matched pairs. It is unknown whether the remaining

subjects used two different PINs, one for the pretest and one for the posttest. It is also possible that some subjects completed only the pretest and that some subjects only completed the posttest. The issue of the lack of paired data prevented analysis with inferential statistics within the groups and prevented calculation of post hoc main effects and power. The research question was cautiously answered using data between the control and intervention groups.
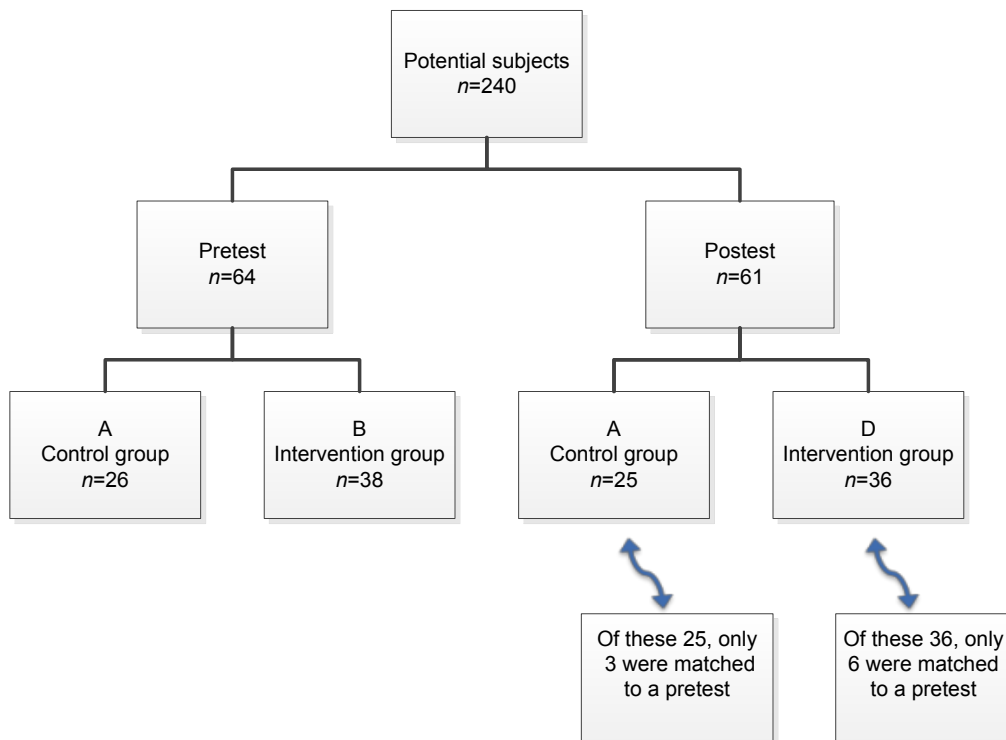
Figure 3 Distribution of sample and matched pairs between groups

Intervention Description

The use of AV feedback and the use of audio feedback alone have both been proven to be effective in enhancing students' perceptions of social presence (Borup et al.,

2012; Ice et al., 2007). The intervention in this study was audio-video feedback from the academic coach to the student.

The academic coach in this study is employed by a third-party organization that collaborates with the university. The academic coaches provide support to the university faculty who teach large classes. Each academic coach has a maximum of 30 students per section. The academic coaches meet the same criteria and credential requirements as faculty who are employed directly by the university. Each academic coach and faculty member must have an unencumbered RN license and a minimum of a master's of science in nursing degree (Academic Partnerships, 2014).

The intervention that the academic coach utilized was AV feedback regarding a three-part written assignment. After the student submitted each part of the assignment, the academic coach created a 1- to 2-minute video, which provided the student with feedback. The academic coach used a standardized grading rubric (see Appendix A) to guide feedback and grading of each student. The intervention group had 120 subjects and each subject received three videos, for a grand total of 320 videos for this study.

Each feedback video followed a standardized format. Each video contained four segments: introductory affective statement, corrective statement, Socratic segment, and a concluding affective statement (Blignaut & Trollip, 2003). The first segment of the video began with an affective message, such as greeting the student by name. The next segment contained messages that were corrective and addressed specific parts of the assignment that the student needed to revise. The third segment was Socratic in nature and generally guided the student. The purpose of adding the Socratic component to the intervention was to promote critical thinking by engaging the student in further inquiry (Marcisz & Woien, 2010). Critical thinking is a crucial component of cognitive presence. The addition of a Socratic question, coupled with the feedback based on the rubric, was

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designed to enhance cognitive presence. The final message was a concluding affective

statement of motivation and use of the student name.

  The academic coach created the video using YouTube media. Within the

YouTube media, there are privacy settings that allowed the academic coach to limit

access to the video to only the student for whom it was intended. The COI survey was

used to determine the effectiveness of these videos.

<div align="center">Measurement Description</div>

  The COI instrument (see Appendix B) is a survey tool that consists of 34 items

representing items that measure three COI presences (Garrison et al., 2001). The COI

begins with 13 teaching presence items, followed by nine social presence items, and

concludes with 11 cognitive presence items. The items are constructed so that the

subject reports his or her level of agreement with each item. The subject may select one

of five levels of agreement. Level 1 represents strongly disagree. Level 2 represents

disagree, and Level 3 stands for a neutral opinion. Subjects choose Level 4 if they agree

with the item. Lastly, Level 5 represents strongly agree.

  The COI survey consists of three subscales, one for each presence of the COI

framework. These presences are not directly measureable. Researchers can best

measure an intangible concept by using an entity that is a close proxy for the concept

(Bannigan & Watson, 2009). An example of a COI survey item that measures social

presence is, "Getting to know other course participants gave me a sense of belonging in

the course." In this example, social presence is not directly measured. The subject

reports his or her perception of sense of belonging in the course, which is a component of

social presence.

In addition to using the COI survey, the PI collected demographic data about the respondents (see Appendix C). Table 4 includes conceptual definitions and operational definitions of the three COI presences and of the demographic variables.

Table 4 Conceptual Definitions and Operational Measurements

Concept	Conceptual definitions	Operational definitions
Teaching presence	Subject's perception of design and organization, facilitation of discourse, direct instruction (Garrison & Vaughan, 2008)	• Mean of scores for subscale of teaching presence on COI survey • Item numbers 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 • Range of scores 1–5
Social presence	Subject's perception of open communication, group cohesion and affective elements (Garrison & Vaughan, 2008)	• Mean of scores for subscale of social presence on COI survey • Item numbers 14, 15, 16, 17, 18,19, 20, 21, 22 • Range of scores 1–5
Cognitive presence	Subject's perception of triggering event, exploration, integration, resolution (Garrison & Vaughan, 2008)	• Mean of scores for subscale of cognitive presence on COI survey • Item numbers 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34 Range of scores 1–5
Gender	Socially constructed roles for men and women	• Subject's self-report on Item 2 on demographic form • Item response options: Male, female
Race	Socially constructed classification of people based on certain biologic and sociologic characteristics	• Subject's self-report on Item 3 on demographic form • Item response options: American Indian or Alaska Native, Asian, Black/African American, Native Hawaiian or other Pacific Islander, White
Ethnicity	Classification of people based on culture, nationality, beliefs	• Subject's self-report on Item 4 on demographic form • Item response options: Hispanic/Latino or Not Hispanic/Latino

Table 4—*Continued*

Concept	Conceptual definitions	Operational definitions
Years of RN experience	Years worked as RN on a full-time, part-time, or volunteer basis at time of study commencement	• Subject's self-report actual years of experience on Item 5 on demographic form
Social media use (i.e., Facebook, Twitter, LinkedIn)	Frequency of the use of online technology for the purpose of connecting with other people	• Subject's self-report on Item 6 on demographic form • Item response options: Use social media daily, use social media a few times a week, use social media a few times a month, never use social media
Online course experience	Number of courses taken either wholly or partially online	• Subject's self-report on Item 7 on demographic form • Item response options: First online course, taken 1-2 online courses, taken 3 or more online courses
Internet access	Type of Internet connection used by subjects	• Subject's self-report on Item 8 Item response options: wireless, cable, dial-up, don't know

Scoring

In studies using the COI survey or components of it, researchers have reported

descriptive statistics such as mean scores for each subscale (Burgess, Slate, Rojas-

LeBouef, & LaPrairie, 2010; Nagel & Kotzé, 2010). Interpretation of this summed interval

level data is currently limited to reporting means and standard deviations. The scoring

uses a 5-point Likert scale with a range of 1–5, whereby the student reports levels of

agreement or disagreement with statements regarding the three COI presences. A 1 on

the scale represents a "strongly disagrees" response, and this equates to the lowest level

of student perception of the measured presences. A 5 on the scale represents a "strongly

agrees" response and equates to the highest levels of student perception of the COI

presences. The means ranged from 1 to 5. Results were reported using mean scores for each COI subscale.

Validity

In December 2006, an expert panel of online educators and researchers collaborated to reconcile previous attempts to create the COI survey and transform those works into one COI survey upon which the team could agree (Arbaugh et al., 2008). Review of the COI survey by an expert panel provided support for content validity. Table 5 provides a summary of content validity results related to the COI survey.

Table 5 Community of Inquiry Framework Content Validity Studies

Authors	Sample	Program level	Sites (*n*)	Procedure	Results
Swan et al. (2008)	8	N/A	3	Expert panel	Created and reviewed by expert panel of educators from three different universities in the United States and Canada.
Díaz et al. (2010)	412	Undergraduate, graduate	4	Student ratings of importance of items	Students rated teaching presence as most important, followed by social, and then cognitive presences

Construct validity is a main form of validation for a test and helps determine how well a measurement scale correlates with the construct under study (Bannigan & Watson, 2009). Three ways to evaluate construct validity include convergent, divergent, and factorial validity. There are no published studies that implicitly or explicitly address convergent or discriminant validity. Several studies addressed construct validity using principal components analysis, exploratory factorial analysis, confirmatory factorial

analysis, and hypothesis testing. Table 6 provides a summary of construct validity studies of the COI survey.

Table 6 Community of Inquiry Framework Construct Validity Studies

Authors	Sample size	Program level	Sites (n)	Procedure	Retained 3 or 4 factors	Results variance explained
Arbaugh & Hwang (2005)	190	Graduate	1	Confirmatory factor model	Teaching factor only	GFI = 0.91
Arbaugh et al. (2008)	287	Graduate	4	PCA	3	61.3%
Diaz (2010)	412	Undergraduate	4	PCA	Both	3-factor: 61.9% 4-factor: 66.2%
Shea & Bidjerano (2008)	1106	Undergraduate, graduate	39	EFA	4	74.5%
Shea & Bidjerano (2009)	2159	Undergraduate, graduate	> 30	PFA	3	63% GFI = 0.95
Arbaugh, et al., (2010)	1173	Undergraduate, graduate (nursing included)	2	EFA	3	65.4%
Akyol et al. (2010)	4397	Undergraduate, Graduate	1	PFA	3	GFI = 0.69

Note. GFI = goodness of fit. PCA = principal component analysis. EFA = exploratory factor analysis. PFA = principle factor analysis

The findings of these studies supported the validity of the scores on the COI survey among various age groups, different college course levels, and among multiple disciplines, such as healthcare. There was adequate construct validity to support the use of the COI survey as a measure of the three presences in the COI framework, which appropriately corresponds to the underlying COI framework (Arbaugh et al., 2010).

Reliability

The reliability of an instrument refers to the degree to which the instrument consistently measures an attribute (Cronbach & Shavelson, 2004). It also refers to the

degree to which the score is free from random error (Bannigan & Watson, 2009). Table 7

summarizes studies that addressed reliability using internal consistency. The COI

instrument demonstrated internal consistency across studies. Each of the subscales had

coefficient alphas over 0.9. Coefficient alpha values can range between 0 and 1. The

closer the values are to 1.0, the higher the internal consistency among the items in the

scale (Yang & Green, 2011). Coefficient alpha values over 0.9 are typically sufficient for

use in well-developed instruments. No studies using test-retest methods to address

reliability of the COI survey were found.

Table 7 Community of Inquiry Survey Studies Addressing Reliability

Authors	Sample size	Program level	Sites (*n*)	Disciplines	Coefficient alphas
Swan et al. (2008)	287	Graduate	4	Education and business	Cognitive = 0.95, Teaching = 0.94, Social = 0.91
Shea & Bidjerano (2008)	1106	Undergraduate, graduate	39	Fully online courses	Cognitive = 0.97, Teaching facilitation = 0.93, Teaching design = 0.95, Social = 0.96
Díaz et al. (2010)	412	Undergraduate, graduate	4	Unknown based on article	Cognitive = 0.95, Teaching = 0.96, Social = 0.92

The length of a scale also affects the value of coefficient alpha, with longer

scales typically having higher levels of coefficient alpha (Yang & Green, 2011). The COI

survey has a sufficient number of items (34) and has an adequate number of items in

each subscale, allowing for robust measurement of the abstract concepts. The COI

survey consistently performed reliably regardless of the population sampled.

Permission

There is no cost to use or administer the COI survey. Dr. Randy Garrison, one of the creators of the COI framework and developers of the COI survey, gave this author written permission to use the COI survey free of charge (see Appendix D).

Procedure

The study began with the lead teacher assigning the students to groups of 30, based on alphabetical order. During the 11-week course, four groups of 30 students received standard treatment. A different set of four groups of 30 students received standard treatment, plus the AV feedback intervention. A flow chart of the procedure and data collection process is included in Appendix E.

Due to the large class size, this course used academic coaches to assist the lead teacher. Academic coaches were responsible for a maximum of 30 students per group and taught up to three groups. The lead teacher selected the academic coaches. Three coaches who administered the treatment received standardized training on the use of the AV technology. The coaches for the standard treatment group received no training. The standard treatment coaches continued to provide text-based feedback only. Training for the intervention included both written and verbal instruction (see Appendix F) regarding how to use the grading rubric, the creation of the YouTube video, and how to maintain student privacy. To verify that the training was effective, the coaches created a video and sent it to the PI for review. The PI provided additional training as needed. The coaches had access to the PI's cell phone number and e-mail address in case any questions or issues arose.

Two weeks after the course began; the lead teacher e-mailed the subjects a link to the instruments via Qualtrics, which is online survey software (Qualtrics, 2013). The survey began with the consent form. Instructions for completing the demographic form

and COI survey followed. Subjects created their own five-digit unique identifier (PIN) that they included at the beginning of the demographics form. This five-digit PIN or SGIC included the practice of using a combination of letters and digits of the subject's family member (Kristjannson et al., 2013). The subjects in this study were asked to use the first initial of the family name of the subject's mother. The initial was followed by the month and date of the mother's birthday. Alternatively, the subject might have used another significant family member's information. For example, if the mother's family name was Jones and her birthday was February 15, the PIN would have been J0215. The instructions on the survey included a reminder for the subject to select a person's information that he or she would remember. The subjects' continuation and completion of the survey verified their consent to participate in the study. The administration of the COI survey at the end of Week 2 established a baseline for the students' perceptions of the COI presences.

Beginning in the third week of the course, the trained academic coaches for the treatment group provided the subjects with AV feedback regarding Part 1 of a three-part assignment. The academic coach personalized the video for each student, and the length of the video depended on the level of feedback required, which was between 30 and 120 seconds. In the fourth and seventh weeks of the course, the intervention was repeated for parts 2 and 3 of the assignment.

Subjects in the standard treatment group received their regular feedback via text-based communication for each part of the three-part assignment. Subjects in the standard treatment group did not receive any form of AV feedback. At the end of the tenth week of the course, all consented subjects received the post COI survey.

Ethical Considerations

Subject participation was voluntary. Subjects were informed that they could stop participation at any time. The investigators were not a part of the teaching team for the first course in the RN-to-BSN program and had no influence on student grades for that course. The PI obtained approval from the university's Institutional Review Board before the commencement of any sampling, treatments, or data collection. These measures mitigated risks to the subjects enrolled in the study. Subjects provided informed consent. The text of the consent form (see Appendix G) was available to the subjects electronically as the first screen of the online survey. The subjects confirmed that they had given consent by taking the online survey.

Data Analyses

The purpose of data analysis was to answer the research question of this study: "Do students who receive instructor AV feedback have different perceptions of teaching, social, and cognitive presences than do those students who receive standard text-based feedback?" The independent variables in this study were the instructor's AV feedback and participant demographics. The dependent variables included the subjects' perceptions of the teaching, social, and cognitive presences.

Initial analysis included descriptive statistics of the demographics and COI survey data. The control and intervention groups' data were prepared for analysis first by testing each variable for normality using the Shapiro Wilk's normality test. The same statistical analyses were used to describe the pretest and posttest samples, with one exception for the variable of age. In the pretest groups, the Mann Whitney U test was used for age and an independent samples t-test was used for the posttest groups. The other ratio and ordinal data violated the tests for normality, which prohibited the use of the t-test. The nonparametric alternative, the Mann Whitney U was used.

The Chi-square was the preferred statistical test for the nominal level data. However, the data violated the third assumption of the Chi-square tests. The assumption requires a cell count of at least five per cell. Since the data did not meet that requirement, an alternative was used. The alternative test to the Chi-square test is the Fisher's Exact Test (McDonald, 2009). The analysis concluded with Mann-Whitney U tests to check for differences between the groups on the COI presences.

Summary

This chapter discussed the quasi-experimental design of this study and rationale for the use of this design. The population sample, study intervention, and study measurement tool were described. A review of validity and reliability findings and the rationale for use of the COI survey were also provided. The study procedure and ethical considerations of this study were discussed. The chapter concluded with the data analysis procedures of this study.

Chapter 4

Findings

The purpose of this chapter is to present the findings of this study about university students' perceptions of teaching, social and cognitive presences before and after receiving AV feedback from the instructor in an online course. The COI framework was the theoretical framework and the COI Survey was the instrument utilized in this study. This chapter will include the characteristics of the sample and the responses to the COI survey and the mean scores for each of the COI presences.

Sample Overview

Data were collected using Qualtrics from students enrolled in one online RN-BSN course at a four-year university in the State of Texas. The population consisted of Registered Nurses (RNs) licensed to practice by the Texas Board of Nursing. A total of 540 students were enrolled in the course, which was divided into sections with 30 students per section. The instructor for the course randomly chose four sections to be designated as the control group and four sections to be the intervention group. This resulted in 240 enrolled students who were eligible to participate.

On the pretest, the control group had 27 responses and the intervention group had 38 responses. On the posttest, the control group had 25 responses and the posttest had 36 responses. Within the control group, only three subjects had matching PINs on the pretest and posttest, which was much lower than the target of 90 subjects. Within the intervention group, only six subjects had matching PINs, which was again lower than the target of 90 subjects. The lack of matched pairs within the groups also changed the design of the study from a pilot, quasi-experimental design to a descriptive posttest study with independent samples design.

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The first section of the study questionnaire included questions regarding the participant's demographic characteristics. Demographic data were collected including age, gender, race and ethnicity. Additionally, the participants responded to questions about their years of experience as an RN, frequency of social media use and type of Internet access. The demographic data about pretest control and pretest intervention groups and the overall pretest sample are in Table 8.

Table 8 Demographic Data of Pretest Samples

Variable	Control group *n*= 26	Intervention group *n*=38
Age		
Age	Mean 35.46 Median 33.5 Range 25-53 SD 8.94	Mean 37.82 Median 38 Range 22-58 SD 10.86
Age under 25 years	15.4%	16.2%
Age 26-30 years	19.2%	13.5%
Age over 30 years	65.4%	70.3%
Gender		
Men	3.8%	15.8%
Women	96.2%	84.2%
Race		
White	93.3%	86.8%
Black/AA	7.7%	10.5%
American Indian/ Alaskan Native	0%	0%
Asian	0%	2.6%
Ethnicity		
Hispanic	0%	2.7%
Non-Hispanic	100%	97.3%
Years of RN experience		
Years of RN experience	Mean 8.75 Median 6 Range 1-30 SD 8.75	Mean 7.46 Median 4 Range 0-38 SD 10.03
0-4 years	42.3%	53.3%
5-9 years	26.9%	20%
10-20 years	19.2%	16.6%
Greater than 20 years	11.5%	10%
Use of Social Media		
Daily	61.5%	72.9%

Table 8—*Continued*

Few times a week	23%	8.1%
Few times a month	11.5%	13.5%
Never	3.8%	5.4%
Experience with online courses		
First online course	19.2%	15.8%
1-2 online courses	11.5%	15.7%
3 or more online courses	69.2%	68.4%
Type of Internet Access		
Wireless	92.3%	86.8%
Cable	3.8%	13.2%
"I don't know"	3.8%	0%

Description of Pretest Samples

Age and Gender

The age ranges reported in Table 9 were chosen to be consistent with the format used by the NLN for reporting age data on RN-BSN student demographics. Distribution values for age were not similar between the groups as assessed by Shapiro-Wilk's test (p=0.02). Mann-Whitney U analyses resulted in no significant difference between the groups on age (U=371.5, z=-.66, p=0.51).

Women comprised the majority in the pretest sample (96.2%) and in the posttest sample (84.2%). The gender data violated the third assumption of the proposed analysis with the Chi square test having 50% of cells with an expected count less than five. The Fisher's Exact Tests revealed that there was no significant difference between the groups on gender (p=0.23).

Race and Ethnicity

The sample was predominantly white and non-Hispanic. The data violated the third assumption of the proposed analysis with the Chi square test having 50% of cells with an expected count less than five and the Fisher's exact test was used. The Fisher's Exact Tests revealed that there was no significant difference between the groups on race, (p=1.0) or on ethnicity (p= 1.0).

Years of RN Experience

The subjects in the overall sample had a broad range of RN experiences from 0 to 38 years. Values for years of RN experience were not normally distributed as assessed by the Shapiro-Wilk's test (p=.00). The years of RN experience for the pretest control group were not significantly different that for the pretest intervention group (U=302, z=-1.45, p=0.15).

Social Media and Online Courses

Mann-Whitney U tests were used to determine if there were significant differences between the groups on use of social media and experience with online courses. The Mann Whitney U tested was used as the data violated the Shapiro Wilk's normality test (p=.00). Use of social media was not significantly different between the groups, (U=441.5, z=-0.67, and p=0.50). Experience with online courses was also not significantly different between the pretest groups, (U=492, z=-0.03, p=0.99).

Internet Access

Type of Internet access data violated the Shapiro Wilk's normality test (p=.00). The Chi square goodness of fit was not appropriate to use for analysis of the Internet access item because the data violated the third assumption, with 33% of cells having a count less than 5. The Fisher's Exact Test revealed that there was no significant (p= .20) difference between the pretest groups on Internet access.

Description of Posttest Samples

The initial data analysis for posttest control group and posttest intervention groups began with using the Shapiro Wilk's test for normality. The descriptive analyses for the post control and post intervention groups included the independent variables: age, gender, race, ethnicity, years of RN experience, social media use, experience with online courses, and Internet access. Demographic data for the posttests groups are in Table 9.

Table 9 Demographic Data of Posttest Samples

Variable	Control group *n*= 25	Intervention group *n*=36
Age		
Age	Mean 38.47 Median 37 Range 25-61 SD 10.86	Mean 36.69 Median 37 Range 22-55 SD 8.55
Age under 25 years	8.7%	13.9%
Age 26-30 years	26.1%	16.7%
Variable	Control group n= 25	Intervention group n=36
Age over 30 years	65.2%	69.4%
Gender		
Men	12%	16.6%
Women	88%	83.4%
Race		
White	84%	77.1%
Black/AA	12%	20%
American Indian/ Alaskan Native	4%	0%
Asian	0%	2.8%
Ethnicity		
Hispanic	12.5%	2.7%
Non-Hispanic	87.5%	97.3%
Years of RN experience		
Years of RN experience	Mean 10.58 Median 8 Range 1-33 SD 10.2	Mean 5.22 Median 2 Range 0-22 SD 6.15
0-4 years	33.3%	67.6%
5-9 years	23.8%	8.8%
10-20 years	19%	17.6%
Greater than 20 years	23.8%	5.9%
Use of Social Media		
Daily	68%	61.1%
Few times a week	12%	16.7%
Few times a month	8%	13.8%
Never	12%	8.3%
Experience with online courses		
First online course	12%	13.9%
1-2 online courses	20%	30.5%
3 or more online courses	68%	55.6%
Type of Internet access		
Wireless	76%	86.1%
Cable	24%	11.1%
"I don't know"	0%	2.8%

Age and Gender

Analysis of age and gender included the use of the Shapiro Wilk's test for normality. Age had passed the normality test (p=.21). An independent sample t-test was conducted and no significant difference between the posttest groups on age (t=.83, df1,57, p=.41) was found.

Women were the majority gender in the post control group (88%) and the post intervention group (83.4%). Data for gender did violate the Shapiro Wilk's normality test (p=.00). A chi-square test was performed. The gender data violated the third assumption for the chi-square tests with a cell count of less than 5. The alternative Fisher's exact test was performed and no significant difference (p=.73) in distribution of gender between the groups existed.

Race and Ethnicity

The posttest control and intervention subjects were again predominantly white and non-Hispanic. The data for race and ethnicity both violated the Shapiro Wilk's test for normality (p=.00). Both race and ethnicity data violated one of the Chi-square assumptions, with cell counts less than 5. The Fisher's exact test was used and no significant difference in distribution of race (p=.52) or ethnicity (p=.29) was found.

Years of RN Experience

For the variable years of RN experience, the data violated the normality test (p=.00). A Mann Whitney U test was performed and a statistically significant difference (U=210, z=-2.56, p=0.01) was found. This variable had the most missing responses of any on the survey. Each group had three missing responses for this variable. Yet, the subjects completed all or most of the other questions on the survey, so the other variable data was retained for use in analysis. It is unknown whether the six missing responses

would have changed the results of the normality test and Mann Whitney U tests. The possible effect that years of RN experience have on the COI presences is also unknown.

Social Media and Online Courses

The use of social media ($p=.00$) and experience with online courses ($p=.00$) data both violated the Shapiro Wilk's test for normality. The nonparametric, Mann Whitney U tests was once again used. The results revealed no significant difference between the groups on the use of social media ($U=426.5$, $z=-.40$, $p=.70$) and experience with online courses ($U=398.0$, $z=-.877$, $p=.40$).

Internet Access

The last demographic variable of type of internet access also violated the test of normality ($p=.00$). The Chi-square test was performed but the data once again violated the third assumption for use of the Chi-square with cell counts less than 5 in the cells. In the posttest control group, no subjects reported, "I do not know" to the question of the type of Internet access. One subject in the intervention group reported "I do not know". The Fisher's exact test was used and results indicated no statistically significant difference between the groups existed ($p=.29$).

<div align="center">Instrument</div>

The descriptive analysis of the COI instrument including mean scores on the pretest and posttest for each group are presented in Table 10. Each item was a positive statement that participants responded to using a five point Likert scale from strongly disagree (1) to strongly agree (5). Items 1-13 represented the teaching subscale. Items 14-22 were social presence items and items 23-34 were cognitive presence items. Reliability of the COI instrument was assessed using the internal consistency value for each subscale and is presented in Table 11. Cronbach's alpha for the pretest was 0.94 and for the posttest was 0.98.

Table 10 Descriptive Analyses of Items on the Community of Inquiry Scale

Item #	Item	Pretest Control Group (*n*=26)	Pretest Intervention Group (*n*= 38)	Posttest Control Group (*n*=25)	Posttest Intervention Group (*n*=36)
1	The instructor clearly communicated important course topics.	4.61	4.54	4.00	4.55
2	The instructor clearly communicated important course goals.	4.61	4.60	4.00	4.59
3	The instructor provided clear instructions on how to participate in course learning activities.	4.30	4.36	3.89	4.55
4	The instructor clearly communicated important due dates/time frames for learning activities.	4.73	4.58	4.16	4.62
5	The instructor was helpful in identifying areas of agreement and disagreement on course topics that helped me to learn.	4.23	3.85	3.74	4.38
6	The instructor was helpful in guiding the class towards understanding course topics in a way that helped me clarify my thinking.	4.42	4.00	3.89	4.45
7	The instructor helped to keep course participants engaged and participating in productive dialogue.	4.23	3.97	3.74	4.34
8	The instructor helped keep the course participants on task in a way that helped me to learn.	4.19	4.0	3.84	4.45
9	The instructor encouraged course participants to explore new concepts in this course.	4.38	4.36	3.84	4.52
10	Instructor actions reinforced the development of a sense of community among course participants.	4.42	3.94	3.58	4.34

Table 10—*Continued*

Item #	Item	Pretest Control Group (*n*=26)	Pretest Intervention Group (*n*= 38)	Posttest Control Group (*n*=25)	Posttest Intervention Group (*n*=36)
11	The instructor helped to focus discussion on relevant issues in a way that helped me to learn.	4.42	4.30	3.84	4.45
12	The instructor provided feedback that helped me understand my strengths and weaknesses.	3.96	3.88	3.37	4.52
13	The instructor provided feedback in a timely fashion.	3.88	4.24	3.89	4.59
14	Getting to know other course participants gave me a sense of belonging in the course.	3.92	3.81	3.63	3.97
15	I was able to form distinct impressions of some course participants.	3.85	3.60	3.79	4.07
16	Online or web-based communication is an excellent medium for social interaction.	3.73	3.67	4.00	4.28
17	I felt comfortable conversing through the online medium.	4.27	4.03	4.00	4.45
18	I felt comfortable participating in the course discussions.	4.34	4.21	4.16	4.48
19	I felt comfortable interacting with other course participants.	4.31	4.09	4.11	4.48
20	I felt comfortable disagreeing with other course participants while still maintaining a sense of trust.	3.85	3.76	3.95	4.24
21	I felt that my point of view was acknowledged by other course participants.	3.88	3.94	4.00	4.41
22	Online discussions help me to develop a sense of collaboration.	3.65	3.73	3.79	4.17
23	Problems posed increased my interest in course issues.	3.78	3.81	3.95	4.34
24	Course activities piqued my curiosity.	4.00	4.00	3.74	4.45

Table 10—*Continued*

Item #	Item	Pretest Control Group (*n*=26)	Pretest Intervention Group (*n*= 38)	Posttest Control Group (*n*=25)	Posttest Intervention Group (*n*=36)
25	I felt motivated to explore content related questions.	4.31	4.09	3.79	4.48
26	I utilized a variety of information sources to explore problems posed in this course.	4.46	4.27	3.95	4.55
27	Brainstorming and finding relevant information helped me resolve content related questions.	4.35	4.27	3.95	4.38
28	Online discussions were valuable in helping me appreciate different perspectives.	4.00	3.85	3.95	4.38
29	Combining new information helped me answer questions raised in course activities.	4.31	4.18	4.00	4.48
30	Learning activities helped me construct explanations/solutions.	4.31	4.12	4.00	4.48
31	Reflection on course content and discussions helped me understand fundamental concepts in this class.	4.11	4.15	3.95	4.48
32	I can describe ways to test and apply the knowledge created in this course.	4.15	4.06	3.89	4.48
33	I have developed solutions to course problems that can be applied in practice.	4.19	4.03	4.05	4.52
34	I can apply the knowledge created in this course to my work or other non-class related activities.	4.58	4.42	4.16	4.55

Table 11 Instrument Performance: Internal Consistency

Subscale/Scale	Pretest	Posttest
Teaching Presence items	Cronbach's Alpha .93	Cronbach's alpha .97
Social Presence items	Cronbach's Alpha .87	Cronbach's alpha .96
Cognitive Presence items	Cronbach's Alpha .88	Cronbach's alpha .97
COI survey (all items)	Cronbach's Alpha .94	Cronbach's Alpha .98

Research Question

The research question was: Do students who receive instructor AV with text-based feedback have different perceptions of teaching, social, and cognitive presences than do those students who receive standard text-based only feedback? The COI theoretical framework suggests that a community of inquiry is comprised of these three presences. The COI survey instrument has three subscales, one for each presence. The following sections describe the between groups and within groups analysis on pretest and posttest scores.

Pretest COI Scores between Groups

Pretests scores were normally distributed for social presence (p=.25) and cognitive presences (p=.50) as assessed by Shapiro-Wilk's Tests. No significant differences between the control and intervention groups on pretest scores for social and cognitive presences were found using independent samples t-tests (Table 12). Teaching presence scores violated the assumption of normal distribution as assessed by Shapiro-Wilk's test (p=.04). The nonparametric alternative, Mann Whitney U test, was used and no significant difference was found between the pretest groups on teaching presence scores (U=419.5.56, z=-1.02, p=.31). The bar graph in Figure 4 is provided to visually show the similarity in pretest scores between the groups.

Table 12 Comparison of Control Group and Intervention Group Pretest Scores

Group	Pretest Control Group	Pre- Test Intervention Group	Student's t or U test (p)
Teaching Presence	M=4.34 (SD=.54)	M=4.21 (SD=.54)	p=.31
Social Presence	M=3.98 (SD=.62)	M=3.85 (SD=.59)	p=.40
Cognitive Presence	M=4.21 (SD=.41)	M=4.10 (SD=.55)	p=.38
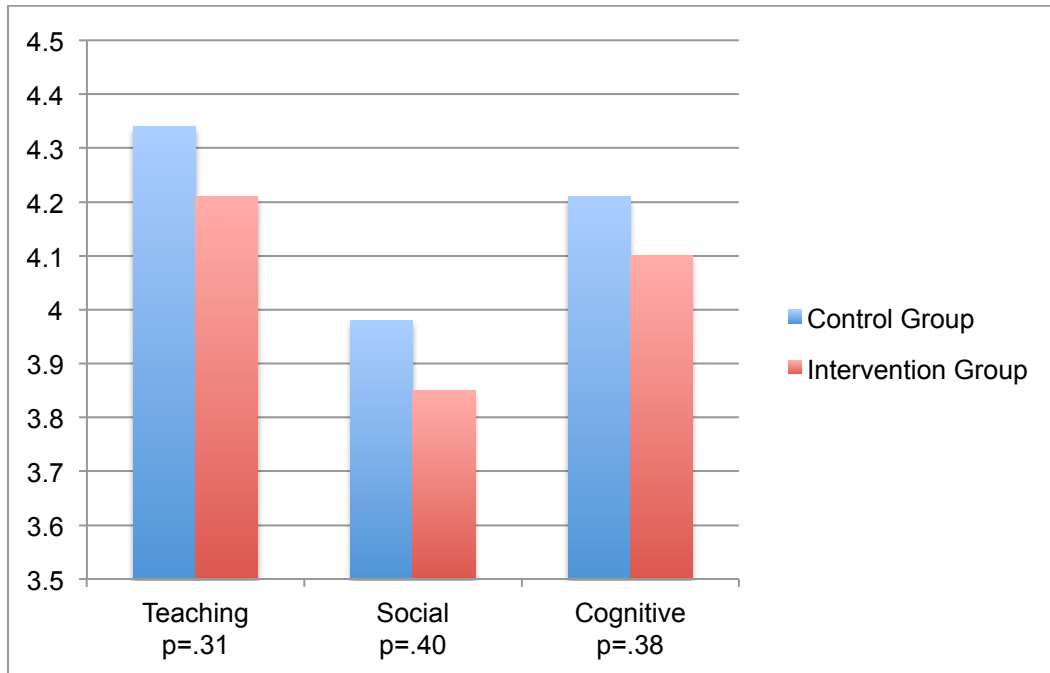
Figure 4 Comparison of control group and intervention group pretest scores

Posttest COI Scores between Groups

The Shapiro Wilk's test was used to assess for normal distribution of scores for each subscale of the posttest. In each set of subscales the assumption of normality was violated: teaching presence (p=.00), social presence (p=.00) and cognitive presence (p=.00). The nonparametric alternative, Mann Whitney U test, was used to determine if there was a significant difference between the groups on posttest scores. The groups had a significant difference on each subscale: teaching presence (U=258, z=-2.84, p=.00),

social presence (*U*=301.5, *z*=-2.21, *p*=.03) and cognitive presence (*U*=253.5, *z*=-2.91,

p=.00). Table 13 provides the mean, standard deviations and significance values for each

subscale of the posttest. The bar graph in Figure 5 is provided to visually show the

difference between the groups on posttest scores.

Table 13 Comparisons of Control Group and Intervention Group Posttest Scores

Subscale/Scale	Posttest Control Group	Posttest Intervention Group	Student's U (*p*)
Teaching Presence	*M*= 3.84 (SD=.1.02)	*M*= 4.45 (SD=.47)	*p*=.00
Social Presence	*M*= 3.84 (SD=.96)	*M*= 4.31 (SD=.66)	*p*=.03
Cognitive Presence	*M*= 3.88 (SD= .90)	*M*= 4.46 (SD=.48)	*p*=.00

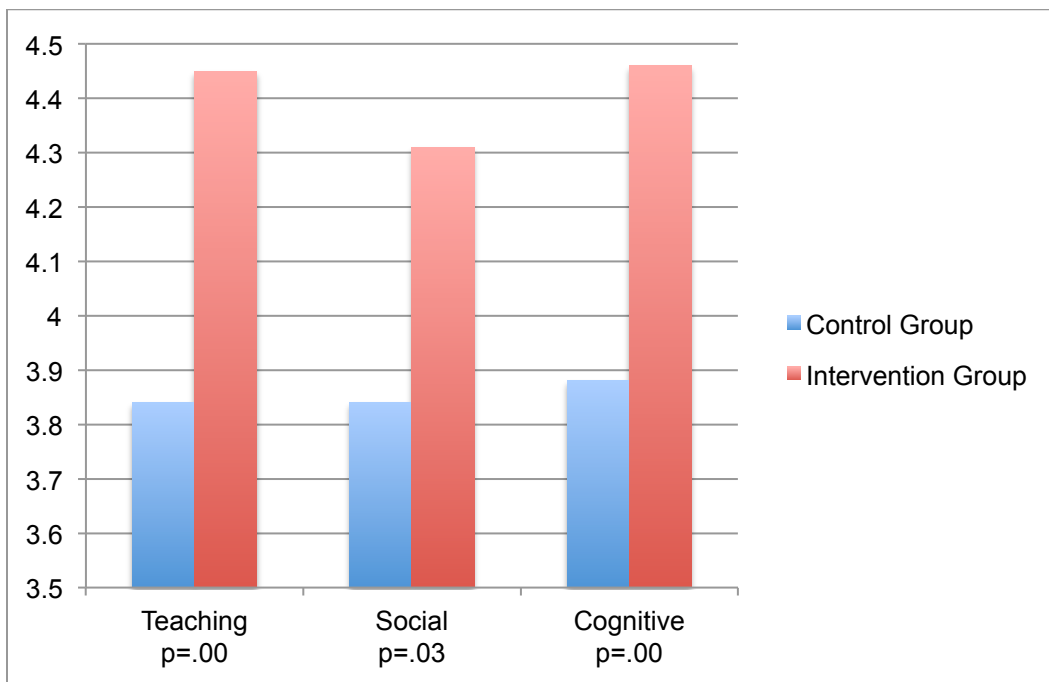Figure 5 Comparison of control group and intervention group posttest scores

The analyses conducted to answer the research question indicate that there are

significant differences in the students' perceptions of the three presences on the

posttests. The posttest scores were significantly higher in the intervention group.

Although the difference may be attributed to the AV feedback from their instructor, other unknown factors may have also contributed to the difference in scores.

Within groups analysis

The low number of matched pairs, three in the control group and six in the intervention group, prevented the use of inferential statistics for analysis. To explore the possibility of any trends, the percent of change within the groups (Figure 6) was calculated. The intervention group had positive changes of 8.3-10.2% between pretest and posttest scores. The control group had a minimal positive change of 1.7% on teaching presence and had slight negative changes for both the social (-1.6%) and cognitive (-1.3%) presences. The pretest and posttest mean scores for the control group are presented in Figure 7 and for the intervention group, mean scores are in Figure 8. Due to the small number of matched pairs in the sample and lack of inferential statistics for a within-the-groups analysis, caution should be used in attributing the difference in posttest scores to the AV feedback intervention alone.
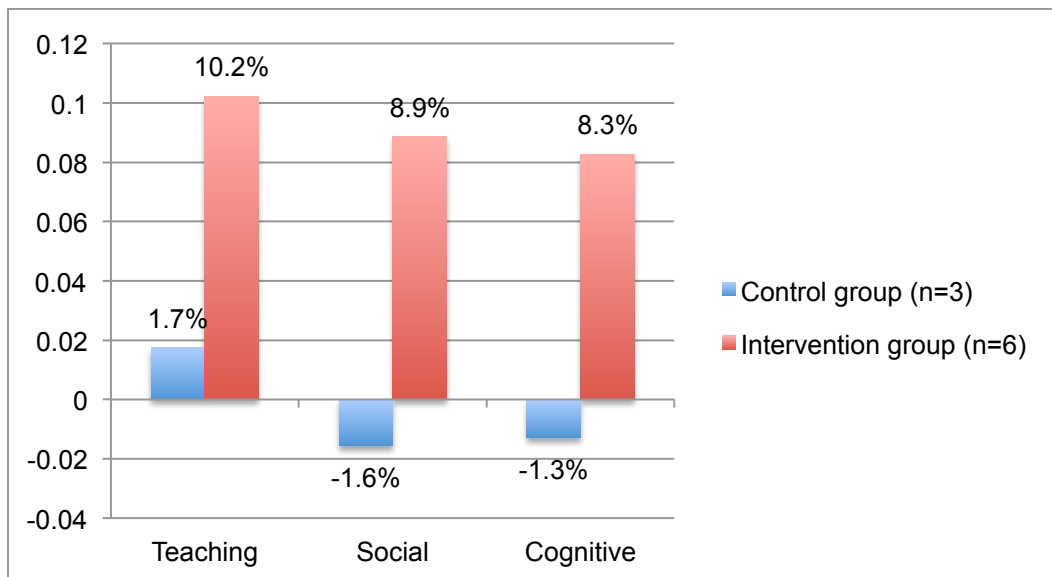
Figure 6 Percent of change within the groups
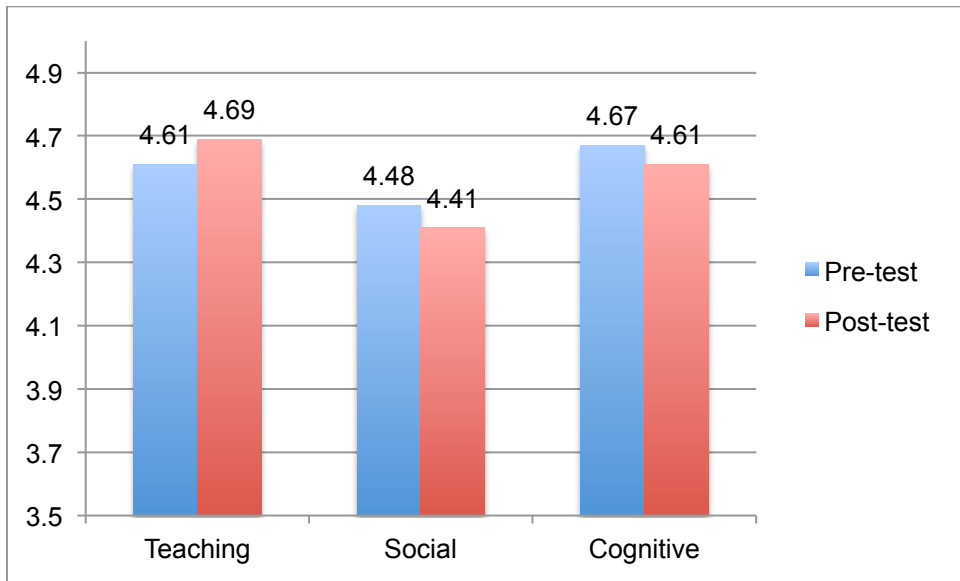
Figure 7 Pretest and posttest means for the control group (n=3)
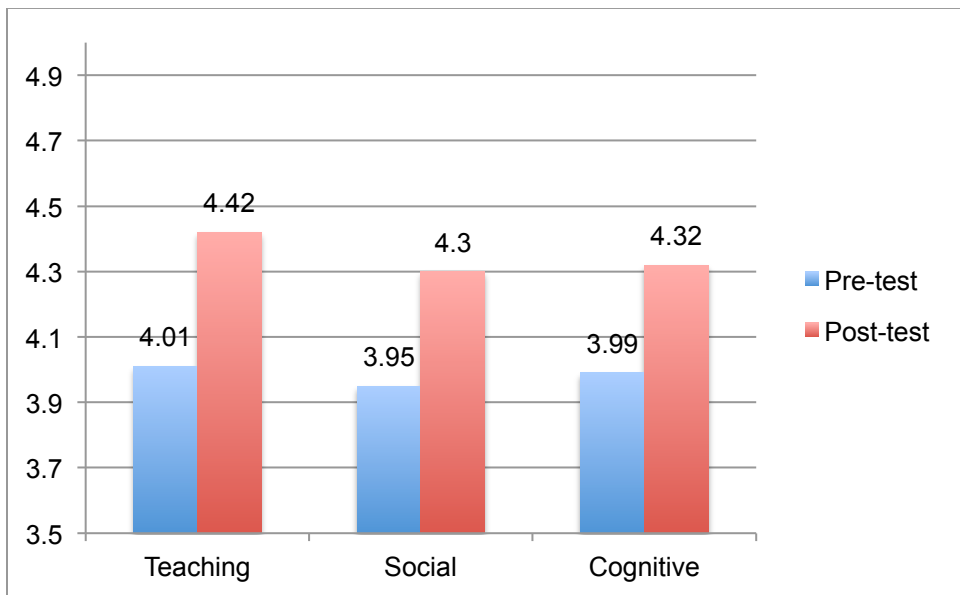
Figure 8 Pretest and posttest means for the intervention group (n=6)

Summary

This chapter described the samples of this descriptive posttest study. Demographic data of the samples included age, gender, race and ethnicity. Additional data collected about the sample included years of RN experience, social media use, online course experience and type of interest access. The only statistically significant difference between the posttest samples was years of RN experience in which the control group had an average of 6 years more experience as an RN. The COI subscales and COI survey did perform reliably and descriptive analysis of each COI survey item was presented. The chapter continued with the results of the between groups' analyses and exploration of the data from within the groups.

Chapter 5

Discussion

This descriptive, posttest study with independent samples was conducted to test the effect of audio-visual (AV) faculty feedback on students' perception of the learning environment in an online course. Subjects were divided into two groups, a control group who received text only feedback and an intervention group, which received AV and text based feedback. Subjects responded to the Community of Inquiry Survey (Swan et al., 2008) before and after the intervention. This chapter begins with a comparison of the sample's demographics to available national data for RN to BSN students. The findings will be compared to the existing research literature on the topic. Specific strengths and limitations of this study are also discussed. Additional items included in this chapter are implications for nurse educators and nurse education administrators. Recommendations for future research conclude this chapter.

Samples' Demographics

The demographic characteristics of the samples in this study are consistent with the larger RN to BSN student population. The majority of subjects were women (84-96%), which is similar to the 86% of female students enrolled in RN-BSN programs nationally (NLN, 2012). Sixty-five to seventy percent of the subjects in the study were over age 30, which again, is similar to the national average of 69% (NLN, 2012). Between the control group and intervention group, no statistically significant differences were found on age and gender.

The national demographic data for race and ethnicity of RN to BSN students are unknown. Data exists for undergraduate RN students, which include RN to BSN students.

Nationally, White students account for 73% of undergraduate RN students. White students accounted for 77-93% of the subjects, in this study. The 0-12% rate of Hispanic subjects, in this study's groups, was inclusive of the national rate of 6% (NLN, 2012). No statistically significant difference between this study's groups on race or ethnicity was found.

Years of RN Experience

The control and intervention posttest groups were significantly different on years of RN experience. Subjects in the control group had a median of 8 years compared to a median of 2 years in the intervention group. One possible explanation for the difference is that the intervention group had a higher percent of subjects under age 25 (13.9%) than did the control group 8.7%. Although age was not statistically different, the younger age would account for fewer years of experience. Whether years of experience had an effect on the subjects' perception of the COI presences is unknown. With the wide range of years of experience from 0-38 years, subjects had varying degrees of nursing expertise. It is unknown whether the difference in experience had an effect on the subject's learning outcomes.

Social Media and Internet Access

Of adults in the US who use the Internet, 73% use some form of social media (Duggan & Smith, 2013) compared to between 88-96% percent of subjects in this study. In the report by Duggan and Smith (2013), 19% of their 1445 respondents were over the age of 65 compared to none of the subjects in this study being over age 65. This may account for the higher social media use in the study group. Subjects in this study were online for course work and may have been generally more comfortable with the use of online social media. Subjects in this study used social media on daily basis between 61-72% of the time. The rate of daily use is similar to those found in a telephone survey of

adults of age 18 and older, whereby 63% of respondents report daily use (Duggan & Smith, 2013).

The data collected regarding the subjects' type of Internet access did not produce any significant results. Indirectly, one can conclude that Internet access type was not a substantial confounding variable. The coaches who performed the intervention did not report any student complaints or issues with viewing the videos from a technical standpoint. Neither the lead teacher nor the PI received any inquires or complaints regarding the videos. The concern of technical issues was the rationale for including the Internet access question on the data collection survey. The rest of the items on the data collection survey were COI items that were used to answer the research question.

<center>Research Question</center>

Q1. Do students who receive instructor AV with text-based feedback have different perceptions of teaching, social, and cognitive presences than do those students who receive standard text-based only feedback?

The subjects in the intervention group, who received AV feedback, reported higher levels of all three presences on the posttest than those in the control group. Statistically significant differences were found between the control and intervention groups on posttest scores for each of the three presences. The percent of change in the intervention group, between pre-test and post-test scores, lends support to the between groups result that AV feedback has a positive influence on the COI presences. The posttest social and cognitive presence scores were not surprising, as previous studies have shown the benefits of asynchronous AV and audio-only feedback (Borup et al., 2012; Ice et al., 2007)

Subjects in the intervention group reported higher levels of social presence and teaching presence than subjects who only received text based feedback. The increase in

<center>60</center>

social presence scores was similar to findings by Borup et al. (2012) in which similar positive associations between the use of asynchronous AV and the concepts of social presence were found. A quantitative comparison between the two studies was not possible due to the case study design (*n*=18) by Borup et al. (2012) and the exploratory nature of this descriptive posttest study.

Results of this study also supported findings of another study. Ice et al. (2007) used a case study design, which revealed that the use of audio only feedback had a positive influence on social presence. Subjects who received audio only feedback, in the Ice et al. study, also reported an increased retention of content. Retention of content is considered within the domain of cognitive presence. Therefore, both studies found that audio or AV feedback may have positive effects on social and cognitive presences. The two previous studies and this study contributed to the knowledge about the use of different types of feedback and the COI framework. Findings within the Context of the Theoretical Model

The underlying model (Figure 1) used in this study was the COI framework, which depicts the COI as having three interacting components: teaching, social, and cognitive presences (Garrison & Anderson, 2003). In the theoretical model in Figure 2, teaching presence is a precursor to the development of social and cognitive presences. Social presence also contributes to cognitive presence in the model.

The use of AV feedback in this study was considered direct instruction and, therefore, within the concept of teaching presence. Subjects who received AV feedback reported higher teaching presence scores than those who received only text feedback. The group with the higher teaching presence scores had higher scores on the post social and cognitive scores. The conclusion drawn from the results was that the study findings supported the theoretical model.

Study Strengths

One of the strengths of this study was that it was one of the first exploratory studies to utilize the entire COI instrument to study AV feedback in online courses. In the past, researchers have collected data using portions of the COI survey. This was also the first study to use asynchronous AV as a delivery method for feedback in online RN to BSN courses. Subjects in the intervention group reported higher levels of all three COI presences on the posttest than those in the control group.

The COI item related to instructor feedback was that "the instructor provided feedback that helped me understand my strengths and weaknesses''. The control group's posttest score for this item actually dropped from 3.96 to 3.37. The intervention group's mean posttest score for this same COI item increased from 3.88 to 4.52. The use of AV feedback in the intervention group may have contributed to these positive results in the intervention group.

The samples in this study were similar to the national demographics for RN to BSN students. The demographics of subjects in both the control and intervention groups were also similar. Findings may be generalized to RN to BSN students in online programs of other colleges of nursing. The limitation of generalizability to students in other majors and other limitations will be discussed in the next section.

Study Limitations

The limitations of this study include a data collection issue, resources to expand the pool of subjects, limits to generalizability of findings and lack of qualitative data. The data collection issue was the related to the subject's personal identification number. Written instructions were provided to the subjects on how to create their PIN. They were instructed to create a PIN using initial and date of birth of a significant person in their life.

Subjects were advised that this was a two-part study, which required completing a pre and post survey. Despite these instructions, the pre and post PINs had very few matches.

Unfortunately, the lack of matches is a problem with the use of PINs or SGICs in longitudinal studies. As times elapses between measures, the number of matched pairs decreases (Kristjannson et al., 2013). It was not possible to determine whether the same subjects completed both surveys and used different PINs or whether different students completed the pre and post surveys.

Posttest demographics were collected in case the need arose for the manual-matching subjects with missing or incomplete PINs. However, attempts at matching pretest to posttest subjects, based on demographics, did not produce additional matches. This total loss of potential data prevented analysis within the groups. Hence, a main effect could not be calculated within the groups. The loss of data also changed the design of the study from quasi-experimental to a weaker, posttest study with independent samples design.

Lack of resources

Resources were also limited this study, as this was an unfunded study. The overall sample size was constrained by the lack of available coaches to perform the intervention. Recruitment of coaches to create the AV feedback videos was a challenge without the offer of compensation. Without funding to compensate coaches to create the videos, the study relied on coaches to volunteer their time. Potential coaches who were not technologically savvy perceived the creation of the videos as a substantial time commitment and "too much work". Finding coaches who were comfortable with the technology was a challenge. For example, one potential coach had declined to participate because she had never made a video, not even for social purposes.

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Lack of funding limited the recruitment of coaches to those that could be obtained through networking. This resulted in each group of subjects having different coaches. It was not possible for the same coach to have a control and an intervention group. The teaching style, responsiveness, experience level and individual personality of each coach might have been confounding variables that influenced the posttest scores. The coaches who created the videos did so voluntarily because of their passion for education and research. It is unknown how this level of coach engagement affected the teaching and social presence scores between the groups.

The convenience sampling used in the study included only nursing students enrolled in one online course. The generalizability of these findings was limited to nursing students because other disciplines may not align, as well as nursing does, with the COI framework (Arbaugh, 2010). The subjects in this study were enrolled in one online course, which was part of an academic model that utilized both lead faculty and with an additional academic coach for every 30 students. Class size and the use of coaches varies from institution to institution, hence the generalizability of this study was limited to institutions with similar models.

Common practices within the study institution may have influenced the online RN to BSN course structure. Hence, it was unknown whether the course's structure had an effect on the student's perceptions of the COI presences. For example, RN to BSN faculty members, at the study institution, were requested to have introductory videos on the course home page. Intuitively, the introductory video may have enhanced teaching and social presences. Other institutions may not have expected their faculty have introductory videos.

The study institution also had a practice of responding to student's emails within 24 hours. Teacher-to-student response times of 48-72 hours have been shown to be a

high priority among students enrolled in online courses (Sitzman, 2010). Responsiveness of the teacher was measured by a teaching presence item (#13) of the COI survey. On item #13, the intervention group (4.59) scored higher on the posttest than the control group (4.24). Other universities may have different practices regarding teacher response times and it is unknown what effect response times may have had on teaching presence.

Threats to validity

Attempts mitigate the following threats to validity to this study were made whenever possible. Limitations to the study include threats to statistical conclusion validity, internal validity and construct validity. Extraneous variances in the experimental setting may have occurred (Shadish, Cook & Campbell, 2002). Each subject viewed the AV feedback intervention in a different setting. As no subjects reported difficulty in viewing the videos, it is unlikely that the setting had a significant effect. Threats to internal validity included maturation and testing (Shadish, Cook & Campbell, 2002). The subjects were enrolled in an 11-week course and it is unknown how time may have influenced their perceptions on the COI. Testing was also a threat as the subjects received the pretest and posttest eight weeks apart. However, with the volume of course work, it is unlikely that the participants recalled their pretest responses while responding to the posttest.

Numerous threats to construct validity also existed. Novelty or disruption effects are an example of such threats (Shadish, Cook & Campbell, 2002). Since no qualitative data was collected, it is unknown if all subjects viewed the AV in a positive way. However, coaches did report receiving some emails from students stating positive messages about the videos.

Subjects may have responded positively as part of reactivity to the experimental situation. Likewise, there may have been subjects in the control group who experienced resentful demoralization because of not receiving the intervention (Shadish, Cook & Campbell, 2002). If demoralization occurred, the effect size in the intervention group may have been inflated. Yet, no subjects reported discontent or a desire to have the intervention. Subjects also did not know which group they were assigned at the onset on the study.

Lastly, experimenter expectancies, in which the coach may have influenced the subjects' responses by relaying expectations of positive responses, may have also been a threat (Shadish, Cook, & Campbell, 2002). These threats to validity limit the generalizability of the findings; however, the findings provide the foundation for future research.

The last limitation, that is presented here, was the lack of qualitative data. Neither the subjects' nor coaches perceptions of the AV feedback's usefulness were directly ascertained. Subjects were not asked if the AV feedback increased their perception of their learning. Lastly, it was unknown if the AV feedback had any influence on students overall performance in the course.

Implications for Nurse Educators

As technology evolves, students adapt these technologies into their lives, and educators are often expected to incorporate these technologies into the online classroom. Educators should seek opportunities to learn about emerging technologies that may be of benefit to the online learner. Existing technology may also be used in a new ways for content delivery or as methods of feedback to the student (Hepplestone, Graham, Irwin, Parkin, & Thorpe, 2011).

If educators choose to utilize AV feedback, they may find it helpful to explore their students' satisfaction with the AV feedback. Knowing how the student feels regarding the ease of use of the AV format, knowing when the student found it most helpful and whether it made a difference in the student's' understanding of the information would benefit the educator. Some instructor feedback may be best delivered via phone, email, text or AV and when to use each delivery method, is crucial to being an effective teacher. From an efficiency perspective, knowing whether students would be satisfied with AV feedback alone versus both AV and written is important, as it takes the educator time to provide feedback via both methods.

Students in this study reported anecdotally to their course coaches, that they enjoyed the video because it added a level of personalization. The coaches reported receiving several emails thanking them for taking the time to make feedback video. These comments indicate that the some students do value instructor's efforts to build teaching and social presence in online classrooms. Educators should consider using the COI to establish a baseline and also when they try new interventions to enhance the COI.

Recommendations for Future Research

Future research in the area of online teaching strategies remains important for continuous improvement of academic outcomes. Research and technology are typically large expenses for universities. Therefore, faculty needs data to make informed decisions about the effectiveness of existing and emerging technology. Education administrators need data to support the purchase of technologies with strong consideration of the potential return on investment (Wagner, Hassanein, & Head (2008).

Recommendations for future research include studies that are designed to address aspects of the limitations of this study. Whether the use of AV feedback specifically improves cognitive presence within a group of students is a question that still

needs to be answered. This is an important question because students who report higher levels of cognitive presence are more likely to reenroll in classes (Boston et al., 2010) and student reenrollment has a direct impact on the financial outcomes of educational institutions. Future research should also look at the relationship between the COI presences and retention in RN to BSN students.

A second recommendation for research is to determine the main effect of AV feedback within a group. Between the groups, there were positive increases in all of COI presences in the intervention group. In this study, the intervention group received three separate treatments with AV feedback, with each video lasting approximately 60-90 seconds. Some faculty may find it daunting to create this number of videos. Yet, if one video would create the same effect, it would reduce the amount of faculty time spent in the creation of the video. Hence, this is another important question to be answered.

The utilization of AV feedback in courses for academic degrees other than nursing would be another area worthy of future research. The majority of the subjects in this study were white females with a mean age between 37-37 years. Other majors may have a different mean age or a more equal ratio of males to females enrolled in courses. This would add to the knowledge of how student characteristics may influence students' perceptions of AV feedback and of the COI presences. Data collection including information regarding institution policies and practices, such as teacher response times and class sizes, may help identify if certain practices are of any significance on the COI presences.

The recommendations for future research, presented in this section included determining the main effect of AV feedback on the COI presences and identifying which, if any, institutional characteristics affect the interaction between AV feedback and the COI. Expanding research to include majors, other than nursing alone, may benefit the

larger community of educators. Significant opportunities exist to qualitatively explore the student and faculty experience with AV feedback and the COI presences. Future research, in the area of AV feedback and the COI, is needed to assist educators toward reaching the ultimate goal of improved student outcomes and student reenrollment.

Conclusion

In conclusion, the theoretical model for this study was congruent with this descriptive study. The COI survey performed reliably and a statistically significant difference between the groups on posttest scores was found. The use of AV feedback may have contributed to increases in all three of the COI presences. Limitations included lack of funding, data collection issues for within group's analysis, and the lack of generalizability to students outside of the RN to BSN major. Overall, the findings of the study were consistent with previous studies that demonstrated the benefit of audio and AV feedback. The results of this study are promising for nurse educators who are looking for ways to increase the COI presences in their online courses.

Appendix A

Grading Rubric

Criteria	Levels of Achievement		
	Accomplished	Proficient	Needs improvement
Week 3 assignment, Part 1: Problem identification	12.5 to 12.5 points: Identifies a clinical problem in the workplace that would be under a nurse's control.	10 to 10 points: Clearly identifies a clinical problem in the workplace.	0 to 7.5 points: Does not clearly identify a clinical problem in the workplace.
Research question	7.5 to 7.5 points; Develops an appropriate research question using the four stated criteria from assignment.	5 to 5 points: Develops an appropriate research question using three criteria from assignment.	0 to 2.5 points: Uses one or two criteria in composing a research question.
Rationale for question	5 to 5 points: Clearly explains a rationale for the selection of a research question.	2.5 to 2.5 points: Explains the rationale for the selection of a research question.	0 to 0 points: Provides no rationale for the selection of a research question.
Part 2: Title page components using UT Arlington College of Nursing title page format	12.5 to 12.5 points: Develops title page components in College of Nursing title page format using American Psychological Association (APA) format with no errors.	7.5 to 7.5 points: Develops title page components in APA format with no more than three errors.	0 to 0 points: Does not use College of Nursing title page format or creates title page with more than three errors.
Part 3: APA references and summaries: Summarize peer-reviewed, evidence-based literature related to a clinical problem.	25 to 25 points: Clearly and concisely summarizes three professional, peer-reviewed articles that address a research question.	15 to 22.5 points Summarizes three professional, peer-reviewed articles that address a research question.	0 to 12.5 points: Summarizes one or two professional, peer-reviewed articles that address a research question.
Apply a decision-making framework to a clinical problem situation.	12.5 to 12.5 points: Effectively applies a decision-making framework in selecting articles related to a clinical problem situation.	7.5 to 7.5 points: Applies a decision-making framework in selecting articles related to a clinical problem situation.	2.5 to 2.5 points: Selects articles, but does not apply a decision-making framework.

	Levels of Achievement		
Criteria	Accomplished	Proficient	Needs improvement
Use correct grammar, punctuation, and APA format in writing professional papers.	25 to 25 points: Consistently uses correct mechanics and APA format in writing professional papers (0-2 errors).	15 to 22.5 points: Uses correct mechanics and APA format in writing professional papers (3-8 errors).	0 to 12.5 points: Does not use correct mechanics and/or APA format in writing papers (more than 8 errors).

Appendix B

Community of Inquiry Survey

Community of Inquiry Survey Instrument

Instructions

Enter your PIN that you created in the demographics form: __-__-__-__-__.

For each item choose the number that best represents your opinion.

    1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

The term "instructor" used in this survey refers to both the instructor and academic coach*.*

Items

1. The instructor clearly communicated important course topics.

2. The instructor clearly communicated important course goals.

3. The instructor provided clear instructions on how to participate in course learning activities.

4. The instructor clearly communicated important due dates/time frames for learning activities.

5. The instructor was helpful in identifying areas of agreement and disagreement on course topics that helped me to learn.

6. The instructor was helpful in guiding the class towards understanding course topics in a way that helped me clarify my thinking.

7. The instructor helped to keep course participants engaged and participating in productive dialogue.

8. The instructor helped keep the course participants on task in a way that helped me to learn.

9. The instructor encouraged course participants to explore new concepts in this course.

10. Instructor actions reinforced the development of a sense of community among course participants.

11. The instructor helped to focus discussion on relevant issues in a way that helped me to learn.

12. The instructor provided feedback that helped me understand my strengths and weaknesses.

13. The instructor provided feedback in a timely fashion.

14. Getting to know other course participants gave me a sense of belonging in the course.

15. I was able to form distinct impressions of some course participants.

16. Online or web-based communication is an excellent medium for social interaction.

17. I felt comfortable conversing through the online medium.

18. I felt comfortable participating in the course discussions.

19. I felt comfortable interacting with other course participants.

20. I felt comfortable disagreeing with other course participants while still maintaining a sense of trust.

21. I felt that my point of view was acknowledged by other course participants.

22. Online discussions help me to develop a sense of collaboration.

23. Problems posed increased my interest in course issues.

    Course activities piqued my curiosity.

24. I felt motivated to explore content related questions.

25. I utilized a variety of information sources to explore problems posed in this course.

26. Brainstorming and finding relevant information helped me resolve content related questions.

27. Online discussions were valuable in helping me appreciate different perspectives.

28. Combining new information helped me answer questions raised in course activities.

29. Learning activities helped me construct explanations/solutions.

30. Reflection on course content and discussions helped me understand fundamental concepts in this class.

31. I can describe ways to test and apply the knowledge created in this course.

32. I have developed solutions to course problems that can be applied in practice.

33. I can apply the knowledge created in this course to my work or other non-class related activities.

5-point Likert-type scale

1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Appendix C

Demographics Form

Create your own personal five-digit PIN. You will need to use this PIN again on the survey at the end of the course. To create your PIN, use the first initial of your mother's maiden name and her month and day of her birth. You may use someone else's initial and date of birth as long as it is someone you remember. You should not use your own data. This allows your survey responses to remain anonymous. Example: If your mother's family name before marriage was Jones and her date of birth was February 15, then the PIN would be J0215. Insert your PIN below.

____-____-_____-_____-_____

1. Age _____

2. Gender (check one) _____female   _____male

3. Race

_____American Indian or Alaska Native

_____Asian

_____Black/African American

_____Native Hawaiian or other Pacific Islander

_____White

4. Ethnicity

_____Hispanic or Latino

_____Not Hispanic or Latino

5. How many years have you been an RN?_____

6. Social media (such as Facebook, Twitter, LinkedIn)

(check one)

_____I use social media daily

_____I use social media a few times a week

_____I use social media a few times a month

_____I never use social media

7. Experience with courses taken wholly or partially online (check one)

_____This is my first online course

_____ I have taken 1–2 courses online

_____I have taken 3 or more courses online

8. What type of Internet access do you have?

____Wireless

____Cable

____Dial-up

____Don't know

Appendix D

Permission to Use CoI Survey Instrument

RE: community of inquiry model

Dr. D. Randy Garrison [garrison@ucalgary.ca]

Sent: Friday, September 16, 2011 7:19 PM

To: Lindley, Marie Kelly

Marie,

You have my permission to use the CoI questionnaire.

I would be careful about simply comparing f2f (on campus) and online learning; there are

numerous studies that have showed no significant differences.

However, what you should consider is comparing various delivery methods based on the

factors (i.e., presences) and variables (categories) associated with the CoI framework.
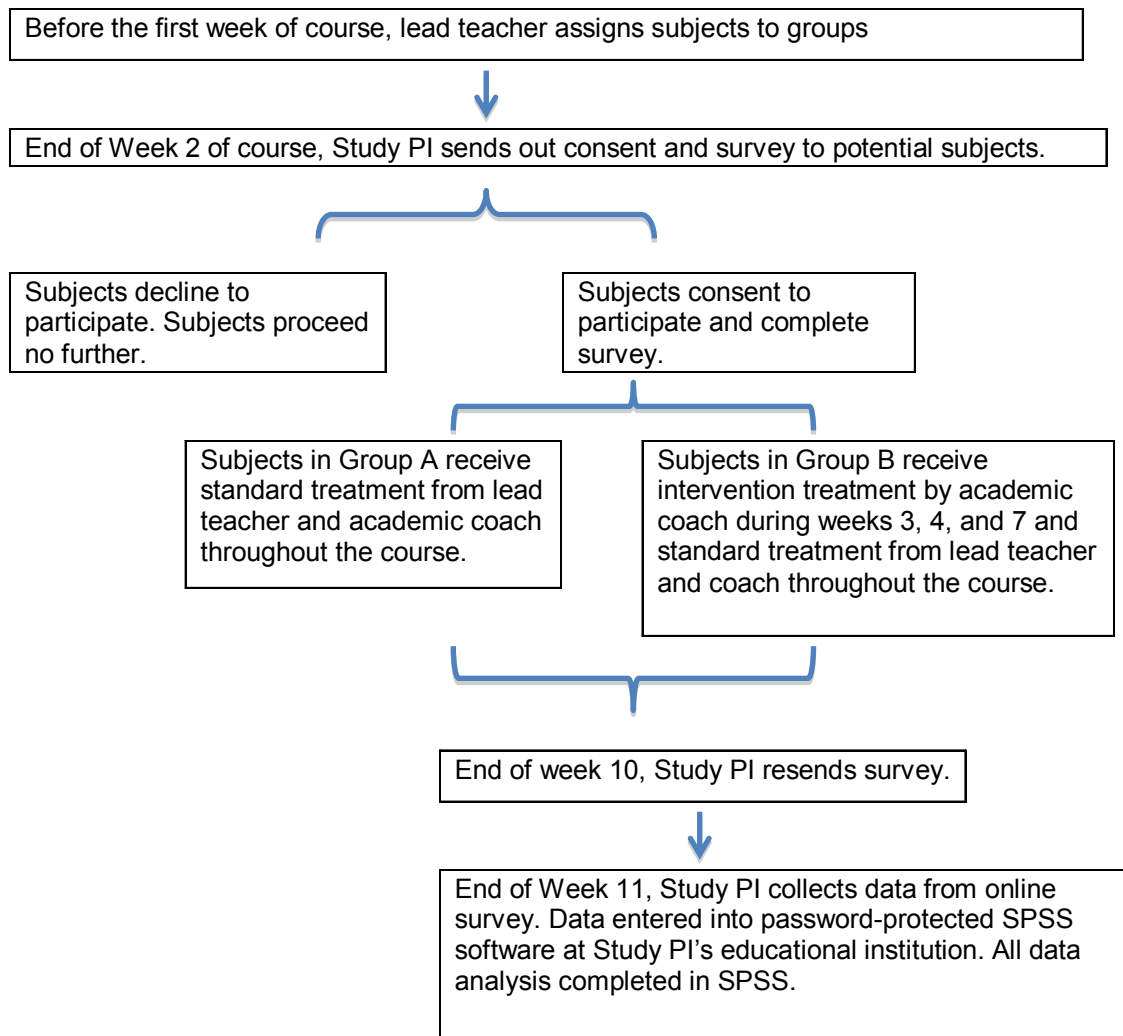
Hope that helps.

Good luck with your studies and research.

DRG

Appendix E

Procedure and Data Collection Flowchart

Before the first week of course, lead teacher assigns subjects to groups

End of Week 2 of course, Study PI sends out consent and survey to potential subjects.

Subjects decline to participate. Subjects proceed no further.

Subjects consent to participate and complete survey.

Subjects in Group A receive standard treatment from lead teacher and academic coach throughout the course.

Subjects in Group B receive intervention treatment by academic coach during weeks 3, 4, and 7 and standard treatment from lead teacher and coach throughout the course.

End of week 10, Study PI resends survey.

End of Week 11, Study PI collects data from online survey. Data entered into password-protected SPSS software at Study PI's educational institution. All data analysis completed in SPSS.

Appendix F

Training Protocol for AV Intervention

Instructions for Academic Coaches on How to Conduct AV Intervention

This instruction guide includes the purpose of the intervention, the essential components of the intervention, and technical procedure for creating and delivering the intervention.

Introduction

The purpose of the video feedback is to provide the student with personalized and specific feedback regarding their performance on their major paper for the course. The students submit the paper in three parts, so each student will receive three feedback videos. If you have not already reviewed the grading rubric (see Appendix A) for the major paper assignment, please do so before continuing with these instructions.

Essential Components

Each video will be between 1 and 2 minutes in length. Each video will contain four essential components or types of statements.

Segment 1: Begin each video with an affective statement

Example: "Hi, Michelle. I completed reading your first draft of your paper. Here is some specific feedback."

Segment 2: Include at least one corrective statement and add more as necessary. Using the Grading rubric, explain to the student what major elements are missing or are incorrect

Example: "In the grading rubric, you will find that you needed to identify a clinical problem not under the nurse's control. The problem you identified is clinical but possibly under the nurse's control."

Segment 3: Include one Socratic statement

Example: "Maybe instead of approaching from this direction, consider trying this other avenue. Ask, "What other issues have you seen in your practice?"

Segment 4: Conclude each video with an affective statement.

Example: "Michelle with some revisions, you can create a strong argument for the case you presented. You have some great ideas. I look forward to reading your next draft."

Create the video recording for each student individually, using either your webcam software or YouTube capture app for iPad or iPhone.

Technical Instructions

1. If you do not already have one, you will need to create a Google/YouTube account. You may do so by going to the following website. https://accounts.google.com/SignUp?continue=https%3A%2F%2Faccounts.g oogle.com%2FManageAccount

2. Once you have a Google account, you will automatically have a YouTube account. Log in to your Google account.

3. Click on YouTube on the menu bar at the top of the page.

4. Click the upload button on the top of the page. You may choose to either upload a video from your computer or record directly from your webcam. This second option is recommended as the easiest way to create the video.

5. Click webcam access. Once it loads, click access to your camera and microphone. Click record when ready.

6. After completing the recording, click stop recording and then upload.

7. Add a title and description in the boxes labeled.

8. Go to PRIVACY settings on the right side of the page. Change settings from public to private.

9. Once you click private, you will enter in the e-mail address of the person to whom you wish to send the video.

Academic coaches will submit a complete 20- to 30-second test video and e-mail to the study PI at mlindley@uta.edu. The PI will review each video to ensure that the video was completed accurately and that it was set with the appropriate security settings. If any additional training for the academic coach is required, then PI will provide it on an individual basis with the academic coach. The academic coach will also have access to the PI 24/7 via cell phone.

Appendix G

Consent Form

Researcher

Marie Kelly Lindley

College of Nursing

Marie.lindley@mavs.uta.edu

Phone 972-415-7223

Researcher Supervisor

Dr. Jennifer Gray

College of Nursing

jgray@uta.edu

Phone 817-272-2776

Title of Project

A Comparison of Instructor Audio-Video Feedback with Text-Based Feedback Versus

Text-Based Feedback Alone on Student's Perceptions of Community of Inquiry Among

RN-to-BSN Online Students

Introduction

You are being asked to participate in a research study because you are over 18 years of age and are enrolled in an online RN-to-BSN course. Please contact the researcher via cell phone or e-mail if you have any questions.

What is this Study About?

The researcher wants to determine if students who receive audio-video and text-based feedback about class assignments have different perceptions of their online community of learning from those who receive only text-based feedback.

How Long Will this Study Last?

Participation in this study will last approximately 40 minutes.

You will be asked to participate in two online surveys. Each survey will last approximately 20 minutes.

How Many People Will be in this Study?

The number of anticipated participants in this research study is 120–300.

Procedures

As a participant in this study, you will read this consent form and, if you agree to continue, then you will complete surveys on personal information about yourself such as age, gender, and years of experiences as an RN. You will also take a survey about your perceptions of your online community of learning in this RN-to-BSN course. At the end of the course, you will complete the survey again.

No information will be collected that will result in identifying you. Use the information below to create a confidential personal PIN.

- Create your personal PIN by using the first initial of your mother's family name prior to marriage and her two-digit month and two-digit date of birth. You may alternatively choose another person's information that you will remember. Do not use your own name and date of birth.

- Example: If your mother's family name prior to marriage was Jones and her date of birth was February 15, then the personal PIN would be J0215.

All students who agree to participate in this study will receive either text-based feedback only or audio-video feedback with text-based feedback. If, as participant in this study, you receive an audio-video feedback from your instructor, you need to know the following. An instructor in your course will create a video to provide you personalized feedback about three of your assignments in the course. The instructor may use your first name on the video but no other identifying names or information will be on the video. The only persons to see the video are the instructor who creates the video, you as the student

receiving the feedback, and the researcher of this study. These videos will not be used in the actual data analysis. The videos may be reviewed for determination of consistency among the instructors in quality and quantity of feedback. The videos will not be used for any future research purposes not described here.

What Will I Gain from Being in this Study?

You may benefit from this study if, as result of receiving instructor feedback, you experience enhanced learning and increased feelings of sense of community in this online course. The results of this study may benefit future students because we will learn if audio-video feedback is an effective online teaching method.

Are There Possible Risks/Discomforts from Being in this Study?

There are no perceived risks or discomforts for participating in this research study. Should you experience any discomfort, please inform the researcher. You have the right to stop at any time without consequence.

Any new information developed during the study that may affect your willingness to continue participation will be communicated to you.

Will I be Paid to Participate?

No compensation will be offered for participation in this study.

Who is Paying for this Study?

The researcher is providing any needed funding for this study.

Are There any Alternative Procedures?

There are no alternative procedures offered for this study. However, you can elect not to participate in the study or quit at any time without consequence.

Is my Participation Voluntary?

Participation in this research study is voluntary. You have the right to decline participation in any or all study procedures or quit at any time at no consequence.

Will my Confidentiality be Protected?

Every attempt will be made to see that your study results are kept confidential. A copy of this signed consent form and all data collected from this study will be stored in a locked cabinet in a locked office of the researcher at UTA for at least three years after the end of this research. The results of this study may be published and/or presented at meetings without naming you as a participant. Additional research studies could evolve from the information you have provided, but your information will not be linked to you in any way; it will be anonymous. Although your rights and privacy will be maintained, the Secretary of the Department of Health and Human Services, the UTA Institutional Review Board (IRB), and personnel particular to this research have access to the study records. Your records will be kept completely confidential according to current legal requirements. They will not be revealed unless required by law, or as noted above. The UTA IRB has reviewed and approved this study and the information within this consent form. If in the unlikely event it becomes necessary for the IRB to review your research records, UTA will protect the confidentiality of those records to the extent permitted by law.

Who Do I Contact if I Have Questions?

Questions about this research study may be directed to Marie Kelly Lindley, researcher, 972-415-7223, marie.lindley@mavs.uta.edu, or Dr. Jennifer Gray, faculty advisor, 817-272-2776, jgray@uta.edu. Any questions you may have about your rights as a research participant or a research-related injury may be directed to the Office of Research Administration; Regulatory Services, at 817-272-2105 or regulatoryservices@uta.edu.

Do You Want to be in this Study?

By continuing this survey, you understand that you have chosen to take part in this study. You confirm that you are 18 years of age or older and have read this consent

form. You have been informed about this study's purpose, procedures, and possible benefits and risks. You have been given the opportunity to ask questions before you consent, and you have been told that you can ask other questions at any time.

You voluntarily agree to participate in this study. By continuing the survey, you are not waiving any of your legal rights. Refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You may discontinue participation at any time without penalty or loss of benefits to which you are otherwise entitled. To stop participation in the study, you may exit the survey or close the browser window. You understand that once the survey is submitted, you are not able to withdraw.

References

Academic Partnerships. (2014). Success Story: University of Texas at Arlington's College

 of Nursing. Retrieved from Academic Partnerships website:

 http://www.academicpartnerships.com/experience/success-stories/ut-arlington

Aiken, L. H., Clarke, S. P., Cheung, R. B., Sloane, D. M., & Silber, J. H. (2003).

 Educational levels of hospital nurses and surgical patient mortality. *Journal of the*

 American Medical Association, 290, 1617–1623. http://dx.doi.org/10.1001/

 jama.290.12.1617

Akyol, Z., Ice, P., Garrison, R., & Mitchell, R. (2010). The relationship between course

 socio-epistemological orientations and student perceptions of community of

 inquiry. *The Internet and Higher Education, 13,* 66–68. http://dx.doi.org/

 10.1016/j.iheduc.2009.12.002

American Association of Colleges of Nursing (AACN. (2012a). *Creating a more highly*

 qualified nursing workforce. Retrieved from http://www.aacn.nche.edu/media-

 relations/ NursingWorkforce.pdf

American Association of Colleges of Nursing (AACN). (2012b). *Degree completion*

 programs for registered nurses: RN to master's degree and RN to baccalaureate

 programs. Retrieved from http://www.aacn.nche.edu/media-

 relations/DegreeComp.pdf

American Association of Colleges of Nursing (AACN). (2012c, March 22). *New AACN*

 data show an enrollment surge in baccalaureate and graduate programs amid

 calls for more highly educated nurses [Press release]. Retrieved from

 http://www.aacn.nche.edu/news/articles/2012/enrollment-data

American Institutes for Research. (2010, October 11). *Finishing the first lap: The cost of*

 first-year student attrition in America's four-year colleges and universities.

94

Retrieved from http://www.air.org/news/

Anant, S. S. (1966). The need to belong. *Canadian Mental Health, 14,* 21–27.

Anderson, T., Rourke, L., Garrison, D. R., & Archer, W. (2001). Assessing teaching presence in a computer conferencing context. *Journal of Asynchronous Learning Networks, 5*(2), 1–17. Retrieved from http://sloanconsortium.org/publications/ jaln_main

Angelino, L. M., Williams, F. K., & Natvig, D. (2007). Strategies to engage online students and reduce attrition rates. *Journal of Educators Online, 4*(2). Retrieved from http://www.thejeo.com/

Arbaugh, J. B., Bangert, A., & Cleveland-Innes, M. (2010). Subject matter effects and the Community of Inquiry (COI) framework: An exploratory study. *The Internet and Higher Education, 13,* 37–44. http://dx.doi.org/10.1016/j.iheduc.2009.10.006

Arbaugh, J. B., Cleveland-Innes, M., Díaz, S. R., Garrison, D. R., Ice, P., Richardson, J. C., & Swan, K. P. (2008). Developing a community of inquiry instrument: Testing a measure of the Community of Inquiry framework using a multi-institutional sample. *The Internet and Higher Education, 11,* 133–136. http://dx.doi.org/ 10.1016/j.iheduc.2008.06.003

Arbaugh, J. B., & Hwang, A. (2005). A confirmatory study of "teaching presence" in online MBA courses. *Academy of Management Proceedings, 8*(Suppl.)*,* A1–A6. http://dx.doi.org/10.5465/AMBPP.2005.18779266

Archibald, D. (2010). Fostering the development of cognitive presence: Initial findings using the Community of Inquiry survey instrument. *The Internet and Higher Education, 13,* 73–74. http://dx.doi.org/10.1016/j.iheduc.2009.10.001

Ashar, H., & Skenes, R. (1993). Can Tinto's student departure model be applied to nontraditional students? *Adult Education Quarterly, 43,* 90–100.

http://dx.doi.org/10.1177/0741713693043002003

Bannigan, K., & Watson, R. (2009). Reliability and validity in a nutshell. *Journal of Clinical Nursing, 18,* 3237–3243. http://dx.doi.org/10.1111/j.1365-2702.2009.02939.x

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117,* 497–529. http://dx.doi.org/10.1037/0033-2909.117.3.497

Blignaut, A. S., & Trollip, S. R. (2003). Measuring faculty participation in asynchronous discussion forums. *Journal of Education for Business, 78,* 347–353. http://dx.doi.org/10.1080/08832320309598625

Borup, J., West, R. E., & Graham, C. R. (2012). Improving online social presence through asynchronous video. *The Internet and Higher Education, 15,* 195–203. http://dx.doi.org/10.1016/j.iheduc.2011.11.001

Boston, W., Díaz, S. R., Gibson, A. M., Ice, P., Richardson, J. C., & Swan, K. P. (2010). An exploration of the relationship between indicators of the Community of Inquiry framework and retention in online programs. *Journal of Asynchronous Learning Networks, 13*(3), 67–83. Retrieved from http://sloanconsortium.org/publications/jaln_main

Burgess, M. L., Slate, J. R., Rojas-LeBouef, A., & LaPrairie, K. (2010). Teaching and learning in *Second Life*: Using the Community of Inquiry (CoI) model to support online instruction with graduate students in instructional technology. *Internet and Higher Education, 13,* 84–88. http://dx.doi.org/10.1016/j.iheduc.2009.12.003

Cobb, S. C. (2011). Social presence, satisfaction, and perceived learning of RN-to-BSN students in web-based nursing courses. *Nursing Education Perspectives, 32,*115–119. http://dx.doi.org/10.5480/1536-5026-32.2.115

Cronbach, L. J., & Shavelson, R. J. (2004). My current thoughts on coefficient alpha and

successor procedures. *Educational and Psychological Measurement, 64,* 391–

418. http://dx.doi.org/10.1177/0013164404266386

Dewey, J. (1938). *Experience and education*. New York: Macmillan.

Díaz, S. R., Swan, K. P., Ice, P., & Kupczynski, L. (2010). Student ratings of the

importance of survey items, multiplicative factor analysis, and the validity of the

Community of Inquiry survey. *The Internet and Higher Education, 13,* 22–30.

http://dx.doi.org/10.1016/j.iheduc.2009.11.004

Douglas, A. (2010). Fostering the development of cognitive presence: Initial findings

using the Community of Inquiry survey instrument. *The Internet and Higher*

Education, 13, 73–74. http://dx.doi.org/10.1016/j.iheduc.2009.10.001

Dringus, L. P., Snyder, M. M., & Terrell, S. R. (2010). Facilitating discourse and

enhancing teaching presence: Using mini audio presentations in online forums.

Internet and Higher Education, 13, 75–77. http://dx.doi.org/

10.1016/j.iheduc.2009.11.001

Duggan, M. & Smith, A. (2014). *Social Media Update 2013*. Retrieved from Pew Center

for Research website: http://pewinternet.org/Reports/2013/Social-Media-

Update.aspx

Estabrooks, C. A., Midodzi, W. K., Cummings, G. G., Ricker, K. L., & Giovannetti, P.

(2005). The impact of hospital nursing characteristics on 30-day mortality.

Nursing Research, 54, 74–84. http://dx.doi.org/10.1097/00006199-200503000-

00002

Farrell, G. A., Cubit, K. A., Bobrowski, C. L., & Salmon, P. (2007). Using the WWW to

teach undergraduate nurses clinical communication. *Nurse Education Today,*

27(5), 427-435. doi:http://dx.doi.org.ezproxy.uta.edu/10.1016/j.nedt.2006.07.005

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses

using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods, 41,* 1149–1160. http://dx.doi.org/10.3758/BRM.41.4.1149

Gallagher-Lepak, S., Reilly, J., & Killion, C. M. (2009). Nursing student perceptions of community in online learning*. Contemporary Nurse, 32,* 133–146. http://dx.doi.org/10.5172/conu.32.1-2.133

Garrison, D. R. (2009). Communities of inquiry in online learning. In P. L. Rogers (Ed.), *Encyclopedia of distance learnin*g (2nd ed., pp. 352–355). Hershey, PA: IGI Global.

Garrison, D. R., & Anderson, T. (2003). *E-learning in the 21st century: A framework for research and practic*e. New York, NY: Routledge Falmer.

Garrison, D. R., Anderson, T., & Archer, W. (2001). Critical thinking, cognitive presence, and computer conferencing in distance education. *American Journal of Distance Education, 15*(1), 7–23. http://dx.doi.org/10.1080/08923640109527071

Garrison, D. R., Anderson, T., & Archer, W. (2010b). The first decade of the Community of Inquiry framework: A retrospective. *The Internet and Higher Education, 13,* 5–9. http://dx.doi.org/10.1016/j.iheduc.2009.10.003

Garrison, D. R., Cleveland-Innes, M., & Fung, T. S. (2010a). Exploring causal relationships among teaching, cognitive and social presence: Student perceptions of the Community of Inquiry framework. *The Internet and Higher Education, 13,* 31–36. http://dx.doi.org/10.1016/j.iheduc.2009.10.002

Garrison, D. R., & Vaughan, N. D. (2008). *Blended learning in higher education: Framework, principles, and guidelines*. San Francisco, CA: Jossey-Bass.

Girasoli, A. J., & Hannafin, R. D. (2008). Using asynchronous AV communication tools to increase academic self-efficacy*. Computers & Education, 51,* 1676–1682. http://dx.doi.org/10.1016/j.compedu.2008.04.005

Gliner, J. A., Morgan, G. A., & Leech, N. L. (2009). *Research methods in applied settings: An integrated approach to design and analysis* (2nd ed.). New York, NY: Routledge.

Gruendemann, B. J. (2011). Nursing student experiences with face-to-face learning. *Journal of Nursing Education, 50,* 676–680. http://dx.doi.org/10.3928/01484834-20110930-02

Hagerty, B. M. K., Lynch-Sauer, J., Patusky, K. L., Bouwsema, M., & Collier, P. (1992). Sense of belonging: A vital mental health concept. *Archives of Psychiatric Nursing, 6,* 172–177. http://dx.doi.org/10.1016/0883-9417(92)90028-H

Hall, W. A. (2009). Whither nursing education? possibilities, panaceas, and problems. *Nurse Education Today, 29*(3), 268-275. doi:http://dx.doi.org.ezproxy.uta.edu/10.1016/j.nedt.2008.09.005

Hepplestone, S., Graham H., Irwin B., Parkin, H. & Thorpe, L. (2011). Using technology to encourage student engagement with feedback: A literature review. *Research in Learning Technology,19*(2), 117.

Herbert, M. (2006). Staying the course: A study in online student satisfaction and retention. *Online Journal of Distance Learning Administration, 9*(4), Article 2. Retrieved from http://www.westga.edu/~distance/ojdla/

Heyman, E. (2010). Overcoming student retention issues in higher education online programs. *Online Journal of Distance Learning Administration, 13*(4), Article 3. Retrieved from http://www.westga.edu/~distance/ojdla/

Ice, P., Curtis, R., Phillips, P., & Wells, J. (2007). Using asynchronous audio feedback to enhance teaching presence and students' sense of community. *Journal of Asynchronous Learning Networks, 11*(2), 3–25. Retrieved from http://sloanconsortium.org/publications/jaln_main

Institute of Medicine (IOM). (2010). *The future of nursing: The focus on education* [Brief]. Washington, DC: The National Academy of Sciences.

Jeffreys, M. R. (2012). *Nursing student retention: Understanding the process and making the difference* (2nd ed.). New York, NY: Springer.

Jones, I. M. (2011). Can you see me now? Defining teaching presence in the online classroom through building a learning community. *Journal of Legal Studies Education, 28,* 67–116. http://dx.doi.org/10.1111/j.1744-1722.2010.01085.x

Kristjansson, A. L., Sigfusdottir, I. D., Sigfusson, J., & Allegrante, J. P. (2013; 2014). Self-generated identification codes in longitudinal prevention research with adolescents: A pilot study of matched and unmatched subjects. *Prevention Science, 15*(2), 205-212. doi:10.1007/s11121-013-0372-z

Levett-Jones, T., & Lathlean, J. (2008). Belongingness: A prerequisite for nursing students' clinical learning. *Nurse Education in Practice, 8,* 103-111.

Levett-Jones, T., Lathlean, J., Maguire, J., & McMillan, M. (2007). Belongingness: A critique of the concept and implications for nursing education*. Nurse Education Today, 27,* 210–218. http://dx.doi.org/10.1016/j.nedt.2006.05.001

Marcisz & Woien, 2010). A Case Study: Enhancing Critical Thinking Skills in an Online Health Care Ethics Course. *Journal of Online Learning and Teaching (6)*,2. Retrieved from http://jolt.merlot.org/vol6no2/marcisz_0610.htm

McDonald, J.H. 2009. Handbook of Biological Statistics (2nd ed.). Sparky House Publishing, Baltimore, Maryland pp80.

Mintz-Binder, RD (2014). A comparison of coach-based graduate students in 5 week online courses to traditional graduate students. *International Journal of Arts and Sciences conference for academic disciplines*, oral presentation, Harvard University, Cambridge, MA.

Nagel, L., & Kotzé, T. G. (2010). Supersizing e-learning: What a CoI survey reveals about teaching presence in a large online class. *The Internet and Higher Education, 13,* 45–51. http://dx.doi.org/10.1016/j.iheduc.2009.12.001

National League for Nursing (NLN). (2012). *Annual survey of schools of nursing, fall 2011.* Retrieved from http://www.nln.org/research/slides/index.htm

Newton, S. E., & Moore, G. (2009). Use of aptitude to understand bachelor of science in nursing student attrition and readiness for the National Council Licensure Examination-Registered Nurse. *Journal of Professional Nursing, 25,* 273–278. http://dx.doi.org/10.1016/j.profnurs.2009.01.016

Paechter, M., & Maier, B. (2010). Online or face-to-face? Students' experiences and preferences in e-learning. *The Internet and Higher Education, 13,* 292–297. http://dx.doi.org/10.1016/j.iheduc.2010.09.004

Qualtrics. (2013). *Qualtrics research suite.* Retrieved December 2, 2013, from http://qualtrics.com/research-suite/

Reilly, J. E. R. & Fitzpatrick, J. J. (2009). Perceived stress and sense of belonging in doctor of nursing practice students. *Journal of Professional Nursing, 25,* 81–86. http://dx.doi.org/10.1016/j.profnurs.2008.10.002

Richardson, J. C., & Swan, K. P. (2003). Examining social presence in online courses in relation to students' perceived learning and satisfaction. *Journal of Asynchronous Learning Networks,* 7(1), 68–88. Retrieved from http://sloanconsortium.org/ publications/jaln_main

Robertson, S., Canary, C. W., Orr, M., Herberg, P., & Rutledge, D. N. (2010). Factors related to progression and graduation rates for RN-to-Bachelor of Science in nursing programs: Searching for realistic benchmarks. *Journal of Professional Nursing, 26,* 99–107. http://dx.doi.org/10.1016/j.profnurs.2009.09.003

Rourke, L., Anderson, T., Garrison, D. R., & Archer, W. (1999). Assessing social
presence in asynchronous text-based computer conferencing. *Journal of
Distance Education, 14*(2), 50–71. Retrieved from http://www.jofde.ca/index.php/
jde

Rovai, A. P. (2002). Development of an instrument to measure classroom community.
The Internet and Higher Education, 5, 197–211. http://dx.doi.org/10.1016/S1096-
7516(02)00102-1

Sener, J. (2005, June). *Escaping the comparison trap: Strategies for evaluating online
learning effectively.* Paper presented at the 21st Annual Conference on Distance
Teaching and Learning, Madison, WI.

Shadish,, Cook, & Campbell (2002). Experimental and Quasi Experimental Designs for
Generalized Causal Inference. Houghton Mifflin Company, Boston, MA.

Shea, P., & Bidjerano, T. (2008). Measures of quality in online education: An
investigation of the community of inquiry model and the net generation. *Journal
of Educational Computing Research, 3*9, 339–361. http://dx.doi.org/10.2190/
EC.39.4.b

Shea, P., & Bidjerano, T. (2009). Community of inquiry as a theoretical framework to
foster "epistemic engagement" and "cognitive presence" in online education.
Computers & Education, 52(3), 543-553.
doi:http://dx.doi.org.ezproxy.uta.edu/10.1016/j.compedu.2008.10.007

Sitzman, K. (2010). Student-preferred caring behaviors for online nursing education.
Nursing Education Perspectives 31(3), 171-178.

Snyder, M. M. (2009). Instructional-design theory to guide the creation of online learning
communities for adults. *TechTrends: Linking Research and Practice to Improve
Learning, 53*(1), 45–57. http://dx.doi.org/10.1007/s11528-009-0237-2

Swan, K. P., Garrison, D. R., & Richardson, J. C. (2009). A constructivist approach to

online learning: The community of inquiry framework. In C. R. Payne (Ed.),

Information technology and constructivism in higher education: Progressive

learning frameworks (pp. 43–57). Hershey, PA: IGI Global.

Swan, K. P., Richardson, J. C., Ice, P., Garrison, D. R., Cleveland-Innes, M., & Arbaugh,

J. B. (2008). Validating a measurement tool of presence in online communities of

inquiry. *E-Mentor,* 2(24), 1–12. Retrieved from http://www.e-mentor.edu.pl/eng

Texas Center for Nursing Workforce Studies (TCNWS). (2006). *The supply of and*

demand for registered nurses and nurse graduates in Texas: Report to the Texas

legislature (Paper Publication No. 25-12513) Retrieved from

http://www.dshs.state.tx.us/

chs/cnws/Npublica.shtm

Texas Higher Education Coordinating Board. (2013). *Closing the gaps: Spring 2013*

progress report. Retrieved from http://www.thecb.state.tx.us/index.cfm?objectid=

B84AC5DF-F612-36BC-A74E9EA02460B67E

Tinto, V. (1997). Classrooms as communities: Exploring the educational character of

student persistence*. Journal of Higher Education, 68,* 599–623. http://dx.doi.org/

10.2307/2959965

Tourangeau, A. E., Doran, D. M., Hall, L. M., Pallas, L. O., Pringle, D., Tu, J. V., &

Cranley, L. A. (2007). Impact of hospital nursing care on 30-day mortality for

acute medical patients. *Journal of Advanced Nursing (57)*1, 32–44.

http://dx.doi.org/10.1111/j.1365-2648.2006.04084.x

U.S. Department of Education, National Center for Education. (2011). *The condition of*

education. Retrieved from http://nces.ed.gov/coe/index.asp

U.S. Department of Health and Human Services, Health Resources and Services

Administration. (2010). *The registered nurse population: Findings from the 2008 national sample survey of registered nurses*. Retrieved from http://bhpr.hrsa.gov/healthworkforce/rnsurveys/rnsurveyfinal.pdf

Wagner, N., Hassanein, K., & Head, M. (2008). Who is responsible for E-Learning Success in Higher Education? A Stakeholders' Analysis. *Educational Technology & Society, 11* (3), 26-36.

Yang, Y., & Green, S. B. (2011). Coefficient alpha: A reliability coefficient for the 21st century*? Journal of Psychoeducational Assessment, 29,* 377–392. http://dx.doi.org/10.1177/0734282911406668

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