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The Impact of Teaching Presence in Intensive Online Courses on Perceived Learning and Sense of Community: A Mixed Methods Study

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THE IMPACT OF TEACHING PRESENCE IN INTENSIVE ONLINE COURSES ON

PERCEIVED LEARNING AND SENSE OF COMMUNITY: A MIXED METHODS STUDY

By

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Under the Supervision of Professor Sheldon L. Stick

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THE IMPACT OF TEACHING PRESENCE IN INTENSIVE ONLINE COURSES ON

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Elizabeth Laves, Ed.D.

University of Nebraska, 2010

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This mixed methods concurrent triangulation design study was predicated upon two models that advocated a connection between teaching presence and perceived learning: the Community of Inquiry Model of Online Learning developed by Garrison, Anderson, and Archer (2000); and the Online Interaction Learning Model by Benbunan-Fich, Hiltz, and Harasim (2005). The objective was to learn how teaching presence impacted students' perceptions of learning and sense of community in intensive online distance education courses developed and taught by instructors at a regional comprehensive university.

In the quantitative phase online surveys collected relevant data from participating students (N = 397) and selected instructional faculty (N = 32) during the second week of a three-week Winter Term. Student information included: demographics such as age, gender, employment status, and distance from campus; perceptions of teaching presence; sense of community; perceived learning; course length; and course type. The students claimed having positive relationships between teaching presence, perceived learning, and sense of community. The instructors showed similar positive relationships with no significant differences when the student and instructor data were compared. The qualitative phase consisted of interviews with 12 instructors who had completed the online survey and replied to all of the open-response questions.

The two phases were integrated using a matrix generation, and the analysis allowed for conclusions regarding teaching presence, perceived learning, and sense of community. The findings were equivocal with regard to satisfaction with course length and the relative importance

of the teaching presence components. A model was provided depicting relationships between and among teaching presence components, perceived learning, and sense of community in intensive online courses.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1: INTRODUCTION

Context of the Problem

Compressed formats, intensive or short courses in conventional-like contexts, and online extended-learning, are two components of the learning environment that have been encouraged by administrators, demanded by students, and accepted by many instructors as viable alternative ways to increase student access to education. The evidence of this increasing popularity lies in the growth of both formats, with online intensive course offerings increasing from 22% to 36% of all summer courses offered, between 2007 and 2008 based on a survey of 67 public four-year institutions (Fanjoy, 2008). Each format, intensive and online, carries latent possibilities that potentially could impact a learning context deleteriously, and if such ingredients exist and become unified the potential emerges for uncommon and also unpredictable interactions. This study sought to understand how teaching presence was established by instructors engaged in one or both of these instructional formats, intensive or online, and the perceived impact on student learning and sense of community.

Background

Although heavily supported by federal and, in the case of public institutions, by state funds, postsecondary institutions increasingly are relying on tuition revenue and donor support to survive. This change in the balance between state-supported and state-assisted has becoming critically important as operational costs continue to spiral upward. State funding no longer is keeping pace with rising costs and the percentage of state funding in university budgets continues to show decremental changes. Western Kentucky University (WKU), in its 2009 published budget (Mead, 2009), showed only 25% of expected revenue coming from state funding while 40% came from tuition and fees. In marked contrast, the 2003 budget reported 42% was state funding and 26% from tuition and fees. Angelo Armenti, Jr. of California University of Pennsylvania (2008) labeled the steady decline in state support for higher education "privatization

without a plan", and noted that the decline of state funding for Pennsylvania higher education over the last 25 years could be calculated to be as high as 30% if the increase in student enrollment was included in the computations. Armenti was alluding to the fact the per-student-spending had decreased markedly because the percentage of state support had not kept up with the number of matriculating students.

Facing circumstances of increasing demands for fiscal supports with decreasing sources of assured revenues, higher education institutions have been examining the potential for securing more money from sources such as tuition, research grants, technology transfer, and donor support. The American Association of State Colleges and Universities (AASCU) stated, "Increases in tuition at public colleges are directly correlated to declines in state appropriations; that is, when state appropriations decrease, tuition and fees must be increased – sometimes significantly – to make up for the shortfall" (AASCU, 2009, p. 27). In fact, the AASCU reported that when state appropriations dropped 2.3 percent in 2003-2004, tuition and fees increased 13.9 percent at public institutions.

Increased tuition rates, accompanied by concomitant increases in associated costs such as room and board, learning resources, etc., have been utilized by institutions to keep up with rising budgets. However, the state of Kentucky limited the biggest potential funding source, tuition increases, in 2008 when its Legislature passed the biennial budget. It called for a six-percent budget reduction for public higher education institutions and gave the State Council for Postsecondary Education (CPE) greater control over universities' tuition rate increases (Rodriquez, 2008). In May, 2009, the Kentucky CPE set tuition 2009-2010 caps for the public colleges in Kentucky with increases not to exceed three-percent for the community college system, four-percent for the comprehensives and five-percent for the research universities (Patrick, 2009). The state funding reduction coupled with the tuition cap resulted in operational

budget reductions and no salary increases for WKU in 2009; both were severe and unexpected blows to faculty and staff morale.

Efforts to counter the increasingly dire fiscal situation for higher education in Kentucky have led colleges and universities to consider alternatives to conventional learning opportunities, and simultaneously attract more students. Such efforts have been fraught with concerns about increasing access to postsecondary institutions while ensuring the educational experiences remain at a high level of quality and that matriculates move through the system efficiently in their efforts to earn degrees and certificates.

Juxtaposing intensive and online learning experiences has created instructional environments that are novel, ostensibly effective, but lacking in scientific investigation. Even so, some areas of higher education have moved forward with novel delivery formats, and in some areas it has been done vigorously. For example, intensive online enrollments have more than doubled at Western Kentucky University during the past five-years, according to data released by the WKU Office of Summer Sessions (see Figure1.1).

Figure 1.1 WKU Intensive online course enrollments from Summer 2004 to 2008
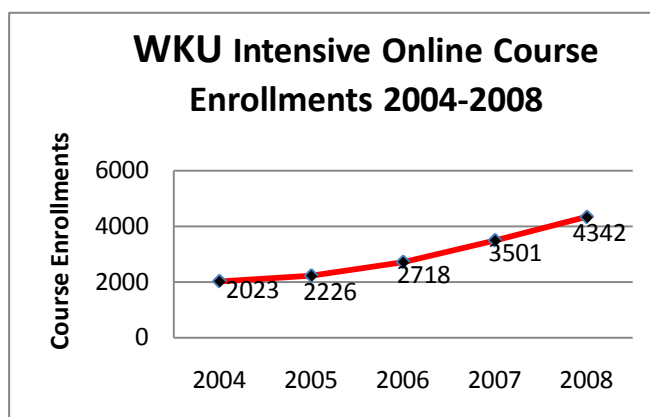
Data retrieved from WKU Summer Sessions 2008 Annual Report (Laves, 2008).

Distance education/learning has been a part of higher education for over one-hundred years, beginning with courses conducted by mail around 1900, then by radio, by satellite and

public broadcast television in the 1960's, compressed video in the 1980's, and now with the explosion of the Internet, online (Moore & Kearsley, 2005, Simonson, Smaldino, Albright, & Zvacek, 2009). Distance education undoubtedly increases student access to education for students who, for a myriad of reasons, would not otherwise have the requisite time or financial resources to re-locate and take classes or be close enough for physical access to libraries and scholars. Online distance education has grown at Western Kentucky University from nineteen enrollments in 1999 to 9,440 in during the fall 2008 semester (Council on Postsecondary Education, 2008).

Allen and Seaman (2007) reported that online enrollments in postsecondary education have been outpacing total enrollment growth in a dramatic manner. "Almost 3.5 million students were taking at least one online course during the fall 2006 term; a nearly 10 percent increase over the number reported the previous year. The 9.7 percent growth rate for online enrollments far exceeds the 1.5 percent growth of the overall higher education student population. Nearly twenty percent of all U.S. higher education students were taking at least one online course in the fall of 2006" (Allen & Seaman, 2007, p. 1).

Intensive course formats have been utilized during the summers beginning at least in 1869 at Harvard, according to Schoenfeld (1967). That procedure has allowed primarily teachers and other educational professionals opportunities for continuing professional development and to complete degrees needed to continue in their positions. In the twentieth century, alternative intensive courses were offered during intercessions, between fall and spring terms, during May and August as microterms, and as short blocks during regular academic semesters. The first known intersession was offered by Eckerd College in 1961, starting a trend that has extended to most of higher education today (Scott & Conrad, 1992).

Intensive and traditional online courses have grown in popularity among many college students for a variety of reasons. At Western Kentucky University online summer enrollments

have grown 55%, from 2,671 in the summer of 2006 to 4,130 during the summer of 2008, while the overall summer enrollment dropped by 1.4% from 11,387 to 11,222 (Laves, 2008) during that same period of time. There are probably many reasons for this popularity, some of which may have to do with convenience and access rather than teaching and learning. But it needs to be acknowledged that the continued rise in intensive online course enrollments can be due to students finding that the courses meet their needs, however described, and instructors at WKU who have been designing and teaching courses to fulfill those needs.

There are similarities between intensive courses and distance education courses. When contrasted to conventional higher education learning, these alternative formats involve both a compression of time and distance. Both are viewed as outside of mainstream higher education because they use technologies and timeframes that are not part of the traditional classroom. Both are optional formats created to increase access, and both cause faculty and students to adjust to new ways of thinking about teaching and learning. Higher education administrators generally are willing to promote both formats because they allow for increasing student access, increasing enrollments, and often decreasing time to graduation without lessening the number of courses or credits required of students.

Unresolved is the question of equal or more favorable learning via the new formats, but heuristic reports claim such outcomes are comparable or even more desirous for the alternative platforms. In a meta-analysis of more than one thousand studies of online learning, analysts found that, generally, students in online distance education environments outperformed students in traditional face-to-face learning environments (U.S. Department of Education, 2009). Likewise, Scott and Conrad (1992) analyzed one hundred publications that dealt with intensive course research and concluded that students in intensive course formats are as successful as students in traditional scheduling, however they questioned whether differences in discipline had an effect on student success.

The variations in learning experiences (intensive and distance education) have fostered inquiries as to why some intensive courses and distance education courses are successful and others are not. Schlager (2004) said, "Distance education is rife with attempts to justify severely constraining pedagogical approaches, such as courses that are conducted entirely via asynchronous postings or streaming video lectures, in terms of metacognitive (more reflective than…), social (more participative than …), and motivational benefits (more feeling of presence than …) when the systems they use were designed primarily to overcome practical constraints, not to satisfy theoretically grounded pedagogical goals" (p. 92). Such critiques have encouraged researchers and practitioners to study pedagogical goals and how aptly they fit with distance education and intensive courses. The goal, as with all learning experiences, is to find positive approaches and best practices that will benefit students maximally while being most parsimonious with resources.

Community of Inquiry Model

Garrison, Anderson, & Archer (2000) proposed a community of inquiry model of online learning. It was, a conceptual framework based on the idea that the community of learners' success depended on the interactions between instructors and content, among students, and between students and instructors as evidenced by three factors: 1) cognitive presence, 2) social presence, and 3) teaching presence. In the community of inquiry model, teaching presence was defined as the instructional design and organization, facilitation of discourse, and direct instruction that an instructor built into a course and used throughout a course.

Cognitive presence "is associated with the facilitation of critical reflection and discourse" (Garrison, 2003, p. 49). Internal cognitive processes such as reflective thinking, construction of knowledge, and external cognitive processes were believed to occur when critical discussions took place among students and between students and instructors. Those activities were deemed to be critical elements of cognitive presence and could not occur without interactions. The necessity

of the interaction component to the community of inquiry model is closely linked to Dewey and Vygotsky's views on constructivist learning theories (Wertsch & Tulviste, 2005), where students interact with the content, with their thought processes, and with other students to construct meaning.

Garrison, Anderson, and Archer (2000) defined social presence as "the ability of participants in a community of inquiry to project themselves socially and emotionally, as 'real' people (i.e., their full personality), through the medium of communication being used" (p. 94). Those authors believed that the medium was not the most important factor in creation of social presence but that it could force participants to be more conscious of and adapt their behaviors in order to project social and emotional presences that facilitated interactions. Social presence was linked to cognitive presence because it facilitated the interactions necessary to produce cognitive processes, both internal and external, thus helping a community to construct meaningful learning outcomes that were facilitated by a teaching presence.

Teaching presence was the glue that held a community of inquiry together because it served to initiate and maintain an environment where social and cognitive presences could flourish. The three elements of teaching presence, instructional design and organization, facilitated discussion, and direct instruction, were aligned to support and grow social and cognitive presences, so that the three factors were seen as overlapping, intertwined, and equally important in developing a community of inquiry that facilitated learning.

Shea, Li, and Pickett (2006) found a "clear connection between perceived teaching presence and students' sense of learning community" (p. 184) with 62% of the variance for classroom community explained by perceived teaching presence. Those authors followed the participation metaphor for learning rather than the acquisition metaphor; stating that successful learning was a process that involved students becoming members of a community, and being able to communicate and act successfully within that community.

In online courses the use of teaching presence to create well-designed, organized courses, where discourse is clearly understood and encouraged as well as having a feeling of the instructor being close through direct instruction, has been shown to directly correlate with students' perceived learning and sense of community (Arbaugh, 2001; Shea, Li, & Pickett, 2006; Lu & Jeng, 2006; Arbaugh & Rau, 2007). Teacher immediacy behaviors, also called teaching presence strategies, have been shown (Scott, 1994; Scott, 1995; Collins, 2005) to be valued by students in intensive courses.

The factors most directly under the control of instructional faculty are those that make up the instructional design. Scott's (1994) qualitative study on intensive courses allowed for identification of several instructional design factors that impacted student satisfaction and perceived learning in what she called a process-oriented, connected approach to teaching and learning. Those factors included instructor traits such as being connected or engaged in the subject, excellent communication skills, use of organized, varied presentation skills, and use of multiple ways of teaching and engaging students with content.

Similarly, Shea, Li, and Pickett (2006) found factors of teaching presence that impacted students' perceived learning in online distance education courses. Shea et al. (2006) extracted two factors, instructional design and organization and directed facilitation which was a combination of direct instruction and facilitated discourse, accounting for 78.18% of the variability of the teaching presence construct. Instructional design and organization factors included communication of course goals, communication of due dates and course topics, and clear instructions. Directed facilitation factors included participants felt connected to course, students were kept on track, a climate of learning was felt, the instructor diagnosed misconceptions, identified areas of agreement, and sought consensus, focused discussions, confirmed understanding, reinforced student contributions, injected knowledge, presented content, and demonstrated netiquette. Each study reportedly had striking similarity when considered in the

context of intensive and online courses and the need for teaching presence in each. These factors of teaching presence, knowledge of subject, creating an environment that allows students to feel engaged in the subject, with the instructor, and with each other are not unique to a single format but the ways instructors find to incorporate these factors into intensive courses, online courses, or intensive online courses are unique to the format. Instructors teaching intensive courses may use longer course lengths to incorporate multiple active learning activities facilitating student discussions and growing sense of community.

Instructors of online courses use online discussions and small group projects to generate communication among students, facilitating the construction of knowledge rather than imparting knowledge through lecture formats. Instructors in intensive online courses may use these strategies in combination with others to capitalize on the intensive nature of courses and the interactivity capable in online courses. The goal of this dissertation study was not to develop a new model but to relate the teaching presence models found in intensive course studies and the Community of Inquiry Model to intensive online courses.

Remedy for deficiencies in prior research

Both intensive course research and online course research have built cases that these delivery formats are as effective as traditional semester-length face-to-face courses. Researchers focusing on the factors that presumably affected learning effectiveness in such courses reportedly were successful in their efforts (Scott, 1994, Scott, 1995, Garrison, Anderson, & Archer, 2000, Swan, 2003). Teaching presence has been argued by Garrison, Anderson and Archer (2000) to be critical in creating a community of inquiry that facilitated and nurtured learning, but there has not been much work on how instructional personnel create teaching presence, and there are no known studies that specifically targeted development of intensive online courses.

The findings reported from this research were scaffold on prior reported literature, recognizing the lacuna in relevant information. The emphasis was to understand teaching faculty

decisions in course design and implementation as it related to teaching presence in courses, as reported by students and compared to their perception of learning and satisfaction in intensive online courses. Thus there were three foci: instructional personnel intentions for creating a teaching presence; students' reported perceptions of learning; and students' reported satisfaction with courses.

The researcher proposed that teaching presence was more vital and integral to student learning in intensive online courses than in so-called conventional learning environments because the former imposed a fairly rigid time constraint upon participants. In intensive online courses, the use of teaching presence to create well-designed, organized courses, where discourse was clearly understood and encouraged as well as having a feeling of an instructor being close through direct instruction and feedback, was deemed to be vital for the learning experience to be successful.

Target Audience for this Study

Faculty and administrators in higher education interested or participating in online and intensive instructional practices, or other atypical learning contexts, likely will consider the reported findings and stated conclusions to have relevance in varying degrees. Persons who teach in such contexts might be able to juxtapose information to their work and perhaps make adjustments, or possibly identify new avenues for research. Administrators with direct responsibilities over areas related to these environments possibly will realize the need to alter allocation of selected resources to foster greater emphasis upon selected skills that previously had not been addressed.

Purpose Statement

The purpose of this mixed methods triangulation design study was to understand how teaching presence, established by instructors at a southern comprehensive university, in intensive online distance education courses was related to student perceived learning and sense of

community. A triangulation multilevel design was used, merging survey data of students'
perception of teaching presence, perceived learning and sense of community, and qualitative data
from faculty interviews and instructor-created course documents that reflected teaching presence
through course structure and organization. The rationale for collecting both quantitative and
qualitative data was to merge the results of two different perspectives in order to describe
teaching presence strategies that could not have been found using only one method.

Research Questions

 Central Research Question

 How is teaching presence related to students' perception of learning and sense of
community in intensive online courses?

 Quantitative Phase

 The quantitative phase was driven by the following questions:

1. Which teaching presence components impact students' perceived learning?

2. Which teaching presence components impact students' perceived sense of
   community?

3. What is the correlation between perceived learning and sense of community?

4. Is high perceived teaching presence predictive of high student perception of learning
   and sense of community?

5. Do the selected independent demographic variables of student age, gender,
   employment, distance from campus, course length, and course type account for the
   variance in students' perception of teaching presence, learning, and sense of
   community?

 Qualitative Phase

The qualitative phase was driven by the following questions:

1. What teaching presence components do instructors believe are important in intensive online courses?

2. Which teaching presence components do instructors perceive to correlate with student learning and sense of community?

3. Did course length influence instructors' choice of teaching presence components to include in intensive online courses?

Definition of Terms:

Cognitive presence: A component of the Community of Inquiry Model of Online Learning, cognitive presence is "the extent to which the participants in any particular configuration of a community of inquiry are able to construct meaning through sustained communication" (Garrison, Anderson, & Archer, 2000, p. 89).

Concentrated study: immersion or deep concentration for an intensive period of time (Scott & Conrad, 1992).

Constructivism: "Constructivism is a poststructuralist psychological theory (Doll, 1993), one that construes learning as an interpretive, recursive, nonlinear building process by active learners interacting with their surround – the physical and social world. It is a psychological theory of learning that describes how structures, language, activity, and meaning-making come about, rather than one that simply characterizes the structures and stages of thought, or one that isolates behaviors learned through reinforcement. It is a theory based on complexity models of evolution and development. The challenge for educators is to determine what this new paradigm brings to the practice of teaching," (Fosnot and Perry, 2005, p. 34).

Collaborative learning: "learning together with one's peers" (Benbunan-Fich, Hiltz, & Harasim, 2005, p. 20). This pedagogical approach is based on constructivist learning theory and Vygotsky's views on learning in a social and cultural as well as an individual context.

Intensive course: a credit course that is compressed into a smaller time frame than a typical semester. For the purposes of this study, three-week intensive courses were studied.

Interference theory: "interference theory predicts that similar tasks preceding or following a learning activity will 'interfere' with an individual's long-term retention of the learned material" (Scott & Conrad, 1992, p. 417).

Interim or intersession course: Typically a three-week course that occurs between two regular terms, such as in between fall and spring, or between spring and summer.

Massed versus spaced learning: A learning theory that gained much attention in the 1960's and 1970's by behavioral psychologists who believed there is a spacing effect that enhances learning, most often tested using vocabulary or numerical strings. Intensive courses have been labeled massed learning when so much takes place in a single day and also spaced learning since students take breaks every day. "[T]wo spaced presentations are about twice as effective as two (successive) massed presentations, and the difference between them increases as the frequency of repetitions increases. Moreover, achievement following massed presentations is often only slightly higher than that following a single shorter presentation" (Dempster, 1987, p. 9).

Model: A theoretical framework is the first step in generating a comprehensive theory for a field. It models the key concepts, and the relationships among these concepts, that can be used to organize the knowledge and to generate hypotheses for empirical testing (Benbunan-Fich, Hiltz, & Harasim, 2005, p. 20). The Online Interaction Learning Model developed by Benbunan-Fich, Hiltz, & Harasim (2005) and the Community of Inquiry Model developed by Garrison, Anderson, and Archer (2000) are two models used in this research project to advance social constructivist learning theory in online intensive courses.

Moderating variables: The contextual factors or inputs related to the Online Interaction Learning Model are seen as those characteristics that influence the learning and social processes

and are contingent on some minimal level existing in order to be effective (Benbunan-Fich, Hiltz, and Harasim, 2005).

Online distance education course: A credit course offered over the web with two or fewer face-to-face meetings.

Sense of community: A community of inquiry exists when learners feel connected, cognitively engaged, and supported as they negotiate meaning through critical analysis and discussion. Measures of participants' perception of the existence and successfulness of community have been correlated with learning effectiveness (Rovai, Wighting, & Lucking, 2004).

Semester-length course: In this study, a credit course that lasts fifteen weeks.

Social presence: A component of the Community of Inquiry Model of Online Learning. "The second core element of the [community of inquiry] model, social presence, is defined as the ability of participants in the Community of Inquiry to project their personal characteristics into the community, thereby presenting themselves to the other participants as 'real people'" (Garrison, Anderson, & Archer, 2000, p. 89).

Student success: The outcome of successful intensive online courses may be measured several ways. Two common methods are student learning and student satisfaction. Benbunan-Fich, Hiltz, and Harasim (2005) also include faculty satisfaction, access and cost effectiveness in this definition.

Teacher immediacy behaviors: Those behaviors that lessen the psychological distance between students and instructors. "Educational researchers have found that both teachers' verbal immediacy behaviors (such as giving praise, soliciting viewpoints, humor, self-disclosure) and their non-verbal immediacy behaviors (such as physical proximity, touch, eye contact, facial expressions, gestures) can lessen the psychological distance between teachers and their students, leading (directly or indirectly, depending on the study) to greater learning" (Swan, 2003).

Teaching presence: A component of the Community of Inquiry Model of Online Learning. According to Swan (2003, p. 24), "Anderson, Rourke, Garrison and Archer (2001, in Swan, 2003) have termed instructors' ability to project themselves in online courses 'teaching presence,' which they define as 'the design, facilitation and direction of cognitive and social processes for the purpose of realizing [students'] personally meaningful and educationally worthwhile outcomes." Teaching presence has three components: design and organization, facilitating discourse, and direct instruction.

Transactional distance: Not just a physical separation of teacher and student, but a pedagogical phenomenon involving dialogue between the teacher and student and course structure, according to Moore's Transactional Distance Theory (Moore & Kearsley, 2005). When dialogue between teacher and learners is high and structure is low the transactional distance is low, allowing for better communication between teacher and learners.

Delimitations

This study was limited to intensive online distance education courses at Western Kentucky University. Because of the instructional faculty culture and development that might be unique to Western Kentucky University, the results should not be generalized to other universities or populations. Sampling was by convenience and not random since students self-selected into these courses. Instructors were chosen based on information gathered in the quantitative phase to get a purposive mix of instructors with variable amounts of teaching presence built into their courses, as identified by students.

Limitations

Data were gathered during one three-week winter term using a student survey, a faculty survey, and faculty interviews. Limitations of this study were:

1. Of the 1,213 intensive online students, 397 returned surveys, giving a return rate of 32.7%. Of 78 faculty teaching intensive online courses during this term, 32 responded, giving a return rate of 41%. This may have introduced a potential for bias in the quantitative phase.

2. Follow-up reminders were used but were restricted to email due to cost of printed reminders. This may have caused a bias toward those students who check and respond to emails more frequently.

3. Lack of randomization was an issue since students self-selected into intensive online courses, thus the sample may not be representative of the population.

4. The results of the qualitative phase were subject to the researcher's potential bias and subjectivity and thus inhibit generalization beyond the population in the current study.

5. There was potential for bias in the research because the researcher worked with the faculty from this study in the role of director of winter and summer sessions.

6. There are many ways to measure learning effectiveness, none of which can be said to accurately reflect student learning. Perception of student learning was used as a measure of learning effectiveness because it fit with the survey format of quantitative data collection of the survey population.

7. In comparing student perceptions categorized by different types of classes, there may have been confounding factors due to student and instructor types and prior experiences.

Significance of the Study

This study may become significant in contributing to the body of research related to teaching presence and sense of community in online courses and to the body of research on intensive course formats. This study has extended the underdeveloped area of research into relationships between students and instructors in intensive online courses. The main contribution of this study lies in the fact that there are no existing studies that have explored teaching presence in intensive online courses in a mixed methods approach. The results from this study may help

instructional faculty design intensive online courses that will further enhance student satisfaction and success.

As intensive online courses continue to grow in popularity within the higher education community, more research is needed to better understand the myriad moderating variables that possibly impact the dynamics of student learning, and how to make such experiences maximally rewarding. While the body of online course research is growing, intensive online courses have not received adequate attention. Research such as this study is significant to all learners in intensive online study, particularly to adult and part-time students who tend to make use of alternate formats such as intensive sessions and online distance education to meet their educational needs. Results of this study may also contribute to the body of knowledge useful to higher education administration in offering courses in alternate formats.

Examples of lacuna can be found through the scholarly efforts by Arbaugh and Rau (2007), Arbaugh (2001), Shen, Hiltz, and Bieber (2006), Lim (2001), and Powers and Mitchell (1997). These authors contributed to the body of knowledge of teaching presence in online courses and even included data related to intensive courses, but more research is needed to inform those in higher education who plan, implement, teach, and learn through intensive online course formats. This study has built on the work of past research by using both quantitative and qualitative data to span the gap in understanding of intensive online courses. The quantitative phase of this study verified the results Shea, Li, and Pickett (2006) found regarding teaching presence and sense of community in online courses. Through the qualitative phase and integration of the methods, this study built on the teaching presence studies cited above to expand knowledge and understanding of intensive online courses that have not been so extensively studied.

CHAPTER 2: REVIEW OF LITERATURE

This chapter presents a review of the existing literature relevant to intensive courses and online distance education courses. These studies cover an almost 40-year span of qualitative and quantitative analysis in alternative formats for teaching, and delve into topics including faculty and student perceptions, attitudes, dynamics, grades, and effectiveness. The review is organized according to the factors that may contribute to student satisfaction and learning in intensive courses, factors that may contribute to student satisfaction and learning in online courses, and selected studies that have included both intensive and online formats. Table 2.1 provides a listing of the studies reviewed that focus on the intensive course format and Table 2.2 provides a listing of the studies reviewed that focus on the online course format.

Contributing Factors to Student Satisfaction and Learning in Intensive Courses

The selected studies in Table 2.1 represent research into the factors that may contribute to student satisfaction and learning in intensive courses. These studies revealed two main foci: student characteristics including age, employment status, academic performance, and persistence; and interaction including student-student interaction, student-instructor interaction, and student content interaction. Each of these factors is discussed in the following section.

Student Characteristics

The student characteristics of age, employment status, academic performance, and persistence have been studied as factors that possibly contributed to student satisfaction and/or learning in intensive courses.

Table 2.1.

Studies on Intensive Courses

Researchers	Date	Method	Studies	Results
Parlett & King	1971	Qualitative	Student attitudes toward intensive courses	Student responses indicated they believed concentrated study to be better or the same as distributed study.
Centra & Sobol	1974	Quantitative	Faculty and student attitudes toward intensive courses	Students overall rated intensive courses as good or better than semester-length courses, with study abroad and off-campus study highest and lecture lowest. Humanities were rated highest in worthwhile status, business classes were rated lowest by both students and faculty.
Allen, Miller, Fisher & Moriarty	1982	Quantitative	Faculty perceptions of interim courses	Faculty satisfaction with interim courses was higher than for semester courses, with interim courses characterized as similar to seminar courses.
Mims	1983	Quantitative	Student perception of intensive art courses	Students showed a significant preference for intensive study over semester-length courses. Reasons given included time structure effectiveness, meeting personal needs, goals and educational standards, ability to arouse interest, and fostering teacher enthusiasm.
Grimes & Niss	1989	Quantitative	Comparison of student learning in intensive and semester economics courses	Students in the intensive courses showed a higher gain in pre/post test scores than students in semester-length course.
Reynolds	1993	Quantitative	Group dynamics of cohorts in intensive graduate courses	Students who moved through cohort programs showed group cohesiveness and interaction over students who did not participate in a cohort. Intensive or semester-length course length was not a significant factor in group cohesiveness or perceived interaction.
Van Scyoc & Gleason	1993	Quantitative	Comparison of learning effectiveness in intensive and semester courses	Students in 3-week economics course scored as well or better than students in 14-week course in pre/post test and on course exams. No difference in retention of microeconomics knowledge was found between the two courses.

Table 2.1 (continued).

Studies on Intensive Courses

Researchers	Date	Method	Studies	Results
Buzash	1994	Mixed Methods	Longitudinal study of student learning and perceptions in 2-week intensive French classes	Most students in the program gained at least one university level of language skills based on pre/post tests. Student perceptions included better understanding of language and culture and recommended program to other students.
Caskey	1994	Quantitative	Comparison of grades of students in algebra and accounting intensive and semester-length courses.	No significant difference in GPA or class grades was found between intensive and semester courses.
Scott	1994	Qualitative	Attributes of high quality intensive courses	Students experience intensive courses differently than semester-length courses, but their perceptions of that experience depend on the presence of certain attributes of high-quality learning. If those attributes are not present, students prefer semester-length courses more because they are exposed to that class environment for shorter periods of time with longer interim periods than intensive courses.
Messina, Fagans, & Augustine	1996	Mixed methods	Student and faculty satisfaction and perceived learning for intensive weekend format	Student and faculty satisfaction and perceived learning were positive toward the 3-weekend intensive format. Students attributed perception of increased learning to the increase in interaction, the intensity of the learning process, variety of teaching methods, and level of difficulty of the courses.
Rayburn & Rayburn	1999	Quantitative	Impact of course length and assignments on student performance in accounting classes	Study found that students in both course formats performed similarly on multiple-choice exams. Students in longer course performed significantly better on accounting problems.
Fall	2001	Quantitative	Adult student satisfaction with intensive courses	Student satisfaction with course format decreased as number of intensive courses taken increased. Female students who took classes where individuality was emphasized in course design rated higher satisfaction with course format, while male students felt more satisfaction when emphasis was placed on academic performance.

Table 2.1 (continued).

Studies on Intensive Courses

Researchers	Date	Method	Studies	Results
Grant	2001	Quantitative	Student satisfaction with 1-week block courses	Courses were geared toward adult part-time students. Overall students were satisfied with course length and course design.
Wlodkowski, Mauldin, & Gahn	2001	Quantitative	Adult learner comparison study of traditional and accelerated programs	Internal community support as it related to persistence was more evident in longer courses. Perception of courses as supportive was directly related to higher GPA.
Burton & Nesbit	2002	Mixed methods	Student and faculty attitudes to intensive teaching 1-week block courses	Older students were not significantly more likely to prefer block courses. Students who had previously taken a block course and were enrolled in another were much more likely to prefer block courses. Preference of block courses centered on convenience. Faculty believed students in block courses learn at least as well as students in semester courses.
Homeyer & Brown	2002	Quantitative	Academic effectiveness in varied course lengths	The study compared a course taught by one instructor in a 3-week, a 5-week, and a semester-length course format. No significant differences were found in pre/post test scores based on course length.
Collins	2005	Mixed Methods	Cognitive development of adult students in intensive and accelerated courses	Adult student cognitive development is influenced more by cohort/noncohort nature of programs than a difference in intensive or accelerated. Factors such as instructor, interactivity, evaluative method, and classroom atmosphere contributed to cognitive development.
Kretovics, Crowe, & Hyun	2005	Quantitative	Faculty perceptions of intensive courses	More faculty members generally believed that they established rapport with the intensive class more quickly and that students in intensive classes were more focused on learning, participated more in discussions, and attended more regularly.
Anastasi	2007	Quantitative	Student performance in intensive and semester courses	Final grades of undergraduates in psychology courses offered in an intensive format in summer were found to be the same or better than the same courses offered in semester format.

Age: Caskey (1994) studied accounting and algebra classes, using a random sample of 30 subjects in algebra and 45 in accounting. Caskey used two-tailed t-tests to analyze class grades, overall GPAs and age. She found no significant difference in class grades or overall GPAs between the intensive course groups and the semester long groups. But she did find a statistically significant difference in the average ages; students who elected to take intensive courses generally were older. She also found no difference existed in requisite class grades between students who took the prerequisite course in the intensive format versus the semester format. Caskey concluded "that students, particularly older students, can achieve in an intense format and perform as well in subsequent courses as students who elect traditional formats." (Caskey, 1994, p. 26).

Scott (1994, 1995, 2003) conducted a qualitative comparison study of 29 students' learning experiences in two intensive and two semester-length undergraduate courses (English literature and Marketing) at a single university. The same instructors taught the course content in both formats; four-week intensive and semester-long in an attempt to control for differences in instruction and content. Data were collected through participant observation, videotaped class sessions, paper survey conducted at the end of each course, course document analysis, field notes, and interviews of students and faculty. The author developed a list of attributes identified by students as important in high quality intensive learning environments, all of which directly or indirectly relate to qualities that an instructor may exhibit or design into a quality course, which she related to a process-oriented, connected approach to teaching. By process-oriented, Scott was referring to instructors' focus on how students learn, and connectedness referred to students feeling connected to the material, to other students, to the instructor, and to the classroom. Scott (1994) concluded, after multiple observations and interviews, that students perceived a direct relationship between the intensiveness of a course and the need for the presence of those high quality course attributes identified by those students.

Importantly**,** Scott (1994) used the words "intellectual development" and referred to Perry (1970) who theorized that there were nine stages of intellectual development. However, she did not measure the students' level of intellectual development. Instead, she estimated it based on observations, and she also made assumptions based on her qualitative observations of age and preference of attributes. In that study, Scott (1994) suggested issues that might alter such relationships including: teaching skill, the degree of intensiveness of the course, student distracters such as work and family responsibilities, students' age, students' intellectual development, subject matter, and an instructor's ability to connect effectively with students.

Age and intellectual development were linked by Perry (1970) when he identified nine stages of intellectual development, ranging from simple dualistic thinking to what he called relative thinking; when students believed that they were responsible for their learning. In Perry's study the higher level(s) of intellectual development took place in older college students. While Scott (1994) did not present evidence that those factors definitively affected the relationships between students' perception of intensiveness and the presence of high quality course attributes, she believed that her study provided a step for future research into these factors.

Employment status: Scott (1993), in the study cited above, reported that students with other responsibilities, such as work obligations, had more negative experiences in intensive courses than did students who did not work. A similar result came from a quantitative study by Fall (2001) of 95 graduate students taking intensive weekend format courses. Fall concentrated on adult students enrolled in the same course at a single university. She compared the syllabi from each of the seven sections taught in a three-weekend format at regional campus centers and found that the courses used the same textbook and comparable assignments and evaluations. Each student was given a questionnaire consisting of 34 items, 24 of them related to student satisfaction of intensive courses and the other 10 related to demographics. Principal component factor analysis with varimax rotation was used on the 24 items related to student satisfaction and

four themes emerged with alpha values greater than .60: format, individuality, study habits, and academic performance. Those themes were collapsed into factor scales with three categories, low, medium, and high, and subjected to chi-square analyses. From that sample, 89 students worked full-time, 4 part-time and 2 were unemployed. Fall (2001) found that adult students whose employers did not reimburse them rated their satisfaction with intensive courses, in terms of perception of format effectiveness, higher than did students whose tuition was reimbursed by their employers.

Burton and Nesbit (2002) reported on a survey of student attitudes about intensive block courses as compared to traditional courses by 62 of 63 students participating in an MBA program at Macquarie University in Sydney, Australia. Those block courses typically consisted of two intensive weekends with pre- and post-course work done independently. Most students in that program took a mixture of both block and weekly (traditional) courses. Data were collected on the number of block and weekly courses the students had taken and their format preferences. The researchers reported a weak but positive correlation (p=.059) between students who worked full or part-time and satisfaction with intensive block courses, and concluded that students' work situations were related to a preference for the intensive course format.

Academic performance and persistence: Wlodkowski, Mauldin, and Gahn (2001) analyzed demographic characteristics, academic background, and persistence in two programs involving adult undergraduate students; 459 students in an accelerated program at Regis University and 370 in a traditional program at University of Missouri-Kansas City (UMKC). The researchers analyzed university student records between fall 1993 and fall 1999 semesters, and found that during the first three years (1993-1996) more students graduated from the Regis program than did from the UMKC program. But that difference was not statistically significant for six-year graduation rates (37% graduation rate from Regis and 32% from UMKC). The

authors reported that the grade point average for graduating students was statistically different ($p<.001$) with the average at Regis 3.46 and the average at UMKC 2.99.

Wlodkowski et al. (2001), discussed the differences between the two universities in terms of private (Regis) and public (UMKC), gender and racial/ethnic differences, as well as admissions policies where Regis used an open enrollment policy compared to UMKC's more restrictive policy of ACT minimum of 24 plus minimum high school rank of at least 47th percentile. Prior study with such differences in student populations would lead to an empirical belief that the UMKC students would have better academic performances but the reverse was true in that study. Parenthetically, it needs to be recognized that the difference between the private (Regis) and public (UMKC) postsecondary institutions and their markedly different admission criteria would lead to variations in the quality of student attending each institution, and it is possible that there might have been a proclivity from the private school to provide greater encouragement to students. An alternative explanation could be that Regis sought to ensure students completed their programs of study because they generated needed tuition dollars.

Given those differences in student populations, the researchers conducted the second phase of the study through a survey of adult undergraduate students in the same accelerated and semester-length programs at UMKC and Regis during the spring and fall 2000 semesters. They used the Adult Learning Survey, developed by Wlodkowski, Mauldin, and Gahn (1999, as cited in Woldkowski, Mauldin, and Gahn, 2001). Their purpose was to compare motivational and demographic variables. The response rate from Regis University was 61% (N=328) and 58.8% from the UMKC students (N=260), with seven surveys discarded, leaving the resulting samples of 321 from Regis and 253 from UMKC. Ten motivational variables were measured; only two were significantly associated to grade point average for the students in the Regis accelerated program (self-regulation and faculty interaction, $p<.05$) while six were significantly associated with grades according to students in the UMKC traditional program (self-regulation, self-

efficacy, intrinsic goal orientation, attitude and meaning, faculty interaction, and effort avoidance, $p<.01$). The conclusion drawn was that students in the traditional program at UMKC seemed to be more influenced by motivational factors than the UMKC students in the accelerated program.

Those authors (Wlodkowski, Mauldin, & Gahn, 2001) also studied persistence and dropout rates in the same samples. Using a regression analysis, they found that: for the students at Regis being female, having transfer credit, higher grade point averages, and financial aid contributed to persistence in 78% of the cases. Among the UMKC students having similar but slightly different experiences (male, adult learners, higher grade point averages, transfer credit, receiving financial aid, and experience at a two-year institution prior to coming to UMKC) also had a favorable prediction on degree completion (86%).

At Regis, being older and having lower grade point averages predicted dropout after the first term in 87% of the cases; at UMKC, being female, having lower grade point averages, fewer or no transfer credit hours, and no prior institutional experience predicted 82% of the dropout cases. The influence of grades on persistence and first term dropout was prominent in both course formats.

Anastasi (2007), in a quantitative study of 506 students in 16 sections of three psychology intensive and semester-long courses at Arizona State University, analyzed student records on enrollment, course grades, assignment grades, and exam grades. Each of the three psychology courses had sections in both formats; nine sections were semester length and seven sections were intensive summer courses. Anastasi used a 3x2 between subjects ANOVA to assess students' final grades. He found the main effect in the differences in grades to be the type of course, but also reported that the mean GPA for summer session courses (M=83.1) was statistically higher than the mean GPA for semester long courses (M=81.1), $F(1,499)=8.01$, MSE=84.68. In addition to grades, Anastasi analyzed teaching evaluations and found that students' perceptions of summer courses compared similarly to those in semester courses. In

response to the statement that an instructor demanded high standards of performance during summer sessions, the students agreed more strongly (M=3.82) than did students in semester-length courses (M=3.70), t (15) =1.93, p=.07, d=.94.

The Burton and Nesbit (2002) survey of 62 graduate MBA students enrolled in a single summer course sought information related to students' preferences for intensive block courses. Twenty-two of the students had taken at least one other intensive course earlier in their programs of study. The researchers found a strong significant positive relationship between students who had taken a previous block course and those who said they would have chosen to take another block course (p<.001). An ordinal logical regression revealed that having taken one block course was a significant predictor for willingness to take another block course (p<.002). Persistence in intensive block courses was not found to be correlated with age.

In summary, the selected research of intensive courses reported here studied specific student characteristics. Caskey (1994) and Scott (1994) discussed age as a demographic variable related to student success in intensive courses. The latter author reported that chronologically more mature students performed better academically. Employment status was addressed by a number of authors and the findings were equivocal. Scott (1994) and Fall (2001) said that students who worked tended to be distracted and did not have enough time to devote to intensive courses, while Burton and Nesbit (2002) reported a positive correlation between working students and satisfaction with intensive courses.

Fall (2001) said that students who paid for their tuition or received scholarships were more satisfied with intensive courses than those whose employers provided reimbursement. With these mixed results, employment status has proven to be a complex issue. Academic performance and persistence in intensive courses was studied by Wlodkowski et al. (2001), Anastasi (2007), and Burton and Nesbit (2002) with more consistent results, students in intensive courses had at least as good grade point averages and course grades as those in semester-length courses and

students who had experiences in intensive courses were more inclined to take additional intensive courses.

Interaction

This section is a review of studies of intensive courses and differences in interaction. Those interactions occurred between students, between students and instructors, and between students and content. Each of these types of interaction is discussed separately in this section, but one study by Scott (1994) was pivotal in defining all three types of interactions in intensive course formats.

Scott (1994) identified two themes, process and connectedness to teaching, and developed a list of attributes students believed contributed to a positive learning experience when taking an intensive course. Scott approached the issue with a qualitative comparison study of intensive and semester courses using the two types of classes (English and Marketing) at a single university. Observations of student and instructor participation and then interviews of 29 students and the respective course instructors formed the basis for data collection and subsequent conclusions.

The author (Scott, 1994) developed a list of factors she believed contributed to high quality learning experiences in both the intensive and semester courses: greater continuity of learning; greater concentration/focus on learning; non-prioritized learning; scheduling and planning; longer class sessions; mental investment and commitment; performance affected by fewer concurrent classes, short duration, retention and understanding, absences, procrastination; decrease in superfluous material, future learning and development; classroom relationships; student-teacher relationships; classroom atmosphere, instructor expectations; classroom diversity; and memorableness. Scott claimed that students preferred intensive course formats when the above cited learning experience attributes were present, but preferred semester length courses if those attributes were not present, because the stretched out time and shorter class periods of a

semester-long course minimized the poor classroom experience. It was concluded that, "[S]tudents experience intensive or semester courses positively or negatively depending on the presence of certain attributes. The greater the concentration of attributes within a class and the more process-oriented and connected the teaching and learning approach, the better the learning experience will be" (1994, p. 465-466). The attributes identified by Scott are embedded in the interactions between students, between students and their instructors, and between students and the content, and formed the basis for Scott's claim that interactions were important to high quality intensive learning experiences.

Student-student interaction: Allen, Miller, Fisher, and Moriarty (1982) conducted a quantitative survey of faculty and department heads' perceptions of intensive interim courses. An unexplained random sample of 123 institutions was chosen from the 245 institutions offering January interims. The researchers received 53 response packets, but 12 no longer offered interim sessions and six others did not include course forms, leaving 35 schools that responded to both the departmental surveys and 82 individual course forms from faculty persons; a 43% return ratio that the authors apparently deemed to be adequate. All but one of the colleges were private institutions with a median FTE student body size of 1,338 (range from 480 to 23,500). Thirty offered bachelor degrees as the highest level and the median department size was three full-time faculty members (ranging from 1 to 65). The median number of interim courses offered per year was two (range of 1 to 18). Course data indicated that all 82 were undergraduate courses, 51 were categorized as innovative format, 19 as new offerings with traditional format, four were semester courses that were changed to fit the interim, and six were concentrated versions of semester courses. The courses for which instructors gave the most positive evaluations were structured most like seminars with special topics, projects and experiential learning that generated positive group dynamics. Those faculty participants also rated several characteristics as occurring to a statistically significant greater degree in intensive courses ($p < .05$): group

discussions, projects, experiential activities, depth of material covered, depth of student comprehension, amount learned, degree to which students get to know each other and the professor, student enthusiasm, and positive student evaluation of course content, course presentation, and teaching method (Allen et al., 1982).

Reynolds (1993) concentrated on cohorts of graduate students in intensive courses. She focused on group dynamics, specifically group cohesiveness, group interaction, and instructional style. Groups were identified as cohort/intensive, cohort/nonintensive, noncohort/intensive, and noncohort/nonintensive with representative programs for each group identified at three different universities. Students in the cohort programs started the same course sequence together so they were in the same classes over the course of their respective programs. The noncohort students were in the same program but did not take their courses in a specific sequence and so they did not spend as much time together, during a longer period of time, than being enrolled in a single course. Reynolds identified that fact as a dichotomous variable called the cohort variable. The researcher developed a questionnaire to measure group interaction, group cohesiveness, and instructional style that was administered by faculty in each of those programs and responses were received from 174 students.

The group interaction scale consisted of six items, the group cohesiveness scale was made up of three items, and the instructional style scale was measured by four items. The reliability assessment for each scale yielded Cronbach's alpha of .80 for the group interaction scale and the group cohesiveness scale, but the instructional style scale had a Cronbach's alpha of .50. Reynolds (1993) also used a rotated factor matrix to assess construct validity of the scales and found that the items loaded as anticipated for group interaction and group cohesiveness, but only two of the items loaded strongly on the instructional style scale. Reynolds hypothesized that instructional style either did not correlate with course format or was more complex than the constructed items could describe, and chose to report on group interaction and cohesiveness.

In order of least group interaction to greatest were non-cohort/non-intensive, non-cohort/intensive, cohort/intensive, and finally cohort/non-intensive when comparing means of group interaction scale. The two-way ANOVA revealed that scheduling (intensive versus non-intensive) did not appear to have an effect but cohort/non-cohort did affect group interaction. Reynolds' (1993) findings that scheduling did not impact group interaction were contrary to the accepted belief of intensive courses enabling students and faculty to have more interactions than found in semester-length courses. That might have been due to the strength of the cohort/non-cohort variable in the study, which the author said was more powerful than scheduling. Reynolds described her study as exploratory and limited in population, but the findings were provocative. Further research using different types of intensive formats are needed to confirm whether the cohort structure retains its dominance.

Collins (2005), in a qualitative study of adult learner cognitive development in intensive non-cohort or accelerated cohort programs, found that student-student interaction may influence cognitive development regardless of whether the programs were cohort-based. Two Midwestern universities were chosen for their adult student programs, one an intensive non-cohort weekend program and the other an accelerated cohort program for adult undergraduates who had never attended college. Collins used an instrument called the Learning Environment Preferences (LEP) to measure the cognitive complexity index of students in order to determine their Perry Position of cognitive development.

The LEP (Moore, 1989) is a survey instrument that has been determined to be valid and reliable for the first five Perry Positions ranging from dualistic, right, wrong reasoning to relativistic, contextual functioning. Positions six through nine were ethical forms and not correlated with LEP measurements. They were not studied by Collins (2005). Using information on the respective students' cognitive development in the two types of programs, the author collected demographic data and pre/post LEP scores from a sample of 49 adult students, 16 who

were beginning the non-cohort program during the semester of the study and 33 in the cohort-based program. She then purposively chose nine students from each group (cohort and non-cohort) that ranged across the different Perry Positions to interview. For triangulation of data, Collins also conducted 23 classroom observations.

The researcher (Collins, 2005) attempted to identify the experiences that influenced adult cognitive development in those intensive and accelerated programs. She crafted the main research question into five sub-questions and utilized just the first and fourth ones for that particular investigation. Sub-question one addressed the effects of an instructor's techniques and sub-question four related to the effects of a classroom atmosphere. Collins offered that her research was limited in scope and generalizability apparently because of the short time span during when the study was done; only one semester. Presumably such a marginal time span hindered differentiation from emerging between the pre and the post LEP scores.

As qualitative research, that work illuminated possible variables that might lead to a more relaxed classroom atmosphere, enhanced student engagement, and instructor techniques such as in-depth discussions that challenged students to analyze and apply concepts. Collins (2005) hypothesized that unless students, who appeared to be functioning at cognitive levels deemed inappropriate for their academic status, were challenged it was dubious that they would be able to mature to the desired intellectual levels. Absent from that report was conversation on how or why instructors could implement such in-depth study of all students' cognitive abilities and then there would be the concomitant issue of scoring such instruments in a timely manner for implementation.

Despite qualms over aspects of the Collins (2005) research it supported a recurring theme surfacing among adult students, cohort students, and students participating in intensive courses; they tend to be drawn to intensive programs because of a yet undisclosed desire to complete a program of study and move forward, while experiencing anxiety over the amount of reading

required and the sometimes deliberately superficial coverage of course content. More research is needed to find ways for instructors to create classroom atmospheres that are favorable for in-depth learning and nurturing the cognitive development among all students. The latter issue seems to be a particularly problematic, if not quixotic, task.

Delivery formats (intensive or conventional) did not seem to make a difference in cognitive development, as determined by the Perry position of cognitive complexity; however the students' cognitive levels at the beginning of courses apparently made a difference as to how effective group activities were in challenging students. Both Collins (2005) and Reynolds (1993) observed that group cohesiveness was more powerful than course scheduling.

Student-instructor interaction: The interactions between students and an instructor can be manifested in several ways. Student-instructor interactions take the form of discussions, instructor feedback, lectures, and other methods of teaching that involve direct communication as well as indirect communications that occur through the instructional design and organization. Several researchers (Centra & Sobol, 1974; Messina et al., 1996; Grant, 2001; Kretovics, Crowe, & Hyun, 2005) sought to address relationships between student-instructor interaction and student satisfaction and learning in intensive courses.

Centra and Sobol (1974) studied selected instructional faculty and student perceptions of interim courses at Rider College. The researchers developed a questionnaire that was distributed through the chosen classes. Both students and the respective instructors were asked the same questions, modified to fit the sample, student or faculty. Questionnaires were received from 1,011 students and 106 instructors, and were deemed to be representative of the total student and faculty bodies. But it was acknowledged that there were more females in the sample than the overall student body. Students reported having a more favorable opinion of whether the interim courses were academically "respectable" (69% agreed) than did the instructional personnel (45% believed so).

Differences were observed in student perceptions by discipline, with higher ratings for courses in social sciences, education, sciences, and mathematics with the lowest ratings reported by students from business courses. The researchers (Centra & Sobol, 1974) found that students preferred study abroad and classes that included field trips and other activities (activity related and away from the confines of conventional learning contexts), and that courses considered by faculty to be discussion or seminar were viewed by the students to be lectures. "Thus, the interim term program seems least effective if it is merely a condensed version of traditional academic courses offered in traditional ways" (Centra & Sobol, 1974, p. 238).

A study conducted by Messina, Fagans, and Augustine (1996) at Burlington County College in the spring of 1995 examined weekend courses designed to attract new adult students. Data were collected on 185 students taking 11 intensive weekend courses. The methodology employed for data collection included: a telephone survey (N=91), in-class student surveys, college records of student characteristics and grades, faculty surveys, and teaching evaluations. The sample was made up of 59% women, 22% minorities, with an average age of 29 and both undergraduate and graduate students were representative of the overall student population at Burlington County. The researchers studied the relationships between student type and satisfaction with the three-weekend format, instructor satisfaction with the format, and the instructor qualities and course types that were judged more successful in that format.

The respective students and faculty reported satisfaction and increased interaction with intensive courses. Sixty-six percent of the students reported that they had greater interactions with their respective instructor and with their classmates in the intensive courses than they experienced in "regular" courses. The researchers reported that 53% of the students who reported more interaction with their classmates also reported that they learned more. Eighty-nine percent of the students responded that they would take another intensive course, and that was cited as evidence of their intent to persist in such learning opportunities. The qualities students listed for

effective instructors were: skilled in conducting small group activities; flexible; interesting; concerned about students; patient; vibrant, exciting, and stimulating; comical; well-organized, prepared, punctual; able to speak quickly and clearly, and quick moving; strongly focused; dedicated; and full of energy (Messina et al., 1996).

Grant (2001) studied student satisfaction of block format in delivering courses in logistics and services marketing. In that study the instructional design and organization of the course was the focus of the research. He used two courses taught in one-week blocks and compared student responses given by pre- and post-questionnaires. There were 32 students in the one-week logistics class and following that class a second one-week block course in services marketing was taught to 33 students. Twenty-students were enrolled in both courses. The researcher followed a customer satisfaction theory that customers were satisfied if they scored their perceptions higher than were their expectations. Grant argued that business majors benefitted from exposure to week-long workshop-type learning situations since they mirrored the continuing education such persons would experience in the business world. The researcher studied the customer repeats, those students who chose to take a second intensive course, separately from students who had no prior experience with one-week courses.

Grant (2001) used a Likert scale for the questions on the pre-questionnaire and used a -2, 0, +2 scale on the post-questionnaire to measure how much perception changed from pre-block expectations. The pre-questionnaire categories included expectations of work load for the week, amount of student interaction, increased knowledge, ease of understanding material, relevancy to their career, and overall expectations for the seminar. Students' overall perceptions showed an increase for both courses with +.75 for the logistics course and +.81 for the services marketing course. Negative perceptions occurred in specific categories such as "relevancy of speakers" in the logistics course and "want readings prepared" and "amount of actual lecturing" in the services marketing course. Students who took both courses, customer repeats as Grant labeled them,

ended the first course with +.90 increase in expectations, but for the second block the overall expectation and perception was +.45, which still showed satisfaction but declined from the first block. Conceivably there was a loss of the novelty effect or perhaps it might be termed a halo effect for the first such course.

Grant (2001) compared the quality of work done in class, on exams and projects, and final grade distributions in the one-week block courses to other six-week sessions taught by the author and determined they were not significantly different. The researcher conjectured that the concentrated contact time created through intensive courses may make a positive impact on student-student interaction. Students worked and discussed course topics during breaks and developed relationships that the author did not observe in longer courses.

Kretovics, Crowe, and Hyun (2005) studied faculty perceptions of intensive summer courses and found differences in faculty views of pedagogical issues on intensive courses compared to semester-length courses. A quantitative survey was developed based on a qualitative self-reflective study and administered to 569 faculty members at one higher education institution. A response rate of 26.5% was obtained (151 replies). The questionnaire consisted of three categories: demographics, attitudes and perceptions, and pedagogical issues, and was piloted during a series of brown bag faculty members' discussions about teaching summer intensive courses. A Cronbach's alpha of .79 was determined to be evidence of survey internal consistency, and a factor analysis revealed the existence of three independent factors; perceptions, pedagogy, and faculty preparation. Kretovics et al. found that 47% of the participants changed their teaching methods for summer instructional purposes, 46% made changes to their syllabi, 33% changed readings, 39% changed writing assignments, 40% changed project assignments, 31% changed assessments, and 39% reduced content. Only 16% increased content.

"Additionally, in general, more faculty believe that they are able to establish rapport with students more quickly in compressed courses (74.7%) and that students are more focused on

learning outcomes (64.5%), that students participate more in class discussions (62.3%), that students attend more regularly (69.7%), and that summer school students are academically stronger (46,6%)" (Kretovics et al., 2005, p. 47). Those favorable perceptions pertaining to the extent of student-instructor interactions during intensive courses reinforced the earlier cited claims that interactions between and among students and instructors were important to intensive learning experiences. Parenthetically, it can be offered that they would be of importance for all kinds of learning environments but seem to hold special importance for intensive learning platforms.

*Student-content interaction***:** Differences in student satisfaction and learning in intensive courses by discipline have been studied extensively. Meta-analyses by Scott and Conrad (1992) and Daniel (2000) concluded that students in intensive courses, across a wide variety of disciplines, were at least as successful as those in semester-length courses, if not more so. Following are some examples of content specific research of intensive courses in physics, art, economics, and accounting (Parlett & King, 1971; Mims, 1983; Grimes & Niss, 1989; Van Scyoc & Gleason, 1993; Rayburn & Rayburn, 1999).

Parlett and King (1971) designed a concentrated study course that was one month in duration. The sample consisted of twenty students in a core content physics course taught at MIT. The researchers used a qualitative approach with one of the researchers acting as the instructor and the other as the observer and investigator. For triangulation of information collecting the authors used direct observation of the class, interviews with all 20-students, and five researcher-designed questionnaires. The authors believed that the experimental course was highly successful. "As we had thought, the abandonment of distributed study permitted innovation and restructuring on a large scale; it also enabled and encouraged students to become fully immersed in the study of physics. The students perceived the experience as more 'real',

more efficient, more intensive, more integrated, more challenging, and certainly as more enjoyable than their previous physics courses." (p. 27).

Mims (1983) focused on art education in her survey of 407 students, in 18 randomly selected colleges and universities, who were scheduled in intensive art classes. A questionnaire was designed to measure student perceptions of differences in art courses based on format, intensive or semester-length. The overall Cronbach's alpha was .72 and thus the questionnaire was judged to be reliable. Additionally, the questionnaire was reviewed and approved by several art educators for content and face validity. The researcher found that art students preferred intensive courses over semester courses, t (384) =-2.83, $p<.05$. Students reportedly had greater motivation and interest in intensive courses, considered them as more valuable than semester courses, and perceived their instructors as more enthusiastic ($p<.05$). The study findings also allowed for claiming there was a direct relationship between students who were art majors and had a preference for concentrated study. Students who were not art majors did not express a comparable interest in such concentrated study opportunities.

There were three studies in business disciplines that addressed specific contents. Grimes and Niss (1989) and Van Scyoc and Gleason (1993) studied intensive economics courses and Rayburn and Rayburn (1999) did a study on accounting courses. Grimes and Niss compared economics courses of three different lengths, using the same curriculum but compressing the course from 15-weeks for the longest course to the shortest course of eight-weeks, with an optional extension of two more weeks to make it a total of ten-weeks. Forty-nine students took the eight-week intensive course, and 41 of them chose to add the optional two-weeks, and then they retook the final exam. A control group of 36 students took the same economics curriculum during the regular 15-week session. The pre and post-test measure of student performance was done using the Test of Understanding College Economics (TUCE). Significant positive gains were observed among the students completing all three formats ($p<.01$), and notably there was no

significant difference as a consequence of course lengths. Students were asked to report their average weekly study time at the end of the course. Students in the intensive course (eight-weeks) logged more study time per week than did students in the control group, but fewer study hours overall. That finding led the researchers to conclude that the intensive course was more efficient in terms of student study time.

Van Scyoc and Gleason (1993) also researched intensive courses in economics. Those researchers conducted a comparative study of intensive three-week economics classes and semester-length economics classes that included 350 beginning microeconomics students and 211 intermediate students at the University of Wisconsin-Oshkosh. Pre and post-testing was accomplished using a revised version of the Test of Understanding College Economics (RTUCE). A combination of GPA, exam scores and pre and post RTUCE were used to compare students in the two types of economics courses.

Van Scyoc and Gleason (1993) found a significant positive relationship on the RTUCE between intensive courses and academic performance when compared to the semester-length courses (a<.01, two-tailed test). Scores from students completing the three-week courses were 10.5% higher. When comparing students' final grades in the beginning course with the intermediate course scores, the researchers found a positive significant relationship between GPA and retention of economics knowledge. Two factors were hypothesized to be related to retention, the length of time between the beginning and intermediate economics courses and the difference in format (intensive or semester-length). Neither the number of semesters between the beginning and intermediate courses nor the scores for students in courses of different course length was statistically significant. This lack of difference led the researchers to conclude that retention of economics knowledge happened in intensive courses at least as well as in semester-length courses.

In a study of 112 business and accounting majors in introductory accounting classes at a mid-South university, Rayburn and Rayburn (1999) compared exam grades and homework completion of students taking eight-week classes to those of students in 16-week classes. The researchers used ANOVA analyses on four factors, class (intensive or semester-length), gender, major (accounting or non-accounting), and past achievement (measured in cumulative GPA, 2.7 and higher or less than 2.7). The dependent variables included the total points on four exams, total points on multiple choice portions of exams, and total points on the problem-solving portions of the exams. The authors found that students in the intensive courses performed as well on multiple choice exams as did students in the semester-length courses, but scored significantly lower on problem-solving ($F=7.694$, $p<.01$). The researchers contended that intensive courses were not advantageous for accounting majors because they did not foster the sought after problem-solving skills needed. Interestingly, their research showed that students in the intensive courses scored as well on multiple choice exams ($F=0.151$), and that there were significant main effects by major ($F=9.031$, $p<.01$) and achievement ($F=26.790$, $p<.01$) on total points earned but total points earned was not as strongly related to course length ($F=1.993$, $p<.1$). None of the secondary effects (class x gender, class x major, class x achievement) were significant with respect to total points earned. The researchers claimed that accounting majors and those with higher past achievement performed better on the exams. While the researchers accepted the effect of $p<.1$ to be significant to their study as showing that intensive courses were related to lower exam scores, it was a much smaller correlation than they found for major and achievement. Conceivably the issue of concern was related to the cognitive aspect of dealing with issues instead of the more superficial elements of responding to tasks that depended upon recognition of information. Alternatively, the issue of how the various multiple choice exams were constructed might have been subjected to greater scrutiny.

In summary, research has been interpreted to mean there are several factors contributing to student satisfaction and learning in intensive courses. The factors highlighted here were grouped into two main categories: student characteristics of age, employment status, academic performance and persistence in intensive course programs; and interactions including student-student interaction, student-instructor interaction, and student-content interaction. The similarities between student characteristics and interaction in intensive courses and in online distance education courses are addressed in the next sections of this chapter.

Contributing Factors to Student Satisfaction and Learning in Online Distance Education Courses

The following review is focused on student characteristics and interaction as factors that contributed to student satisfaction and learning in online distance education courses. Student characteristics research summarized in this section include age, locus of control, online technology self-efficacy, and persistence. Interaction factors have been studied extensively in online distance education. Cognitive presence, social presence, and teaching presence were presented earlier as components of the Community of Inquiry Model (Garrison, Anderson, & Archer, 2001) that was addressed in Chapter One. A representative list of research studies in online distance education are shown below in Table 2.2.

Table 2.2.

Studies of Online Courses

Researchers	Date	Method	Studies	Results
Alavi, Wheeler, & Valacich	1995	Quantitative	Quasi-experimental design measuring student satisfaction and group dynamics in distance learning courses in comparison of f2f and distance students in business course.	No significant difference in student satisfaction; distance students perceived greater social presence than f2f students.
Powers & Mitchell	1997	Qualitative	Student perception and performance in online courses in an online 5-week summer session	Inductive analysis revealed four themes: peer support, inter-student interaction, student-faculty interaction, and time demands.
Jiang & Ting	1999	Quantitative	Student interaction and perceived learning	Student-instructor interaction was directly related to students' perceived learning.
Fredericksen, Pickett, Pelz, Shea, & Swan	2000	Quantitative	Survey of student satisfaction and perceived learning in online courses in SUNY system	Perceived learning was positively related to teacher interaction, student participation, and peer interaction. Adult students rated perceived learning higher and were more satisfied than younger students.
Garrison, Anderson, & Archer	2000	Qualitative	Grounded theory research of graduate programs	Created a coding template as a tool for identifying teaching presence factors as part of the community of inquiry model.
Anderson, Rourke, Garrison, & Archer	2001	Qualitative	Instrument development for analyzing teaching presence in online discussions	Significant differences among teachers of online courses in teaching presence measured by coding template leading to the conclusion that there are many variables that affect teaching presence.
Arbaugh	2001	Quantitative	Survey research of teacher immediacy behaviors as it relates to student satisfaction and perceived learning in online courses	Teacher immediacy was a predictor of perceived learning, but technological experience was not.

Table 2.2 (continued).

Studies of Online Courses

Researchers	Date	Method	Studies	Results
Chen	2001	Quantitative	Factors of transactional distance in online courses	Students felt most positively about learner-interface transactional distance and least about learner-instructor transactional distance.
Lim	2001	Quantitative	Self-efficacy as a predictor of satisfaction and retention	Computer self-efficacy is positively related to student satisfaction and persistence.
Conrad	2002	Mixed Methods	Student satisfaction in the first days of online courses	Initial instructor interactions were not considered by students as primary factors in feeling connected or engaged in the class.
Picciano	2002	Quantitative	Interaction, social presence and performance in online courses	A direct relationship was found between perceived interaction and perceived learning.
Swan	2002	Quantitative	Student perceptions of satisfaction, learning and interaction connected to course design	Perceived interaction with instructor was directly correlated to student satisfaction and perceived learning.
Thurmond, Wambach, Connors, & Frey	2002	Quantitative	Student satisfaction with online courses excluding impact of student characteristics	Students who felt they knew their instructor expressed greater satisfaction with the course.
Tu & Isaac	2002	Mixed Methods	Interaction and social presence	Social presence was directly related to interaction.
Parker	2003	Quantitative	Locus of control as predictor of persistence in distance education	More students in online courses exhibited a positive change in internal locus of control as measured by pre/post test than students in traditional courses.
Richardson & Swan	2003	Quantitative	Student satisfaction, social presence and perceived learning	A direct relationship was found between student perception of social presence and perceived learning.

Table 2.2 (continued).

Studies of Online Courses

Researchers	Date	Method	Studies	Results
Shin	2003	Quantitative	Transactional presence with subconstructs of availability and connectedness and perceived learning, satisfaction and intent-to-persist	Found positive relationships between transactional presence of teachers, student peers and the institution and perceived learning, satisfaction, and persistence.
Deture	2004	Quantitative	Self-efficacy and cognitive style in online courses	No correlations were found between cognitive style and student success or between online self-efficacy and success.
Dupin-Bryant	2004	Quantitative	Student pre-entry variables effect on performance	Found 6 pre-entry variables, GPA, class rank, number of previous online courses, computer/Internet training that correlated with persistence.
Hay, Hodgkinson, Peltier, & Drago	2004	Quantitative	Interactions and perceived learning in online courses	Instructor-student interaction was found to be best predictor for course effectiveness for both online and traditional courses.
Wu & Hiltz	2004	Mixed Methods	Perceived learning in online discussions	Online discussions were directly related to students' perceived learning.
Gomez	2005	Quantitative	Survey research of seven principles of good teaching practice as predictors of perceived learning and satisfaction	Student perceptions of "seven principles of good practice" are positively related to perceived learning and satisfaction.
Reimers-Hild	2005	Quantitative	Locus of control and other adult student characteristics related to learning and persistence in online courses	No relationship was found between locus of control and student success.
Herbert	2006	Quantitative	Online student satisfaction and retention	Students perceived faculty responsiveness as most important institutional factor.

Table 2.2 (continued).

Studies of Online Courses

Researchers	Date	Method	Studies	Results
Lu & Jeng	2006	Mixed Methods	Knowledge construction in online discussions	Variations in instructor facilitation were not significant in development of knowledge construction.
Mozzani-Miller	2006	Mixed Methods	Learning comparison in online and offline distance education courses	No differences in student engagement or reflective thinking between two formats of distance education.
Shen, Hiltz, & Bieber	2006	Quantitative	Student perception of learning and satisfaction with different modes of exams in online courses	Collaborative exams improved student interactions and students' sense of community and were directly related to students' perceived learning.
Ho & Swan	2007	Qualitative	Case study of online discussion elements	Online discussion posts were evaluated according to quantity, quality, relevance and manner. High average quality scores were directly related to higher course grades.
Lebec & Luft	2007	Mixed Methods	Student learning and motivation	Students felt little motivation to participate because of lack of instructor-student interaction and lack of expectation for student interaction.

Student Characteristics in Online Distance Education Courses

Locus of control: Locus of control as a student characteristic has been related to success in online distance education by two studies that are described in this section (Parker, 2003; Reimers-Hild, 2005). Locus of control is defined as either internal, one's belief that outcomes are related to one's ability, or external, the belief that outcomes are related to others' abilities or luck and outside of a person's control (Reimers-Hild, 2005).

In a quantitative comparative study of online and traditional classroom courses at a community college in Arizona, Parker (2003) used a single group pretest posttest experimental design to study locus of control on academic persistence in online and traditional course formats. Ninety-five students participated in the study, with 52 in the online courses and 43 in traditional courses. The researcher used Rotter's (1966) locus of control scale because it was well-known and available online and also in paper formats. Students in the online courses were given a week to complete the online surveys while students in the traditional courses were asked to complete the surveys during the first and last-weeks of class. Parker (2003) found a significant correlation between internal locus of control and academic persistence ($p<.05$) for students in the online courses and also determined that internal locus of control increased over the course for students in the online sections. In contrast, the students in the traditional courses showed no significant increase.

Reimers-Hild (2005) studied locus of control as an element of entrepreneurship in adult distance learners using a convenience sample of 863 online graduate students at a Midwest university.   Reimers-Hild identified entrepreneurship in distance learners as the characteristic that exemplified innovation, willingness to take risks, and a need for achievement. Data were collected using an online survey that included the Internal-External locus of control instrument developed by Rotter (1966), and need for achievement and risk taking propensity scales developed by Jackson (as cited in Reimers-Hild, 2005). Demographic information also was

collected through a questionnaire that sought grade point average, credit hour completion, gender, and age. Reimers-Hild (2005) found no significant relationships between locus of control and GPA or locus of control and credit hour completion. However, the researcher did find a significant negative relationship between locus of control and age ($p<.05$), showing that older students exhibited greater internal locus of control. Age accounted for 2.9% of the variance in locus of control.

Age: In addition to the findings of Riemers-Hild (2005) on age and locus of control in adult distance learners, a study by Fredericksen, Pickett, Shea, Pelz, and Swan (2000) analyzed 1,406 responses to the online student satisfaction survey from the State University of New York (SUNY) campuses completed during the spring of 1999. All online enrolled students were surveyed and 42% responded. Students were asked to rate their interaction with respective instructors, perceived learning, interaction with classmates, satisfaction with the help desk, reasons for taking the online course, gender, and age. The authors reported that the traditional aged students (ages 16 – 25) reported the least satisfaction and perceived learning from such academic experiences, and students in the 36 to 45 years old range reported the most satisfaction and perceived learning. Thus, the studies by Fredericksen et al. and Reimers-Hild found contradictory results on age. Age continues to be a factor that most instructional faculty consider when developing online distance education courses, but the research is not conclusive on whether it is or will be a reliable predictor of student satisfaction and learning.

Self-efficacy: Computers and the Internet oftentimes have been conjectured to be potential barriers to student learning. The personal sense of competence with computers and online technologies is known as computer or online technology self-efficacy. Lim (2001) and DeTure (2004) studied self-efficacy as a predictor of student satisfaction and learning. The Lim research was a quantitative study using an online survey of online distance learners at five universities (N=235) taking an online course in the spring or summer of 1999. The researcher

asked faculty teaching online courses at five universities to post the survey in the online course or send the survey to their students via listserv. The questionnaire was adapted from Eachus and Cassidy's Computer User Self-Efficacy Scale (1996, as cited in Lim, 2001). The researcher also included a section to capture demographic data such as age, gender, academic status, years of computer use, frequency of computer use, computer training, Internet experience, and participation in workshops for online distance education, and preference for a workshop for online distance learners. Additionally, Lim used Marsh's (1988) General Academic Self-Concept Scale. The findings were interpreted to mean that a significant positive relationship existed between computer self-efficacy and student satisfaction ($p<.001$), and the regression analysis was viewed to mean that students with higher computer self-efficacy were more likely to be satisfied with online distance education courses; 15% of the variability was explained by the predictor variables of computer self-efficacy, frequency of computer use, academic self-concept, and academic status. Lim also reported that computer self-efficacy was significantly correlated to the intent to persist with online courses ($r=.238$, $p<.001$); a student characteristic discussed in the next section.

Another study that included computer self-efficacy as a predictor of student learning was conducted by DeTure (2004), who also was interested in cognitive styles, such as field dependence, as it related to student learning and self-efficacy. Six general education online courses with 161 students enrolled at a southeastern community college were selected because they represented a range from low interaction high structure to high interaction low structure. Seventy-three students participated in the on-campus meeting held at the beginning of the semester where the survey instrument was administered. Two surveys were used; the Group Embedded Figures Test (GEFT) to determine cognitive styles and the Online Technologies Self-Efficacy Scale (OTSES) (DeTure, 2004) and course final grades were used as the index of student learning. DeTure found no statistically significant relationship between online technology self-

efficacy and final grades or between cognitive styles and final grades, leading the researcher to conclude that computer self-efficacy was not a good predictor of student learning.

Persistence and retention in online courses: Course completion or retention of students to the end of a course and persistence in taking additional online distance education courses or students' perceptions of their intent to take future online courses have been considered as characteristics to possibly influence student satisfaction and learning. Dupin-Bryant (2004) identified pre-entry variables related to retention in a quantitative study of 464 students randomly selected from the student population taking online distance education courses during the spring of 2003 at Utah State University. A questionnaire was developed by the researcher that included items related to pre-entry variables such as cumulative grade point average, class rank, number of previous online courses, and various types of computer training. The instrument was piloted during the fall 2002 semester and after appropriate revisions it was mailed to the random sample in the spring 2003. Persons agreeing to participate in the study at the conclusion of that semester provided the requisite enrollment data.

Dupin-Bryant (2004) reported that cumulative grade point average, class rank, number of previous courses completed online and three types of computer training were best identifiers of students who persisted in online courses. Furthermore, successfully completing at least one online distance education course increased the likelihood that a student would complete another course. Parenthetically it can be said that Dupin-Bryant's work reinforced the notion that success tended to breed success.

Herbert (2006) conducted a study to determine predictor variables that were most influential in student retention in online distance education courses. The researcher received data from Noel Levitz who had administered their Priorities Survey for Online Learners (PSOL) to students at a Midwestern state university. The instrument included variables such as: satisfaction with technical assistance, library services, faculty responsiveness, and quality of online

instruction. Mailed follow-up surveys were sent to students who had dropped from courses out during the semester in order to gather data on non-completers. Completers submitted 122 useable surveys (25.1% response rate), and 31 of non-completers (40.1% response rate) responded. The institutional variables students ranked as most important included: faculty responsiveness, quality of online instruction, and faculty feedback. Non-completers said that the two most common reasons they did not complete the online course were time commitments and personal problems. Of special note was the information from students who reported the lowest scores for a course meeting their expectations. Thus it seemed that expectations might have influenced judgment, but in the absence of more information that issue remained unresolved.

Research on presumed student characteristics that have potential for influencing student learning and concomitant satisfaction in online courses remains viable but there are no clear directions to pursue for answers. Some relationships have been identified but none of them convey a strong sense of confidence as predictors. Consequently such information needs to be viewed as a part of the total picture that results in student satisfaction and learning in online distance education. The next section will address another focus of online distance education research, interaction.

Interaction

Interactions in online distance education courses can be categorized as student-student, student-instructor, and student-content interactions. Moore and Kearsley believed those types of interactions were essential to distance education (2005). Saba (2000) concurred, noting that as distance education research has moved past quasi-experimental comparison studies to exploration of theories, these studies most commonly include interaction as a theme. Studies that represent some of the work done on interaction are presented in the following paragraphs.

Student-student interaction: Student-student interaction also has been called peer interaction, group dynamics, and social presence. Each of the terms tends to convey a slightly

different nuance, but all are related to students interacting with each other through computer mediated communication. A number of studies (Alavi, Wheeler, & Valacich, 1995; Jiang & Ting, 1999; Swan, 2002; Shin, 2003; Wu & Hiltz, 2004; Mozzani-Miller, 2006) reported on relationships between student-student interactions and student satisfaction and learning.

Alavi, Wheeler, and Valacich (1995) conducted a field experiment using a quasi-experimental design involving 120 MBA graduate students at two universities. The authors compared student groups using desktop videoconferencing for assignments to determine how or if that mode of interaction influenced achievement and satisfaction. The students were divided into 30 groups of four persons each, and then further subdivided into dyads. Some groups collaborated face-to-face, and other groups did so via videoconferencing but were from the same university and so they had opportunities to work face-to-face outside of class. The third treatment included groups that were mixed from the two universities and only met via videoconferencing. Pre and post-tests were used to measure declarative knowledge acquisition and critical thinking skills. A questionnaire was used to measure student satisfaction with the process and the emotional climate of the learning environment.

Alavi et al. (1995) reported the groups using videoconferencing to communicate, regardless of location, exhibited higher post-scores on critical thinking skills tests than did those in the face-to-face and with local collaborative contexts. There were no statistical differences in knowledge acquisition among the three groups, nor were there any significant differences in satisfaction or perception of emotional climate. The findings were interpreted to mean that students in the distance learning environments were as satisfied and emotionally comfortable as students who worked face-to-face.

Jiang and Ting (1999) conducted an online survey with a sample consisting of 78 online courses and 287 survey respondents from many different disciplines and levels in the State University of New York (SUNY) system during the fall of 1997. Variables used in that study

included perceived learning and perceived student behavior. Those broad categories were subdivided for student-student interaction and student-student communication, perceived contributions of learning activities measured by online discussion and written assignments, learning style, prior computer competency, and time spent on course. The researchers found positive correlations existed between student-student interaction and perceived learning (r=.36, p<.01) and between online discussions and perceived learning (r=.38, p<.01). They also found four variables that predicted students' perceived learning: instructor-student interaction, online discussions, time on course, and written assignments.

Swan (2002) reported on two related studies on student-student interaction in online courses. The first involved data collected in during the spring of 1999 through the State University of New York (SUNY) Learning Network annual survey. Of the 3,800 students in 264 online courses in the SUNY system, 1,406 returned the survey. From the data, 73 online courses were chosen, those having at least five students enrolled and at least 40% return rate of the surveys, giving a sample of 1,108 students. The survey included student demographics and student perceptions of satisfaction with their online course and perception of learning. The courses were rated separately by two researchers based on variables that measured course structure, assessment, and interactivity. Course structure included course level, class size, required textbook, number and consistency of modules, number of external links, instructor voice, and page design. Assessment was rated on the actual number and frequency of submissions, graded discussions, papers and other written assignments, projects, quizzes and exams. Interactivity was determined by the frequency of interactions and the average length of responses in the online discussions. The ratings were checked for agreement and consensus was reached between the researchers. The authors used course averages to determine student satisfaction, perceived learning, interactions with instructor, and interactions with peers.

Swan (2002) found significant positive relationships between student-student interactions and students' reported satisfaction with their courses ($r=.440$, $p=.01$) and with students' perceived learning ($r=.437$, $p=.01$). Also, there was a strong positive correlation between students' perceptions of interactions with an instructor and the students' perceptions of interactions with other students ($r=.517$, $p=.01$), which reinforced the Community of Inquiry Model in which the three types of interaction were interconnected (Rourke et al., 2001).

The second and related study reported by Swan (2002) involved an in-depth study of threaded discussions of one graduate-level education course. The researchers coded 235 postings from 39 discussion threads using a constant comparison process for verbal immediacy behaviors. Fifteen indicators emerged. The researchers then recoded the postings for affective, interactive, and cohesive indicators. Number of postings per discussion and words per posting also were recorded. From the total of 1,366 verbal immediacy indicators there were 663 affective, 235 cohesive and 468 interactive. The richness of the threaded discussions filled with verbal immediacy indicators led the researchers to conclude that students used text-based verbal immediacy behaviors to create social presence and to reduce the psychological distance between the participants.

Shin (2003) elaborated on students' perceptions of psychological presence in distance courses that were labeled transactional presence (TP). It seemed to be an extension of the transactional distance used extensively in the early 2000's by Moore (Moore & Kearsley, 2005), but had evolved into a broader sense of interaction and relationships between students, between students and instructors, and between students and institutions.

Shin's (2003) research sampled 506 distance students at one university. The objective was to learn whether students' perception of transactional presence was a predictor of perceived learning, course satisfaction, and intent-to-persist. Shin created the Transactional Presence Questionnaire (2003) that measured five scales: teacher TP, peer TP, institution TP, satisfaction,

and persistence, and the instrument also sought selected demographic information. Perceived learning was measured by GPA self-report and one item, "how much have you learned from the courses?" (p. 73). The author claimed tool validity and reliability through expert review and a pilot study, factor analysis for construct validity and levels of Cronbach's alpha for each of the scales that ranged from .83 to 0.94. The research revealed that peer TP was directly related to perceived learning ($r=0.197$, $p<.01$, two-tailed), satisfaction ($r=0.395$, $p<.01$, two-tailed) and perceived persistence ($r=0.241$, $p<.01$, two-tailed). It was also reported that institutional TP correlated directly with perceived learning ($r=0.311$, $p<.01$), satisfaction ($r=0.466$, $p<.01$), and perceived persistence ($r=0.274$, $p<.01$) and teacher TP was related to all three dependent variables as well (perceived learning $r=0.268$, $p<.01$, satisfaction $r=0.369$, $p<.01$, persistence $r=0.241$, $p<.01$).

In the regression analysis (Shin, 2003), only teacher TP and institutional TP were found to predict 13% of the variance in perceived learning (F (2,386) =28.73, p<.001), while all three TPs were significant in predicting 26.3% of the variance in satisfaction (F (3,429)=51.118, p<.001). Peer TP and institution TP predicted 8.9% the variance in intent-to-persist [F statistic was not included in the article]. The transactional presences, peer, teacher and institution, showed high correlations ($p<.01$, two-tailed), again reinforcing the idea of interaction between students, instructors and learning in the Online Interaction Learning Model (Benbunan-Fich, Hiltz, & Harasim, 2005) as well as the Community of Inquiry Model (Garrison, Anderson, & Archer, 2000).

In a study of asynchronous online discussions in blended courses, Wu and Hiltz (2004) researched relationships between use of online discussions and perceived learning, instructor role, student motivation, and course enjoyment. The study included 116 students in two undergraduate courses and one graduate course during the spring semester of 2002 at the New Jersey Institute of Technology. Independent variables included number of distance learning courses taken, gender,

and instructor role (whether the instructor dominated the discussions or not); the intervening variables included motivation and enjoyment; and the dependent variable was perception of learning from online discussions. The researchers found a significant positive relationship between students' perceptions of motivation and enjoyment in online discussions and students' perceptions of learning (r=0.477, p<.01). Also, they found a significant correlation between the instructor role and motivation and enjoyment (r=0.370, p<.01) and between instructor role and perception of learning (r=0.332, p<.01). The students' answers to the open-ended questions of the survey were viewed to mean they liked online discussions and believed they enhanced their perceptions of learning, particularly when the discussion structure was clear and consistent and students received feedback from the instructor. Those comments relate to teaching presence in the Community of Inquiry Model (Garrison, Anderson, & Archer, 2000).

Mozzani-Miller (2006) used engagement and reflective thinking as indices of quality of learning by 61-graduate students, from the same institution, separated into one online and one off-line distance education course. The students took the same course, had the same course content, same instructor, and same course length, with the off-line course taught in fall 2000 and the online course in fall 2001 at the same university. The quantitative analysis consisted of two independent variables: extent of participation in the online course and participation in the off-line course, and the four dependent variables of: length of student responses, number of responses to other students, number of cited references employed by participants when responding, and the number of references students found outside the provided virtual libraries to each course. The researcher collected data through direct observations of students' online answers to questions and discussions.

Mozzani-Miller (2006) used the reflective lens provided by Surbeck, Han, and Moyer (1991) and the critical inquiry lens from the Garrison, Anderson, and Archer (2000) Community of Inquiry Model to analyze threaded discussions from 12-students. Participants were chosen for

their range of involvement; six from each class, two low, two medium, and two high in order to have a broader understanding of how the students' perceived depth of learning. The author reported no differences in the quality of learning between the two forms of learning, and her conclusions were deemed supportive of research in distance education that claimed the delivery format did not appear to be an important factor in student success (Russell, 2001).

In summary, student-student interaction through online discussions and group activities have been reported to have a positive relationship to students' satisfaction and perceived learning. Student-student interaction is one aspect of communication and often is viewed as overlapping with student-instructor interaction. That topic is addressed in the next section.

Student-instructor interaction: "Obtaining 'buy-in' to the learning process from the student often requires interaction between the student and the instructor" (Hay, Hodgkinson, Peltier, & Drago, 2004, p. 196). Interactions between students and an instructor assume multiple configurations; instructor feedback on assignments, students' involvement in online discussions, and students' responding to statements or questions are indices oftentimes used to characterize student-instructor interactions. Arbaugh (2001) used the term instructor immediacy behaviors to describe communication between instructors and students that presumably helped students believe they were connected to and not isolated from an instructor. Such practices included: humor, calling students by name, and using encouraging and inviting language when providing feedback. Other studies (Arbaugh, 2001; Hay et al., 2004; Gomez, 2005) reported finding relationships between students' perceived learning and the reported student-instructor interactions.

A study of instructor immediacy behaviors in online courses (Arbaugh, 2001) consisted of surveying 25 online MBA sections with 390 respondents over a period of six semesters at the University of Wisconsin-Oshkosh. To measure perceived learning, Alavi's (1994) scale was used. Arbaugh generated a student satisfaction scale and then used Gorham's (1988) verbal

immediacy scale. Control variables included: age, gender, number of international students, number of prior Internet courses taught by instructor, class size, use of audio clips, attitude toward course software, number of course credits, and student attitude toward delivery medium.

Arbaugh (2001) reported that verbal immediacy behaviors and students' attitudes toward course software were predictive of students' perceived learning. Instructor online experience was not a predictor of perceived learning. The researcher interpreted that finding to mean that instructor immediacy behaviors were more important to successful online learning experiences than whether an instructor had experience with online teaching. Apparently students found that the most successful online learning experiences came from all participants interacting, including the course instructor.

Hay, Hodgkinson, Peltier, and Drago (2004) looked at differences in levels of student-student interactions and student-instructor interactions as they related to students' perceived learning in online and traditional MBA courses at the University of Wisconsin-Whitewater. The authors developed 13-items within a standard questionnaire based on the Purdue Rating Scale (Remmers, 1960) and administered it at the end of two semesters to participants in 58 MBA courses. The instrument used three items to measure students' perceptions of learning effectiveness, six items to measure student-student interactions and four items for instructor-student interactions.

The authors (Hay, et al., 2004) did not include their method for validating the survey tool in this article; however, they did run a factor analysis and determined that the items measured separate constructs of global learning, instructor-student interaction and student-student interaction. They had 1,126 responses, 84.6% return rate, from the 27 traditional classes and a 51.9% return rate from persons in the 31 online courses. The researchers concluded that student-student interactions and student-instructor interaction were significant predictors of students' perceived learning effectiveness in online MBA courses, $R^2=.20$, $F (1,665) =286.581$, $p<.0001$.

Those two types of interaction accounted for approximately half the variance in global learning effectiveness when the formats were combined. The researchers concluded that interactions between students and between students and instructors were important to students' perceptions of learning regardless of whether the course is traditional (face-to-face) or online.

Gomez (2005) researched student perceptions of learning and satisfaction through instructor use of Chickering and Gamson's (1987) seven principles of good teaching practice. The sample consisted of 173 graduate students in 40 education and humanities courses offered online during the spring semester of 2005 at one university. The survey instrument used for that study consisted of three scales: the scale used to measure the seven principles of good practice was adapted from Hunt (as cited in Gomez, 2005) called the Good Teaching Practices Survey; the scale used to measure student perceived learning was The Online Student Perceived Learning Scale from Alavi (1994); and the third scale was the Student Satisfaction with the Online Course Scale from Arbaugh (2004). Gomez added demographic items and two open-ended questions for examples of instructor applications of the seven principles.

The seven principles of good teaching practice identified by Chickering and Gamson (1987) and used as predictor variables in Gomez' (2005) study included student-faculty contact, cooperation among students, active learning, prompt feedback, time on task, high expectations, and respect for diverse talents. Those principles of good teaching practice exemplified a constructivist teaching model similar to the concept of teaching presence in the Community of Inquiry Model developed by Garrison, Anderson, and Archer (2000).

Gomez (2005) found positive and statistically significant correlations between students perception of instructor use of the seven principles and students' perceived learning (r=.51, p<.01, two-tails) and with satisfaction (r=.58, p<.01, two-tails). The regression analysis was interpreted to mean that active learning was the best predictor of students' perceptions of learning (β=.349, 12%, p<.05) and satisfaction (β=.385, 14.8%, p<.05), and instructor feedback was a

good predictor of satisfaction (β=.312, 9.7%, p<.05). Overall, the seven principles, taken

together, predicted 32% of the variance in students' perceived learning and 44% of student

satisfaction. That research was seen to mean that good teaching practice was important to student

learning and satisfaction. Given the similarities between the seven principles of good teaching

practice and teaching presence, that research would seem to support the Community of Inquiry

Model (Garrison, Anderson, & Archer, 2000).

      Student-content interaction: Students' are believed to construct knowledge and modify

existing cognitive structures through interactions with course information and by engaging in

course activities that make up the online learning environment. A study by Thurmond,

Wambach, Connors, and Frey (2002) was representative of the research that has been conducted

relating student-content interaction to students' satisfaction.

      Thurmond et al. (2002) conducted a quantitative study of 120-students in online nursing

courses at one university, using a survey developed from selected items on the Current Student

Inventory, part of the Flashlight Program (Ehrmann & Zuniga, 1997). Input variables included

perception of computer skills, knowledge of electronic communications technology, number of

Web courses taken, age, and a person's physical distance from the main campus. The

environmental variables came from the principles of good practice and included: connectedness

to the instructor, group activity, extent of involvement in online discussions, instructor feedback,

time spent studying, and the apparently multiple ways of assessment used by instructors. The

outcome variable was student satisfaction. The researchers found that environmental variables,

such as using a variety of ways for assessment, were much better predictors of student satisfaction

than input variables that were based on student pre-entry characteristics. A significant

relationship was found between time studying and whether a student knew an instructor (r=.50,

p<.01, N=117). That relationship was deemed as evidence that student-content interactions and

student-instructor interactions were pivotal for learning and for subsequent student satisfaction with respective academic experiences.

In summary, student characteristics and interactions have been reported to be important contributors to student satisfaction and learning in online distance education courses. Student characteristics that have been studied included: age, locus of control, self-efficacy with online technology, and persistence and retention in online courses. The research available for perusal is mixed on whether these student characteristics have any significant impact on student learning. Student interactions with other students, with instructors and with the content also were identified as important for understanding students' perceptions of satisfaction and learning in online distance education courses. As researchers have come to a better understanding the role of interaction in student success, they have begun to define the constructs surrounding students, instructors and content in more detail. One model, developed by Garrison, Anderson, and Archer (2000) is the Community of Inquiry Model, is addressed below.

Models of Student Success in Online Learning

The Community of Inquiry Model of Online Learning: Garrison, Anderson, and Archer (2000) proposed a model for learning through computer-mediated communication experiences. It consisted of three interrelated elements: cognitive presence, social presence, and teaching presence (Figure 2.1). They were considered to be essential elements of successful online learning, but also were claimed to be present in all higher educational learning experiences. However, the vehicle of computer-mediated learning environments apparently elevated interpersonal communication to the extent the three elements of cognitive presence, social presence, and teaching presence are considered to be of paramount importance.

Figure 2.1. Community of Inquiry Model
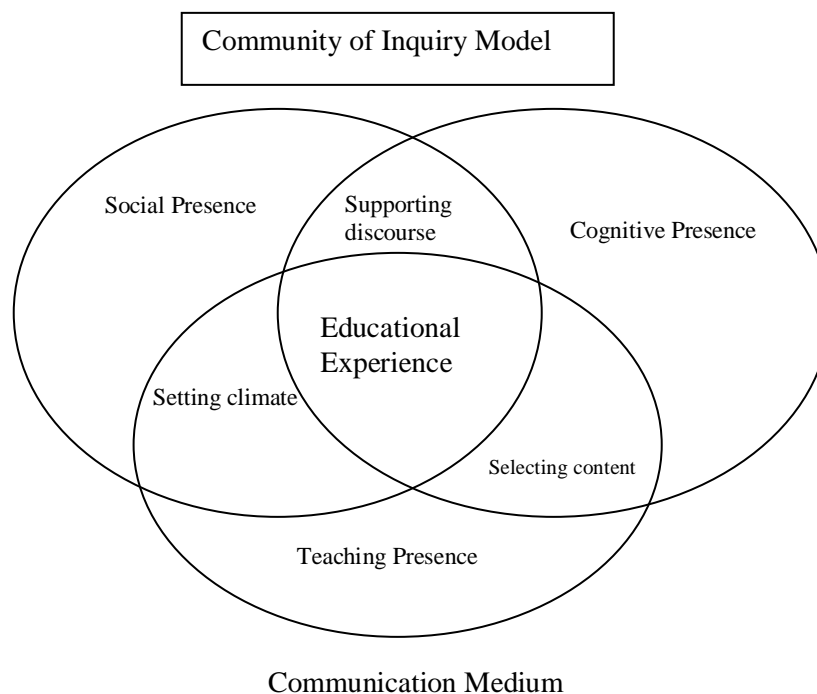
Figure 2.1. The Community of Inquiry Model (Garrison, Anderson, & Archer, 2000)

Cognitive Presence: The Community of Inquiry Model was elaborated by Garrison (2003) in his focus on cognitive presence as an essential element in higher order thinking and learning effectiveness. "Cognitive presence concerns the process of both reflection and discourse in the initiation, construction, and confirmation of meaningful learning outcomes" (Garrison, 2003, p. 50). Cognitive presence was viewed as a vital element in distance education where meaningful learning outcomes were expected and both components, critical reflection and discourses in an intellectual climate, had to be fostered through an instructor's role and peer interactions for construction of knowledge to occur.

The study of cognitive presence in online learning started with creating and validating coding instruments. A qualitative pilot study by Oriogun, Ravenscroft and Cook (2005) utilized Garrison et al.'s (2000) community of inquiry framework and the Transcript Analysis Tool (Fahy,

Crawford, Ally, Cookson, Keller, & Prosser, 2000) to validate a new software tool that made students choose a category according to SQUAD (suggestion, question, unclassified, answer, delivery), and thus led to discussion analysis becoming more structured and less subjective.

Oriogun et al. (2005) conducted a pilot study of the SQUAD in 2004-2005 using transcripts from two groups of graduate students in three discussion groups at a single university. A total of 1,039 messages were coded and analyzed during the academic year from the three groups. The SQUAD postings were viewed by the researchers as superior to other discussion analysis tools because the students chose the message category and thus negated the need for inter-rater reliability on how to categorize a response. Additionally, the procedure encouraged students to spread their message posts across a wider breadth of responses, including integration and resolution rather than staying with the exploration phase. That software was claimed to aid in the analysis of cognitive engagement within groups as opposed to studying only individual cognitive development in online interactions.

Lu and Jeng (2006) studied cognitive presence through analysis of group knowledge construction in online discussions. They used a mixed-method study of two sections of an online course (11 and 10 students respectively) at a Midwestern university. In order to measure knowledge construction, the researchers used the interaction analysis model (IAM) developed by Gunawardena, Lowe, and Anderson (1997), a coding system used to analyze online discussions and categorize messages into five social knowledge construction phases: sharing/comparing, dissonance, negotiation and co-construction, testing, and application. Messages were also coded for the teaching presence components facilitating discourse and direct instruction, following the Community of Inquiry Model developed by Garrison, Anderson, and Archer (2000). In addition to collecting transcripts of online discussions from the two courses, researcher-designed student surveys were administered at the end of the courses to measure students' perceptions of learning

and satisfaction with the online course. Different instructors taught each section. One took the role of a facilitator and the other as a facilitator and co-participant.

Analysis of the online discussions allowed for stating that the students stayed mostly in the first phase of knowledge construction, sharing and comparing, and did not move into higher phases unless an instructor intervened (Lu & Jeng, 2006). The section for which the instructor acted as both facilitator and co-participant (section A) had more postings in knowledge construction phases II through V than the section (B) in which the instructor acted only as facilitator (37 postings versus 15), while phase I postings were much higher (326 postings versus 337). Chi-square test analysis showed a significant difference in levels of group knowledge construction between the two classes (X^2=9.32, $p<.01$). When teaching presence tasks posted by the instructors were coded against student postings by knowledge construction phase, the section A instructor elicited more of the higher levels of knowledge construction per teaching presence task posting than instructor B (34 postings versus 25).

Social Presence: Rourke, Anderson, Garrison, and Archer (2001) described social presence "as the ability of learners to project themselves socially and emotionally in a community of inquiry" (p. 4). Social presence supports the other two elements (teaching and cognitive) through engaging and integrating learners in a group and thus helping to encourage all types of interactions. Social presence as described by Swan (2003) becomes impacted by peer interactions or student-student interactions. Several studies have found positive relationships between student satisfaction, learning effectiveness, and social presence (Picciano, 2002; Tu & McIsaac, 2002; Richardson & Swan, 2003). Toward the latter part of this section a study done by Rovai, Wighting, and Liu (2005) was included because it addressed school climate and students' sense of community in online distance education and has bearing on this material.

Picciano (2002) conducted a survey and then performed a descriptive analysis of factors related to interaction, social presence and performance in one online class of 23 graduate students

at Hunter College. Student perceptions of interaction and social presence were measured by a survey adapted from the Inventory of Presence Questionnaire by the Presence Research Working Group and a questionnaire developed by Chih-Hsiung Tu (Picciano, 2002). Interactions were measured by posts in threaded discussions and students were grouped as being low, moderate or high interaction. Student performance in the course was determined by scores on a multiple-choice examination and a written assignment.

Based on the student survey data, Picciano (2002) reported a strong positive relationship between students' perceptions of interactions and their perception of the quality and quantity of learning (r=.6732, p<.05). Student interactions were measured by the number of posts and the students were categorized as low, medium, or high in terms of number of interactions. Mean exam and assignment scores were calculated for each group. While the mean exam score did not differ appreciably for the interaction groups, the mean assignment score for the high interaction group (80.0) was markedly higher than the means for the other two groups (Mean of low group was 55.5 and mean of moderate group was 70.1, N=23). The relationship between student interactions and perceived social presence was significant (r=.8477, p<.05). Social presence was also found to be significantly related to student perception of learning (r=.6714, p<.05).

Tu and McIsaac (2002) studied the relationship of social presence and interactions in an online environment. "Social presence is a measure of the feeling of community that a learner experiences in an online environment" (p. 131). Social presence theory has been used to describe communication in many learning environments, including face-to-face, audio, closed-circuit video, and computer mediated communication (CMC). Tu and McIsaac (2002) identified three dimensions of social presence: social context; online communication as it related to language used as well as computer literacy skills such as typing, reading, and writing; and interactivity in a study using a mixed method approach with a sample of 51-students in an online graduate course.

In the quantitative part of the study, the CMC Questionnaire (Tu & McIsaac, 2002) was administered and returned by 43-students. The questionnaire contained 17 Likert-scale items on social presence, 13 Likert-scale items related to privacy, and 12 items related to demographics. For the qualitative study, the researchers used a participant observation method with a dramaturgy perspective and data were collected through "casual conversation, an in-depth interview, direct observation, and document analysis" (p. 137). Triangulation methods used included time, space and person, and method. The latter consisted of observations in several settings, an interview, and then completion of questionnaires.

Five factors were retained from an exploratory factor analysis: social context, online communication, interactivity, system privacy, and feeling of privacy. They accounted for 76.6% of the variance in perceived social presence. Perceived social presence and privacy on CMC were high as measured by mean scores, but not significantly related. Frequency of communication and level of perceived privacy were also not significantly related to social presence. The five factors identified in the quantitative study were used to guide the qualitative study, and that component of the research led the authors (Tu & McIsaac, 2002) to identify 23 additional variables that contributed to social presence under the categories of social context, online communication, interactivity, and privacy. The two researchers concluded that further study on the presumed relationships between social presence and social learning theory was indicated, as well as engaging in a closer examination of the possible relationship between privacy and social presence. The latter did not surface as being of significance but oftentimes has been deemed to be important. Perhaps more definitive work could clarify that issue.

Richardson and Swan (2003) conducted a survey study of the relationships between perceived social presence, perceived learning, and student satisfaction with an instructor in spring semester 2000 online courses. The sample consisted of 97 students at one university who completed the end of semester survey. The students were mostly nontraditional, female (63%)

and upper division undergraduates. The survey instrument was adapted from Gunawardena and

Zittle's (1997) social presence scale, designed to study the computer-conferencing environment

and social presence.   Those researchers found a significant and positive correlation between

students' perception of social presence and perceived learning (r=.68, p<.05). They also reported

significant relationships between social presence and satisfaction with the instructor (r=.68,

p<.05) and between perceived learning and satisfaction with the instructor (r=.60, p<.05). Using

a regression analysis, social presence was identified as a good predictor of perceived learning

(r^2=.46, p<.05).

Rovai, Wighting, and Liu (2005) compared students in online courses and on-campus

courses for student-institution fit, sense of community and perceived learning. Rovai et al.

hypothesized that sense of school community or school climate was linked to perceived learning

and ultimately to quality of online learning and student attrition. The sample of convenience

consisted of 279 undergraduates and graduates in education programs at two universities. To

measure community, the Classroom and School Community Inventory (Rovai, Wighting, &

Lucking, 2004) was used. Additionally, the authors used an instrument developed by

McCroskey, Sallenen, Fayer, Richmond, and Barraclough (cited in Rovai et al., 2005) to measure

student perceived learning. The independent variables were delivery method, online or

conventional, and student status, separated into undergraduate and graduate. The dependent

variables were total classroom community, total school community, and perceived learning. The

researchers found that students in online courses scored lower in perceived sense of community

than did those in on-campus courses, but there was no difference in perceived learning among the

two groups. Graduate students scored higher in both classroom sense of community and school

social community than did the undergraduates, leading the researchers to conclude that

nontraditional students might have a greater sense of connectedness in online courses than

traditional students.

Teaching Presence in Online Courses: The community of inquiry model described each of the presences, social, cognitive, and teaching, as interrelated. Teaching presence, as defined by Shea, Pickett, and Pelz (2003, p.65) "is the design, facilitation, and direction of cognitive and social processes for the realization of personally meaningful and educationally worthwhile learning outcomes. Teaching presence has three components: Instructional Design and Organization, Facilitating Discourse, and Direct Instruction." As a functional component of the community of inquiry model, teaching presence was not an end in itself but rather the means to create social and cognitive presence that would bring about positive learning outcomes. The study of instructor immediacy behaviors, those behaviors both verbal and nonverbal, exhibited by an instructor in response to a student, comes from communication theory and is closely related to the teaching presence construct. From a best practices viewpoint, teaching presence has been of interest to many researchers (Anderson, Rourke, Garrison, & Archer, 2001; Shea, Pickett, & Pelz, 2003; Arbaugh & Hwang, 2006; Garrison & Cleveland-Innes, 2005; Shea, Li, & Pickett, 2006).

Anderson, Rourke, Garrison, and Archer (2001) developed a tool to analyze transcripts of discussions within online courses, and by extension to determine teaching presence as it was represented in the Community of Inquiry Model (Garrison, Anderson, & Archer, 2000). They conducted a validation study of that tool using a sample of transcripts from two online classes and using two raters to code the instructor messages. By categorizing units of analysis, the message units, into the three categories of teaching presence: instructional design and organization, facilitating discourse, and direct instruction, the raters achieved 100% interrater reliability. Importantly, it was determined that the two instructors varied widely in their use of teaching presence.

Shea, Pickett, and Pelz (2003) compared teaching presence to student satisfaction and reported learning using an online survey of all students enrolled in online courses in the State University of New York (SUNY) system. The researchers received 6,088 responses, constituting

a 31% response rate, which the authors considered to be low. Correlations for each of the three components of teaching presence as they related to satisfaction and reported learning were: instructional design and organization related to satisfaction ($r=.64$, $p<.0001$) and to reported learning ($r=.60$, $p<.0001$); facilitating discourse by the instructor related to satisfaction ($r=.61$, $p<.0001$) and to reported learning ($r=.58$, $p<.0001$); and direct instruction by the instructor related to satisfaction ($r=.63$, $p<.0001$) and to reported learning ($r=.61$, $p<.0001$). The significant and positive relationships found in all three categories of teaching presence as they related to student satisfaction and reported learning gave Shea et al. reason to believe that teaching presence was essential to effective online learning environments. The researchers also considered students' roles in teaching presence and found a significant and positive relationship in students' perception of student-led facilitated discourse (with satisfaction, $r=.41$, $p<.0001$, and reported learning, $r=.43$, $p<.0001$) and direct instruction (with satisfaction, $r=.40$, $p<.0001$, and reported learning, $r=.43$, $p<.0001$), but it was not as high as for instructor-led discourse and instruction. Teaching presence can be generated by students as well as faculty, but that study reported that students saw an instructor's role in teaching presence to be more important than student-focused teaching presence.

Arbaugh and Hwang (2006) replicated the study done by Shea, Pickett, and Pelz (2003) on a sample of 190-MBA students in 14 graduate classes at a Midwestern university during the spring and summer of 2004 in order to explore the construct validity of teaching presence as described in the Community of Inquiry Model (Garrison, Anderson, & Archer, 2000). The researchers used an online survey, named the Teaching Presence Scale, developed by Shea et al. (2003), to measure students' perceptions of teaching presence. The internal reliability of the scale items was examined using means, standard deviations and Cronbach's alpha coefficients. The Cronbach's alpha was found to be .90. The factor analysis revealed sixteen factors loaded onto the three components of teaching presence, instructional design and organization (6 factors),

facilitating discourse (5 factors) and direct instruction (5 factors). Arbaugh and Hwang also found positive relationships between the components, with phi values of .73 between instructional design and organization and facilitating discourse, phi value of .78 between facilitating discourse and direct instruction, and phi of .69 between instructional design and organization and direct instruction. That study validated the results reported by Shea et al. (2003) by virtue of finding unique factors for each of the three components of teaching presence. Arbaugh and Hwang suggested more research to further explore the relationships between teaching presence and the other components of the Community of Inquiry Model proposed by Garrison, Anderson, and Archer (2000), social presence and cognitive presence.

Garrison and Cleveland-Innes (2005) studied 75 online graduate students from four purposively chosen courses, which varied so that each course was a different treatment based on instructor involvement, level of overall interaction, and reflective assignment requirements (low, medium, or high). The Study Process Questionnaire (Biggs, 1987) was used at the beginning and end of each course to gauge change in students' approach to learning. According to Biggs there were three approaches to learning: deep, surface, and achievement. Surface approach to learning was the least valuable and employed the least amount of quality learning. An achievement approach meant a student was motivated to learn by external reward. Deeper approaches to learning were considered the highest quality learning experiences, when students sought to acquire meaning and knowledge construction. In each of the four treatment groups (courses) an instructor used a different teaching approach, small group discussion of readings, students responded to text lectures as individuals, voluntary participation and student-moderated online discussions, and the last course was designed with high instructor engagement with emphasis on critical thinking skills. The researchers labeled three variables as low, medium or high: instructor involvement, level of interaction, and reflective assignments; and each of the four courses was categorized according to these variables.

Garrison and Cleveland-Innes (2005) found a significant difference in the change to a deep approach to learning across courses from the beginning to the end of the course (F (3, 72) =2.706, p=.050). The fourth course was designed to produce a learning environment structured and facilitated to elicit deep approaches to learning through reflective assignments and discussions led by an engaged instructor who facilitated fewer but more in-depth discussions. That course produced the greatest gain in students' perception of using a deep approach to learning. The authors did not provide supporting statistics but claimed that teaching presence (instructional design and facilitation/direction) was a contributing factor to students' attainment of deeper approaches to learning, and that there had to be active leadership in order to enhance the quantity of interactions.

A follow-up large-scale quantitative study conducted by Shea, Li, and Pickett (2006) revealed a link between teaching presence and learners' sense of community. That study involved 32 higher education institutions, ranging from community and technical colleges to post-graduate degree-granting universities in the State University of New York (SUNY) system. A random sample of students from online and classroom-based web-enhanced classes was chosen and yielded 1,067 respondents (47% return rate). Shea et al. used the Teaching Presence Scale (TPS) to measure the three components of teaching presence, instructional design and organization, facilitation of productive discourse, and direct instruction, and the Classroom Community Index developed by Rovai (2002) to measure students' sense of community through two subscales; connectedness and perceived learning. Also studied were the selected demographic variables of gender, age, employment status, distance from campus, reasons for taking an online course, modem type, registration status (full or part-time), course duration, and online or classroom-based web-enhanced.

Shea et al. (2006) used factor analysis on data collected from the Teaching Presence Scale and extracted two factors they named instructional design and organization and directed

facilitation, combining facilitating discourse and direct instruction. A reliability analysis was run on data collected from the Classroom Community Index and Cronbach's alphas for community and its two subscales, connected and learning, were found to be .93, .91, and .90, showing good internal consistency. Classroom community was found to be positively correlated to total teaching presence (r=.76, p<.001). Additionally, each of the subscales, connectedness and learning for classroom community, and instructional design and organization and directed facilitation for teaching presence, were all positively correlated at the p<.001 level. The first regression analysis was significant (F (21,930) =77.62, p<.001) and it was deemed that instructional design and organization, directed facilitation, and employment status account for 64% of the variance in classroom community. After excluding nonsignificant predictors, the researchers ran a second regression model and found the model predicted 62% of the variance in classroom community with positive relationships to instructional design and organization (B=.31, p<.01) and directed facilitation (B=.83, p<.001), and a negative relationship with full-time employment (B=-1.61, p<.05). Students who were employed full-time were not as likely to perceive high classroom community. That was the only demographic variable that surfaced in the analysis. Shea et al. believed they found a definite connection between teaching presence and classroom community, showing that the instructor's work in instructional design, organization, instruction, and facilitation are important in creating students' sense of connectedness and learning.

Online Interaction Learning Model: The online interaction learning model, developed by Benbunan-Fich, Hiltz, and Harasim (2005) was founded on constructivist learning theory. "Basically, constructivism means that as people experience something new they compare this experience to internalized knowledge constructs based on past experiences, and then modify their constructs accordingly" (p. 21). Vygotsky was a pioneer in social constructivism and his work has been revitalized in online learning theories as researchers consider learning processes that

include social contexts such as collaborative learning (Alavi & Dufner, 2005). Vygotsky defined the zone of proximal development; when a child could be guided to learn through interactions that pushed the child to just beyond his limits of knowledge and then help the child construct knowledge through interacting with a teacher, with other children, and with the content. Alavi (1994) applied collaborative learning to online learning experiences based on the theory that learning and cognitive developments were social activities.

Benbunan-Fich, Hiltz and Harasim (2005) claimed that constructivism was the best pedagogical explanation to online learning because of how well it supported the collaborative learning format. Fosnot and Perry (2005) explained constructivism as being applicable to education by positing the following as characteristic practices:

- learning is not the result of development;
- learning *is* development;
- disequilibrium facilitates learning;
- reflective abstraction is the driving force of learning;
- dialogue within a community engenders further thinking (p. 34).

In building a model of online learning, Benbunan-Fich, Hiltz, and Harasim (2005) incorporated Fosnot and Perry's (2005) ideas and created a model that was made up of inputs or moderating variables, processes, and outputs. The inputs or moderating variables were the characteristics of courses, instructors, students, and the technology. The processes included both individual and collaborative learning and incorporated interactivity and perceived social presence, sense of community, and media richness. The dependent variables related to the effectiveness or quality of the learning experiences and were measured by student learning, student satisfaction; faculty satisfaction, access, and cost effectiveness (Figure 2.2).

Figure 2.2: Dynamic model of online interaction learning theory


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                    ┌──────────────────┐
                    │    TECHNOLOGY    │
                    └──────────────────┘

  ┌──────────────┐                        ┌──────────────┐
  │   COURSE     │                        │  INSTRUCTOR  │
  └──────────────┘                        └──────────────┘

                    ┌──────────────────┐
                    │     STUDENT      │
                    └──────────────────┘
```

INDIVIDUAL LEARNING

COLLABORATIVE
LEARNING
Idea Generating
Idea Linking
Intellectual Convergence

| Access | Faculty Satisfaction | Student Learning | Student Satisfaction | Cost Effectiveness |

Changes over time
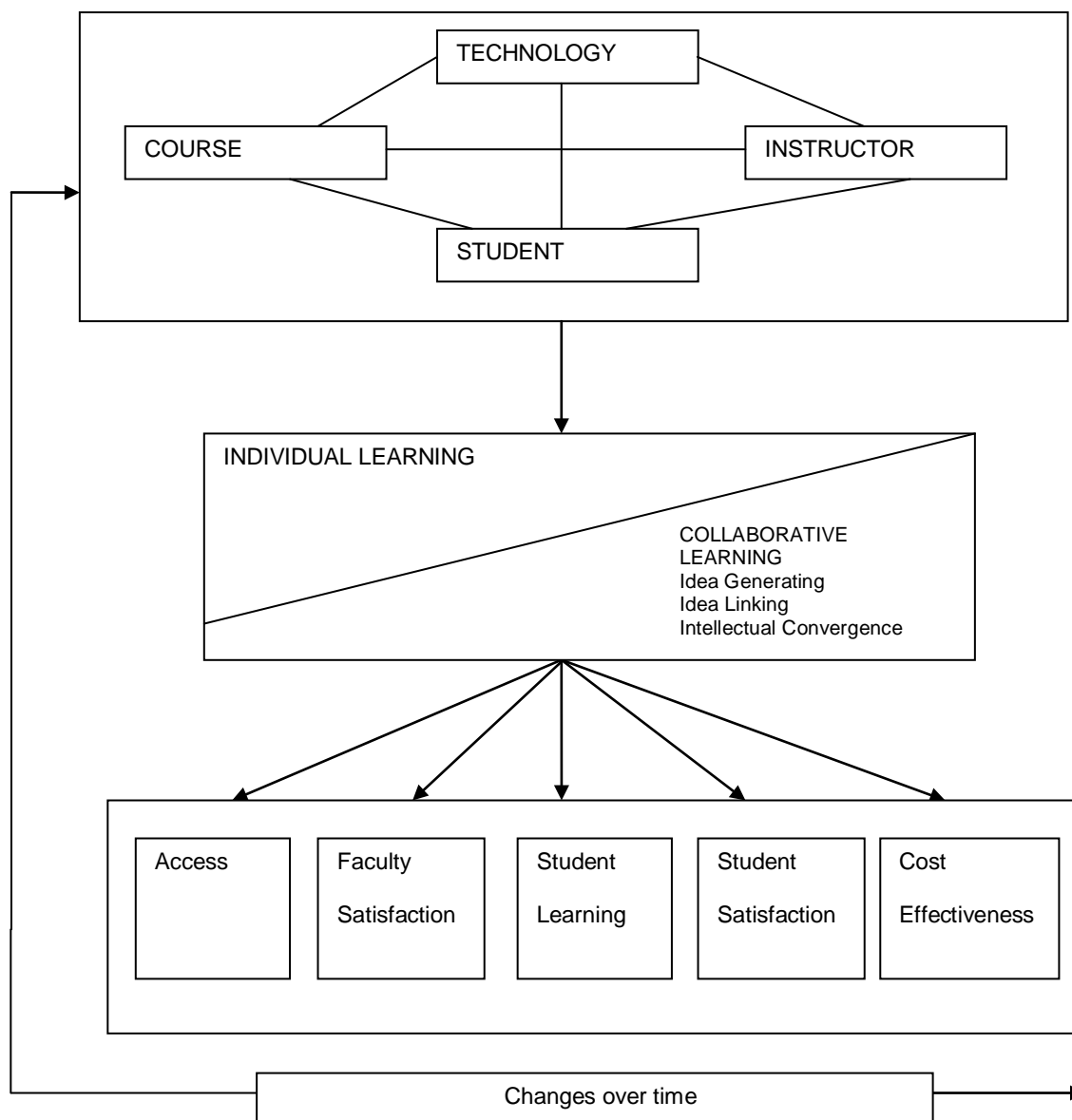
Figure 2.2. The Online Interaction Learning Model incorporates an input-process-outcome template with variables associated with online learning. (Benbunan-Fich, Hiltz, & Harasim, 2005, p. 34)

The variables in this model are interrelated and no one variable indiscriminately or overly

influences the whole scheme. The learning processes might impact all outcome variables

depending on the instructional design, pedagogies used by instructors, student characteristics, technology employed, and content being studied.

In summary, the learning processes portion of the Online Interaction Learning Model (Benbunan-Fich, Hiltz, & Harasim, 2005) and the Community of Inquiry Model (Garrison, Anderson, & Archer, 2000) addressed collaborative learning in terms of cognitive presence, social presence, and teaching presence and both topics were discussed in this section. Both models contributed to this study of the components of teaching presence that impacted sense of community and perceived learning in online intensive courses.

Studies of Student Satisfaction and Perceived Learning in Online Intensive Courses

Online intensive courses have been studied by several researchers (Powers & Mitchell, 1997; Lu & Jeng, 2006; Shea, Li, & Pickett, 2006; Arbaugh & Rau, 2007; Lebec & Luft, 2007). A qualitative study by Powers and Mitchell (1997) was one of the first to look at an online course without comparing it to traditional courses. Powers and Mitchell used a naturalistic observation method and inductive analysis to identify themes within the documented communication of one online class consisting of seven students held during one summer. Four themes emerged: peer support, student-student interactions, instructor-student interactions, and time spent on course. The authors acknowledged those themes were not unique to online learning but existed in all learning; however, the ways they were communicated in an online course were different from traditional classroom communication and thus made them relevant for study. The themes were attributed to the online environment, but the intensive environment was not considered in the analysis.

Lu and Jeng (2006), cited earlier in the cognitive presence section, compared two summer seven-week courses where the instructors took different roles in facilitating discussions and then measured the impact on knowledge construction. The researchers found no significant differences in student perceived learning or satisfaction between the two courses despite the

different facilitative approaches. Also, the intensive nature of those courses was not discussed by the researchers as having any impact on the results. Shea, Li, and Pickett (2006), cited earlier because of their work on teaching presence, included course duration as a variable and reported no significant relationships with students' perceived learning or satisfaction.

Arbaugh and Rau (2007) studied differences in students' perceived learning and satisfaction related to subject matter, course structure, and student behaviors during a two-year period that included fall, spring, and summer terms. The sample consisted of 40-online MBA classes involving 575-students. That study related students' perceived learning and satisfaction with the delivery medium. Additionally, selected variables relating to demographics, course structure, and discipline, defined as quantitative or qualitative, were included. Course structure variables included class size, media variety (number of multimedia uses), number of exams, individual projects and group projects. The survey response rate was 64.7% with surveys administered online for those courses that did not meet at the end of the course, face-to-face for those courses that did have an ending meeting, and follow-up mailed surveys to nonresponders. The researchers used items from Sherry, Fulford, and Zhang (1998) and Arbaugh (2000b) to measure student perceptions of learner-instructor interaction and learner-learner interaction. Cronbach's alpha for the learner-instructor interaction items was .91 and for the learner-learner interaction items was .85. Learner-interface interaction was measured using two items from Hillman, Willis, and Gunawardena (1994). These items had a coefficient alpha of .79. The researchers included nine items that they adapted from Alavi (1994) and Arbaugh (2000a) with coefficient alpha of .94. Satisfaction with the delivery medium was measured using items from Arbaugh (2000a) with coefficient alpha of .84. Of note was the report did not contain evidence of how the survey tools were validated nor on their reliability.

The researchers (Arbaugh & Rau, 2007) found positive significant effects for the three types of interaction on perceived learning, learner-instructor interaction (β=.59, p<.001), learner-

learner interaction (β=.12, p<.01) and learner-interface interaction (β=.09, p<.01). The results of predicting perceived learning using course structure characteristics showed only the variable media variety as having a significant effect on perceived learning (β=-.24, p<.01). All five course structure variables had significant effects on satisfaction with delivery medium: class size (β=-.01, p<.001), media variety (β=.31, p<.001), exams (β=.15, p<.001), individual projects (β=.09, p<.001), and group projects (β=.04, p<.001). Thus, Arbaugh and Rau concluded that course participant variables and course structure variables played a role in students' perceived learning. Even though course structure characteristics were a focus of that study, the fact that some of the courses occurred in an intensive format rather than semester-length was not discussed by the researchers, and certainly might have contributed to the students' perceptions of the online intensive courses when compared to the online semester courses.

Lebec and Luft (2007) conducted a mixed methods study of a three-week online biology course designed to aid teachers preparing for certification. That noncredit course had been designed for in-service teachers who were working toward certification as biology teachers needing a refresher course prior to taking the certifying exam. The sample included five in-service teachers and two pre-service teachers who had completed their bachelor degrees. The course was taught at a southwestern university. Data were collected through 31-item pre and post-tests generated from text resources to measure learning outcomes and reviewed by a content expert for reliability and validity. The students also were required to complete concept maps to demonstrate deeper learning. The researchers reported the students did not demonstrate appreciable improvement in their complex understandings based on the concept maps they completed. Notable was the students claimed to have a lack of motivation due to not enough time to devote to the course and the absence of grades for the course. The researchers did not include course length in the discussion of possible effects on motivation or learning, nor did they pursue the issues related to the lack of student motivation.

Summary

In summary, while there have been several studies of perceived learning in online intensive courses, there has not been adequate attention given to the possible relationships between the intensive nature of the courses and its impact on students' perceived learning in online courses. But the development and evolution of intensive courses and online distance education courses have similarities, as instructional faculty struggle with concerns over whether quality learning can and does occur when presenting students with intensive courses and various configurations of online instruction.

Most of the studies described in this chapter (Table 2.1) reported that students believed they learned at least as much in intensive courses as they would have during semester-length courses, with the exception of problem-solving in accounting classes (Rayburn & Rayburn, 1999). Studies of student satisfaction of intensive courses also claimed that students were at least as satisfied with intensive courses as they were with semester-length courses. Several researchers (Centra & Sobol, 1974; Allen, Miller, Fisher, & Moriarty, 1982; Scott, 1992; Reynolds, 1993; Messina et al., 1996; Grant, 2001; Collins, 2005; Kretovics, Crowe, & Hyun, 2005) studied interactions in intensive courses and found that interactions between students, between students and instructors, and between students and content were important factors in perceived learning and satisfaction.

Research into online learning showed findings on perceived learning and satisfaction to be similar to that for intensive courses. The studies summarized in this chapter of online courses collectively found that students perceived their online learning experiences to be positive. Beyond simple comparisons to face-to-face classrooms, the studies described in chapter two explored different variables such as interaction between students, between students and instructors, and between students and content and the interface, sense of community, instructional design and organization, facilitated discourse, and direct instruction, the components of teaching

presence from the Community of Inquiry Model (Garrison, Anderson, & Archer, 2000). In online courses, the studies that looked specifically at teaching presence as it related to perceived learning and student satisfaction (Anderson, Rourke, Garrison, & Archer, 2001; Shea, Pickett, & Pelz, 2003; Arbaugh & Hwang, 2006; Garrison & Cleveland-Innes, 2005; Shea, Li, & Pickett, 2006) found that teaching presence has been shown to have an effect on students' perceived learning.

Student characteristics as they relate to perceived learning and satisfaction have been studied in both intensive and online courses. In both formats, student characteristics have been identified as having mixed results but they are certainly not contributing greatly to the variance related to students' perceived learning. This research has been valuable in that it gives researchers direction to study other variables such as interaction and course structure.

This chapter addressed the theories that have shaped research on both course formats. In online distance education, the Community of Inquiry Model (Garrison et al., 2000; Swan, 2003) and the Online Interaction Learning Model (Benbunan-Fich, Hiltz, & Harrasim, 2005) have shown promise in providing online distance education researchers models to study. Intensive courses presumably could provide an entry point for studying elements of these models. The instructional design and course structure characteristics of online intensive courses make these types of learning environments unique laboratories for studying learning effectiveness that bear further study as these models are tested.

The importance of teaching presence and its components, design and organization, facilitation of discourse, and direct instruction, was evident in its impact on social presence and cognitive presence. Scott (1994) developed a list of teaching attributes in intensive courses that were related to teaching immediacy behaviors and teaching presence as it was defined by Garrison (2003). Scott (1994) also found a relationship between students' perception of connectedness and learning in intensive courses to those teaching attributes, similar to the findings reported by Shea et al. (2006) in online courses. In general it can be said that there are

gaps in understanding teaching presence and its relationship to student satisfaction and perceived learning especially in online intensive courses. Further research into teaching presence and courses that are both intensive and online could benefit instructional personnel in their efforts to further enhance learning experiences for students.

CHAPTER 3: METHODS

This chapter describes the research design and methodology. It starts by re-iterating the purpose and research questions, goes on to address a description of mixed methods research design and justification for its use in this study. Next is an explanation of the data collection process; sampling procedures, plans for data analyses, and then follows a discussion of legitimating and ethical considerations.

Purpose Statement

The purpose of this mixed methods triangulation design study was to understand how the teaching presence established by instructors at a southern comprehensive university in intensive online distance education courses impacted students' perceived learning and sense of community. A triangulation multilevel design was used; merging survey data of students' and faculty perceptions of teaching presence, perceived learning and sense of community, qualitative data from open-ended survey questions, and faculty interviews that reflected teaching presence through course structure and organization. The rationale for collecting both quantitative and qualitative data was to merge the results of two different perspectives in order to describe teaching presence strategies that could not have been found using only one method.

Research Questions

Central Research Question

How does teaching presence impact students' perception of learning and sense of community in intensive online courses?

Quantitative Phase

The quantitative phase was driven by the following questions:

1. Which teaching presence components most impacted students' perceived learning?

2. Which teaching presence components most impacted students' perceived sense of community?

3. Was there a correlation between perceived learning and sense of community?

4. Was high perceived teaching presence predictive of high student perception of learning and

    sense of community?

5. Did the selected independent demographic variables of student age, gender, employment,

    distance from campus, course length, and course type influence students' perception of

    teaching presence, learning, and sense of community?

Qualitative Phase

The qualitative phase was driven by the following questions:

1. What teaching presence components did instructors believe were important in intensive online

    courses?

2. Which teaching presence components did instructors perceive as correlating best with student

    learning and sense of community?

3. Did course length influence the instructors' choice of teaching presence components to include

    in intensive online courses?

Mixed Methods Research

      Creswell and Plano Clark (2007) defined mixed methods research "as a research design with philosophical assumptions as well as methods of inquiry. As a methodology it involved philosophical assumptions that guided the direction of the collection and analysis of data and the mixture of qualitative and quantitative approaches in the research process. As a method it focused on collecting, analyzing, and mixing both quantitative and qualitative data in a single study or series of studies. Its central premise was that the combination of quantitative and qualitative approaches provided researchers with a better understanding of their findings than might the use of one or the other approaches" (p. 5).

      The major characteristics of a mixed methods research approach are that a study included both quantitative and qualitative data. Inherent in such an approach would be the timing for data collection (were the strands conducted concurrently or sequentially), weighting (was the

quantitative or qualitative data given priority or were both accorded equal priority as in a triangulation design), and mixing (how the quantitative and qualitative data were integrated to form inferences). Four basic design typologies were explained by Creswell and Plano Clark (2007); triangulation, embedded, explanatory, and exploratory.

Triangulation design is the most well-known of the mixed methods research designs, used when researchers want to compare and contrast quantitative results with qualitative findings, or when researchers wish to support or expand upon quantitative results with qualitative findings. Triangulation designs occur in a single phase with both methods weighted equally. The strengths of triangulation design lie in the intuitiveness which makes it easier for novice researchers to comprehend, efficiency with concurrent data collections, and uses traditional methods of data collection and analysis for both methods independently which works when a research team is conducting the study. Challenges include increased effort and expertise compared to quantitative or qualitative studies, and the uncertainty involved when the quantitative results and qualitative findings are in conflict.

The embedded design utilizes one methodology primarily with a secondary data set collected according to the other methodology embedded within the first. The embedded data set is used to support the larger data set which is weighted more heavily than the embedded data set. This type of design may be thought of as more traditional if the qualitative data set is embedded within a quantitative methodology such as in experimental or correlational analysis. The challenge lies in designing the appropriate design to match the study purpose and to choose research questions that require both data sets. Additionally, this design does not lend itself to easily merging the two different data sets.

The explanatory design is a two-phased approach, most often using qualitative findings to explain or support quantitative results such as outliers and unexpected results. This design is often sequential where the quantitative phase is completed first with the qualitative phase second.

Typically more weight is placed on the quantitative phase. The strength of this design lies in the perception as most straightforward of the different designs and the flexibility to conduct as a single study or multiple studies. Challenges of this design include the length of time necessary to complete a single study, difficulties with decisions about sampling because of the time between the two phases of the study, and dependency of sampling for second phase on the work in the first quantitative phase.

The fourth and final design described by Creswell and Plano Clark (2007) was the exploratory design. This design is also a two-phase approach, however the first phase and the one given the greatest weight is the qualitative phase. This design is most often used to develop an instrument, explore a phenomenon or emergent theory. While this design is time consuming due to the sequential nature of the phases, it is also straightforward, allows for both methodologies, and can be applied to multiple investigations. It is difficult to apply to internal review boards since the qualitative phase will dictate the procedures for the second quantitative phase, and like the explanatory design, decisions on sampling, whether the same individuals will be used in both phases or different samples will be identified may also complicate the procedures.

Tashakkori and Teddlie (2003) outlined three reasons for conducting mixed methods research: 1) it allowed for explaining findings more comprehensively and thus provided greater clarification than either quantitative or qualitative methods alone; 2) by virtue of mixing data or integrating analyses, or both, the design allowed for making stronger inferences than either method alone, and offset potential limitations of both approaches in isolation; and 3) mixed methods research provided for collaboration of different views.

Philosophical Assumptions

A pragmatic worldview best describes the philosophical assumptions that drove this study. Pragmatism is a single worldview or paradigm that rejects the incompatibility thesis and allows for both quantitative and qualitative methods to be conducted and integrated into a single

study. Pragmatism allows for pluralistic approaches to collecting and analyzing data, using outcomes based methods and techniques rather than a single philosophy. That research occurs within context and a reflective lens may be used to better understand the social, historical, and political in a transformative-emancipatory perspective (Creswell, 2003). As Tashakkori and Teddlie (1998) stated, the dictatorship of the research problem is the most important driver in choosing a research design rather than the researcher's worldview or purpose.

When comparing positivism, postpositivism, pragmatism, and constructivism, as they are used in social and behavioral science research, Tashakkori and Teddlie (1998) described six points of difference: methods, logic, epistemology, axiology, ontology, and causal linkages. Methods referred to whether the paradigm allowed quantitative, primarily quantitative, quantitative plus qualitative, or qualitative methods. Logic referred to the use of deductive logic which is confirming a hypothesis with a particular result, primarily deductive logic, deductive and inductive logic used together, and finally inductive logic which can be explained as theory development based on observations or data collected. Epistemology referred to world view, whether the researcher is objective and separate from the truth or subjective where the truth is shaped by the researcher and those being researched. Axiology referred to the role of values and whether research is free of the researcher's values or those values are embedded within the research and play a part in the interpretation of results. Ontology referred to the researcher's view of reality, whether it is external to the researcher and there are basic truths or is truth a part of the researcher and those researched. Finally, causal linkages referred to whether the researcher believed that true causes can be attributed to effects or though there may be causes related to effects, researchers will never know enough about the study to be able to know for certain that those causes are the only ones that preceded the effects. The paradigm pragmatism, as it was described by Tashakkori and Teddlie (1998), fell somewhere between positivism and constructivism, using whatever methods would serve to answer the research questions best.

This mixed methods study used both quantitative and qualitative methods, adhering to the pragmatic worldview; by embracing the ontology of a single reality through quantitative survey data collected from students and faculty in intensive online courses, and also multiple perspectives culled from faculty interviews and open-ended survey questions. The epistemology, the relationship between a researcher and that being researched, for this study was defined as practical and used a method of inquiry that worked to answer the research questions posed.

The axiology of this study, the role of values, included both unbiased perspectives in the quantitative phase, as survey data was collected, and biased perspectives during the qualitative phase as the researcher interacted with the instructors during semi-structured interviews. In a pragmatic worldview, causal linkages might be identified depending on the priority of methods and integration of data analysis. Deductive logic was employed as correlations between perceived teaching presence and perceived learning and sense of community were studied to identify particular teaching presence strategies correlated with high perceived learning and sense of community in intensive online courses, while inductive logic was used when analyzing and integrating data from the interviews and surveys to determine the teaching presence strategies most highly valued by instructors and students.

Theoretical Framework

Two models of online learning have guided this research. The first was the Community of Inquiry Model (Garrison, Anderson, & Archer, 2000), and building on it was the Online Interaction Learning Model (Benbunan-Fich, Hiltz, & Harasim, 2005). Garrison, Anderson, & Archer (2000) proposed a Community of Inquiry Model of online learning, a conceptual framework based on the importance of the community of learners being successful that depended on the interactions between instructors and students, as evidenced by three factors: cognitive, social, and teaching presence.

In the Community of Inquiry Model, teaching presence was defined as the instructional design and organization, facilitation of discourse, and direct instruction. Shea, Li, and Pickett (2006) found a "clear connection between perceived teaching presence and students' sense of learning community" (p. 184) with 62% of the variance for classroom community explained by perceived teaching presence. Those authors followed the participation metaphor for learning rather than the acquisition metaphor, stating that successful learning was a process that involved becoming a member of a community, and being able to communicate and act successfully within that community.

Swan (2003) related the Community of Inquiry Model to interactivity, stating, "No matter what learning theories we hold – behaviorist, constructivist, cognitivist, or social – reciprocal events and mutual response in some form must be integral to our notions of how we learn" (p. 16). Swan adapted the model to include modes of interactivity; pairing social presence with interaction with peers, cognitive presence with interaction with content, and teaching presence with interaction with instructors.

Teaching presence as proposed by Anderson, Rourke, Garrison, and Archer (2001) had three categories: design and organization, facilitating discourse, and direct instruction. In online courses, teaching presence was more vital to facilitating social and cognitive processes, for without it there was no environment to help students develop. In online courses the use of teaching presence to create well-designed, organized courses where discourse was clearly understood and encouraged as well as having a feeling of the instructor being close through direct instruction has been shown to directly correlate with students' perceived learning and sense of community (Arbaugh, 2001, Shea, Li, & Pickett, 2006, Lu & Jeng, 2006, and Arbaugh & Rau, 2007). Teacher immediacy behaviors, also called teaching presence strategies, have been reported (Scott, 1994, Scott, 1995, Collins, 2005) to be valued by students in intensive courses.

The Online Interaction Learning Model, developed by Benbunan-Fich, Hiltz, and Harasim (2005) was founded on constructivist learning theory. This input-process-output model was based on moderating variables, the inputs, which included all of the characteristics of the courses, the instructors, students, and the technology. Processes were individual and collaborative learning included interactions, perceived social presence, sense of community, and media richness. Outputs, the dependent variables, were related to learning effectiveness measured by student learning, student and faculty satisfaction, access and cost effectiveness. That comprehensive model was broader and encompassed the Community of Inquiry Model.

Mixed Methods Research Design

The mixed methods research design used in this study is a concurrent triangulation approach. One of six mixed methods research designs outlined by Creswell and Plano Clark (2007), concurrent triangulation is characterized by running quantitative and qualitative phases concurrently, and mixing the results to create inferences. This multilevel model of the concurrent triangulation design (Creswell & Plano Clark, 2007) used different methods to address different levels in the systematic approach with the results gathered from each level merged to form an overarching interpretation. The visual model, shown in Appendix A, exemplifies the concurrent triangulation approach as used in this study (QUAL + QUAN).

The quantitative strands and the qualitative strands were collected concurrently with each receiving equal priority. The quantitative data were collected from students participating in intensive online courses and from the instructors who taught those courses. The vehicles for data collection were online surveys using Likert scales for the quantitative information. Qualitative data was gathered from responses to open-ended questions contained in the online surveys, semi-structured faculty interviews, and analysis of instructor-created course documents such as syllabi and assignment instructions. Integration of those levels was carried out through five procedures:

in the research questions, in the unit of analysis, in the samples chosen, in the instruments and data collection methods used, and in the analytic strategies employed (Yin, 2006).

The research questions focused on teaching presence used in the online courses taught during a three-week winter term, perceived sense of community among the participants in those courses, and students' perceived learning. The questions focused on both the process (qualitative) and the outcomes (quantitative), and by virtue of having addressed students and faculty perspectives it was recognized that some amount of unavoidable and unaccountable variability might have been introduced and possibly not considered during the subsequent analyses. By using one unit of organization – online courses offered during a specific winter term – the samples were connected in a common process. The students' survey data were connected to the instructors who taught them so a comparison was deemed to be justified of perceptions from different perspectives about the same courses.

Instrumentation

Two scales were used to construct the survey instrument. The Teaching Presence Scale (TPS) developed by Shea, Pickett, and Pelz (2003) was the quantitative measure for the three components of teaching presence. In their 2003 study, Shea et al. validated the scale and checked for reliability. Sense of community was measured using the Classroom and School Community Inventory (CSCI) developed by Rovai, Wighting, and Liu (2005). Perceived learning was measured using a single question based on the Student Perceived Learning Instrument used by McCroskey, Sallinen, Fayer, Richmond, and Barraclough (1996). Demographic questions were added to capture student gender, age, course information, distance from campus, and employment.

Sampling Procedures

There were 1,213 students registered for intensive online courses in the Winter Term at that university. Using a southern comprehensive university as the sample site was helpful because

the researcher, as director of Winter Term and Summer Sessions, had a favorable relationship with the faculty members who taught during that period of time. All students enrolled in an online course during that winter term and all of the instructors teaching an online course during that same period were asked to complete the online anonymous survey. Again the tools employed were based on the Teaching Presence Scale (TPS) and Rovai's Classroom and School Community Inventory (CSCI) (Shea, Li, & Pickett, 2006) and modified to fit the audience, student or instructor. Modifications were contained within the instruments as presented by the respective researchers.

As part of the qualitative phase, a convenience sample of 12 instructors participated in semi-structured interviews. Additionally, those persons shared instructor-created course materials that clarified respective course designs and organization (syllabi and assignment instructions). Selection of those interviewees was made on the basis of respondents to the survey having indicated, on their returned materials, that they would be willing to engage in such an activity. Final selection of interviewees came from those who were available at times when it was feasible for the interviews to be conducted.

Institutional Review Boards at University of Nebraska-Lincoln and the southern comprehensive university gave approval for this study (Appendix F). Students and faculty members taking the online surveys consented to participate by returning the online surveys. For the individual interviews, the instructors were asked to sign an informed consent letter allowing the researcher to record the interviews and to use the data without participant identification in future publications.

Pilot Study

Three instruments were used to collect data. The student and faculty surveys were adapted from Rovai's Classroom and School Community Inventory (CSCI) (Rovai, Wighting, & Liu, 2005) and Shea, Li, and Pickett's (2006) Teaching Presence Scale (TPS). Those surveys

claimed validation and reliability in previously reported studies of students. The faculty survey used the same questions as the CSCI and TPS, but was adapted to fit a faculty audience. The individual interviews with selected members of the instructional faculty augmented the data pool and allowed for greater clarification of the qualitative data.

Pilot studies of the faculty survey and faculty interview guide were conducted as part of the survey research design. Pilot studies are used to establish content validity and to improve the instrument before use (Creswell, 2003). Dillman (2000) stated that pretesting was an important step in survey design because it gave a researcher information on how to improve participant understanding of questions, whether questions were necessary or redundant, clarifying procedural issues, and errors, and also to obtain an estimate on time required for completing the task.

Pilot study of interview guide

The process for determining the composition and manner for conducting the interviews followed a Delphi approach. The researcher shared the interview guide with two faculty members at the institution who were experienced with survey research design. Based on the review modifications and deletions were made and then two different faculty members were asked, via email, to participate in the interview pilot study process. Those persons were chosen because they were experienced with intensive online teaching but were not teaching during that upcoming Winter Term, and their participation in the pilot study did not dilute the sample. A meeting time and location was agreed upon and the interviews were conducted individually. Consent forms were signed and the interviews were audio recorded.

Each interview took approximately thirty-minutes. One participant, when asked what improvements could be made to the interview process, suggested that a visual diagram of the Community of Inquiry Model (Garrison, Anderson, & Archer, 2000) would be a helpful reference because it seemed to facilitate formulating responses. The other participant believed the questions were reasonable and allowed for depth of explanation. Based on those suggestions, a copy of

Figure 2.1 was made available to interview participants during the interview for referral. The final version of the interview guide is provided in Appendix E.

Pilot Study of Faculty Survey

Faculty members who taught intensive online courses but were not teaching during the upcoming Winter Term were asked, via email, to participate in a pilot study of the presumed final version of the faculty survey. Ten participants completed the faculty survey instrument and provided feedback; time it took to complete, whether there were questions they did not understand or could be improved, and whether the questions would be able to bring out varied answers. Completion was reported to take between ten and twenty minutes, with an average of 16.25 minutes. Based on that information, emails sent to prospective instructors contained the statement that the survey would take "15 to 20 minutes to complete".

The majority of feedback provided by those 10 pilot interviewees focused on the sense of community section. Several participants were not comfortable making assumptions based on student perceptions. Others, however, appeared secure making choices and thus responding to the survey questions. One person volunteered course evaluations as a means to corroborate the choices made to the survey. Two participants found the change between positive and negative responses confusing. Three of the participants claimed there did not appear to be sufficient variation in the Teaching Presence Scale (Shea, Pickett, & Pelz, 2003) items to be meaningful. The other seven participants believed the questions were appropriate.

A review of the medians of the Teaching Presence Scale (reference) items revealed minimal variance in the responses given by the pilot sample (Table 3.1).

Table 3.1: TPS Items on Faculty Survey Pilot Study

TPS Items on Faculty Survey Pilot Study	Median
1. Overall, I clearly communicated important course goals to the students (for course learning objectives).	5
2. Overall, I clearly communicated important course topics to the students (for example, provided a clear and accurate course overview).	5
3. Overall, I provided clear instructions on how to participate in course learning activities (e.g. provided clear instructions on how to complete course assignments successfully).	5
4. Overall, I clearly communicated important due dates/time frames for learning activities that helped students keep pace with this course (for example, provided a clear and accurate course schedule, due dates, etc.).	5
5. Overall, I helped students take advantage of the online environment to assist their learning (for example, provided clear information on how to participate in online discussion forums).	3.5
6. Overall, I helped students to understand and practice the kinds of behaviors acceptable in online learning environments (for example, provided documentation on "netiquette" i.e. polite forms of online interaction).	4
7. Overall, I was helpful in identifying areas of agreement and disagreement on course topics that assisted students to learn.	4
8. Overall, I was helpful in guiding the class towards understanding course topics in a way that assisted the students to learn.	4
9. Overall, I acknowledged student participation in the course (for example, replied in a positive, encouraging manner to student submission).	4
10. Overall, I encouraged students to explore new concepts in this course (for example, encouraged "thinking out loud" or the exploration of new ideas).	4
11. Overall, I helped to keep students engaged and participating in productive dialog.	4
12. Overall, I helped keep the participants on task in a way that assisted them to learn.	4
13. Overall, I presented content or questions that helped students learn.	5
14. Overall, I helped to focus discussion on relevant issues in a way that assisted students to learn.	5

Table 3.1 (Continued)

TPS Items on Faculty Survey Pilot Study	Median
15. Overall, I provided explanatory feedback that assisted students to learn (for example, responded helpfully to discussion comments or course assignments).	5
16. Overall, I helped students to revise their thinking (for example, correct misunderstandings) in a way that helped them to learn.	4
17. Overall, I provided useful information from a variety of sources that assisted students to learn (for example, references to articles, textbooks, personal experiences or links to relevant external websites).	4

A review of the Classroom Sense of Community Inquiry (Rovai, Wighting, & Liu, 2005) items revealed greater variance in responses provided by those interviewees (Table 3.2).

Table 3.2: CSCI Items in Faculty Survey Pilot Study

CSCI items in Faculty Survey Pilot Study	Median
The students in this course cared about each other.	3.5
The students received timely feedback in this course.	4.5
The students seemed to be connected in this course.	4.5
The students believed that that this course resulted in only modest learning.	2
The students did not trust each other in this course.	1.5
The students were given ample opportunities to learn in this course.	5
The students believed that they could rely on others in this course.	3
The students believed that their educational needs were not being met in this course.	2
The students did not have confidence that others in this course would support them.	2
The students believed that this course did not promote a desire to learn.	2

Feedback from the participants suggested making several changes, but the researcher was concerned about aligning questions with those in the student survey, which could not be altered, and the decision was made not to change them. Typographical and grammatical errors reported by the participants were corrected and a copy of the final version of the faculty survey is in Appendix D.

Data Collection

This concurrent triangulation study included quantitative and qualitative phases (see Visual Diagram, Appendix A). Both data collections were concurrent with equal priority given to both methods. Intramethod mixing, often called data triangulation when data instruments included quantitative and qualitative methods, was used in the surveys; using closed-ended and open-ended questions. Intermethod mixing, or method triangulation, where mixing occurred in the inferences drawn from the analysis was used to draw inferences from the separate data sets (Johnson & Turner, 2003).

Quantitative Phase

Data collection in the quantitative phase were gathered through two online surveys, one to faculty teaching intensive online courses and one to the students taking those courses. The surveys were anonymous; however, the student surveys included a place for students to enter their email address to be entered into a drawing for 10 $25 on-campus coupons by the researcher. The online surveys were done during the last week of the term. These data were collected using an online survey software tool (Easy Survey Package) and created a data file that was imported into SPSS.

Qualitative Phase

Data from the qualitative phase were collected through open-ended questions from the online surveys and semi-structured interviews with 12 instructors selected from the group teaching during the selected term. It was a convenience sampling using instructors who volunteered, and it was realized that such participants might be different from non-volunteers. The questions in the interview protocol were adapted from those in the surveys and sought to collect information about an instructor's perception of student learning and sense of community as it was impacted by their respective teaching presence.

Data from the qualitative questions on the surveys, audio recordings, researcher's field notes of the interviews, and instructor-created course documents were transcribed and coded with the qualitative data analysis software, Atlas.ti.

Timeframe for Data Collection

As a function of this triangulation study, the timeframe was such that both phases were conducted concurrently. A table outlining the timeframe for this study appears in Appendix B. During the second week of the three-week term an email was sent to instructors asking them to encourage their students to participate in the survey and also to participate themselves, and to note on the survey if they were willing to be interviewed. During the third and last week of the term the online surveys went out to all students in the intensive online courses and to the instructors of those courses, with two follow-up email reminders spaced two-days and three-days apart. The 12 instructors participating had one-to-one and face-to-face interviews during the next three-weeks.

Data Analysis

The surveys from students and instructors used the same dependent variables, perceived learning and perceived sense of community, and associated independent variables, perceptions of teaching presence in the course. The use of the same variables allowed for integration on the merged data sets between the two levels, students and faculty. Demographic variables related to the dependent variables added credibility to the study replicating the work of previous studies by Shea, Li, and Pickett (2006) that used these scales. The interviews with selected faculty were coded and organized into themes to determine if they conveyed similar information to what the survey analyses disclosed.

Initial Preparation of Data for Analysis

All email addresses entered into the student surveys were stripped from the data after the prize selection process. The quantitative data were edited for completeness, consistency, and

duplication, and then coded and organized into comma delimited files and analyzed using SPSS

data analysis software. Responses to open-ended questions were compiled and students'

responses were grouped by course type categorized as: sciences, business, health and social

sciences, arts and letters, or education. The interviews, field notes, artifacts, and open-ended

survey questions were transcribed and initially scanned by the researcher, writing memos,

creating codes, and interpreting codes into themes. The researcher erased any identifying

information from the tapes before transcription. The researcher kept a key to the identification of

each interviewee locked in the researcher's office. An auditor checked over the qualitative work.

Exploration of Data

Quantitative analyses focused on the independent variables of teaching presence and

satisfaction with course length. The dependent variables were analyzed according to perceived

learning and sense of community, and then the relationships between demographic variables and

teaching presence, sense of community, perceived learning, and satisfaction with course length.

Statistical power and effect size were calculated to understand sample size and its relationship to

power (Newton & Rudestam, 1999). The statistical software SPSS was used to conduct the

analyses.

Qualitative analysis was conducted on the data gathered from open-ended survey

questions, interview transcriptions, artifacts from instructors, and researcher field notes. The

researcher first went through the data by hand, making field notes and initial codes. The next step

involved use of the qualitative data analysis software package Atlas.ti to find recurring themes

(Creswell, 2003, Creswell & Plano Clark, 2007). Subsequently the hand written notations were

corroborated with the Atlas.ti outputs.

Mixing

Mixing of the data of both phases was done through matrix generation and discussion using quantitative variables and qualitative themes with text data. The visual diagram (Appendix A) is a model of the mixing of the two concurrent phases (Creswell & Plano Clark, 2007).

Erzberger and Kelle (2003) used a triangulation metaphor to relate the use of multiple methods for mutual validation or as a means to articulate the integration of different perspectives (termed a complementarity model). The complementarity model was a way of drawing together supplementary findings, and in this study it was for tying up the different levels under a common theoretical framework. This study used Erzberger and Kelle's (2003) complementarity model to integrate, at the discussion stage, the data analyses of the different levels used in this study. "Thus, qualitative and quantitative methods help to answer different questions; the results of statistical analyses show what kinds of actions social actors typically perform (e.g., attending certain schools, achieving certain school exams), while the analysis of qualitative data helps to answer *why* questions" (p. 473).

Intramethod mixing was used in the data collected through surveys, including both close-ended and open-ended questions. Intermethod mixing was used to merge the survey data and the interview data (Johnson & Turner, 2003). Coded themes were drawn from the factor analysis of the quantitative data and merged with themes generated from the qualitative data using matrix generation to draw inferences based on the total set of data.

Figure 3.1
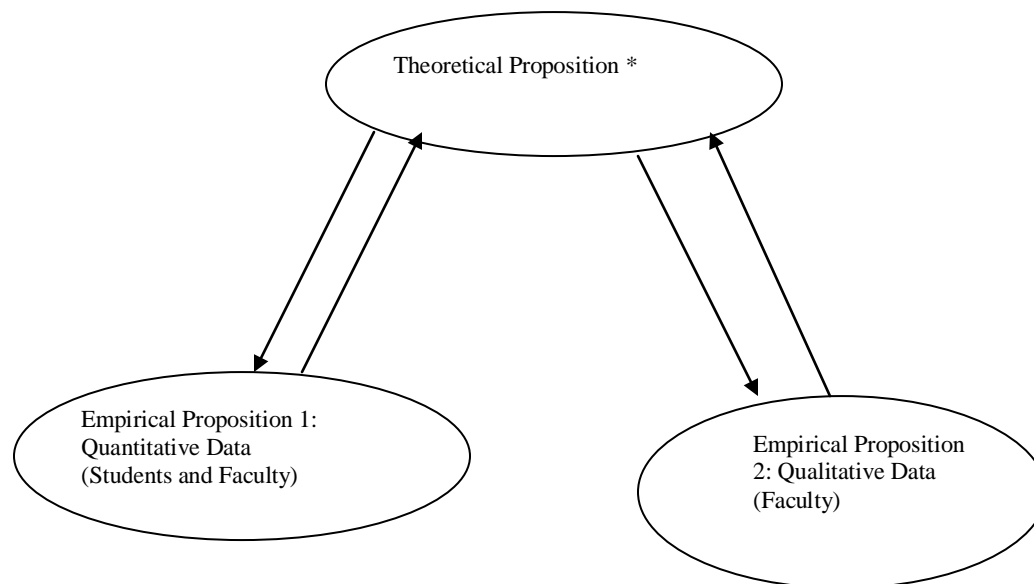
Erzberger and Kelle's (2003) Complimentarity Model for Validation of Mixed Methods Research

*Theoretical Proposition: The three components of teaching presence, facilitated discourse, direct

instruction, and course design and organization, impact student perceived learning and sense of

community (Shea, Li, & Pickett, 2006).

Legitimation

Quantitative Phase

Reliability of the quantitative phase included comparing the internal consistency of the

survey findings to previous studies that utilized the TPS (Shea, Li, & Pickett, 2006) and CSCI

(Rovai, Wighting, & Liu, 2005) survey items through Cronbach's alpha. Rovai, Wighting and

Liu (2005) established construct validity of the sense of community scales for classroom and

school-wide community with subscales of social and learning communities. Reliability estimates

for the classroom scale and the school showed Cronbach's alphas of .84 and .85. Cronbach's

alphas for social community and learning community subscales were .90 and .87 respectively.

The inventory also showed stability in pre- post-test correlation with a Pearson *r* of .91.

For the student perceived learning scale on the Classroom and School Community Inventory (Rovai, Wighting, & Liu, 2005) the following item was included; "On a scale of 0 to 9, how much did you learn in this course, with 0 meaning you learned nothing and 9 meaning you learned more than any other course you've had?" adapted from the student perceived learning instrument used by McCroskey, Sallinen, Fayer, Richmond, and Barraclough (1996). Those authors reported a test retest correlational reliability of .85 for 162 adult learners. But it was recognized that whenever a tool has been altered there was the possibility for the credibility and value to have been compromised.

Shea, Li, and Pickett (2006) also used the classroom community instrument and through reliability analysis reported Cronbach's alphas for the learning community scale and its subscales (.93), for connectedness (.91) and learning (.90). Shea et al. (2006) also reported reliability coefficients for the teaching presence scale and its components, instructional design and organization, and directed facilitation had Cronbach's alphas of .98, .97, and .93 respectively.

Validity, according to Creswell and Plano Clark (2007), "means that the researcher can draw meaningful inferences from the results to a population" (p. 133). Content validity of the online surveys was shown through using validated survey items, pilot testing the faculty survey and faculty interview guide, discussing the results with an outside auditor, and comparing the results with the other data collected in this study. An advantage of using a mixed methods approach was triangulating data from both phases to verify or question the construct validity of the surveys.

Qualitative phase

Onwuegbuzie and Johnson (2006) described validity in mixed methods research as the combination of quantitative validity and qualitative credibility, trustworthiness, and dependability into one term, legitimation, for mixed methods. Onwuegbuzie and Johnson (2006) described nine types of legitimation of mixed methods, of which this study utilized: sample integration

legitimation, inside-outside legitimation, weakness minimization, paradigmatic mixing, and multiple validities.

Sample integration legitimation was the extent to which the sampling designs of both phases yielded quality meta-inferences. Making the sample size for the quantitative phase as large as possible by soliciting involvement from all students in the term maximized the sample (N=397). The sample design for the qualitative phase was consistent with qualitative methods; using a purposeful sample. Because the quantitative and qualitative samples were amenable to those methods, and to the matrix generation used in the integrated analysis, it was contended that it legitimized the study.

Inside-outside legitimation referred to the researcher's responsibility to represent both the insider's viewpoint and the observer's viewpoint. Through in-depth open-ended interviews with instructors and close-ended surveys with both groups, both viewpoints were generated for integration and analysis.

Weakness minimization was addressed by virtue of using a large sample for the quantitative phase (students = 397; instructors = 32), which offset the apparent limitation of the smaller sample in the qualitative phase. Importantly, those open-ended faculty interviews provided rich text data that the surveys could not yield.

Paradigmatic mixing was the extent to which the researcher's beliefs were combined or blended so the results became usable and meaningful. In this case, using a pragmatic worldview allowed the researcher to believe that the survey data gave one view of an answer and the smaller but richer data secured through the open-ended interviews provided a different view of the issue. In combination the two data sets enabled the researcher to approach the analyses with an unusually robust set of data.

Multiple validities legitimation was achieved through using quantitative and qualitative verification procedures separately in addition to legitimation. Since several types of validity

checking were used, the study was stronger than using only one research method with only one type of verification.

Verification procedures used in the qualitative phase included triangulation of data from multiple sources (interviews, field notes, instructor-created course documents, open-ended responses in online surveys); thick, rich descriptions were used in coding data and aided the researcher in identifying themes; and member-checking through discussing findings with interviewed participants.

Ethical Considerations

Institutional Research Board (IRB) approval was granted by University of Nebraska – Lincoln, the home institution of the researcher, as well as Western Kentucky University where the study took place. The online surveys were anonymous through an online software package. While email addresses were collected for a drawing to increase student interest in participation, those email addresses were separated from the data at the initial point of data collection, but only after email addresses had been used to select persons who won the prizes. Voluntary consent was sought from faculty who participated in the semi-structured interviews and all names and other identifiers were purged from transcripts and other documented data that were included with the report. Data were stored on one computer and paper copies were housed in the researcher's office and kept under lock in a location that was typically secured from unwarranted observation.

CHAPTER 4: RESULTS

The purpose of this mixed methods triangulation design study was to understand how teaching presence as established by instructors at a southern comprehensive university in intensive online distance education courses was related to students' perceived learning and sense of community. A triangulation multilevel design was used; merging quantitative data related to students' and faculty members perceptions of teaching presence, perceived learning, and sense of community with qualitative data. The latter information came from responses to open-ended survey questions, interviews with selected members of the instructional faculty, and instructor-created course documents that ostensibly reflected teaching presence through course structure and organization.

The quantitative data was collected using the Teaching Presence Scale (TPS) (Shea, Pickett, & Pelz, 2003) and the Classroom and School Community Inventory (CSCI) (Rovai, Wighting, & Liu, 2005). An online survey was administered to students registered in and to instructors teaching online intensive 2009 Winter Term courses. The rationale for collecting both quantitative and qualitative data was to merge the results of two perspectives so as to more fully describe teaching presence strategies that likely could not have been uncovered using only one method.

This chapter presents the demographics of the students and instructors, quantitative analyses of the survey data from both samples (students and instructors), qualitative analyses of the open-ended responses from the student and faculty member surveys, faculty interviews, and leads to a mixed methods analysis of all data. Quantitative data from both surveys (students and instructors) were loaded as separate databases in SPSS version 16.0 for analysis. Atlas.ti software was used to analyze qualitative data gathered from the student and faculty surveys and the selected faculty members' interviews.

Student Survey Population

Online surveys were sent during the third week of the three-week Winter Term in 2009 to all persons who were registered in or teaching an online course at one southern comprehensive university. Two email reminders subsequently were sent to all potential respondents since no attempt was made to track individuals. Of the 1,213 students identified, 186 responded after the first request. The first reminder was sent two-days later with an additional 121 responses, and the second reminder was sent four- days after the first request, garnering an additional 90 responses. The total of 397 student responses yielded a 32.7% response rate. Of 78 faculty persons teaching online courses, 32 had replied after the two reminders (41% response rate).

Gender

Table 4.1: *Gender of Student Survey Participants*

	Frequency	Percent
Males	98	24.7
Females	296	74.6
Missing	3	.8
Total	397	100.0

The gender of the student participants was similar to the overall online student population during that session, which consisted of 398 males (32.6%) and 823 females (67.4%). Data for the population was obtained from information released by the university institutional research office.

Age

Table 4.2: *Age of Student Survey Participants*

	Frequency	Percent
23 years old or younger	157	39.5
24 years old or older	239	60.2
Missing	1	.3
Total	397	100.0

The age of the survey sample was skewed toward the nontraditional aged student, with 60.2% being 24-years old or older. University data disclosed that 47.3 % of the online student population was 24-years of age or older.

Access, Employment, and Distance from Campus

The students categorized themselves according to: where they most often accessed their online course, if they were gainfully employed during the course, if their employment was part-time or full-time, and how far away they lived from the campus. Most of the responding students worked on their class from home (91.9%), were employed full-time (50.4%), did not live on campus, and lived less than a one- hour commute from the main campus.

Table 4.3: *Access, Employment and Distance from Campus of Student Survey Participants*

Location of Access to Course	Frequency	Percent
Home	365	91.9
Other	32	8.1
Total	397	100.0

Employment	Frequency	Percent
Not employed	84	1.2
Part-time employment	111	28.0
Full-time employment	200	50.4
Missing	2	.5
Total	397	100.0

Distance from Campus	Frequency	Percent
On campus	7	1.8
Less than 30 minutes driving time away from main campus	164	41.3
More than 30 minutes but less than one hour away from main campus	59	14.9
One to two hours away from main campus	101	25.4
More than two hours away from main campus	61	15.4
Missing	5	1.3
Total	397	100.0

Faculty Survey Population

Faculty persons who responded to the survey were defined by the online course they were teaching during that three-week session. Of the 32 responses, 68.8% (N = 22) taught an undergraduate course, and for 93.8% (N = 30) it was a repeat course. For 12.5% (N = 4) it was the first time they had taught that course online, and for the remaining 18.8% (N = 6) it was their first experience teaching that particular course in a three-week format.

Quantitative Analysis

Factor Constructs of Teaching Presence from Student Data

The teaching presence correlations (Table 4.4) were greater than .50 for all items. A principal component method with Varimax rotation and Kaiser normalization was used to examine the factor construct of teaching presence. Two factors were extracted.

Table 4.4: *Teaching Presence Item Correlation Matrix*

	TP1	TP2	TP3	TP4	TP5	TP6	TP7	TP8	TP9	TP10	TP11	TP12	TP13	TP14	TP15	TP16
Communicated course goals	-															
Communicated course topics	.904	-														
Provided clear instructions	.858	.839	-													
Communicated due dates	.801	.755	.788	-												
Provided clear information	.620	.628	.646	.571	-											
Netiquette	.582	.578	.589	.573	.730	-										
Identified agreement	.617	.630	.605	.510	.647	.696	-									
Sought to reach consensus	.760	.771	.744	.653	.699	.705	.739	-								
Reinforced student contribution	.662	.642	.617	.575	.691	.642	.627	.742	-							
Set climate for learning	.527	.506	.523	.494	.711	.630	.620	.661	.674	-						
Promoted discussion	.540	.556	.550	.499	.789	.711	.688	.693	.722	.740	-					
Kept students on task	.625	.596	.609	.599	.684	.664	.693	.741	.740	.711	.769	-				
Focused discussion	.591	.617	.605	.546	.730	.679	.708	.760	.694	.668	.825	.773	-			
Confirmed understanding	.573	.587	.545	.514	.652	.628	.659	.742	.757	.650	.696	.705	.673	-		
Diagnosed misunderstandings	.529	.538	.543	.466	.611	.595	.666	.679	.668	.646	.728	.725	.658	.763	-	
Injected knowledge	.633	.627	.612	.588	.637	.629	.572	.709	.672	.645	.625	.691	.629	.657	.663	-

Through analysis of the component score coefficient matrix (Table 4.5), the two factors were labeled (1) directed facilitation (DF) and (2) instructional design and organization (IDO), in accordance with the work of Shea et al. (2006) whose data analysis revealed a similar two-component matrix for teaching presence. Those two components together accounted for 76.1% of the variance of the teaching presence construct; directed facilitation accounted for 45.8% and instructional design and organization accounted for 30.3% of the variance in teaching presence.

Table 4.5: *Component score coefficient matrix for Teaching Presence items*

	Component	
Survey Items	1	2
Communicated course goals	-.165	.340
Communicated course topics	-.152	.323
Provided clear instructions	-.152	.322
Communicated due dates	-.163	.328
Provided clear information	.114	-.022
Netiquette	.110	-.022
Identified agreement	.108	-.018
Sought to reach consensus	.030	.097
Reinforced student contribution	.106	-.010
Set climate for learning	.186	-.123
Promoted discussion	.214	-.152
Kept students on task	.144	-.057

Table 4.5 (Continued).

Focused discussion	.150	-.067
Confirmed understanding	.159	-.083
Diagnosed misunderstandings	.185	-.121
Injected knowledge	.067	.035

Note. Extraction Method: Principal Component Analysis. Rotation

Method: Varimax with Kaiser Normalization.

Reliability

Cronbach's Alpha was used to measure the reliability of the subscales of teaching

presence, sense of community, and satisfaction with course length in the student survey data. All

of the Cronbach Alpha scores were above 0.7 (see Table 4.6), and deemed to be acceptable

measures for internal consistency.

Table 4.6: *Cronbach's Alpha for Student Survey (N=397)*

Variable	Cronbach's Alpha	n
Teaching Presence	.968	371
Instructional Design and Organization	.948	384
Directed Facilitation	.960	373
Sense of Community	.862	390
Satisfaction with Course Length	.729	389

Interpretation of Quantitative Results

In order to obtain meaningful statistics for each teaching presence component, a mean

score of the questions related to each component was calculated (Table 4.7). MnTP refers to the

mean teaching presence composite score. IDO refers to the teaching component for instructional

design and organization, DF refers to a combination of facilitated discourse and direct instruction

from the factor analysis, similar to directed facilitation by Shea et al. (2006) and was so named here. Mean scores for the items that made up perceived learning (PERLRN), sense of community (SC) and satisfaction with course length (CoursLn) also were calculated.

Table 4.7: *Summary of Mean Scores of Teaching Presence, Sense of Community, Perceived Learning and Course Length.*

	N	Minimum	Maximum	Mean	S.D.	Variance
MnTP	371	.88	5.00	3.8881	1.19083	1.418
IDO	386	.00	5.00	4.1431	1.15109	1.325
DF	386	.00	5.00	3.7441	1.30027	1.691
PERLRN	386	0	9	5.85	2.341	5.480
CoursLn	386	.00	5.00	3.9659	.77507	.601
SC	386	.00	5.00	3.5001	.87521	.766
Valid N (listwise)	371					

Research Questions

This study sought to answer the following central research question: how does teaching presence impact students' perception of learning and sense of community in intensive online courses? The methodology that best fit this question was a mixed methods approach involving both quantitative and qualitative methods. This section will address the results of the quantitative analysis as they related to the quantitative research questions posed.

Quantitative Research Questions

The first three quantitative research questions asked about potential relationships between teaching presence components as identified through students' perceptions of perceived learning and sense of community. Results of that data analysis are presented below in Table 4.8.

Table 4.8: *Correlations for Teaching Presence Components, Sense of Community, Course Length, and Perceived Learning.*

	IDO	DF	CoursLn	SC	PERLRN
Instructional Design & Organization	-				
Directed Facilitation	.791**	-			
Course Length	.354**	.352**	-		
Sense of Community	.466**	.589**	.289**	-	
Perceived Learning	.273**	.255**	.317**	.238**	-

**. Correlation is significant at the 0.01 level (2-tailed).

Quantitative Research Question One

Which teaching presence components most impacted students' perceived learning?

A two-tailed Pearson correlation matrix was run on the student data (Table 4.8) between the three teaching presence components: instructional design and organization, facilitated discourse, and direct instruction, and students' perception of learning. Significant but small correlations were found between the teaching presence components and students' perceptions of learning. That decision was made based upon the Gravetter and Wallnau (2004) description of Cohen's (1988) interpretation of using r^2 to estimate effect size. Small effect size was r^2 between .01 and .09. In this study only 7.5% of the variance was accounted for in the correlation between Instructional Design and Organization and Perceived Learning, giving an effect size of $r^2=.075$.

The variance of 6.5% was explained by directed facilitation and perceived learning, with an effect size of $r^2=.065$.

Quantitative Research Question Two

Which teaching presence components most impacted students' perceived sense of community?

The second quantitative question asked about relationships between the teaching presence components and the students' perceptions of sense of community. Table 4.8 shows that there were significant correlations at the .01 level (2-tailed) between the teaching presence components and students' perception of sense of community. The effect sizes for the correlation instructional design and organization with sense of community was r2=.22; FD with sense of community was medium, as described by Cohen (1988), as r^2 was between .09 and .25, and the effect of directed facilitation with sense of community was large, $r^2=.35$. Cohen (1988) defined a large effect as $r^2>.25$. Both of those correlations on relating teaching presence components to sense of community were larger than the correlations between the teaching presence components and perceived learning. Table 4.9 shows the amount of variance for each correlation.

Table 4.9: *Percent Variance Explained by Relationships between Teaching Presence Components and Sense of Community*

	r	r^2
IDO – Sense of Community	.466	21.7%
DF – Sense of Community	.589	34.7%

Quantitative Research Question Three

Was there a correlation between perceived learning and sense of community?

The correlation shown in Table 4.9 revealed a small but significant relationship between the students' perceptions of learning and sense of community, $r = +.238$, n=397, $p=.000$, two tails. The hypothesis that perceived learning and sense of community were related has been promulgated in both the Community of Inquiry Model (Garrison, Anderson, & Archer, 2000), and the Online Interaction Learning Model (Benbunan-Fich, Hiltz, & Harasim, 2005).

Quantitative Research Question Four

Was high perceived teaching presence predictive of high student perception of learning and sense of community?

The first regression analysis was run with three independent factors, directed facilitation (DF), instructional design and organization (IDO), and course length (CoursLn), and the dependent factor was perceived learning. The results were interpreted to mean that this model was significant, $F (3,382) =18.859$, $p<.001$ and accounted for 12.9% of the variance (Table 4.10). The only factor that was significant was satisfaction with course length and perceived learning.

Table 4.10: *Regression Analysis Summary for Teaching Presence, Course Length, and Perceived Learning*

Variable	*B*	*SE B*	*Beta*
1 (Constant)	1.362	.624	*
IDO	.295	.160	.145
DF	.098	.142	.054
CoursLn	.732	.155	.242**

Note: Dependent Variable: Perceived Learning, *$p<.05$, **$p<.001$.

A second regression analysis was run with the same independent factors using sense of community as the dependent factor (Table 4.11). This model also was significant, $F (3,382)$ =71.354, $p<.001$ and it accounted for 35.9% of the variance for sense of community. Directed

facilitation and satisfaction with course length both were deemed to be statistically significant in predicting sense of community.

Table 4.11: *Regression Analysis Summary of Teaching Presence, Course Length, and Sense of Community*

Variable	*B*	*SE B*	*Beta*
(Constant)	1.808	.200	**
IDO	-.092	.051	-.121
DF	.438	.046	.651**
CoursLn	.109	.050	.097*

Note. Dependent Variable: Sense of Community *p<.05, **p<.001.

Quantitative Research Question Five

Did the selected independent demographic variables of student age, gender, employment, distance from campus, course length, and course type influence students' perceptions of teaching presence, learning, and sense of community?

Pearson correlations were run on student age, gender, employment length, distance from campus, course length, and course type with teaching presence, perceived learning and sense of community. The results are summarized below in Table 4.12.

Table 4.12: *Summary of correlations of demographic variables with teaching presence, perceived learning and sense of community (N=386).*

	IDO	DF	PerLrn	CoursLn	SC	Crstyp	Dist	Age	Access	Employment	Gen
Instructional Design & Organization (IDO)	-										
Directed Facilitation (DF)	.791**	-									
Perceived Learning (PerLrn)	.272**	.255**	-								
Course Length (CoursLn)	.348**	.352**	.312**	-							
Sense of Community (SC)	.427**	.589**	.241**	.284**	-						
Course Type (Crstyp)	.037	-.052	-.087	-.065	-.071	-					
Distance from campus (Dist)	.063	.033	.108*	-.036	.030	-.017	-				
Age	.049	.067	.054	.076	.153**	-.157**	-.013	-			
Access to computer (Access)	.043	.041	.059	.086	.016	.051	.116*	-.062	-		
Employment (Employ)	-.016	-.009	.006	.020	.050	-.099	-.030	.367**	-.056	-	
Gender (Gen)	-.040	-.020	.061	.024	.051	-.011	.005	.020	.075	-.038	-

Note: *. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed).

Two demographic variables showed significant correlations with the dependent variables; students' perception of learning and sense of community. Distance from campus correlated positively with perceived learning; the farther away a student was the higher the perceived learning. The second significant correlation was between age and sense of community; the nontraditional students expressed having a greater sense of community than did the traditional-age students.

Course type, categorized by course discipline into sciences, business, health and social sciences, arts and letters, or education, was used in a one-way ANOVA to further explain any differences in connection to perceived learning and sense of community. The Levene statistics for each of the dependent variables, instructional design and organization, directed facilitation, and sense of community were not significant, indicating that a one-way ANOVA could be run on these data (Table 4.13).

The effect size of between groups and sense of community was .6582 which was interpreted to mean that a significant effect was generated by differences in course type and students' perceptions of community. Further analysis of Tukey HSD tests allowed for saying a significant mean difference of .60822 at the .05 level existed between business and education and social sciences for directed facilitation. The mean differences between course types for sense of community between education and art and letters (.34750), education and business (.54594), and education and health and social sciences (.42223) also were significant at the .05 level.

Table 4.13:*ANOVA of Course type with teaching presence and sense of community*

		Sum of Squares	Mean Square	F(4,381)	Sig.	Effect Size
IDO	Between Groups	4.386	1.096	.826	.509	.0086
	Within Groups	505.739	1.327			
	Total	510.124				
DF	Between Groups	18.995	4.749	2.863	.023	.0292
	Within Groups	631.923	1.659			
	Total	650.918				
SC	Between Groups	19.688	4.922	6.814	.000	.6582
	Within Groups	275.221	.722			
	Total	294.910				

Quantitative Data from Faculty Surveys

The Teaching Presence Scale (Shea, Pickett, & Pelz, 2003) and items from the Classroom Community and School Index (Rovai, Wighting, & Liu, 2005) were used to survey selected members of the instructors teaching online intensive courses during Winter Term of 2009. Of 78 instructors, 32 returned usable data. A random sample of 32 students' responses was compared to the faculty responses. No significant differences were found in teaching presence from the responses in a comparison of means using t-tests. However, significant differences were shown in perception of satisfaction with course length (52.294, $p=.028$, 2-tailed), with students being more satisfied with course length than were the instructors, and also in perception of learning, (47.702, $p=.001$, 2-tailed), where the instructors believe a greater amount of learning had occurred than the students reported having occurred.

Qualitative Analysis

Study Population

Qualitative data were gathered from faculty interviews, transcripts of interviews, field notes and artifacts from materials used in teaching, and the student and instructor surveys (using open-ended responses). The interviewees were chosen from instructional personnel who indicated on their returned survey that they would be willing to be interviewed. Twelve persons were chosen from a pool of 17. The interview group consisted of nine females and three males, two of whom had not taught their course online in a three-week session before. Student responses came from the student surveys, with 397 usable participant responses. Open responses also were gathered from the 32 instructional respondents. *Qualitative Research Questions*

As with the quantitative phase of this study, the qualitative phase was driven by the central research questions, how does teaching presence impact students' perception of learning and sense of community in intensive online courses? Although this was an exploratory ethnographic investigation, several questions guided the inquiry.

1. What teaching presence components do instructors believe are important in intensive online courses?

2. Which teaching presence components do instructors perceive to correlate with student learning and sense of community?

3. Did course length influence instructors' choice of teaching presence components to include in intensive online courses?

Faculty Interviews

Transcripts from the twelve faculty interviewees, field notes, and artifacts such as syllabi were reviewed and coded into themes. In the first pass, the researcher used the three general teaching presence components: instructional design and organization, facilitated discussion and direct instruction, as well as perceived learning and sense of community. As coding progressed, it became apparent that some factors were similar to the survey questions, thus the interviews were recoded to incorporate codes that represented teaching presence components, facilitated discourse, instructional design and organization, and direct instruction. In addition, super codes were produced from co-occurring codes. Table 4.14 lists the 39 codes that emerged.

Table 4.14: *Summary of Codes from Faculty Interviews*

Theme Categories of Codes	Code Identifiers
Direct Instruction (DI)	DI
	*DI & instructor-student interaction
	*DI & SOC (Sense of community)
	guided students to understanding
	Presented content
	reinforced student submissions
	diagnosed misconceptions
	student feedback
	used diverse sources
	provided explanatory feedback
Facilitated Discourse (FD)	FD
	*FD & Negative
	*FD & SOC (Sense of community)
	*FD & instructor-student interaction
	Focused discussion
	prompted discussion
	helped students agree & disagree
	kept students on task
	set a climate for learning
Instructional Design and Organization (IDO)	IDO
	*IDO & Negative
	*IDO & SOC (Sense of community)
	*IDO & student-student interaction
	communicated course goals
	communicates course topics
	Communicates timeframe
	established netiquette
	helped students utilize medium effectively
	instructions on how to participate
Sense of community (SOC)	SOC
	*SOC & Negative
	*Negative & instructor-student interaction
	instructor-student interaction
	student-content interaction
	student-student interaction
Perceived learning	instructor perception of student learning
Course length	course length
	*course length & Negative
	Negative

Note. * indicates super codes representing co-occurring codes.

Themes Derived from Coding

The 12 faculty interviews were coded and then the codes were grouped into six themes: direct instruction, facilitated discourse, instructional design and organization, sense of community, perceived learning, and course length. Analysis of the text units (N=783) across the six themes showed a fairly even distribution among the themes, with the exception of perceived learning being much lower. Direct instruction comprised 17.1% of the total (N=134), facilitated discourse 18.8% (N=147), instructional design and organization 24.6% (N=193), sense of community 23.8% (N=186), course length 14.7% (N=115), and perceived learning 1.0% (N=8).

Direct Instruction

All of the instructors interviewed considered direct instruction to be very important to the success of their online intensive courses. Student-instructor interaction and sense of community, as it related to direct instruction, emerged as a subtheme with 22.4% of the direct instruction text units connected to this subtheme. Instructors also cited using diverse sources as an integral part of their direct instruction, such as audio and video, web resources such as wikis, learning objects, and Google documents for student collaboration.

Facilitated Discourse

This theme showed a similar number of text units to direct instruction, 18.8% (N=147) to 17.1% (N=134). Instructors considered these two themes as being fairly equal in importance for teaching online intensive courses. Instructor-student interaction, focused discussions, discussion prompts, consensus-building, keeping students on task, and setting a climate for learning were topics discussed by instructors.

Instructional Design and Organization

The instructors discussed instructional design and organization most often, 24.6% (N=193). Subthemes that emerged included the need to build student-student interaction into the course and building innovative ways of communication into the course so that students would

have a sense of comfort when navigating a course. The goal was to mitigate or eliminate course organization as a barrier to student success. Additionally the instructors expressed concerns that because of the compressed timeframe a course had be organized and that students had be able to easily and quickly understand how to participate and learn.

Sense of Community

This theme also emerged as being of importance among the instructors, with 23.8% of the total text units (N=186). Instructors apparently worked to create interactions between themselves and students, between students, and between students and the content. Notably, ten of the 12 instructors discussed the difficulty of creating and maintaining such interactions, with 28 text units (15% of sense of community text units) voicing negative statements about interactions. Three instructors said they understood that a sense of community would enhance their students' experience but did not design their respective course to include any community building. Two instructors related sense of community to invasion of privacy and asserted that they sought to protect students from potential hazards that might accrue by virtue of having revealed personal information by isolating the students from each other.

Perceived Learning

Only five of the instructors related that they believed their students were learning at least as much as students in face-to-face, semester-length courses that they taught. Two instructors were enthusiastic about how much learning they observed in online intensive courses and claimed there were no differences between intensive and semester-length courses.

Course Length

The instructors discussed teaching intensive courses as challenging, tiring, time-consuming, and meeting student demand. With 14.7% of the total text units about course length, instructors did not consider it as important as teaching presence components or sense of community. More of the statements (54.8% of the course length text units) contained negative or

challenging connotations, revealing that the instructors had concerns with the challenges in teaching intensive courses.

Teaching Presence and Sense of Community Codes Connected

The teaching presence and sense of community codes are represented graphically in Figure 4.1. This depiction was generated in Atlas.ti as a pictorial representation of the connections between the codes, showing the overlay of sense of community through interactions with teaching presence components, facilitated discourse, instructional design and organization, and direct instruction.

Figure 4.1: *Graphic Representation of Teaching Presence and Sense of Community Codes*
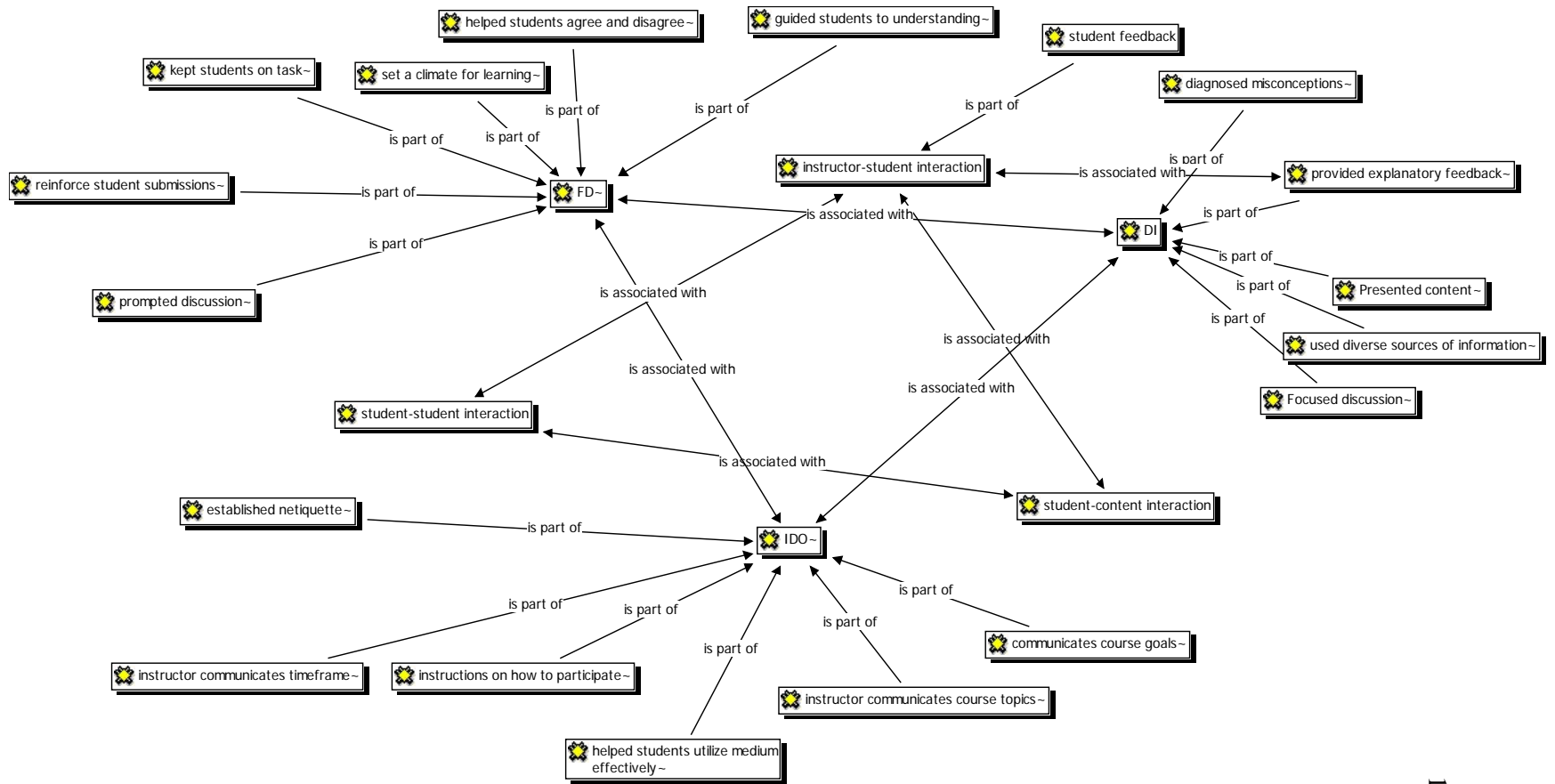
Components of Teaching Presence

Of the three teaching presence components, instructional design and organization was the most discussed by the instructors (N=193). Facilitated discourse was coded 147 times and direct instruction 134 times. While each of the interviews included discussions of all three, nine instructors claimed that instructional design and organization was the most important or one of the most important components of teaching presence. Table 4.15, below, contains instructor statements on the importance of teaching presence components. Most stated that without organization, the other components would not be effective. One faculty member said that all three were equally important and considered them as completely connected, and without all three a course would not be successful.

Table 4.15: *Faculty Responses to Importance of Teaching Presence Components*

Faculty	Teaching Presence Component	Sense of Community	Perceived Learning
1	I think that having the class totally organized really impacts the students the most. And I guess that is just the total package, not just the syllabus and having all of the Blackboard directions in there and what to do day by day, but the organization on my end of how I am going to interact with the students and how I want them to feel about the class in terms of its accessibility and that kind of thing.	I put an extra credit discussion board in there because they do not evaluations for the online class those site evaluations or anything like that so I usually put an extra credit discussion board at the end of the semester for feedback on the class. That was something a student had asked was can you leave the discussion boards open after you have graded them, because I was just closing them down they were just unavailable after the due date. So I said yeah I can do that. That is not a problem I just did not think about students wanting to use them. So I leave them open so they have that opportunity.	I do not know if there is that self selection and I actually end up with grades on average that are a little higher in these online classes.
2	I think overwhelmingly the design and organization. I think when students look on there they want to know certain things, when is it due what is expected. The design and the way that I have tried has evolved but especially for this three week class that is the main that was the top priority.	For my discussion board I think it is really important that I see that other people are reading everyone's responses, not only myself but other students. So even in that first group of questions I still make them respond to at least one or two other individual students so that they can get a feel for who is in the class, where they are, how many times they have taken an online class, what occupation they are in now. Just basic things I would do in my normal classroom. Overall I did not do a good job on this particular I just did not think through the whole community thing this time. I thought the three week we have to get it done.	

Table 4.15 Continued.

Faculty	Teaching Presence Component	Sense of Community	Perceived Learning
3	I think I can say I tend to go toward the second one, facilitated discussion. I feel that the practical part of it is key and even in the online classes my students have to go out in either the schools, the community, talk to someone in the field, do an interview, and I think that is a big piece of getting them to understand and getting them to have that ah ha moment oh this is what it is all about.	I am not so sure that a sense of community was established in this short semester in the typical sense that I think you meant. Sometimes they do not know if it is a woman or a man because I have time for students to come into my office and make that connection and then go back and I have seen that there is a difference in the way students post to the discussion boards or respond to something I have put up there depending on whether we have met and talked or have had some kind of personal connection. I know some people think you really should put that kind of information up there, but I do not know if it is making a difference for my students. I offer them always the opportunity to contact me by email, I tell email is their best bet if they want a quick response but they can call me and I will try to remember to call my voice messages and get that or they can swing by if it is not my office hours just let me know that is the best time you want to come in and I will try to make the effort to be there during that time.	

Table 4.15 Continued.

Faculty	Teaching Presence Component	Sense of Community	Perceived Learning
4	I think that the structure has to be there because the students need it and they need to know what is expected of them and some consistency parameters whatever that has to be there. But I think that the interaction has to be there, but I think it is more student to student interaction. And that is important too in terms of the model. Or maybe it is setting the climate so that it is there too but I really think that the students, or I set a climate that they are comfortable with because it is similar to what they are used to.	You know I think the younger students are used to from Facebook and Myspace they jump in and they are talking and they kind of monitor themselves. If somebody starts to get out of line you will see people jump on them saying that was a cheap shot, but by and large I rarely have anybody say anything that is disrespectful and there will be somebody who expresses a strong opinion and somebody who disagrees but then that person will come back and be like I did not mean to offend you I am sorry if I did. And so they are really good about being respectful of each other. One of the things I have not mentioned, but I put it on the survey is I have each student fill out a homepage the first day and then I do a scavenger hunt so they have to go in and look at each others and it is kind of cool and you will see messages hey I am so and so and most of them will post pictures so you get to see who your interacting with and their families.	
5	I think if you really organize that well then the other two components are facilitated much greater. I think if you do not have the organization and students have told me this if they have taken online courses where it is not organized they lose interest.	Again I have tried that like this parking lot or coffee shop and I got very little response from it at the undergraduate level. The strategy that I use is try to stay connected to them. Trying to help them work through whatever issue there may be.	

Table 4.15 Continued.

Faculty	Teaching Presence Component	Sense of Community	Perceived Learning
6	Then I would say the direct instruction would have to be the most important thing because if they do not have that it can be well organized but if they do not get the direct instruction then there is nothing to learn.	So it is organized into the discussion board which kind of leads into the community issue. And I did not do water cooler this time that is what a lot of people call theirs and I have in the past.	
7	I think structure is, like you brought up if students can go on and can easily figure out and navigate and know where they need to go and what the expectations are then they can be successful.	One of the things that I ask is I ask the students to initially introduce themselves to me and I ask it is just an open response but I say basically tell me a little bit about yourself, what is your major, have you taken online classes before, what is your expectation of this class, so then I get an open response.	You know what, they do as well if not better in the three weeks because I think the students who sign up for the three weeks they are much more motivated and a lot of them are looking at that end result of when can I graduate by throwing in this class now and I mean you have to be motivated to do a winter term.

Table 4.15 Continued.

Faculty	Teaching Presence Component	Sense of Community	Perceived Learning
8	I do not think any of them stand alone as being powerful enough to overshadow the other two aspects.	Their assignment was to know and understand what was in course information to be able to read and know all of that and introduce themselves and what they expected out of the class.	I am not sure I am thrilled about it to be honest with you. I think it goes very quickly. Part of me feels like it is a hoop jumping. Like the students are jumping through hoops they are reading and discussion boarding and assignments and they just keep moving on. I am not sure it has the rigor that I would like to see. Teachers do not do enough of networking with their colleagues or reflecting on what they have learned or what they can do to improve their practices and in three weeks you are doing a fifteen week course there is minimal time for that reflecting and networking. If they took the exact same class with me, it is less.

Table 4.15 Continued.

Faculty	Teaching Presence Component	Sense of Community	Perceived Learning
9	They do not really function if you do not have all three, but if I really had to pick, I would say it is the structure and the design you set up before you go in. If it is not sound, then you have problems with the others because you get wobbly. You have got to have and I would say that with any online course. The structure of how it is structured is really important because you are not seeing them every day. That structure has to stand alone on its own.	I have my web page up in there that has pictures of my grand kids so I do things to sort of bring them into my world and a lot of them when they post their page they will post wedding pictures, they will post other types of things where they are trying to bring people into their kind of community	So that is something that I actually think the online classes is one of the strengths of it. They actually weed out some of the people that do not have the strong academic strengths and that do not have the organizational ability to actually be teachers. I think they are good for student learning and I think that there are some things that fit, there are other things that they do not.
10	I think the organization is critical. I think on the front end if you do not have everything set up where the students can access it and know what they are responsible for, it is a disaster.	You know I do not feel like I know the students as well as I do in the classroom which I think is a disadvantage. I talked to another professor who said they felt like that was a privacy issue.	So I really did not see any difference and I noticed that they were able to finish, you know nobody missed the deadline. It really surprised me that they did as well as they did.
11	I think organization and structure and direct instruction somewhat go hand in hand. I believe they are somewhat linked to each other. And because I do not do in this course a lot of interaction among the students enrolled in the course, I would have to say that the direct instruction and the organization.	Not in this [] class that we are talking about, no we do not [have student-student interaction]. We are talking about a lower division class. We really do not because during that three week term they are so focused on just doing their own thing they really do not have time for a lot of interaction between the other students. Maybe that is something that I need to work on to try to create a more global interactive type assignment but they really do not.	

Table 4.15 Continued.

Faculty	Teaching Presence Component	Sense of Community	Perceived Learning
12	You start off with a content background material and then later the last thing you do is the application stuff where you actually have them doing stuff. After you have gone through the learning cycle, facilitated discussion would be the most important and that is where the light bulbs go on, that is where people get what it is that you are wanting them to get.	You have got to be a part of this. You cannot be the instructor doing the lecture and just observing the interactions. My whole philosophy is in the discussion boards, there is one of the assignments I told them the presenters are going to be the facilitators and the moderators meaning that I expect you to moderate the discussion about your presentation that you posted, but I still got in and made comments and that kind of thing too but I let them take the lion's share in that case. You cannot observe that and then evaluate it. To me you have to get in the middle of that with them. I do not know how to explain this but they sense that. They can tell if you are in it with them or if you have set it up and you are going to check it occasionally and then grade people.	

Faculty member 6 chose direct instruction and Faculty member 3 cited facilitated discussions as being of the greatest importance. Both of those instructors believed the other components were necessary but that the one they chose was of greatest importance. Faculty member 6 also stressed the importance for students to engage in individual work and that a great deal of student-content interaction also was of paramount importance. Faculty person 3 said that facilitated discussion was most important but did not believe that a sense of community was established or that the students were getting an equivalent experience to the same classes when taught in a face-to-face context.

Ten of the instructors claimed that sense of community was important and that some sense of community was established in the classes they taught. All 12 faculty interviewees linked sense of community back to some area in a class they had specifically designed for interaction, either through discussion boards, small group assignments, water cooler spaces, instructor availability and encouragement, or options for contacting an instructor. In the interviews it became apparent that the faculty persons who were most comfortable establishing a sense of community used facilitated discourse intentionally designed into their course.

The 12 faculty interviewees seemed hesitant to discuss their perceptions of student learning as it occurred in their courses. That reluctance may have stemmed from a concern that it could have been viewed as a reflection on their teaching ability rather than on the aspect of student assessment. One faculty member said, "It really surprised me that they did as well as they did." Four of the five interviewees mentioned some type of student motivation or self-selection as a factor in successful learning by students.

Course Length

The 12 faculty persons interviewed said that teaching an online intensive course in three-weeks was difficult. "I do not like teaching the three-week course intensive and I can see where it would be very good for many subjects I am not sure which those would be." But eight of the

faculty interviewed have embraced it, "I really think that the intensive courses if they are structured and if they go the way they are intended force students to be there and to be present and I think that whole emersion thing is a good way to learn." Another faculty member said that the intensive nature of the course helped with interaction, "I think that day to day interaction where they are required to get in there and post generates that excitement and keeps them going and moves the class and makes it more cohesive than semester long courses because they are forced to."

Seven of the faculty members interviewed discussed ways they planned to redesign their courses in order to incorporate different teaching presence components or to improve communication with students and between students. Only one person said they would not teach that course again in a three-week session.

Student and Faculty Survey Open Responses

There were four open response questions that were worded similarly on the student surveys and faculty surveys. The first open response question asked students what part of their class helped them learn. Of the 335 responses, 181 (54%) discussed reading, quizzes and exams, assignments, and lectures as making the greatest impact on their perceptions of learning. Those are elements of direct instruction. Elements of facilitated discourse (discussion boards, case studies and other activities, and feedback) were given by 118 students as important to their learning (35%). Thirty-six (11%) students stated that the organization of the course, schedules, syllabus details, being kept on task, and steady pacing, as being of the most importance to their learning. Faculty members' responses to this question were similar. Of 37 faculty responses, 22 (59%) named reading, quizzes and exams, assignments, and lectures, 14 responses (38%) included discussion boards, case studies, feedback, and other activities, while only one (3%) stated the organization of the course was the most important aspect of their course that impacted learning.

The second open response question asked, "In what ways did your instructor create an environment where you felt a sense of community?" Of the 324 student responses to this question, 236 (72.8%) reported that their instructor created an environment where they felt a sense of community, and cited use of discussion boards, group work and personal web pages as ways the students considered themselves connected to others in a class. The students also said that a sense of community existed when an instructor emailed frequently, used video and audio lectures, and gave timely feedback. All of those actions required instructor-student interaction, but many students believed instructor-student interaction was sufficient for the students to have a sense of connectedness to a course. Of the 324 student responses, 88 (27.2%) did not feel a sense of community was created in their course. Students cited course structure as being more independent study in nature, "I didn't have a sense of community in my course. Everything we needed, besides the midterm and final, was posted on the first day of the course and I felt on my own." Of the 29 faculty survey responses to the question, 24 (83%) stated ways they worked to create a sense of community while 5 (17%) reported there was no sense of community in their courses. Table 4.16 lists some examples of student and faculty comments on sense of community.

Table 4.16: *Examples of students' and faculty responses to sense of community open response question*

Student Survey Responses
1. During the lecture, he spoke as if he were speaking to all of us. He would stop to explain things that some of us might not have covered in other courses so that no one would be left behind. Students also emailed the class as a whole when they needed some help on certain things so that we could help each other.
2. I didn't have a sense of community in my course. Everything we needed, besides the midterm and final, was posted on the first day of the course and I felt on my own.

Table 4.16 Continued.

Student Survey Responses

3. The fact that the lectures were recorded meant that everyone else was watching the lectures just as I was.

4. Honestly, there is no sense of community in an online class, and you are wasting your time if you expect there to be real community. Especially in a 3 week class.

5. There is no learning environment whatsoever. For all I know, I am the only person enrolled in this class, and I have no teacher.

6. There was none needed as far as I'm concerned. I'm here to learn, not to make friends.

7. This is the one thing that I think the course lacked. I did suggest that maybe next time have the discussion forum up and running it really been an asset to me in other classes.

8. With others participating on Discussion Board, this provided us all with a sense of not being alone in the class.

Faculty Survey Responses

1. I tried to be a role model for the students with my own participation. I posted an announcement virtually every day (sometimes simply with a ""Thought for the Day"" if I had no course-related message) and I participated in as many discussion boards as I could. I also had an Introductory Discussion Board for everyone to introduce themselves.

2. I did not utilize any tools for creating a sense of community. I am less convinced that a true sense of such is achievable through online education. It is, I think, one of the advantages of face-to-face courses.

3. By being available during certain hours every day; answering emails promptly; providing individual and whole class feedback on discussion boards and assignments.

The third student open response question asked whether course length affected their learning. Of the 336 student responses to this question, 89 (26%) said that the length of a course hindered their ability to [perform maximally, that they were too stressed, and did not believe that as much content was covered. Thirty-nine students (11.6%) said that course length had no effect on them and they learned as much or as well as they would have in a different time format.

On the positive side, 208 students (62%) said that the short time format enabled them to focus on one course for a concentrated period of time and that they stayed on track because the course was organized in a specific way or that they were organized in their approach to the course. One student commented, "The instructor, not the time limit, affected my ability to learn in this course." Faculty responses were remarkably similar: 6 out of 29 faculty (21%) responded that the course length had no effect on student learning in their courses, while another 21% believed that the short time frame forced them to reduce activities or assignments and made them suspect that the intensive course was not as good as the same course in a semester-long format. Seventeen faculty members (59%) observed that student learning in intensive courses was enhanced when students are focused on one course for a concentrated period of time. These faculty members also agreed that online intensive courses required attention to instructional design and organization in order to maximize students' learning experience.

Mixing of Quantitative and Qualitative Results

The final phase of this mixed methods study was to merge the results from the quantitative and qualitative phases. A matrix was used to illustrate findings from the different data sets (Table 4.17).

Table 4.17: *Matrix of Quantitative and Qualitative Data*

	Instructional design and organization	Facilitated discourse	Direct instruction	Course length
Perceived learning	Significantly correlated in student quantitative survey, accounted for 7.5% of the variance. No significant difference between faculty survey results and like random sample of student surveys. Nine of 12 faculty interviewed stated IDO as most important to learning. 11% of student survey open responses chose IDO as most closely related to learning. 3% of faculty surveyed related IDO to learning.	Merged with direct instruction to form directed facilitation (DF) from factor analysis. DF was the stronger of the two factors. Significantly correlated in student quantitative survey, accounted for 6.5% of the variance. No significant difference between faculty survey results and like random sample of student surveys. 35% of student open responses chose FD as most closely related to learning. 38% of faculty surveyed related FD to learning.	Merged with direct instruction to form directed facilitation (DF) from factor analysis. DF was the stronger of the two factors. Significantly correlated in student quantitative survey, accounted for 6.5% of the variance. No significant difference between faculty survey results and like random sample of student surveys. 54% of student survey open responses chose DI as most closely related to learning. 59% of faculty surveyed related DI to learning.	Significantly correlated in student quantitative survey, accounted for 10.0% of the variance. Faculty surveys showed a significant difference from student results with faculty feeling less satisfaction with course length but perceived learning to be greater than students. 208 students (62%) said that the short time format enabled them to focus on one course for a concentrated period of time and that they stayed on track because the course was organized in a way or they were organized in their approach to the course. Seventeen instructors surveyed (59%) felt that the course was as good as or better than semester-length because students focus on one course for a concentrated period of time. They also agreed that online intensive courses required attention to instructional design and organization.

Table 4.17 Continued.

	Instructional design and organization	Facilitated discourse	Direct instruction	Course length
Sense of community	Significantly correlated in student quantitative survey, accounted for 21.7% of the variance	Merged with Directed Instruction (DI) to form Directed Facilitation (DF). Significantly correlated in student quantitative survey, accounted for 34.7% of the variance. Ten of 12 faculty interviewed used some form of FD to create a sense of community in their courses. 72.8% of the students in open responses reported a sense of community and cited discussion boards, personal web pages, and small group activities as faculty planned activities that contributed to it. 83% of faculty surveyed stated their course had a sense of community in open responses. Faculty more often cited activities that were instructor related such as frequent feedback and other communication, participation in discussion boards and being available if students have problems such as logging in for quizzes and exams.	Merged with Facilitated Discourse (FD) to form Directed Facilitation (DF). Significantly correlated in student quantitative survey, accounted for 34.7% of the variance.	Significantly correlated in student quantitative survey, accounted for 8.4% of the variance. The faculty interviewed in general felt that teaching an online intensive course in three weeks was difficult, but that students were learning at least as well as students did in online semester-length courses.

In summary, this chapter has presented the analyses of the data interpretation for this mixed methods study. The quantitative phase included data analysis that answered the quantitative research questions and the qualitative phase included data analysis that was shaped by the qualitative research questions. A matrix was generated that merged the quantitative and qualitative data. This mixing provided complimentary findings that quantitative or qualitative data alone could give according to Erzberger and Kelle (2003). The next chapter contains a discussion of these findings.

CHAPTER 5: DISCUSSION

Overview

This mixed methods study utilized surveys in the quantitative phase and open-ended responses and 12 interviews in the qualitative phase. The quantitative phase used the Teaching Presence Scale (Shea et al., 2006), the Classroom and School Community Inventory (Rovai et al., 2005), and questions about satisfaction with course length. Surveys returned were analyzed from 397 students enrolled in and 32 faculty persons who had instructed in the three-week intensive online courses (Winter Term 2009) all came from a southern comprehensive university. The qualitative phase consisted of open-ended questions about teaching presence, sense of community, and satisfaction with course length on the student and faculty surveys, plus one-on-one interviews with 12 faculty members who taught those intensive online courses.

This study addressed online intensive courses to explore the relationships between the components of teaching presence, perceived learning, sense of community, and satisfaction with course length. The components of teaching presence as they related to sense of community and perceived learning had been studied previously in online courses by Shea, Li, and Pickett (2006), and Rovai, Wighting, and Liu (2005). Course length was part of the demographic factors studied by Shea et al. (2006) who did not find a correlation with teaching presence. Other researchers studied online courses that included course durations of less than a conventional semester (Powers & Mitchell, 1997; Lu & Jeng, 2006; Arbaugh & Rau, 2007; Lebec & Luft, 2007), but none focused on intensive online courses (three-weeks in duration) and the possible relationships of duration with teaching presence.

This initial section of the chapter discusses integrating the results from the quantitative and qualitative phase. First presented is the meaning of the quantitative phase, as these data are interpreted to answer the quantitative research questions. Second, the results of the qualitative phase are interpreted as they explained the guiding qualitative research questions, and where or

how these data further support the quantitative results. Finally, the study results are discussed according to interpreted relationships between the teaching presence factors (instructional design and organization, facilitated discourse, and direct instruction) and perceived learning, perceived sense of community, and perceptions of satisfaction with course length.

Demographic Data

Of the 397 useable students survey responses, approximately three-fourths were female (296 out of 397) and 60.2% (n =239) were of nontraditional age (more than 24-years old). By contrast, the demographics of the overall intensive online student population at this university during that Winter Term were 67.4% female and 47.3% nontraditional. The sample taking intensive online courses was viewed to be a reasonable approximation of the entire student population. Almost all students (91.9%, N=365) accessed their respective course from home, half (50.4%, N=200) worked full-time, and 58% (N=230) lived less than an hour commute from the campus.

Of the 32 faculty survey responses, 22 taught an undergraduate course, 30 had taught that course before, but for four instructors this term was the first time they had taught the class online, and for six instructors Winter Term 2009 was the first time the faculty member had taught the respective course during a three-week format. The interview group consisted of a convenience sample of nine females and three males; two had not taught their course online previously during a three-week session.

Quantitative Discussion

Cronbach's Alpha was used to measure the internal consistency of the components of teaching presence, sense of community, perceived learning and satisfaction with course length from data gathered in the surveys. All scores were above 0.7 indicating an acceptable level of internal consistency (see Table 4.6). Furthermore, the three components of teaching presence were correlated beyond the 0.5 level, and also significantly correlated to sense of community,

perceived learning, and satisfaction with course length ($p<.01$, two-tailed), which indicated a high level of internal consistency for these measures. That level of internal consistency meant the subscales were acceptable measures for the purpose of this study.

A factor analysis of the teaching presence components was conducted with the results showing two factors (Table 4.5) contributing 76% of the variance to perceived learning. Those two items were 1) instructional design and organization, and 2) directed facilitation; a combination of facilitated discourse and direct instruction. Shea, Li, and Pickett (2006) similarly reported an overlap of the components of teaching presence in their work with online courses.

Facilitated discourse originally was posited as a separate component by Garrison et al. (2000), but the results from the current investigation corroborated Shea et al.'s (2006) work meaning that the component of facilitated discourse could be interpreted as direct instruction if students perceived an instructor's role in facilitating discussion to be a part of their instruction. It was not clear from the Shea et al. (2006) work, or from the research presented here, whether the collapse of the two components (direct instruction and facilitated discourse) into a single factor (directed facilitation) was the result of the components, facilitated discourse and direct instruction, being interpreted by students as the same component of teaching presence or if the survey items were not able to distinguish between the two. It is postulated that the similarity of results to the earlier Shea et al. findings might be due to how the participants' interpreted the survey items; meaning there was a lack of distinction between facilitated discourse and direct instruction. More research would be useful in answering this question of how much facilitated discourse and direct instruction overlap.

Research Questions

This study was guided by the central research question, how does teaching presence impact students' perception of learning and sense of community in intensive online courses? The quantitative phase was made up of five research questions.

Quantitative Research Question One

Which teaching presence components most impacted students' perceived learning?

The first quantitative research question asked if the components of teaching presence were correlated with students' perception of learning. All of the teaching presence components were found to be significantly correlated to students' perception of learning (Table 4.8) although the effect size, interpreted through variance, was small. Only 7.5% of the variance was accounted for in the correlation between Instructional Design and Organization and Perceived Learning, 6.7% of the variance was explained by facilitated discourse and perceived learning, and 6.2% of the variance was explained by direct instruction and perceived learning. Those correlations were deemed to be provocative and further study would be valuable to determine if teaching presence was a causative agent for positive perception of learning. If a causative relationship existed between teaching presence and learning, instructors presumably could impact student learning by making changes to their teaching presence, and that would open up a venue for additional study; what defines teaching presence, how is it effected, when should it be introduced and to what degree, and does the level of student (experience with such instructional methods and academic maturity) influence what an instructor should do to encourage learning?

Quantitative Research Question Two

Which teaching presence components most impacted students' perceived sense of community?

The second quantitative research question asked about the relationships between teaching presence components and sense of community. Table 4.9 listed the variances as explained by the relationships between components of teaching presence and sense of community. The strongest correlation was found between facilitated discourse and sense of community ($r = .583$, meaning that 34% of the variance was explained by the interactions between those two components). Since sense of community indicated a connectedness between students and an instructor, the

content and other students, it was expected that interactions such as discussions and group activities would correlate with a sense of community. The results from this study have revealed this expectation to hold true for this population sample. Because sense of community showed a correlation to perceived learning ($r = .238$, $p < .01$, two-tailed), this correlation between facilitated discourse and sense of community was considered to mean that instructors who design facilitated discourse into online intensive courses might positively influence sense of community and perceived learning.

Quantitative Research Question Three

Was there a correlation between perceived learning and sense of community?

The third quantitative research question asked if there was a correlation between students' perception of learning and sense of community. The correlation shown in Table 4.8 revealed a small but significant relationship between students' perception of learning and sense of community, $r = +.238$, n = 397, $p = .000$, two tails. That positive relationship was interpreted to mean a connection existed between instructors who incorporated teaching presence components deliberately to foster development of a sense of community among students and the element of students who perceived that learning occurred in those courses. The importance to this finding rested with the understanding that increasing students' sense of community through activities that promoted a feeling of connectedness likely influenced students' perceptions of learning. Consequently, it would behoove instructors engaged in directing intensive online courses to make a concerted effort to interject their presence, but in a positive manner, so the participants have a sense of being engaged with peers and an instructor. Perhaps more than most aspects of the teaching art, this point deserves special attention with additional research.

This relationship between perceived learning and sense of community was endorsed by Rovai, Wighting, and Liu (2005) who found no significant difference in perceived learning between online and on-campus students in courses where instructors used social constructivism

and fostered a sense of community. The growing body of research into sense of community in online learning (Lear, 2007, Shea, Pickett, & Pelz, 2003; Rovai, Wighting, & Lucking, 2004; Rovai, Wighting, & Liu, 2005) has led to a belief that sense of community and perceived learning are connected. More studies that explore this apparent relationship are needed.

Quantitative Research Question Four

Was high perceived teaching presence predictive of high student perception of learning and sense of community?

The fourth quantitative question asked if high perceived teaching presence was predictive of high perceived student learning and sense of community. The results from a regression analysis were interpreted as meaning that the model was significant, F (3, 382) =18.859, $p<.001$, and accounted for 12.9% of the variance (Table 4.10). The only statistically significant factor was student satisfaction with course length and perceived learning.

A second regression analysis was run with the same independent factors using sense of community as the dependent factor (Table 4.11). This model also was significant, F (3, 382) = 71.354, $p<.001$, and accounted for 35.9% of the variance for sense of community. Directed facilitation and satisfaction with course length thus were deemed to be significant in predicting students' perceptions of sense of community in a course.

In both analyses (instructor presence and directed facilitation) course length was significant in predicting perceived learning and sense of community. This was viewed to mean that satisfaction with course length (intensive three-week course) was an important factor and should be considered when designing and teaching intensive online courses. The conclusion was that directed facilitation was significant in predicting sense of community.

Quantitative Research Question Five

Did the selected independent demographic variables of student age, gender, employment, distance from campus, course length, and course type influence students' perceptions of teaching presence, learning, and sense of community?

The fifth quantitative question asked about possible correlations between student age, gender, employment length, distance from campus, course length, and course type with (the dependent variables) what was perceived to be teaching presence, perceived learning, and sense of community. Pearson correlations were run on these variables (Table 4.12). There were no significant correlations between gender, employment length, or course length with teaching presence, perceived learning or sense of community and thus no evidence that the factors of gender and employment length are related to perceptions of teaching presence, perceived learning, or sense of community. Two demographic variables showed significant correlations with the dependent variables, distance from campus and age.

Distance from campus correlated positively with perceived learning; the farther away a student was from campus the higher the perceived learning. The second significant correlation was between age and sense of community; the nontraditional students believed that a greater sense of community existed in the intensive online courses than did the traditional age students. These results need further investigation, but do auger well for serving as a platform for recommending additional study. Do distant and nontraditional students believe a greater sense of community existed due to age or distance from campus, or were other factor(s) operating? This question was not addressed in the current study and could produce valuable results that would guide instructors teaching nontraditional students in online intensive settings.

Course length was found to be correlated to perceived learning in the student survey, which accounted for 10.0% of the variance. Course length also was explored using regression analysis (see Tables 4.10 and 4.11). The results were understood to mean that course length was

significantly related to perceived learning ($p<.01$) and sense of community ($p<.05$) and thus showed some predictive ability for these factors. This result was corroborated by qualitative findings in both student open responses and faculty interviews. Of the 397 students, 208 (62%) said that the short format was helpful in allowing them to concentrate on only one course and keep their learning on track. Seventeen faculty (59%) persons gave open ended responses on their surveys connoting that their courses were as good as or better than semester-length courses, because of increased student focus in a concentrated period of time.

Course type was explored further using a one-way ANOVA (Table 4.13). Course type was assigned to different groups of course disciplines: sciences, business, health and social sciences, arts and letters, and education. The course type groups were compared based on the two components of teaching presence (instructional design, organization, and directed facilitation) and sense of community. Significant differences were not found in comparisons of instructional design and organization, but were indicated in comparisons with directed facilitation and sense of community.

In course type comparisons with directed facilitation, only one pair, Education and Business students, showed a statistically significant difference ($p<.05$) between the perception of directed facilitation for the two groups of students in those disciplines. This result was interpreted to mean that Education students perceived directed facilitation to be present in their courses more so than did students in the Business courses. Because directed facilitation was directly correlated to perceived learning ($r=.255$, $p<.01$) and sense of community ($r=.589$, $p<.01$), this result was considered to mean that as a group, Education students either value directed facilitation more and/or saw directed facilitation generated by an instructor.

The differences between course types for sense of community had a large overall effect between groups ($p = .000$) with significant differences between Education and Art and Letters, Education and Business, and Education and Health and Social Sciences at the $p<.05$ level.

Education students believed they had a greater sense of community than did students from all the other disciplines except the Sciences. Students and instructional faculty open-ended responses corroborated those results, with Education students and instructors reporting a greater sense of community than did students and instructors from other courses. Persons from the Education discipline cited discussions and other similar activities, such as active learning, as being important for creating community.

Finally, in order to further understand the relationships between the student surveys and the faculty surveys, a random sample of 32 quantitative student responses, drawn from the total student sample of 397 responses, was compared to the 32 faculty survey responses. No significant differences were found in teaching presence from the responses in a comparison of means using t-tests. However, significant differences were disclosed in satisfaction with course length, $p<.05$, with students being more satisfied with course length than were the instructors, and in perception of learning, $p<.001$, where instructional faculty envisioned a greater amount of learning occurring than did the students. Student and faculty responses to the open-ended survey items confirmed those findings.

Summary of Quantitative Discussion

The quantitative analysis revealed positive relationships between teaching presence, perceived learning, and sense of community in online intensive courses at this university. Satisfaction with course length also evidenced a significant correlation with perceived learning, accounting for 10.0% of the variance, and sense of community which accounted for 8.4% of the variance. Course length showed a predictive tendency with perceived learning through interpretation of the regression analysis with significance at the $p<.01$ level. Demographic variables of age and distance from campus showed significant relationships. Age and sense of community were related ($r=.153$, $p<.01$) and distance from campus with perceived learning ($r=.1.08$, $p<.05$), showing evidence that nontraditional students perceived a greater sense of

community than traditional students and students who accessed their courses from farther away perceived the learning to be greater than those who were closer to campus. Further exploration of these relationships would be beneficial to instructors designing online intensive courses to find the motivations and other factors involved in these results.

Additional study of the influence of format would be beneficial to instructors as they design courses and for administrators as they consider supporting programs that utilize different course lengths. Given the advent of technology into the world and how it influences learning opportunities, it seems of paramount importance for educational institutions to engage in scientific study of how to best provide the optimum learning experiences for their respective students while continuing to maximize their available resources.

Qualitative Discussion

Qualitative data were gathered through open-ended responses to the surveys submitted by the participating students and instructional faculty, as well as 12 interviews with instructors who taught the intensive online courses during that particular Winter Term. The following research questions guided the researcher.

1. What teaching presence components do instructors believe are important in intensive online courses?

2. Which teaching presence components do instructors perceive to correlate with student learning and sense of community?

3. Did course length influence instructors' choice of teaching presence components to include in intensive online courses?

The first qualitative research question asked which teaching presence components instructors believed to be most important. Ten of the 12 instructors interviewed believed that instructional design and organization were the most important, or one of the most important, components of teaching presence. All three components, instructional design and organization,

facilitated discourse, and direct instruction, were identified by the interviewees as important to the success of their courses, and they then discussed the importance of incorporating them into a course regardless of its format. Instructional design and organization was mentioned by nine of the interviewees as being a pivotal aspect for creating a viable and effective online course.

The second qualitative question asked about the relationships between teaching presence components and perceived learning and sense of community. Surprisingly, seven of the instructors interviewed seemed hesitant to discuss their perceptions of student learning as it occurred in their courses. Conceivably such reluctance might have stemmed from a concern that such disclosure would be viewed as a reflection on their teaching ability. One faculty member said, "It really surprised me that they did as well as they did." Four of the five who did comment mentioned some type of student motivation or self-selection as a factor in successful learning. A review of the open-ended responses from students and instructors revealed that both groups considered direct instruction as the most important feature with regard to learning. Facilitated discourse was second and organization of a course was last.

The instructor interviewees linked sense of community back to some area in their respective courses that had been designed specifically for interactions, either through discussion boards, small group assignments, water cooler spaces, instructor availability and encouragement, or options for contacting an instructor. In those interviews, it became apparent that instructors who were most comfortable establishing a sense of community used facilitated discourse intentionally designed into their course. Of the 324 student open-ended responses (not all students answered that item) on whether they believed there had been a sense of community in their respective course, 236 (72.83%) said there had been a sense of community and gave examples of: discussion boards, personal webpages, and small group work. The students also said the sense of community was cultivated when an instructor emailed frequently, used video lectures, and gave feedback. The latter involved only instructor-student interaction, and of those

persons who mentioned that type of interaction the message was that it was sufficient for them to believe it was a vehicle for being connected to a course.

Parenthetically, it was noted that direct communication, between an instructor and a student (emails), probably was more impressive since that kind of exchange is not common in conventional courses. Of the 29 faculty survey responses to this question, 24 (83%) reported how they worked to create a sense of community. Five instructors claimed there was no sense of community in their courses. Interestingly, the findings from analysis of that question led to the belief that both groups of participants (students and instructors) were interested in having a sense of community in courses.

The third qualitative research question sought to learn if course length had any influence on teaching presence. The instructors interviewed described the intensive nature of their respective courses using words such as: challenging, tiring, time-consuming, and constantly sensing a need to address student demands, and/or encouraging selected to students to become more engaged. Quotes from those interviews also disclosed some previously unmentioned attitudes regarding teaching an online intensive course in three-weeks. "I do not like teaching the three- week course intensive and I can see where it would be very good for many subjects. I am not sure which those would be." "I really think that the intensive courses, if they are structured and if they go the way they are intended, force students to be there and to be present and I think that whole emersion thing is a good way to learn." Another faculty member said that the intensive nature of such a course helped with interactions, "I think that day-to-day interaction where they are required to get in there and post generates that excitement and keeps them going and moves the class and makes it more cohesive than semester long courses because they are forced to."

Most of the students (62%) said that the short time format enabled them to focus on one course for a concentrated period of time and that they stayed on track because the course was so

tightly organized, or they were forced to be exceptionally well-organized in their approach to the course. One student commented, "The instructor, not the time limit, affected my ability to learn in this course." Instructors survey responses were similar; 17 (59%) believed that a three-week intensive online course was as good as a semester-long format regardless of the platform, that it was enhanced by the requirement for students to exert greater concentration during a prescribed period of time, and that intensive courses necessitated attention to organization on the parts of instructors and students.

Students who were most satisfied with the three-week intensive online courses said that they believed a respective instructor used positive teaching presence components of instructional design and organization and directed facilitation. Instructors who taught those online intensive courses voiced concerns with the time commitment and effort involved in designing, organizing, and then teaching quality online courses in intensive formats, but they claimed to have been successful with their efforts.

Creating a balance between the demands of such work and successful instructional practices will continue to be a challenge for persons vested with the responsibilities for authorizing and scheduling such learning experiences. The evidence was that most students appreciated the learning opportunities provided by such innovative approaches. The evidence also was that the persons entrusted with the instructional responsibilities generally were satisfied with their efforts to foster student learning, but the caveat was that the demands on instructors tended to be so great that it was apt to result in burn-out or possible resistance to assume future responsibilities for such instructional approaches. For administrators the key term seems to be caveat emptor (buyer beware).

Summary of Qualitative Discussion

The faculty interview data was interpreted to mean that the teaching presence component, instructional design and organization, was the pivotal aspect for creating and guiding meaningful

learning in intensive online courses. The instructors gave examples related to both compressed time constraints and distance delivery constraints that influenced the design and organization of their courses. However, when asked open-ended questions on student and faculty surveys, both groups chose direct instructional activities (instructor presence and involvement) as the most important influence on learning. That observation might have been a consequence of not differentiating course design and organization of material mechanisms employed by instructors, meaning that most instructors engaged in such learning practices were limited in their comprehension of teaching presence components and what made them distinct. If true, then it is a provocative issue and worthy of investing a considerable amount of resources to ensure those components are understood by administrative and instructional personnel.

The relationship between facilitated discourse and sense of community emerged from the faculty interviews and also the faculty and student survey responses. The interesting comments identified were when students and instructors claimed to have had no sense of community despite reporting favorable opinions on learning. The students claimed to have been frustrated at the apparent absence of community, but there were students who liked the independent learning format. Those latter students' apparent indifference to sense of community was perplexing. One thought was they lacked experience in courses designed with high sense of community and consequently did not have a standard for comparison. An alternative consideration was they genuinely believed that community was not important for their learning. Such a view could indicate students who were more self-efficacious and thus more mature about the learning process took responsibility for their own learning. This issue certainly would be worthy of additional study.

When asked whether course length made a difference to learning in intensive online courses, both students and instructional survey responses were interpreted to mean that a positive relationship existed between compressed course time and perceived learning. But it was

important to realize that both groups addressed the difficulties and frustrations of the seemingly huge workload. For students, the workload was deemed tantamount to taking a full-load of coursework without the 'break-time' afforded from having weekends or other such times when it was possible to avoid the course responsibilities. Instructors claimed their workload was greater than what was endured during a typical semester, even when engaged in directing online learning courses.

Conceivably the students' claims were prompted by a less than completely mature approach to learning. One that led them to believe that learning occurred only within defined times and that 'down-time' from learning activities were synonymous with fun time. Instructors who voiced complaints about their workloads might have been less organized in terms of structuring how they addressed their work assignments. No quarrel was warranted with the discontent voiced by either group. Instead, they were regarded as topics worthy of additional investigation.

Mixed Methods Discussion

The central research question that drove this study was: how is teaching presence related to students' perception of learning and sense of community in intensive online courses? The following discussion is predicated on the contents of Table 4.17, which graphically illustrates relationships in the quantitative and qualitative data as the interpretations of the results explain the relationships between teaching presence, perceived learning, sense of community, and course length. The strength of a mixed methods study comes from the legitimation of merging data from the two phases.

Teaching Presence Components and Perceived Learning

The teaching presence components of online learning as described by the Community of Inquiry Model (Garrison, Anderson, & Archer, 2000) include three constructs: instructional design and organization, facilitated discourse, and direct instruction. The following discussions

integrate student and faculty responses as they relate to these three teaching presence components and perceived learning.

Instructional design and organization. The quantitative results of the student surveys revealed a significant correlation between instructional design and organization and perceived learning ($r = .273$, $p < .01$), which accounted for 7.5% of the variance in perceived learning. Of student survey open ended responses, only forty-two (11%) students chose instructional design and organization as the teaching presence they identified as mostly closely related to facilitating learning. From the open ended responses on the surveys returned by the instructional personnel only three identified instructional design and organization as most important in relation to learning.

These survey open ended responses were understood to mean that instructional design and organization was not considered by these two groups as influential to learning in online intensive courses. A random sample of student quantitative data compared to instructor quantitative survey results evidenced no significant differences on perceptions of teaching presence components and perceived learning. A somewhat startling observation was found when 9 of the 12 instructors interviewed identified instructional design and organization as the most important teaching presence component with regard to learning.

The above information disclosed the existence of a perceived connection between the student quantitative results, showing there was a relationship between instructional design and organization and perceived learning, and the analysis of transcripts from the faculty members interviewed, which endorsed the importance of instructional design and organization to perceived learning. The strength of the interviewees' data interpretation encourages additional research to discover if this component is in fact clearly the most important or if it is so tightly interwoven with the other two teaching presence components, facilitated discourse and direct instruction that students do not readily differentiate between them.

Facilitated discourse and direct instruction. This section contains both teaching presence components because the student quantitative data revealed that students found these two components to represent one construct within the quantitative survey. This result corroborated the earlier findings of Shea, Li, and Pickett (2006), who labeled this construct as directed facilitation. Student quantitative results revealed a significant correlation between directed facilitation and perceived learning ($r =.255$, $p<.01$), which accounted for 6.5% of the variance in perceived learning.

The qualitative results also were understood to mean that students and instructors were most favorably inclined toward facilitated discourse and direct instruction. Student survey open responses showed that 118 (35.1%, N =335) chose facilitated discourse as the most important teaching presence component, and 181 (54%, N=335) selected direct instruction.

Instructors' open responses were similar to students, with 22 of 37 responses identifying facilitated discourse and 14 choosing direct instruction as most important with respect to learning. In survey open responses both students and faculty generally chose facilitated discourse as the most important teaching presence component, however the faculty interview data did not agree with the survey results. In the interviews, faculty overwhelmingly chose instructional design and organization as key to successful online intensive courses.

This study found evidence that selected teaching presence components apparently are tied to perceived learning by students. Furthermore, there appears to be overlapping between and among these components and as such the interactions appear to hold important implications for how students and instructors understand and/or perceive learning in online intensive courses. There is no conclusive evidence over which of the components is more important than the others. Further study in this area could reveal insights in instructional design and course preparation.

Teaching Presence Components and Sense of Community

   Student perspective. The student survey results revealed significant correlations between the elements of directed facilitation and instructional design and organization with regard to a sense of community. Directed facilitation accounted for the most variance (34.7%) while instructional design and organization accounted for 21.7%. These results are similar to the finding by Shea, Li, and Pickett (2006) who found that 62% of the variance for class community was accounted for by measures of teaching presence. Student survey open responses also chose facilitated discourse, in this case distinct from direct instructional strategies, as most important to building a sense of community. Most students (72.8%, 236 out of 324 open responses) believed that a sense of community had been established. Strategies employed to cultivate such a sense included: student and faculty introductions, discussion boards, personal webpages, group projects and activities, video lectures, and emails. Many students commented that instructor-student interaction was important to them in establishing a sense of community than student-student interaction. These comments suggest that teaching presence is instrumental in building community in online intensive courses and that student-student interaction without instructor-student interaction is not enough to generate that sense of community among students.

   Faculty perspective. Faculty instructors interviewed stated an importance for a sense of community, with 10 out of the 12 faculty claiming to have worked to establish community in their courses. In addition, 24 out of 29 faculty survey open responses (83%) stated ways they worked to create a sense of community in their courses. Five of those 29 faculty persons who responded to the survey reported no sense of community in their online intensive courses. Instructors who did not have a sense of community typically designed their courses to be more like independent studies, or believed that activities causing students to interact was an invasion of student privacy. Parenthetically it can be stated that such a position seems to be myopic and likely naïve in terms of what research claims fosters learning; the dynamics of interactions

between and among persons so ideas are expanded and concepts can be modified, rejected, or new views developed. Instructors citing reluctance to encourage student-student interactions seem to be adherents of the adage that an instructor should be a sage on a stage. The world has changed since the 1800s and the understanding of fostering learning has moved away from the notion of a teacher being the dispenser of information to an eager supplicant who absorbs and then regurgitates such information.

In general, both students and faculty instructors emphasized a need for instructor presence; not being an absentee land-owner but being an active participant/leader in the class. This idea seemed to be more important than student-student interactions or student-content interaction. Students and instructors perceived a greater connection occurring between teaching presence and sense of community than was shown by the data on the relationship between teaching presence and perceived learning.

Different interpretations can be made to that finding. One approach could be that as instructors and students become more comfortable in online intensive environments, students expect to have a sense of connectedness to fellow classmates and to an instructor. This feeling of social presence as well as teaching presence has led students to perceive an environment as being more conducive to learning. A second view might be that a sense of community comes from instructional personnel who believe that collaborative learning, or other methods that involve constructivist learning theory, employ techniques highlighting facilitated discourse. As such, they favor use of direct instruction with an active teaching presence that students perceive as desirable, especially in an online class environment when there is no physical presence.

Satisfaction with Course Length

Student perspective. From the student survey data, satisfaction with course length was significantly correlated with both perceived learning and sense of community, with 10.0% of the variance in perceived learning and 8.4% of the variance in sense of community attributed to

satisfaction with course length. A majority of the students' (62%, 208 out of 336) open responses cited the short time format as a catalyst for them focusing on one course. They explained that for a concentrated period they stayed on track because the course was organized or they realized the need to self-organize in order to be successful.

Faculty perspective. A majority of the instructors surveyed (59%, 17 out of 29 respondents) observed that student learning in their online intensive course was enhanced or at least was equal to what occurred during a semester-length online courses. Another six (29%) stated that they believed course length was irrelevant to student learning. Additionally, it was important to learn that those responding instructors wanted to convey statements about increased workload, additional work in instructional design, intense time demands to complete grading, and constantly feeling rushed to keep up with student interactions such as discussion boards and emails. Despite such complaints, it was gratifying to learn that the instructors believed that the intense nature of three-week courses were of benefit to students.

In summary, the students seem to be much more satisfied with the intensive nature of these three-week online courses than were the instructors, but both groups claimed to find benefits to such experiences. Shea, Li, and Pickett (2006) included course length as a demographic factor but found no correlations to teaching presence or sense of community. This study extended that line of inquiry and uncovered a connection between course length and teaching presence. Further study in the intensive nature of online intensive courses would be warranted.

Model of Students' Perceived Learning, Sense of Community and Teaching Presence Components in Online Intensive Courses

Based on the findings of the quantitative and qualitative phases of this study, a model of the factors surrounding students perceived learning in online intensive courses was developed (see Figure 5.1). The use of double arrow-lines represents the interrelationships between the

factors in online intensive courses. Solid arrows represent the positive relationships between factors indicated by quantitative survey data. Single dashed-line arrows were used to denote positive relationships between factors indicated by the results of data found from analysis of the transcripts from faculty interviewees. Long-short dashed-line arrows represent relationships found through student and faculty survey open responses.

This model was drafted to visually depict the interactions between the factors that contribute to perceived learning and sense of community in online intensive courses. It is limited to three-week online courses delivered during one winter term at a single university, and only a small number of factors were included. More research is needed to find a reliable model of perceived learning and sense of community in online intensive courses.

Figure 5.1

Model of Students' Perceived Learning, Sense of Community and Teaching Presence Components
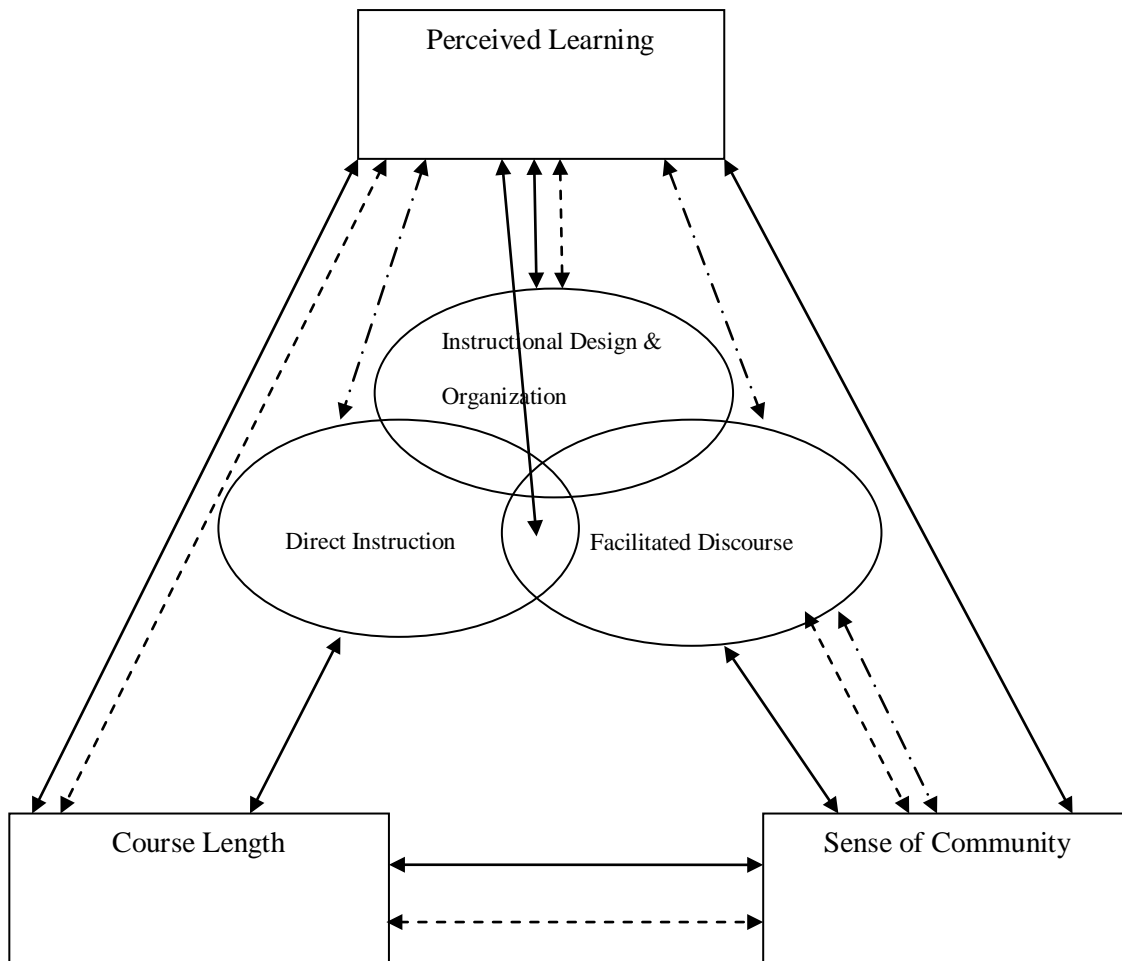
in Online Intensive Courses

Figure 5.1. Solid lines denote quantitative survey results. Single dashed lines denote faculty

interviews. Long-short dashed lines denote survey open responses.

Implications and Recommendations

This study has contributed to the body of research on online courses and intensive courses by using the lens of teaching presence as it relates to the combined formats of online and intensive courses in higher education. While there is a growing body of research on both online courses and intensive courses separately, the major contribution of this study is that it has explored factors of teaching presence that impact students' perceived learning and sense of community in the combined online intensive format. The mixed methods approach of this study incorporated quantitative and qualitative data and analysis has expanded the understanding of online intensive courses by providing different perspectives to the research question.

As both online and intensive courses continue to grow in offerings and their enrollments in higher education increase, the results of this study may be of interest to many stakeholders: instructors who design and teach online intensive courses, persons who design programs that incorporate online intensive courses, and professionals who advise students taking online intensive courses. Administrators who recommend and implement policies related to winter and summer terms as well as accelerated programs, and students who are interested in pursuing academic programs that include online intensive courses may also might benefit from the findings reported in this study by virtue of knowing more about the relationships between the factors of teaching presence, perceived learning, sense of community and course length. The implications and recommendations that follow come from a critical interpretation of the study results:

1. The teaching-learning phenomenon as it occurs in online intensive course settings is complex and many factors contribute to students' perception of learning. Given this caveat, the results of this study for this sample population have shown that the components of teaching presence are valuable in describing the variance in students' perceived learning. The study findings allow for claiming that the teaching presence components as defined by Garrison, Anderson, and Archer (2000) and described by the survey items in the Teaching Presence Scale

developed by Shea, Pickett and Pelz (2003) are highly interrelated. Interviewed faculty

instructors identified instructional design and organization as highly important in creating a

learning environment, and then described the design elements that presumably facilitated

discourse. Direct instruction, regardless of how perceived, was identified by students as

important to their learning experiences.

  2. Students' perceptions of learning and sense of community were positively correlated

($p<.01$, two-tailed). Creating a sense of community in an online environment as well as a sense

of community in an intensive course environment was an important aspect of a course. Students

expressed the value they placed on sense of community in both quantitative and qualitative

results. Faculty instructors who design online intensive courses may want to consider this issue

as it seems to hold considerable importance. Administrators may want to provide incentives to

faculty who commit to the effort to incorporate community building modules and activities into

online intensive courses in order to strengthen the quality of learning. Students may want to look

for and register for online intensive courses that have good reputations of providing community

building.

  3. Students in this study believed that the intensive nature of the course contributed to

and was predictive of their learning and sense of community. They were mostly nontraditional

(60.2%), accessing their course from home (91.9%), employed full-time (50.4%), and lived off

campus but less than two hours away (81.5%). Nontraditional students claimed to have a greater

sense of community, and students who were farther away from campus claimed to have a higher

perception of learning. Because of self-selection into courses, it is not possible to generalize to a

larger population, however, for persons who believe the students from this study are similar to

those they encounter, the findings may be valuable especially in the areas of instructional design

and organization of online intensive courses.

Instructors displayed less enthusiasm for the intensive nature of online courses, but they expressed a perception of student learning occurring that was at least as good as in online semester-length courses. This fact should hold considerable importance for others when making decisions related to faculty workloads and students' course loads as they include more online intensive courses. Prior to the prevalence of online courses, students and faculty were hindered in the number of courses they could participate in at a given time; issues of location and time. Online courses, especially when they employ an asynchronous format negate the time and location shackles. But such attractiveness should not be misleading because each online course demands considerably more structure and effort on the part of all participants, and when the format is intensive, such as during a three-week window, the demands are exacerbated on all involved.

Recommendations for Future Research

This study of teaching presence as it relates to perceived learning and sense of community in online intensive courses has just touched the surface of the complexity of factors that contribute to student learning and sense of community in these types of courses. There are still questions to be answered that will bear valuable results in future research for all stakeholders in higher education. Some questions for future research are:

1. The merging of two of the teaching presence components in the quantitative results was similar to results obtained by Shea, Li, and Pickett (2006), who also found the teaching presence factors facilitated discourse and direct instruction merged into a single factor in a study of 1,067 students in online courses. While there was some demarcation of the components in the faculty interviews, further studies are warranted on the Teaching Presence Scale (Shea, Pickett, & Pelz, 2003) and the way the teaching presence components are defined.

The Community of Inquiry Model created by Garrison, Anderson, and Archer (2000) was designed to include overlap in the three components. Further research could help faculty

understand those overlaps and how best to leverage them to create strategies that will be most effective in creating sense of community and a learning environment.

2. Teaching presence strategies that helped students in intensive online courses also apply to all learning environments. Further study to determine which teaching presence components are most effective in the intensive online format would benefit faculty in course creation and delivery and provide students with improved learning environments. Most students expressed positive perceptions of learning and sense of community in intensive online courses and it is expected these students, having had a positive learning experience, will create an ever greater demand for this format in the future. Instructors could use more research-based information on how to design courses that would most effectively project their teaching presence to promote learning in all course formats, online, face-to-face, and intensive.

3. This study should be replicable. Questions to consider include:

(a) Do the student demographics make a difference to the results?

(b) Can expanding the sample be expanded to include multiple campuses?

(c) Would there be value to restricting a study to traditional or nontraditional students?

(d) Might there be benefits to in-depth study of selected instructor attributes such as online teaching experience, instructional design experience, and technology self-efficacy?

It is believed that this exploratory study can serve as a launching platform for qualitative studies about teaching presence from both student and faculty perspectives. As economic winds continue to swirl around the campuses and homes of current and prospective students the use of cutting-edge technology and creative approaches to learning likely will be increasingly important.

CHAPTER 6:

SUMMARY

This mixed methods concurrent triangulation design study was predicated upon two models that advocated a connection between teaching presence and perceived learning: the Community of Inquiry Model of Online Learning developed by Garrison, Anderson, and Archer (2000); and the Online Interaction Learning Model by Benbunan-Fich, Hiltz, and Harasim (2005). The objective was to learn how teaching presence impacted students' perceptions of learning and sense of community in intensive online distance education courses developed and taught by instructors at a regional comprehensive university. Teaching presence has been considered as being pivotal for learners to 'connect' to a course.

Study Design

The quantitative phase was driven by five research questions that focused on the central question of whether teaching presence, as established by instructors in online intensive courses, impacted students' perceptions of learning and sense of community. The qualitative phase explored teaching presence through students' and instructors' perceptions of teaching presence, learning, sense of community, and satisfaction with course length. Online surveys were used to collect quantitative data from students and respective instructors. Open-response questions and interviews with a convenience sample of 12 instructors complimented that information.

The quantitative and qualitative phases were conducted concurrently with analysis and integration occurring after the data collection was completed. Quantitative analysis included frequency counts, means, correlations, component score coefficient matrix to extract factors from the quantitative student survey data, and regression analysis to explore the predictive value of the teaching presence components. The qualitative data were coded and analysis of 783 text units revealed six themes: direct instruction, facilitated discourse, instructional design and organization, sense of community, perceived learning and course length.

Findings

Integration of quantitative and qualitative results at the discussion stage through matrix generation allowed for integrating the students' and instructors' perspectives on teaching presence in the intensive online course, and its relationship to perceived learning and sense of community. Listed below are the salient findings.

Teaching presence and perceived learning. The components of teaching presence (instructional design and organization, facilitated discourse, and direct instruction) apparently were tied to the students' perceived learning, but there was no definitive evidence as to which was of greatest value.

Teaching presence and sense of community. Students reportedly perceived a greater connection in online courses when an instructor used facilitated discourse in addition to an active presence to create a social presence. That allowed students to interact with each other and to 'sense' an instructor's presence. As students became acclimated to the online learning environment they expected such interactions to occur, and was interpreted as conducive to learning.

Satisfaction with course length. Students were more satisfied with intensive course formats than were instructors, but both groups believed they provided benefits. It was concluded that a relationship existed between teaching presence and course length.

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APPENDICES

Appendix A: Visual Model for Multi-level Triangulation Design Study

Appendix B: Timeframe for Data Collection in Concurrent Triangulation Study

Appendix C: Student Survey

Appendix D: Instructor Survey

Appendix E: Interview Guide

Appendix F: IRB Approvals

Appendix A

Visual Model for Multi-level triangulation design study of teaching presence in intensive online distance education courses with high

perceived learning and sense of community (QUAL + QUAN)

Procedure		Product	Procedure		Product

Procedure
- Faculty interviews
- Collection of syllabi and other instructor-created course documents that may demonstrate teaching presence

QUAL Data Collection

Product
- Text data

Procedure
- Faculty surveys
- Student surveys

QUAN Data Collection

Product
- numeric data

QUAL Data Analysis

QUAN Data Analysis

- Coding
- Thematic analysis

Compare Results

- Test
- Factors related to teaching presence

- Discussion stage
- Matrix generation

Composite Model

Appendix B

Timeframe for Data Collection in Concurrent Triangulation Study		
	Quantitative Phase	*Qualitative Phase*
Second Week of Three Week Winter Term	Ask instructors teaching intensive online courses if they are willing to encourage their students to participate in online surveys.	Ask instructors teaching intensive online courses if they are willing to participate in the surveys and interviews.
Last week of Winter Term	Conduct online anonymous surveys of students and instructors that included both quantitative questions and open-ended questions.	
Beginning Last Week of Winter Term		Conduct one-on-one, face-to-face interviews with instructors, write field notes, and collect instructor-created course documents related to course structure and organization.
Month after term ends	Data were edited for completeness, consistency, and duplication. Data were coded for use with statistical software.	Audio recordings and field notes based on researcher's experiences in interviews and in readings of instructor-created course documents were transcribed and coded.

Appendix C

Teaching Presence in Intensive Online Courses Student Survey v1.0

To be administered online using EASY software

Instructions: Your help with this survey will help us better understand the impact of teaching

presence, the design, organization, facilitation, and instruction in online intensive courses, like the

one you took during Winter Term. We continually look for ways to improve the learning process,

and your feedback will be very valuable as a part of this study.

Thank you for your participation –

I. Information about your course: (dropdown boxes)

  1. Did you complete an online course during Winter Term? (branch question: if no, go to
  end of survey)
    a. Yes
    b. No
  2. What course did you take?
    a. (dropdown box for course ids and titles listed, with "other" write-in box in case
    course didn't get listed.

  3. Was this an elective or a course in your major/minor/area of concentration?
    a. Elective
    b. Course in my major/minor/or area of concentration
  4. What motivated you to take an online course during Winter Term?
    a. Distance from campus/lack of transportation
    b. Conflict with personal schedule
    c. Course not offered on campus
    d. Course schedule conflict
    e. Work responsibilities
    f. Family responsibilities
    g. Interested in taking a course online
    h. Other

II. Questions about your course. On these questions, please click on the radio button under the

choice that best describes your sense of your course and instructor.

	strongly disagree	disagree	neutral	agree	strongly agree	I choose not to answer this question
5. Overall, the instructor for this course clearly communicated important course goals (for example, provided documentation on course learning objectives).	1	2	3	4	5	0
6. Overall, the instructor for this course clearly communicated important course topics (for example, provided a clear and accurate course overview).	1	2	3	4	5	0
7. Overall, the instructor for this course provided clear instructions on how to participate in course learning activities (e.g. provided clear instructions on how to complete course assignments successfully).	1	2	3	4	5	0
8. Overall, the instructor for this course clearly communicated important due dates/time frames for learning activities that helped me keep pace with this course (for example, provided a clear and accurate course schedule, due dates, etc.).	1	2	3	4	5	0
9. Overall, the instructor for this course helped me take advantage of the online environment to assist my learning (for example, provided clear information on how to participate in online discussion forums).	1	2	3	4	5	0
10. Overall, the instructor for this course helped students to understand and practice the kinds of behaviors acceptable in online learning environments (for example, provided documentation on "netiquette" i.e. polite forms of online interaction).	1	2	3	4	5	0
11. Overall, the instructor for this course was helpful in identifying areas of agreement and disagreement on course topics that assisted me to learn.	1	2	3	4	5	0
12. Overall, the instructor for this course was helpful in guiding the class towards understanding course topics in a way that assisted me to learn.	1	2	3	4	5	0
13. Overall, the instructor in this course acknowledged student participation in the course (for example, replied in a positive, encouraging manner to student submission).	1	2	3	4	5	0
14. Overall, the instructor for this course encouraged students to explore new concepts in this course (for example, encouraged "thinking out loud" or the exploration of new ideas).	1	2	3	4	5	0
15. Overall, the instructor for this course helped to keep students engaged and participating in productive dialog.	1	2	3	4	5	0
16. Overall, the instructor for this course helped keep the participants on task in a way that assisted me to learn.	1	2	3	4	5	0
17. Overall, the instructor for this course presented content or questions that helped me to learn.	1	2	3	4	5	0

	strongly disagree	disagree	neutral	agree	strongly agree	I choose not to answer this question
18. Overall, the instructor for this course helped to focus discussion on relevant issues in a way that assisted me to learn.	1	2	3	4	5	0
19. Overall, the instructor for this course provided explanatory feedback that assisted me to learn (for example, responded helpfully to discussion comments or course assignments).	1	2	3	4	5	0
20. Overall, the instructor for this course helped me to revise my thinking (for example, correct misunderstandings) in a way that helped me to learn.	1	2	3	4	5	0
21. Overall, the instructor for this course provided useful information from a variety of sources that assisted me to learn (for example, references to articles, textbooks, personal experiences or links to relevant external websites).	1	2	3	4	5	0

III. Questions about your sense of community

In this section, choose the number corresponding to 1 for strongly disagree to 5 strongly agree or 0 if you choose not to answer that question. Sense of community means how connected, engaged, and supported you felt as a part of the Winter Term class you took. (radio buttons)

	strongly disagree	disagree	neutral	agree	strongly agree	I choose not to answer this question
22. I feel that students in this course care about each other.	1	2	3	4	5	0
23. I feel that I receive timely feedback in this course.	1	2	3	4	5	0
24. I feel connected to others in this course.	1	2	3	4	5	0

	strongly disagree	disagree	neutral	agree	strongly agree	I choose not to answer this question
25. I feel that this course results in only modest learning.	1	2	3	4	5	0
26. I trust others in this course.	1	2	3	4	5	0
27. I feel that I am given ample opportunities to learn in this course.	1	2	3	4	5	0
28. I feel that I can rely on others in this course.	1	2	3	4	5	0
29. I feel that my educational needs are not being met in this course.	1	2	3	4	5	0
30. I feel confident that others in this course will support me.	1	2	3	4	5	0
31. I feel that this course does not promote a desire to learn.	1	2	3	4	5	0

IV. Questions about how you measured your learning

35. On a scale of 0 to 9, how much did you learn in this course, with 0 meaning you learned nothing and 9 meaning you learned more than any other course you've had? 0 1 2 3 4 5 6 7 8 9 (dropdown box)

36. Did the intensive nature of the course, having three weeks from start to end, impact the way you felt about the course?
    a. Yes
    b. No
    c. I'm not sure

37. Did the intensive nature of the course, having three weeks from start to end, impact the way you felt about the instructor?
    a. Yes
    b. No
    c. I'm not sure

38. Did the intensive nature of the course, having three weeks from start to end, impact the way you felt about how well you learned?
    a. Yes
    b. No
    c. I'm not sure

39. In what ways did your instructor structured the course activities and assignments so that you felt that you were learning?

40. In what ways did your instructor create an environment where you felt a sense of community?

41. How did the short time period, only three weeks, affect your ability to learn in this course?

42. What did your instructor do in this course that you felt made an impact on your learning in a three-week course compared to a semester-long course?

IV. Tell us about yourself.

43. Are you
   - a.   Male
   - b.   Female

44. Are you
   - a.   23 years old or younger
   - b.   24 years old or older

45. During this course, did you live
   - a.   On campus
   - b.   Less than 30 minutes driving time away from main campus
   - c.   More than 30 minutes but less than one hour away from main campus
   - d.   One to two hours away from main campus
   - e.   More than two hours away from main campus

46. Did you access your course online most often from
   - a.   Home
   - b.   Campus computer lab
   - c.   Library
   - d.   Commercial wi-fi site (e.g. Starbucks or McDonalds)
   - e.   Other

43. Did you hold a job while taking this course?
   - a.   Full-time employment
   - b.   Part-time employment
   - c.   Not employed

44. If you are interested in entering a drawing for 5 prizes of $25 in Big Red Dollars, please enter your WKU email address below. Be assured that your email will be separated from your responses and this survey is anonymous. Thank you for your participation!
   - a.   (Textbox for entering email address)

Appendix D

Teaching Presence in Intensive Online Courses Faculty Survey v4.0

To be administered online using EASY Survey Package software

Instructions: Your help with this survey will help us better understand the impact of teaching presence [the design, organization, facilitation, and instruction] in online intensive courses, like the one you taught during the past Winter Term. We continually look for ways to improve the learning process, and your feedback will be valuable. This project has been reviewed and approved by the Western Kentucky University Human Subjects Review Board on [insert approved date], (Sean Rubino, Compliance Manager, telephone: (270) 745-4652). This study has also been approved by the Institutional Review Board at University of Nebraska – Lincoln, 312 N. 14th St., 209 Alex West, Lincoln, NE 68588-0408(402) 472-6965, Fax (402) 472-6048, irb@unl.edu. Please contact me if you have any questions or comments about this study (Beth Laves, Principal Investigator and doctoral student, beth.laves@wku.edu, phone: 745-5308). Thank you for your participation.

I. Questions about your course design and structure. (17 items)

On these questions, please click on the radio button under the choice that best describes the sense of your course and instruction.	strongly disagree	disagree	neutral	agree	strongly agree	I choose not to answer this question
18. Overall, I clearly communicated important course goals to the students (for example, provided documentation on course learning objectives).	1	2	3	4	5	0
19. Overall, I clearly communicated important course topics to the students (for example, provided a clear and accurate course overview).	1	2	3	4	5	0
20. Overall, I provided clear instructions on how to participate in course learning activities (e.g. provided clear instructions on how to complete course assignments successfully).	1	2	3	4	5	0
21. Overall, I clearly communicated important due dates/time frames for learning activities that helped students keep pace with this course (for example, provided a clear and accurate course schedule, due dates, etc.).	1	2	3	4	5	0
22. Overall, I helped students take advantage of the online environment to assist their learning (for example, provided clear information on how to participate in online discussion forums).	1	2	3	4	5	0
23. Overall, I helped students to understand and practice the kinds of behaviors acceptable in online learning environments (for example, provided documentation on "netiquette" i.e. polite forms of online interaction).	1	2	3	4	5	0

On these questions, please click on the radio button under the choice that best describes the sense of your course and instruction.	strongly disagree	disagree	neutral	agree	strongly agree	I choose not to answer this question
24. Overall, I was helpful in identifying areas of agreement and disagreement on course topics that assisted students to learn.	1	2	3	4	5	0
25. Overall, I was helpful in guiding the class towards understanding course topics in a way that assisted the students to learn.	1	2	3	4	5	0
26. Overall, I acknowledged student participation in the course (for example, replied in a positive, encouraging manner to student submission).	1	2	3	4	5	0
27. Overall, I encouraged students to explore new concepts in this course (for example, encouraged "thinking out loud" or the exploration of new ideas).	1	2	3	4	5	0
28. Overall, I helped to keep students engaged and participating in productive dialog.	1	2	3	4	5	0
29. Overall, I helped keep the participants on task in a way that assisted them to learn.	1	2	3	4	5	0
30. Overall, I presented content or questions that helped students learn.	1	2	3	4	5	0
31. Overall, I helped to focus discussion on relevant issues in a way that assisted students to learn.	1	2	3	4	5	0
32. Overall, I provided explanatory feedback that assisted students to learn (for example, responded helpfully to discussion comments or course assignments).	1	2	3	4	5	0
33. Overall, I helped students to revise their thinking (for example, correct misunderstandings) in a way that helped them to learn.	1	2	3	4	5	0
34. Overall, I provided useful information from a variety of sources that assisted students to learn (for example, references to articles, textbooks, personal experiences or links to relevant external websites).	1	2	3	4	5	0

II. Questions about your students' sense of community. (9 items)

Sense of community means how connected, engaged, and supported the students believed they were in the Winter Term class you taught. In this section, choose the number corresponding to 1 for strongly disagree to 5 strongly agree, or 0 if you choose not to answer that question. (radio buttons)	strongly disagree	disagree	neutral	agree	strongly agree	I choose not to answer this question
35. The students in this course cared about each other.	1	2	3	4	5	0

Sense of community means how connected, engaged, and supported the students believed they were in the Winter Term class you taught. In this section, choose the number corresponding to 1 for strongly disagree to 5 strongly agree, or 0 if you choose not to answer that question. (radio buttons)	strongly disagree	disagree	neutral	agree	strongly agree	I choose not to answer this question
36. The students received timely feedback in this course.	1	2	3	4	5	0
37. The students seemed to be connected in this course.	1	2	3	4	5	0
38. The students believed that that this course resulted in only modest learning.	1	2	3	4	5	0
39. The students did not trust each other in this course.	1	2	3	4	5	0
40. The students were given ample opportunities to learn in this course.	1	2	3	4	5	0
41. The students believed that they could rely on others in this course.	1	2	3	4	5	0
42. The students believed that their educational needs were not being met in this course.	1	2	3	4	5	0
43. The students did not have confidence that others in this course would support them.	1	2	3	4	5	0
44. The students believed that this course did not promote a desire to learn.	1	2	3	4	5	0

III. Questions about how you measured your learning

29. On a scale of 0 to 9, how much did your students learn in this course, with 0 meaning they learned nothing and 9 meaning they learned more than any other group you've taught? 0 1 2 3 4 5 6 7 8 9 (dropdown box)

For the following six questions, choose the number corresponding to 1 for strongly disagree to 5 for strongly agree or 0 if you choose not to answer the question. Intensive nature of the course in this context refers to the three-week format.

	strongly disagree	disagree	neutral	agree	strongly agree	I choose not to answer this question
30. I liked the intensive nature of this course, having three weeks from start to end.	1	2	3	4	5	0

	strongly disagree	disagree	neutral	agree	strongly agree	I choose not to answer this question
31. I thought student learning was enhanced in a positive way by the intensive nature of the course, having three weeks from start to end.	1	2	3	4	5	0
32. The students learned as much in the intensive course, having three weeks from start to end, as they would have in a semester-long course in the same subject.	1	2	3	4	5	0
33. I would have rather taught this course in a semester-long online format.	1	2	3	4	5	0
34. I think I would have been able to do more to enhance student learning in a semester-long course.	1	2	3	4	5	0
35. Students would have felt more connected to other students in a semester-long course.	1	2	3	4	5	0

Questions 36 – 39 require short answers.

36. In what ways did you structure the course activities and assignments so that you felt that students were learning?

37. In what ways did you create an environment where your students felt a sense of community?

38. How did the short time period, only three weeks, affect your ability to teach this course?

39. What did you do differently in this course that you felt made an impact on your students' learning in a three-week course compared to a semester-long course?

IV. Questions about your course

40. What level was this course?
        c.   Undergraduate
        d.   Graduate

41. Was this the first time you have taught this course?
        c.   yes
        d.   no

42. Was this the first time you have taught this course online?
      a. yes
      b. no

43. Was this the first time you have taught this course in a three-week format?
   - c. yes
   - d. no

44. Would you be interested in allowing me to interview you about teaching presence in your course design and structure? If so, please enter your email address or email me separately at beth.laves@wku.edu. The interview will only take about one hour of your time. Thank you so much for your help with my research.
   - b. (Textbox for entering email address)

Appendix E

Sequence of topics to use for interviewing selected faculty members teaching intensive online courses
The following questions will be used as a guide when interviewing faculty who are teaching online intensive courses. The intent is to understand how they developed teaching presence in their intensive online course during the Winter Term that had just concluded. To ensure that the participants understand the purpose for the study, the researcher will introduce and discuss teaching presence and its three elements [instructional design and organization, facilitated discourse, and direct instruction] as part of the Community of Inquiry Model, and explain the outcome variables of students' perceived learning and sense of community. Each person who participates in the interviews will be asked to sign an informed consent form prior to initiating the interviewing.

The initial question is: What course were you teaching during the Winter Term? Subsequently the following 14 point outline will be followed.

Question	Teaching Presence Component or Factor
1. How did you convey course organization to students?	IDO
2. What elements in your instructional design helped students navigate through the course?	IDO
3. Do you have many questions from students about the syllabus, assignments, or how to navigate the course? How do you handle, or compensate for, these questions?	IDO
4. How do you cultivate a class atmosphere/environment in an online course environment?	IDO
5. How does the intensive timeframe impact your instructional design and organization of this course?	IDO
6. How do you help students develop and maintain (or understand and practice) behaviors that help them succeed in the online intensive course environment?	DI
7. Do you create activities/environments that allow students to agree, disagree, and/or reach consensus so that the activities foster learning? How is it done?	FD
8. How do you guide, acknowledge, and encourage student participation in the course?	FD
9. What strategies/activities do you use to keep students engaged and actively participating?	FD
10. What teaching presence strategies do you use to correct misunderstandings?	DI
11. How do you develop students' sense of community and shared experience? Explain if the process is different than for conventional courses.	Sense of Community
12. How does the intensive course timeframe affect the design, organization, content, activities or discussions in your course?	Course Length

Table cont. Question	Teaching Presence Component or Factor
13. What are your views on intensive courses as vehicle affecting student learning and developing a sense of community?	Course Length
14. What do you believe are the most important teaching presence elements (instructional design and organization, facilitated discourse, and direct instruction) that you have built into your course and how do such elements impact student success?	Teaching Presence

Appendix F

    1. University of Nebraska – Lincoln Institutional Review Board Approval

    2. Western Kentucky University Human Subjects Review Board Approval

From: nugrant-irb@unl.edu
Subject: NUgrant Message - Official Approval Letter for IRB project #9373
Date: Sun, 14 Dec 2008 08:20:33 -0600
To: beth.laves@wku.edu,sstick@unlserve.unl.edu

UNIVERSITY OF
Nebraska
Lincoln

December 11, 2008

Elizabeth Laves
Department of Educational Administration
341 Millwood Dr Bowling Green, KY 42104

Sheldon Stick
Department of Educational Administration
123 TEAC UNL 68588-0360

IRB Number: 2008129373EP
Project ID: 9373
Project Title: The impact of teaching presence in intensive online courses on perceived learning: A mixed methods study

Dear Elizabeth:

This letter is to officially notify you of the approval of your project by the Institutional Review Board (IRB) for the Protection of Human Subjects. It is the Board's opinion that you have provided adequate safeguards for the rights and welfare of the participants in this study based on the information provided. Your proposal is in compliance with this institution's Federal Wide Assurance 00002258 and the DHHS Regulations for the Protection of Human Subjects (45 CFR 46).

Your stamped and approved informed consent form has been uploaded to NUgrant (Informed_Consent_Form-Approved.pdf file). Please use this form to make copies to distribute to participants. If changes need to be made, please submit the revised informed consent form to the IRB for approval prior to using it.

Date of EP Review: 11/26/2008

You are authorized to implement this study as of the Date of Final Approval: 12/11/2008. This approval is Valid Until: 12/10/2009.

We wish to remind you that the principal investigator is responsible for reporting to this Board any of the following events within 48 hours of the event:
▪ Any serious event (including on-site and off-site adverse events, injuries, side effects, deaths, or other problems) which in the opinion of the local investigator was unanticipated, involved risk to subjects or others, and was possibly related to the research procedures;
▪ Any serious accidental or unintentional change to the IRB-approved protocol that involves risk or has the potential to recur;
▪ Any publication in the literature, safety monitoring report, interim result or other finding that indicates an unexpected change to the risk/benefit ratio of the research;
▪ Any breach in confidentiality or compromise in data privacy related to the subject or others; or
▪ Any complaint of a subject that indicates an unanticipated risk or that cannot be resolved by the research staff.

For projects which continue beyond one year from the starting date, the IRB will request continuing review and update of the research project. Your study will be due for continuing review as indicated above. The investigator must also advise the Board when this study is finished or discontinued by completing the enclosed Protocol Final Report form and returning it to the Institutional Review Board.

If you have any questions, please contact the IRB office at 472-6965.

Sincerely,
Mario Scalora, Ph.D.
Chair for the IRB

WKU.

A LEADING AMERICAN UNIVERSITY WITH INTERNATIONAL REACH
HUMAN SUBJECTS REVIEW BOARD

In future correspondence please refer to HS09-064, November 10, 2008

Beth Laves
DELO
Western Kentucky University
WKU

Dear Beth:

Your revision to your research project, *The impact of teaching presence in intensive online courses on perceived learning: A mixed methods study*, was reviewed by the HSRB and it has been determined that risks to subjects are: (1) minimized and reasonable; and that (2) research procedures are consistent with a sound research design and do not expose the subjects to unnecessary risk. Reviewers determined that: (1) benefits to subjects are considered along with the importance of the topic and that outcomes are reasonable; (2) selection of subjects is equitable; and (3) the purposes of the research and the research setting is amenable to subjects' welfare and producing desired outcomes; that indications of coercion or prejudice are absent, and that participation is clearly voluntary.

1. In addition, the IRB found that you need to orient participants as follows: (1) signed informed consent is not required as participation will imply consent; (2) Provision is made for collecting, using and storing data in a manner that protects the safety and privacy of the subjects and the confidentiality of the data. (3) Appropriate safeguards are included to protect the rights and welfare of the subjects.

This project is therefore approved at the Exempt Review Level

2. Please note that the institution is not responsible for any actions regarding this protocol before approval. If you expand the project at a later date to use other instruments please re-apply. Copies of your request for human subjects review, your application, and this approval, are maintained in the Office of Sponsored Programs at the above address. Please report any changes to this approved protocol to this office. Also, please use the stamped forms that accompany this letter.

Sincerely,

Sean Rubino, M.P.A.
Compliance Manager
Office of Sponsored Programs
Western Kentucky University

cc: HS file number Laves HS09-064

The Spirit Makes the Master

Office of Sponsored Programs | Western Kentucky University | 1906 College Heights Blvd. #11026 | Bowling Green, KY 42101-1026
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