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**Students' Experiences of the Social Environment and Social Presence
in Campus-Based and Web-Based Education**

A Dissertation
Presented for the
Doctor of Philosophy Degree
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Jennifer Lynn Gramling
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DEDICATION

This dissertation is dedicated to my parents, Don and Mary Gramling,
who are intelligent and courageous people, and who taught me, at a very young age,
that I could accomplish anything I put my mind to.

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Now and forever, we are not alone.

W. H. Auden

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ABSTRACT

Learning is a social process involving conversation, dialogue, and interactivity. Student-student, student-instructor, student-content, and student-interface interaction are considered integral to meaningful learning in both campus-based and web-based education (Moore, 1989; Hillman, Willis and Gunawardena, 1994). A review of the literature suggests that social factors are of increasing concern to distance learning researchers and practitioners. In particular, the concept of social presence has emerged as essential to comprehending the social context of web-based teaching and learning and to students' overall satisfaction with a course.

The purpose of the study was to observe and describe the social environment of two sections of Information Sciences 530: Information Access and Retrieval, and to understand students' experiences with social presence. One of the sections was taught in a web-based distance education format, using asynchronous and synchronous text-based chat and audio-conferencing software. The other section was delivered in a traditional, campus-based setting. Both sections were taught by the same instructor and covered the same material.

The study used multiple case study design within the framework of naturalistic qualitative research. Participant-observation, document analysis and interviews were used to obtain as much information as possible about the social environment and students' interpretations of social presence. Once the data from each case had been carefully examined and themes identified, a cross case analysis was performed to generate more information about the relationship between social presence in campus-based education and social presence in web-based distance education.

In both sections the social environment reflected a myriad of characteristics, including the students' and teacher's previous educational experiences, values and

attitudes, as well as interpersonal and intellectual exchanges between and among students and the instructor. The social atmosphere reflected students sharing knowledge and building relationships over time. Students in the campus-based course assigned meaning to social presence in terms of teaching, learning and connecting with fellow students. Participants in the web-based course experienced social presence as an awareness of fellow students based on their classmates' ability to use and manipulate the technology and computer-mediated communication tools.

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CHAPTER 1: INTRODUCTION

Background of the Problem

Distance education has come a long way since Isaac Pitman mailed the principles of shorthand, along with an offer to correct transcriptions of Bible passages, to correspondence students in the 1840s. Considered to be one of the oldest forms of distance learning, correspondence education is defined as “teaching by means of pre-produced instructional materials” and “postal two-way communication at a distance between student and correspondence tutor” (Baath, 1980, p. 13). Fueled by the Industrial Revolution’s advances in communication and transportation, correspondence education began to grow in response to increasing demands from the public. The university extension movement expedited the development and acceptance of correspondence education across the country (Keegan, 1996).

During the 19th century, students and instructors participating in correspondence study relied almost exclusively on the postal service as a way to exchange information. During the 1920s and 30s, new delivery technologies were introduced into many extension programs, initially, in the form of slides and motion pictures, and eventually through instructional radio and television. The advent of cable television in the mid-50s and the launching of the first US communication satellite in '58 paved the way for more advanced forms of distance education delivery (Jeffries, 2000).

Radio and television characterized the ‘second generation’ of distance education. Satellite communications technology in the late 70s allowed students across the country to receive two-way educational programming (Buckland, 1991). The ‘third generation’ of distance education began with audio-conferencing, but progressed to more sophisticated teleconferencing systems that eventually allowed two-way audio and video interaction between students and instructors (Romiszowski, Barker and Goodwin, 1993).

Educational adoption of computer networking started in the mid 1970s, spurred by the use of electronic mail (email), a program designed to send messages across a network. This easy to use, but powerful telecommunication tool helped establish the Internet as a significant communications medium (Harasim, 2000). The introduction of graphical web browsers and multimedia allowed an increasing number of people to “surf” the Internet and access a wide variety of information from around the world.

Advances in web-based technologies, combined with a new interest from administrators and a new appreciation within the global community, helped legitimize the delivery of instruction at a distance. In 1982, the International Council for Correspondence Education (ICCE) officially changed its name to the International Council for Distance Education (ICDE) (Holmberg, 1995). Consequently, scholars in the field began to redefine their discipline. Keegan (1980) synthesizes several definitions of distance education into the following elements: the separation of teacher and learner which distinguishes it from face-to-face learning; the influence of an educational organization which distinguishes it from private study; the provision of two-way communication so that the student may benefit from or even initiate dialogue; the possibility of occasional meetings for both didactic and socialization purposes; and the participation in an industrialized form of education. Moore (1990) proposes that distance education “is all arrangements for providing instruction through print or electronic communications media to persons engaged in planned learning in a place or time different from that of the instructor or instructors” (p. 10). Today’s distance education includes “the acquisition of knowledge and skills through mediated information and instruction, encompassing all technologies and other forms of learning at a distance” (Roblyer & Edwards, 2000, p. 23).

The proliferation of web-based telecommunications technologies has greatly impacted distance and distributed learning. University-based distance education has grown rapidly in the last ten years, and is now a regular offering of colleges and universities across the country. During the 1997-1998 academic year, an estimated 54, 000 different distance education courses were offered to 1.7 million people in two and four year post-secondary institutions in the United States (Nation Center for Educational Statistics, 1998). By the end of 2002, 85% of two year and 84% of four-year colleges will offer distance education courses with the number of college students enrolled in distance learning courses reaching 2.2 million (Oblinger and Kidwell, 2000).

As a result of such expansion, questions have been raised as to the pedagogical soundness of “anytime, anywhere” education, and the long-term effects of altering the social dynamics of teaching and learning (Noble, 1997). Moore (1972, 1980, 1989) notes that the “distance” in distance education is more than a “geographic separation of learners and teachers. It is the distance of understanding and perceptions...which can lead to a psychological and communications gap.” It is the “transactional distance” (Moore, 1972, 1980, 1989) that must be addressed “if effective, deliberate, planned learning is to occur.”

The physical separation of the learner and instructor has long been considered a characteristic of distance learning. Web-based technologies, such as two-way audio-video conferencing, interactive multimedia, and virtual “chat” sessions, have made it possible to bring elements of “face to face” teaching into the distance education environment (Keegan, 1996). In particular, the use of computer-mediated communication (CMC) tools has helped bridge the geographical and pedagogical distances that result from the physical separation of instructor and learners. Definitions of computer-mediated communication (CMC) vary in scope. “At its narrowest, CMC

refers to computer applications for direction in human-to-human communication. This includes electronic mail, group conferencing systems and interactive chat systems. At its broadest, CMC can encompass virtually all computer uses” (Romiszowski, 1995, p. 1).

Computer-mediated communication is generally described in two categories: asynchronous and synchronous. Asynchronous communication occurs between participants independent of time and place. Sending a fax, leaving a voicemail, sending email (which could also be considered synchronous), posting to a discussion board, or responding on a listserv are all examples of asynchronous communication. Synchronous CMC, on the other hand is considered a “real-time” experience between two or more people. Tools to facilitate synchronous communication include telephones, videophones, audio-video conferencing software, multi-user domains, virtual chat, virtual classrooms, and whiteboards (Santoro, 1995). Both types of computer-mediated communication can be used in individual or group learning situations, and in traditional or online learning environments.

As the methods for delivering education and facilitating communications have evolved over the last two hundred years, so have the occasions for socialization between and among students and instructors. An extensive body of research confirms the notion that learning is a social act, in which human beings acquire knowledge on a “vicarious basis by observing other people’s behavior” (Bandura, 1977, p. 12). Learning involves the process of constructing knowledge, is embedded in cultural contexts, and mediated among social beings through language, signs and tools (Vygotsky, 1981; Hung, 2001). As such, learning is accompanied by conversation, dialogue, and interactivity. Interaction is viewed as, “central to the expectations of teachers and learners in education and is a primary goal of the educational process” (Hillman, et. al.,

1994). It is so crucial, in fact, that The National Education Association has named “interactivity” as one of the ten standards for quality education (Alesandrini, 2002).

Moore (1989) defines three types of interaction: learner-instructor interaction, learner-learner interaction, and learner-content interaction. In the traditional classroom, interaction between teachers and students is seen as a major issue in accounting for the cognitive learning of students, their confidence in their own abilities and their general interest in learning (Bloom, 1981). Indeed, Chickering and Gamson (1997) list “contact between students and faculty,” as one of the seven principles for “good practice” in education (p. 1). Interaction between instructors and students can build student motivation and involvement. Recent studies have found that interaction in distance learning environments may lead to increased achievement, and greater retention rates (Lenning & Ebers, 1999).

Contact between learners is also viewed as crucial to students’ overall academic achievement. Using “articulation and reflection in the context of multiple practice and collaboration,” learners begin to simplify meanings and to apply what they have learned in different situations. (Brown, Collins, & Duguid, 1989). “Reciprocity and cooperation among students,” whether in traditional classrooms or via the Internet, enriches the learning atmosphere, allowing students to share ideas through collaboration and to respond to others using critical thinking and problem-solving skills (Chickering and Gamson, 1997). Research indicates that interaction is important for a variety of learning styles and essential to learner satisfaction and persistence of students in distance education (King and Doefert, 1999).

A third type of interaction, learner-content interaction, is seen as the “basis for, and defining characteristic of, all types of education,” since the “process of intellectually interacting with the content results in changes in the learner’s understanding... (Moore,

1989). Learner-content interaction includes “the internal, didactic interaction between learners and one-way media, including correspondence text, and electronic media such as broadcast television, interactive videodisc, and audio-tapes (Moore, 1989). Numerous reports have been written detailing the ways computer-mediated communication tools can be used to facilitate interaction among students and with content. (Bonk and Reynolds, 1997; Peters, 2000; Paulsen, 1995).

Hillman, Willis & Gunawardena (1994) introduce an additional concept to Moore’s three types of interaction: learner-interface interaction, which “addresses the relationship between the learner and the technology that is being used to access course materials and to communicate with the instructor and other students” (Hillman, et. al., 1994). Gilbert & Moore (1998) make the distinction between social interactivity and instructional interactivity, listing types of activities, characteristics and examples of the technologies used in each one. Due to the influence on students’ cognitive development, satisfaction, and overall quality of learning, understanding and planning for social processes is of paramount importance in both traditional and Web-based environments.

The concept of social presence is related to interaction, and has emerged as essential to comprehending the social context and dynamics of teaching and learning. Social presence has been defined as the level of awareness occurring between people (Short et al. 1976; Walther, 1992; Tu, 1999). Factors contributing to social presence in face-to-face communication include posture, dress, facial expression, direction of gaze, and verbal and non-verbal cues (Short, et. al, 76). The social presence model set forth by Short, et al (1976) suggests that social presence is a factor of both the medium and the user. The capacity of the channels to transmit information about facial expression, posture, and nonverbal cues all contribute to the degree of social presence felt among users.

Research on the socio-psychological dynamics of education examines the role of social presence in teaching and learning. Short, Williams and Christie (1976) define social presence as “the degree of salience of the other person in the interaction and the consequent salience of the interpersonal relationships” (p. 65). Recently, the definition of social presence has been expanded to include social context, said to be comprised of social process, purpose, setting, interactivity, use of affective language, online communication, motivation and privacy. (Gunawardena, 1995; Walther, 1992; Tu, 99). Gunawardena (1996) suggests that social presence is of “particular significance” to educators attempting to understand social factors inherent in effective distance teaching and learning.

Two dimensions related to interpersonal contact and social presence are intimacy and immediacy. The level of intimacy depends upon factors such as physical distance and eye contact. Immediacy, notes Gunawardena (1997), is the “psychological distance that a communicator puts between himself or herself and the object of his/her communication” (p. 9). Teacher immediacy behaviors include verbal and nonverbal actions such as smiling, addressing students by name, personalizing examples, and encouraging feedback (Gorham, 1998). Teacher “immediacy” has been identified as a predictor of student affective learning and student satisfaction (Gorham, p. 10; Hackman and Walker, 1990). Immediacy or non-immediacy can be conveyed verbally and non-verbally, and is believed to enhance social presence.

The increased use of instructional technologies in both traditional and Web-based education has lead researchers to study social presence as an indicator of overall learner satisfaction in a computer-mediated communication (CMC) environment (Gunawardena & Little, 1997). Tools such as email, discussion boards, listservs, audio/video conferencing systems, whiteboards, and chat rooms allow instructors and

students to communicate across time and distance barriers. In a study designed to measure CMC from a social/relational perspective, findings suggest the “degree to which a person is perceived as ‘real’ in mediated communication” may be a strong predictor of overall learner satisfaction (Gunawardena & Little, p. 10, 1997). Participants who felt a higher sense of social presence “enhanced their socio-emotional experience by using emoticons to express missing nonverbal cues in written form” (p. 23).

Statement of the Problem

In the traditional classroom, interaction promotes student satisfaction, group involvement, and motivation. It is viewed as an integral part of meaningful teaching and learning. Similarly, The American Distance Education Consortium lists the following as a guiding principles for distance teaching and learning:

Learning is social and sensitive to context. Learning experiences based on interaction and collaboration support learning communities while building a support network to enhance learning outcomes. Multiple interactions, group collaboration and cooperative learning may provide increased levels of interaction and simulation” (<http://www.adec.edu>).

Distance learning researchers, practitioners, and students, continue to assert the importance of socialization and interaction in online education. However, there is still much to be discovered regarding social factors in web-based teaching and learning. Questions are being raised concerning the “potential impact” of shifting from the “institutionalized social space” of the university to the “virtual space” of the online classroom (Jaffee, 2002). A traditional classroom generally operates within a set of “social rules and normative expectations that shape behavior” (Jaffee, 2002). When these rules are suspended, what is the resulting social environment? What is the impact on the students and instructor when traditional methods of communication and interaction are replaced by text-based and audio-conferencing systems?

Given the rapid growth of university-based distance education initiatives, and the connection between socialization and quality learning, both campus-based and online educators need clarification regarding social factors in Web-based distance education. In order to design and deliver courses that facilitate important social interactions, social presence and all its dimensions must be thoroughly examined and redefined in the context of online teaching and learning.

Purpose of the Study

The purpose of the study was to observe and describe the social environment of two sections of Information Sciences 530: Information Access and Retrieval, and to understand students' experiences with social presence. One of the sections was taught in a web-based distance education format, using asynchronous and synchronous text-based chat and audio-conferencing software. The other section was delivered in a traditional, campus-based setting. Both sections were taught by the same instructor and covered the same material. Interaction between students, between students and the instructor, between students and the content and between students and the interface was examined in both sections. The overall social environment and students' experiences of social presence were also studied. Common themes and categories were identified among participants in order to begin redefining social presence in terms of web-based teaching and learning.

Research Questions

This study addressed the following research questions:

- What was the social environment of a Web-based distance education course, and what was the social environment of a traditional, campus-based course that covers identical content?
- What was the relationship between these two environments?
- What were students' experiences of social presence?

Significance of the Study

The social dynamics of teaching and learning are complex and multifaceted, influencing the presentation of content, relationships between students and instructors, and the overall atmosphere and success of a course. While a large body of research has been devoted to these issues in traditional, campus-based instruction, there is much to be discovered concerning the social dynamics of web-based courses. The idea of social presence has emerged as an important component of interaction, and has been studied in connection with various web-based telecommunications tools and computer-mediated technologies (Rafaeli, 1990; Rourke, et al, 2001). Notable contributors to research on social presence (Gunawardena, 1995; Walther, 1996; Tu, 2000) have not yet examined the relationship between social presence in Internet-based teaching and learning and social presence in the traditional classroom. Researchers warn “failure to address the social and relational dynamics within online courses may result in greater feelings of isolation among the distance learners, reduced levels of student satisfaction, poor academic performance, and ultimately increased attrition” (Baker and Woods, 2002). As university-based distance education becomes more commonplace, there is need to examine fundamental educational principles and the “practice” of Distance Education in

the context of new, technology-based learning environments (Swartz and Biggs, 1990, p. 71).

The study used a qualitative case study design to obtain as much information as possible about the social environment of two sections of Information Sciences 530: Information Access and Retrieval. One section was taught using web-based distance education, and the other section was taught using a traditional, campus-based format through the School of Information Sciences at the University of Tennessee, Knoxville. The same instructor taught both sections, and the goals and objectives of each section were identical. This situation provides an opportunity to examine the relationship between the social atmosphere of the campus-based section and the web-based section, and students' perceptions of social presence within each learning situation. The School of Information Sciences is well-known for its distance education Master's program. The instructor of the course is an acclaimed scholar and teacher, and she has extensive experience with both the content and medium of delivery.

Qualitative case studies have been described as "particularistic, descriptive, and heuristic" in that they can describe, using "vivid" material and a wide variety of sources, the detailed "complexities of a situation" (Merriam, 2001). Each section of IS 530 was studied using direct observation, participant interviews, and document analysis. Once the data from each case had been carefully examined and themes identified, a cross case analysis was performed to generate more information about the relationship between social presence in campus-based education and social presence in web-based distance education.

Results from this study can contribute to the growing body of research on social presence and online learning by identifying areas of significance concerning the relationship between social presence, interaction, and computer mediated

communication and understanding conditions that promote social presence. The findings of the case study can serve as a blueprint for other educational programs and instructors looking to implement quality web-based distance education.

Assumptions of the Study

The researcher assumes that students behaved and reacted in the same manner they would even if the researcher had not been present during the class. The researcher assumes that participants answered questions accurately and to the best of their ability.

Limitations of the Study

The researcher is a graduate student in Instructional Technology with a supporting collateral in Distance Education. During the study, all observations, interviews, and analyses were filtered through her “worldview, values and perspectives” (Merriam, 2001). As the main instrument for gathering and analyzing, she had to be sensitive to the context and to the participants, while remaining conscious of her own experiences with the topic. Identifying preconceived ideas early in the study can help minimize the effect that human mistakes and personal biases may have on the investigation.

In addition, students who know they are being observed might act differently than they would otherwise. Data collection was limited to two sections of SIS: Information Access and Retrieval, taught during the Fall 2001 semester in the School of Information Sciences at the University of Tennessee, Knoxville. Data collection was restricted to only those participants returning signed consent forms. Data analysis and conclusions are limited to the interpretation of the research data by the researcher.

Definition of Terms

Blackboard's Course Info: a course management system used by the University of Tennessee, Knoxville. The system allows instructors to place course content on the Internet and to utilize built-in computer mediated communication tools, including a discussion board area, "virtual" chat room.

Campus-based, traditional, or face-to-face education: a class whose students regularly meet in a classroom on the University's campus.

CentraOne: an open architecture web platform featuring real-time video conferencing and content management used by the School of Information Sciences to delivery distance education courses.

Computer-mediated communication: procedure by which people create and exchange information using a wide variety of computer-based communication tools.

Distance education: teaching and learning that generally takes place where learners are physically separated from one another and from the instructor.

Emoticon: a short sequence of keyboard letters and symbols, usually emulating a facial expression.

Interaction: "sustained, two-way communication among two or more persons for the purposes of explaining and challenging perspectives" (Garrison, 1993, p. 16).

Social Presence: "consciousness of a another person in an interaction and the salience of an interpersonal relationship" (Tu, 2000, p. 27).

Web-based distance education or online education: a class in which the content is delivered primarily via Internet-based technologies, and students meet and communicate using computer-mediated-communication and audio-conferencing technologies.

Organization of the Study

This study is organized into five chapters. Chapter one provides an overview of web-based distance education and background of the problem to be studied; chapter two examines current research related to social presence in campus-based and distance education and the use of qualitative methods in distance education research; chapter three discusses the research methods used in the study; chapter four presents the findings of data analysis; and chapter five offers recommendations and conclusions for further research in this area.

CHAPTER 2: REVIEW OF THE LITERATURE

This chapter examines the literature related to a) theories of social presence in traditional and web-based learning environments and b) the use of qualitative research methods in distance education.

Theories of Social Presence

As discussed in Chapter 1, interaction is an essential component of meaningful learning. This includes, but is not limited to, interaction between students, interaction between students and instructor, interaction between students and content, and interaction between students and the interface mediating the content (Moore, 1992; Hillman, et. al, 1994). There is a large and growing body of literature related to the facilitation of social processes and interaction in distance and web-based courses (Fulford, & Zhang, 1993; Kearsley, 1995). Numerous studies explore the idea of interaction via Internet-based technologies, recommending instructional design strategies that promote and sustain interaction between and amongst students and instructors (El-Tigi & Branch, 1997; Gilbert & Moore, 1998; Berge, 1999, Morteau-Gutiérrez, 2002). Given the rapid growth in web-based distance education, and the accompanying call for quality in online teaching and learning, the trend in this area of research is not surprising.

Social presence has emerged as an important component of interaction. While research on the topic is limited, the idea is being explored more frequently in the literature as a result of increased use of media and computer-based telecommunications tools in education. Early research on the concept approached it mainly from an organizational perspective. Social presence is connected to Mehrabian's (1969) idea of immediacy, defined as "those communication behaviors that enhance closeness to and

nonverbal interaction with another.” (p. 203). Mehrabian suggests the use of non-verbal cues such as body movements, facial expressions and eye contact increase sensory stimulation, leading to more affective and intense interactions.

The concept of immediacy has been examined in the traditional classroom as an indicator of student affective and cognitive learning (Kearney, et al., 1985; Kelly & Gorham, 1988). Christophel (1990) found that learners see instructors with a high degree of social presence as being more influential and positive. Teacher immediacy is viewed as an important component of student learning and is frequently linked with social presence in the research (Powell and Harville, 1990).

The term, social presence, was introduced by communication theorists, Short, Williams and Christie (1976), who followed-up Mehrabian’s work. The researchers studied various media, including voice mail and audio-conferencing systems, hypothesizing that lack of nonverbal clues such as body language, facial expressions, and posture would have a negative effect on interpersonal communication. They conclude that “social presence,” is “the salience of the other in a mediated communication and the consequent salience of their interpersonal interactions” (p. 65). Short, Williams and Christie characterize social presence as an attribute of the medium, and largely dependent upon the number of information channels available to the user.

Sproull and Kiesler (1986) regarded the implications of Mehrabian’s work from yet another viewpoint. They argued that the critical difference between face-to-face and mediated communication is the absence of social context cues. Their research indicates that the lack of cues to define the nature of a social situation leads to unrestrained communication such as hostile and intense language, also known as “flaming” (p. 41).

Filtered cue-theorists, Daft and Lengel (1986), agreed that the lack of nonverbal information would result in abrupt, matter-of-fact exchanges. However, they argue there

is a beneficial side to this. When messages are very simple, a “lean medium” such as computer-mediated communication (CMC) is good because “shadow functions and coordinated interaction efforts are unnecessary.” Nonetheless, they suggest that if receivers are to understand “information that is ambiguous, emphatic or emotional, a richer medium should be used” (p. 57).

Walther (1992, 1994, 1996) introduced the social information processing perspective into the discussion. He found that users working with a text-based tool such as CMC would try to achieve desired levels of intimacy by manipulating verbal immediacy in the textual environment. Walther’s study on computer-mediated interaction suggests that studies on the effects of CMC have not taken into account the different social settings, processes and outcomes for telecommunications use. He offers a “new perspective” and “fully integrated” view on CMC, one that considers “sender, receiver, channel, and feedback” as each one contributes to interaction (1992, p. 28).

From an organizational perspective, Walther suggests CMC can be as deeply relational as face-to-face interactions, citing several studies in which “experienced CMC users rated text-based media, including email and computer conferencing as rich or richer than telephone conversations and face-to-face conversations” (1994, p. 19). He goes so far as to call computer-mediated communication “hyper-personal” when “users experience commonality and are self-aware, physically separated, and communicating via a limited-cues channel that allows them to selectively self-present and edit, to construct and reciprocate” (1996, p. 33). Walther acknowledges, however, that in comparison with face-to-face communication, the construction of interpersonal knowledge is slower using CMC, and sufficient time is required for interpersonal and hyper-personal connections to be made.

Much of the current literature on social presence investigates the construct within an educational setting, examining social presence as it relates to student satisfaction, affective learning, and web-based telecommunications. (Rifkind, 1992). Gunawardena and Zittle (1997) examined social presence as a predictor of satisfaction within a computer-mediated conferencing environment. They conclude that social presence is a strong predictor of satisfaction, and that participants enhanced their social-emotional experience by using emoticons to express missing nonverbal cues in written form. Boverie, et al. (1997) examined learner satisfaction in terms of instructor's social presence, finding a moderate to high relationship between the social presence of the TV instructor and overall student satisfaction in the program. Polhemus and Shih (1999) developed and implemented a coding scheme for affective learning and an evaluation rubric for learning engagement. Their pilot study suggests a correlation between social presence, learning engagement and an effective learning community.

Schweizer et al (2001) conducted an experimental field study on communication and distance education, partially confirming a hypothesis that to experience a tutor with less social presence leads to emotional evaluations and tense, task-oriented reactions. Leh (2001) investigated social presence and computer-mediated communication in a distance learning environment. The study revealed that students in an upper level university Spanish class were in favor of the use of CMC in instruction. According to the study, CMC is considered appropriate for distance learning in that it allows users to communicate "warm," "friendly," and "personal," messages.

Calls have been made to reexamine social presence in light of new and emerging telecommunications technologies (Walther, 1992; Tu, 2000). Cutler (1995) defined social presence in cyberspace as taking on "more of a complexion of reciprocal awareness by others of an individual, and the individual's awareness of others."

Tu (2000) explored the concept of social presence as it relates to social learning theory. Social presence is defined as “consciousness of another person in an interaction and the salience of an interpersonal relationship” (p. 27). He argues that social presence is a “dynamic variable” and must be examined while considering the “three dimensions of social presence: social context, on-line communication, and interactivity” (p. 34). Tu calls for social presence to be redefined for computer-mediated communication, suggesting that online social interaction is the major vehicle of social learning (p. 27).

Newberry (2001) put forth suggestions for raising student social presence in an online course, presenting the relative richness of different media types such as video-conferencing and text-based chat. Instructors aiming to increase social presence must consider strategies that impact selection of media, organization of activities and individual communication processes.

Rourke, et al (2001) examined social presence in asynchronous text-based computer conferencing. Their exploratory study presents a template for ascertaining social presence in computer conferencing, and includes the categories of affective, interactive and cohesive responses. Gunawardena (1995) concluded that CMC can be perceived as “interactive, active, interesting and stimulating” by users (p. 147), however, the responsibility lies with the course facilitator to create a sense of online community.

Additional studies discuss an association between social presence and sense of community among learners (Fabro & Garrison, 1998, Rovai, 2001, 2002; Leh, 2001). Garrison, Anderson & Archer (2000) view social presence, in addition to cognitive presence, and teaching presence as the three core components in their Community of Inquiry model of teaching. The model describes three categories of indicators of social presence that emerged from the literature: emotional expression, open communication

and group cohesion (p. 101). Social presence, they discovered, is a reflection of these elements.

Baker and Woods (2002) discussed social presence and the dynamics of online learning, emphasizing the importance of forming academic communities in web-based distance education. They make suggestions to instructors for developing communal scaffolding to reinforce cognitive development in the context of social connection. Structuring social support, they argue, can help students “bridge the gap” between the intellectual and interpersonal (p. 21). In addition, instructors should also make efforts to increase collaborative learning activities so that students can share common experiences (p. 19-22).

Rovai (2002) also examined the principles behind designing online courses that foster a sense of community among learners. He discusses seven factors the literature describes as promoting a sense of community: social presence, social equality, small group activities, group facilitation, teaching style and learning stage, community size, and Moore’s theory of transactional distance (1993).

Qualitative Research in Distance Education

The literature documents a lack of qualitative studies in distance education research (Evans & Nation, 1996; Dillon & Blanchard, 1991). An early call for qualitative studies came during the mid 1980s when researchers suggested using quantitative and qualitative methods in conjunction with one another (Rothe, 1985; Burge, 1990). Burge (1990) asserts that competent researchers know how to use the strengths of each method to collect and describe complex data. Researchers in the field of distance education “must enlarge [their] boundaries of experience and exploration” and in doing so, “use qualitative methods to gather and interpret people’s multiple constructions of

reality” (p. 9). This will lead to a greater understanding of distance education students’ lives, influences and learning processes.

Suggestions for conducting qualitative research are characterized by the need to recognize and validate the voices of minorities. Guy (1991) highlights some of the methodological issues surrounding a critical approach to distance education. A postmodern discourse, he contends, allows for increased participation from people who previously did not have a voice in the system. Research strategies should belong to those voices rather than privileging the assumptions of the researcher (p. 57). The qualitative paradigm honors the role of the participants in the study.

Rothe (1985) suggests a need for phenomenological approaches in distance learning research. He believes that a careful content analysis of distance education instructional materials is necessary. These materials are typically analyzed according to effectiveness, readability, appeal, and motivating factors (p. 21). Rothe advocates examining the content, language, metaphors and stereotypes of the text. This, he asserts, can help describe the program developer’s perspective, one that has direct influence on the development of instructional materials. Nonetheless, the strategies suggested by researchers, including critical reflections and phenomenological analysis, exist “in a tradition of scholarship that has not been dominate in distance education” (Evans and Nation, 1996, p. 8).

Despite scholarly pleas for qualitative research, quantitative approaches continue to dominate the literature. In fact, the clamor for qualitative research, as evidenced in conference proceedings and papers, has been greater than the number of qualitative research studies actually undertaken. The most popular qualitative approach is case study (Epper, 1997). Used frequently by the medical community (Leeman & Kilpatrick, 2000), case study allows researchers to do in-depth analysis of a particular setting

through observations, interviews, and discussions (Patton, 1990). Case studies in the field have been characterized by an examination of individuals, classes, programs and institutions. (Swartz & Biggs, 1999).

Recent qualitative studies in distance education discuss evaluating online courses and the pedagogical implications of teaching and learning in this environment. Others examine women's experiences in a DE environment (May, 1994); tenure, promotion and faculty rewards (Wilcott, 1997), interactive radio and television in DE courses (Mottet, 1998); and political activism among DE students (Grace, 1991). Often, both qualitative and quantitative methods are used to gather and analyze information (Hackley, 1997; Fetterman, 1988; Benigno & Trentin, 2000; Carnwell, 2000). Although, the amount of qualitative research in distance education is increasing, quantitative studies generally outnumber their qualitative counterparts by three to one (Dillon and Blanchard, 1991).

For the most part, the literature of distance education is a mixture of evaluative reports, descriptive research, experimental research, and case studies (Adcock and Morrison, 1999). Over the years, a variety of disciplines have contributed to the field including Library and Information Sciences, Nursing, Psychology, Computer Science and Adult Education. The American Association of Higher Education (AAHE) concludes that the majority of research in the area measures the effectiveness of distance learning delivery systems and how technologies affect learner outcomes, student satisfaction, and student attitudes. The means for collecting data include survey questionnaires, attitude scales, and pre and post-tests (The Institute for Higher Education Policy, 1999). With a few exceptions, the literature of distance education is dominated by quantitative terminology and a positivist approach to generating knowledge and understanding.

CHAPTER 3: METHODOLOGY

Theoretical Paradigm

The study employed a constructivist research paradigm to examine the social environment of a Master's level Information Sciences course and how students assign meaning to and experience the concept of social presence. A psychological theory of learning and knowledge, constructivism holds that reality is internally constructed by individuals, and mediated through social and cultural mechanisms. People see the world and others in it in drastically different ways. Consequently, there is no single absolute reality or "truth" but multiple interpretations or constructions of reality, unique to each individual, and subject to constant change depending upon the circumstances.

Uncovering another's reality is the result of an exchange between researcher and participant, a "subjective interaction" in which the two negotiate meaning and co-construct understanding (Guba, 1990, p. 26). The intention (goal) is to "reconstruct the 'world' at the only point at which it exists: in the minds of constructors" (p. 27).

"The constructivist paradigm assumes...a naturalistic set of methodological procedures" (Guba, p. 21) will guide the researcher as she attempts to achieve this. The naturalistic methods used in the study include the following: having me, the researcher, serve as the primary data-gathering instrument; conducting research in the natural settings of the campus-based and web-based learning environments; using purposeful sampling to identify participants; gathering data using qualitative methods such as participant-observation and interviews; utilizing inductive analysis techniques; and applying special criteria for trustworthiness (Erlandson, et. al., 1993).

A goal in the study was to help reconstruct the realities of participants in two sections of an Information Sciences course. In order to accomplish this, I needed to learn as much as possible about the setting, the students, and the instructor, so that I

could then describe those realities and that environment accurately. I interacted with participants in their learning environments, hoping to identify their intentions as they communicated with one another, with the instructor, and with me. As the primary instrument for data collection and analysis, this interaction was essential for gaining insight into their perspectives and for understanding the phenomenon under investigation as the participants understood it. When working with people, the researcher as instrument approach takes into account the complexities of human beings, capturing nuances and details that might be missed by a more static, less obtrusive instrument.

This approach also brings the beliefs and principles of the researcher fully into the project. My values were present in the study from beginning to end, influencing the research questions, the strategies for collecting data, and the procedures for analysis. For example, I knew I wanted to learn as much as possible about how participants defined their social environment and the meanings they assigned to certain social factors. However, I also knew that my research questions specifically addressed socialization in terms of social presence. Furthermore, previous research predisposed me to think of interaction with regard to learner-instruction interaction, learner-learner interaction, learner-content interaction, and learner-interface interaction (Moore, 1989; Hillman, Willis & Gunawardena, 1994). I would need to remain conscious of this during the study so as not to be shut myself off from important data, potentially overlooking a key pattern not germane to those types of interaction.

To aid in this process, I kept a separate research journal in which I recorded my thoughts and feelings about the situations and people I was observing. As I gathered data and recorded it on paper, I noted my own feelings and early impressions by placing brackets [] around this information. During analysis, I was then able to separate my own

thoughts from the rest of the descriptive data and reflect upon my initial interpretations of what was taking place in the class.

Research Strategy

The study used a multiple case study design, within the framework of naturalistic qualitative research. Naturalistic researchers are driven by the desire to know more about the “meanings people have constructed” (Merriam, 2001, p. 6). Meaning “is defined and redefined through interaction,” and managed through a process of interpretation used by people in dealing with things and situations they encounter (Hatch, 2002, p. 9). A person does not understand something in exactly the same way as another person since they each have different histories and experiences. However, with language, stories, and metaphors, we can listen to others, gain and insight into their understanding and negotiate meaning (Blumer, 1969).

In addition, naturalistic qualitative research is interested in the “lived experiences of real people in real settings” (Hatch, p. 6). Human behavior should be considered in the context of its natural occurrence. “Most investigators that describe and interpret a social unit or process necessitate becoming intimately familiar with the phenomenon being studied” (Merriam, 2001, p. 7). Patton (1990) suggests it is essential to get close to participants “through physical proximity” as well as “through development of closeness in the social sense of shared experience and confidentiality” (p. 46). In this study, I wanted to understand how participants interpret the social environment of a course. There was a need to go into the field to gain an insider’s perspective, and to observe the behavior of participants as they made their way through the class. This interaction between researcher and participants makes it possible to describe and understand behavior that is observable as well as values, beliefs and attitudes (Patton, 1990, p. 47).

Furthermore, qualitative research supports a flexible and emergent research design wherein prior constraints are not placed on the outcomes of the study (Hatch 2002; Merriam 2001). As events change, situations evolve which can lead to changes in the overall research design. As the semester progressed, each time I made an observation and then reflected upon that observation, there was the possibility it would influence my overall perception of the study, how I reacted in the classroom setting, and how I approached the interview questions. Using naturalistic methods, I was able to confirm the shared influence that the students and I had upon one another, recognizing a cyclical process in which I shape the data, as the data shapes me. As I discovered new paths, I was able to act and react accordingly.

Within the naturalistic research framework, a multiple case study design was used “to gain an in-depth understanding of the situation and meaning for those involved” (Merriam, 2001, p. 19). Case study “investigates a contemporary phenomenon within its real-life context...using multiple sources of evidence” (Yin, 1984, p. 23). A case is a “bounded system” (Smith, 1978) in that it must have a beginning and an ending. In the study, there were two cases; the IS 530 section being taught on the UT campus, and the IS 530 section being taught via the Internet. The beginning of the cases corresponded to the start of the fall semester, with the cases ending once the semester was completed. Each of these was treated as an individual case, with a cross-case analysis performed once the data for each case had been analyzed.

Observations, interviews, and document analysis were used in the study to answer the research questions, “what is the social environment of the campus-based course,” “what is the social environment of the web-based course,” and “what are students’ experiences of social presence?” This type of detailed and comprehensive material illustrates the “complexities of a situation,” showing the “influence of

personalities” and the “passage of time on the issue.” (Merriam, 2001, p. 31). The social setting of any learning situation is intricate and multi-layered, with numerous people’s feelings, backgrounds, and interpretations coming into play. Students’ experiences of the social environment of a course do not exist separate from the context of that course, nor can their realities be understood in isolation from the learning situation.

Case study is used as research strategy when “the interest is in process rather than outcomes, in context rather than a specific variable, in discovery rather than confirmation” (Merriam, 2001, p. 19). It is the process, context, and discovery aspects of case study that make it suitable for use within a constructivist paradigm. Constructivist principles support the idea that constructions are findings of the inquiry process itself, a process that “unfolds through a ‘dialectic’ of iteration, analysis, critique, reiteration, reanalysis and so on that leads eventually to a joint (among inquirer and respondents) construction of a case” (Guba and Lincoln, 1989, p. 179). Since constructions reside in the minds of the individuals that hold them, the inquiry process requires an intimate familiarity with the situation and people being studied. As a research strategy, case study offers a means for direct personal contact between researcher and participants.

Furthermore, constructivist principles support the idea that understanding and meaning cannot be separated from context. Case study offers a means of “interpretation in context,” (Cronbach, 1975, p. 123) presenting a detailed and holistic account of a phenomenon in which it is impossible to separate the phenomenon’s variables from the circumstances in which they occur (Yin, 1994). There are no universal truths related to social environment and social presence; there are multiple truths and realities, all based in specific and local experiences. Realities change as situations and people change. Just as our own experiences are rooted in context, so too is the knowledge in case studies.

The goal of the study was not to confirm a previously established hypothesis, but to discover, through an extended engagement between researcher and participants, how students come to understand and interpret their social situation. Case study has been defined as “both a process of inquiry about the case and the product of that inquiry” (Stake, 2000, p. 435). The case researcher “emerges from one social experience, the observation, to choreograph another, the report” (Stake, p. 442). The final case report, or narrative, is where the transfer of knowledge from researcher to reader occurs. Constructivists believe that knowledge is socially constructed. Case study researchers assist readers in the construction of knowledge through detailed and contextual accounts. Stake (2000) explains:

From case reports we increase both propositional and experiential knowledge (Geertz, 1983; Polanyi, 1962; Rumelhart & Ortony, 1977; von Wright, 1971). Readers assimilate certain descriptions and assertions into memory. When the researcher’s narrative provides opportunity for vicarious experience, readers extend their memories of happenings. Naturalistic, ethnographic case materials, to some extent, parallel actual experience, feeding into the most fundamental processes of awareness and understandings. The reader comes to know some things told, as if he or she had experienced it (p. 442).

In reconstructing the multiple realities of students in two sections of an Information Sciences course, I can identify themes important to participants, and those that I deem significant to the overall study. However, readers of the final narrative will reflect upon their personal situation, extend their own metaphors, discover patterns relevant to their own experiences, and ultimately arrive at their own reconstructions about the social environment of the course. This process will take place each time the case report is read, so that ideas and theory can continually emerge from the data.

Fieldwork

Campus-Based Section

Participant Observation

In order to answer the research questions, I gathered detailed information about participants and the context of their experiences by becoming a participant observer in both the campus and web-based sections of the IS 530. I chose the “observer as participant” approach as discussed by Merriam (2001, p. 101). While I needed “access to many people and a wide range of information,” I did not intend to fully participate in the class or class activities as a student, although, I could ask questions and make comments. I planned to observe and interact closely with participants to establish what Adler and Adler (1994) call “an insider’s identity,” however; I did not wish my presence in the room to be disruptive to the class (p. 380). My objective was to pay close attention to the details of the physical setting, the participants, and their interactions and behaviors. This, I believe, is an effective way to understand the setting from the viewpoint of the participants. Spending time in the natural setting provides access to details that serve as the basis for the holistic description essential to case study research (Yin, 1994).

Furthermore, my presence in the classroom was a first step in the ongoing process of negotiation necessary to derive a shared meaning of reality between participants and myself. I was aware of how my own experiences and opinions might influence the procedures for gathering and analyzing data. So as to understand the meanings participants assign to their social environment, and to know students’ intentions within the context of their experiences, researchers and participants should remain in close proximity throughout the study. Hatch (2002, p. 8-9) explains that while the inner feelings of participants are not always “directly observable” qualitative

researchers rely on “subjective judgments to bring them to light.” As a researcher operating within the constructivist paradigm, I recognized the importance of subjectivity as integral to discovering the individual constructions held by people in the study. unlocking the constructions held by individuals. The more I interacted with participants in their contexts and the more I reflected on those interactions, the better suited I was to speak about their feelings, motivations, and realities. In addition, as a researcher interested in the social dynamics of a learning environment, it would have been unwise to distance myself from the methods of construction and reconstruction taking place among people in the setting.

Therefore, my role was not that of an objective or detached observer, but rather as a person with a deep interest in the subject matter, one whose enthusiasm was bound to have some sort of impact on the study. However, I did not want this to be a negative impact and I was self conscious about refraining from judging the actions and reactions of the participants. I knew it was crucial to the research to keep an open mind during the entire study, and avoid placing limitations around what I might discover.

It is worth noting that I became friendly with several people in the class, and we would occasionally go to lunch or stop and chat briefly if we saw each other on campus. During these times, we did not specifically talk about the research project or research questions, other than to speak about the general procedure for writing a dissertation. Nonetheless, I realized that I did not have as many of these same opportunities with the distance education students. How might this affect my relationship with students in the DE section and my role as a participant-observer? How does a web-based environment influence the methods procedures for conducting qualitative research? I reflected upon these things, making numerous journal entries related to the use of qualitative research methods in both the campus and web-based sections.

Class meetings.

The campus-based course met on Tuesdays and Thursdays on campus at the University of Tennessee, Knoxville. Class was scheduled to last an hour and fifteen minutes. The instructor in the course allowed me to come in and introduce myself during the first week of class. I explained to the students that I was conducting research about the social dynamics of traditional and Web-based education. I tried to impress upon them that their participation in the study was entirely voluntary and that their names would never be used. I told them I would have consent forms for them to sign and explained their responsibilities if they opted to participate.

I made my initial observations about the physical setting, specifically the building in which the class was held, what it looked like, how old was it, where was it located in relation to other buildings on campus, how the classrooms were arranged, where the faculty and administrative offices were, where the drink machines, computer labs and student mailboxes were. I wanted to begin with a very broad set of observations, and then begin focusing in as I became aware of what mattered to participants .

I would generally come into class a few minutes early to watch what was taking place between students in the classroom or in the hall outside. I used a notebook to record my observations. I generally sat in the back of the room, although, there were times I had to adjust my regular seat and sit elsewhere. I made notes about the setting of the classroom asking myself questions about how the chairs were laid out, how the room was decorated, what type of things were in the room besides the chairs and podium, what was the temperature of the room, where was the instructor primarily located in the room, where was she in relation to the students; where were the students in relation to one another; where was everything in relation to me? I watched the students and observed their body language. When did they fidget? When did they sit

still? When were they tardy? When did they talk to one another and when did they talk to the instructor? What kinds of comments and questions did they have? What answers did they receive? I paid careful attention to what types of things were discussed between students and with the instructor, and in what ways they communicated. I became skilled in the art of eavesdropping, although, I had to remain conscious of only recorded data related to students who had consented to participate.

It was exciting to be in the field, although, a bit overwhelming. I felt like a detective on her first assignment. I became conscious of myself as an investigator looking for clues, signs, symbols, and patterns – small details that might not seem important now, but could become essential later. During group activities, I would circulate around the room, observing the group dynamic, listening to conversations and making note of how students arranged themselves. Spradley (1980) outlines nine major dimensions to every social situation: space, actor/s, activity, object, act, event, time, goal and feeling (p. 78). Similar to a detective, I tried to be inconspicuous while constantly looking for clues related to these elements.

Two of the class sessions were held in the University of Tennessee Library, and reference librarians instead of the regular instructor taught these. I was able to observe how students interacted when they were outside their normal routine. This gave me a different “view” of participants, both figuratively and literally. From my usual seat in the back of the classroom, I was used to seeing the backs of students’ heads. While in the library, I picked a seat near the front, and turned to see participants’ faces as they asked questions and made comments.

I not only observed the students and instructor before and during class meetings, I was also interested in what participants did immediately after the class session ended. Did they leave the room, or crowd around the instructor’s podium? Did they leave the

building altogether, or simply move to the hallway, or into one of the computer labs? Once out of the classroom, did they stand and talk or sit on the couch located directly outside the classroom door? Were the topics of their conversations related to class work or personal issues? Did their body language change once they were away from the instructor and their fellow students?

From the first day of observation, I found myself making notes about not only what I was seeing, but also how I was feeling. I wrote these notes in the margins of the paper in my notebook. I always placed either a set of parenthesis or brackets around these notations to distinguish them from my direct observations. I also kept a separate research journal during the semester (Hatch, 2002). The journal was the place where I could freely explore my own imagination and emerging theories, and I generally carried it with me at all times. Writing in the journal encouraged me to look inside the hunches and feelings I had about what was happening in the study, and to begin working through the complex data that arises from qualitative research.

I would end each class session with a pages full of observation notes and as many direct quotes from participants as I could capture. By the end of the course I had accumulated a mountain of data in the form of "raw field notes." I had to figure out a way to convert these notes into useful observation protocols that could be analyzed later. Initially, that process consisted of me rewriting the field notes by hand, filling in the details necessary to produce an accurate picture of what took place during class.

However, I soon began to see the advantage of reworking my field notes using a word processing program. It was much easier to make revisions, and I felt comfortable opening up a new document and free writing about a certain phrase or comment that caught my attention. Each time I wrote the expanded account of a class observation, topics and patterns began to emerge. I was able to begin identifying issues and

situations important to participants, laying the groundwork for more effective observations in the future.

Labs.

By the fifth week of class, students were to have identified a classmate to work with while completing the online exercises in the 530 lab workbook. The instructor advised students to identify “someone who shared an interest,” suggesting that “working with a partner helps you gain insights from another person’s perspective on search strategies and is a good experience for working with clients.” Students were to turn their lab assignments in each week. It did not take long for me to discover that one of the things important to IS 530 students was that they do well in their coursework. The labs were an important part of their success in the course, giving them valuable hands-on activities related to their discipline.

I was able to observe several teams as they worked together to complete their labs. One of these teams met in a student’s home. I received permission from both team members to observe them while they completed their activity. I obtained directions to the student’s house and drove over one evening. I spent approximately two and a half hours observing this team, taking note of their interactions, comments, negotiations and surroundings. I observed the other two teams as they completed their lab assignments in the computer lab on campus. I was concerned with making detailed observations about how the students worked together and how they dealt with various issues that arose during the lab activity.

Term Project.

Students worked in groups of three to four to compile the Resources Notebook, which was due at the end of the semester. This was a major project, with students receiving both group and individual grades. Details about completing the Resources

Notebook were provided in the syllabus. Each person in the group was to examine specific information about a total of thirty resources. The group as a whole was to determine an agreed upon template for reporting the information about the sources and was required to place this information in a notebook and turn it in to the instructor.

I observed two groups as they worked on their Resources Notebook. Both of these observations took place in a building on campus, with each one lasting between one and a half and three hours. I paid attention to the setting and the deliberations taking place between students. Often, students within a group would discuss their term project prior to the start of class, or after class as they were leaving the room. During these interactions, I made less formal observations related to the term project, while continuing to pay attention to the details of what was taking place.

Document Analysis

Syllabus.

The syllabus for IS 530 was provided to students on the first day of class. This 20 page document contained information about the instructor, course goals and objectives, the class methodology, grading scale, required materials, details about each assignment, technology skills required, a calendar highlighting the topic for each class meeting which assignments are due, and a reference list of Library and Information Science literature. I took notes directly on the syllabus, writing down the instructor's exact quotes and making note of her body language as she explained each section. The instructor was very specific about what she expected from students, telling them she "assumed" they would be in class unless they notified her otherwise, and stressed the importance of participating in the class discussion. "Even if you don't know the topic, you can contribute to the discussion. Think of this [each class] as a staff meeting and I'm your boss."

I knew I wanted to compare the campus-based syllabus to the Web-based syllabus, so it was important to observe not only the details of the information, but also how the information was presented to the students. What did the instructor speak about first? What topics were identified as important? Were the expectations for the course clearly stated? Did the students ask questions, and if so what type? Did the instructor have to reiterate certain information?

Handouts.

Occasionally, the instructor would provide handouts and other printed material in class. The material ranged from definitions of basic Library and Information Science terms, to information from the Tennessee Library Association regarding “model reference behaviors.” I made sure to get copies of all the handouts, writing the date the materials were passed out in the upper right hand corner, using “f2f” to denote I received it in the campus-based course. I was immediately curious as to whether this same information would be communicated to students in the Web-based course, and if so, how.

Listserv.

Students were required to join the IS 530 listserv as soon as they activated their email accounts. According to the syllabus, the listserv would be “used for communications between 530 students and between the instructor and students.” This included students in both the campus-based and Web-based sections. Students were encouraged to “feel free to post useful information for 530 topics on the list....” Details about joining the listserv were provided in the syllabus. I read the messages as they came across the list, and printed out responses from participants in both sections of IS 530. I made my observations directly on the printouts, and recorded reflections in my journal.

Interviews

I conducted face-to-face interviews with individual participants in the campus-based section. After randomly picking ten people from the stack of consent forms, I emailed participants and set up interviews for the week after finals. Using a handheld micro-cassette recorder, I met with participants in the library and in their offices on the University of Tennessee campus. I used a semi-structured interview format, asking open-ended and unrestricted questions to reveal the ways students assign meaning to and organize their experiences. This type of format assumes that individuals define and the environment in unique ways and fits within the constructivist assumptions of the study (Merriam, 2001).

An interview guide was used and contained several specific questions I wanted to ask all the participants, including, “what was your experience with the social environment of the class?” I knew it was important to give respondents an opportunity to open up and take questions in whatever direction they chose, at least initially. From there, I could explore different angles and topics as they unfolded.

Because a goal of less structured interviewing is one of understanding, it is important for the researcher to establish rapport and make a concerted effort to see the situation from the participants’ perspectives. The fact that I had been observing the class all semester helped me appreciate participants’ surroundings. I seemed to get along well with the people I interviewed. They were often funny, insightful, and intelligent. During the first few interviews, I had to keep reminding myself to sit back and let the participant take the lead. Although, I could certainly steer them back if they veered off course, I did not want my enthusiasm (and my general love of talking) to get in the way of hearing what participants had to say.

Interviews lasted between forty-five minutes and one hour. One interview was conducted with each participant, and follow-up questions were distributed through email. During the interview, I paid attention to body language as well as the tone of verbal responses. I took notes during the interview about the physical surroundings and my reactions to the interview process. Using a word processor, I wrote my reflections about each interview immediately after it concluded. I also took the time to expand my observational notes in hopes of being better prepared for upcoming interviews. I transcribed the audio-tapes using a transcription machine and a word processor.

Web-Based Section

Participant Observation

In order to become familiar with the participants, the setting and the culture of the online class, I became a participant observer in the web-based course. Synchronous class meetings were held on Monday evenings from 6:30-9:00pm. During these evenings, students were required to take part in the session using CentraOne, an Internet-based audio-conferencing program, or as the manufacturer's describe it, "the world's first complete, open architecture Web platform for knowledge delivery featuring real-time collaboration, content management, and authoring built on a common framework" (<http://www.centra.com/products/centraone.asp>). Students could participate in these sessions from the location of their choice; however, their computers needed to meet certain specifications and software had to be downloaded onto their machines from the appropriate web site.

I elected to take the same "observer as participant" approach I had adopted in the campus-based course. However, these observations were taking place under a very different set of conditions. In the campus-based section, the participants and I were in

the same room; in the DE section we were not. Instead of observing and describing a physical setting common to myself and to all participants, I could only note details of my own surroundings, in this case my office on campus. I was almost always alone in the office during these evenings, save for an occasional evening maintenance person stopping by to clean up.

When I collected the data, I had never been a student or an instructor in a distance education course. However, as someone pursuing an advanced degree in Instructional Technology with a collateral in Distance Education, and as someone who works designing, implementing, and evaluating web-based distance learning, I was blessed with a large number of ideas, opinions, and hunches about what the experience would and should be like. The more I thought about the fact that I could not see, but only hear participants and that we were never going to occupy the same physical space, the more I began to reflect on a broader scale.

Spradley (1980) suggests that participant observers should “learn [to use themselves] as research instrument[s]” (p. 57). This means paying attention to how one’s own experiences might affect in what way data is collected, what type of information is obtained, and what topics are eventually identified as important. This also suggests that researchers must look inside themselves to explore what they already believe they know so that they can come to terms with new, often changing situations.

I have been a student for many years, attended two universities and taken over one hundred credit hours of coursework. During all this time, what had I come to expect about the teaching and learning environment? What had I come to expect about my fellow students and the instructor/s? What had I come to understand about teaching as an art and a science? These types of questions came in droves; they brought forth emotions and insight, as in the first time I realized just how much I use my hands, my

eyes, and my entire body to communicate. I reflected upon own life experiences, background and education when beginning the process of constructing new knowledge.

Orientation Weekend.

Prior to the start of the fall semester, I attended the opening session of the “boot camp,” a three-day long orientation with instructors and staff of the school of Information Sciences. Students in both the campus-based and distance education Master’s cohort groups were invited to attend. Many students traveled to the University of Tennessee, Knoxville campus from states throughout the Southeast, including Kentucky, Virginia, North Carolina and West Virginia. During the opening session, faculty, staff and students gathered in an auditorium on campus. The School’s Director spoke first, welcoming all those in attendance and providing an overview of the day’s events. Several University of Tennessee administrators were also present, speaking about students’ new roles as Graduate students and “pioneers” in their fields. Faculty introduced themselves, providing information about their background, credentials and research interests. Over the next two and a half days, students had the chance to hear about their courses and the technology requirements for the program, and numerous opportunities to socialize with the instructors and other students.

At this time, I had not obtained signed consent forms from any of the students. However, I felt this event would certainly be worth knowing more about. Therefore, I focused my observations on the physical setting, the instructors, and the topics being discussed. I also reflected on how it might feel to be a new student in the Master’s program. Later, during the interviews, I would ask participants’ about their experiences at the boot camp orientation weekend.

Class Meetings.

I arranged with the distance education coordinator to have an account set up with a login name and password. She told me the procedures for accessing CentraOne and gave me the web address so I could download the program. I planned to participate in the class from my office on the University of Tennessee campus. Participants in the class received a reminder email prior to the synchronous meeting:

Subject: You have been enrolled in event IS 530 Oct 29, 2001.

This email message was generated automatically. Please do not send a reply.

You are registered for the following live, online event:

Event: IS 530 Oct 29, 2001

Date: 29-Oct-01

Time: 6:30:00 PM EST

Your username and password for the event are:

Username: XXXXX

Password: XXXXX

To attend this event, click on the following link:

http://208.62.88.231:80/main/User/LoginAttend.jhtml?s_id=141

Participants in the course were to be logged in to the class session by 6:30pm EST. Out of fourteen class sessions, seven, including the first two were conducted synchronously. Generally, I would log in ten to fifteen minutes prior to the start of the session by visiting the appropriate web site and entering my login name and password. The Centra interface contained options for getting help, taking a tutorial, and checking to see if your current computer system met the requirements for downloading the content. Figure 1.0 is an example of the CentraOne screen "My Schedule." Selecting "My Schedule" from the left side of the screen brings up a list of "Events," including the "Start Time" and "Duration" of the activity. The events included the

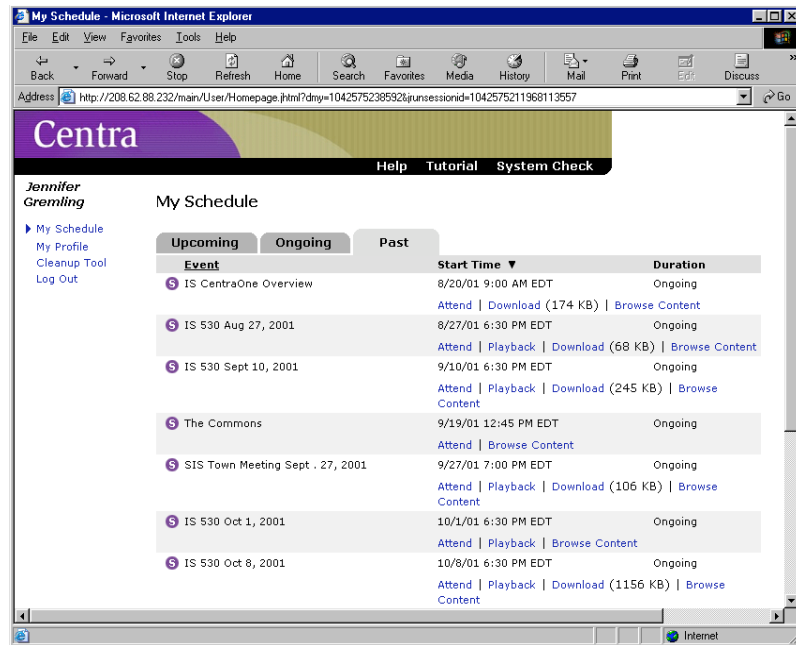


Figure 1.0: CentraOne – My Schedule

asynchronous class sessions, individual group sessions, an overview of CentraOne, an Information Sciences “Town Meeting,” where students in the DE cohort group met with the School’s Director, and a “Commons” area where students could interact with one another when they choose to do so.

From this screen, participants could take part in the class, playback an audio-recording of a prior class, download a previously recorded session in its entirety onto their computer, or browse through the content screens. They could view events that were scheduled in the future, those taking place at the moment and those that had happened in the past. During the first time using the software, there is a brief download process after choosing “Attend.” Figure 2.0 illustrates the “Getting Started” screen.

The CentraOne interface allowed participants to see the name of the instructor or presenter, as well as everyone else attending the class. Students’ names appeared under “Participants” as they logged in to the session. To speak, users had to hold down

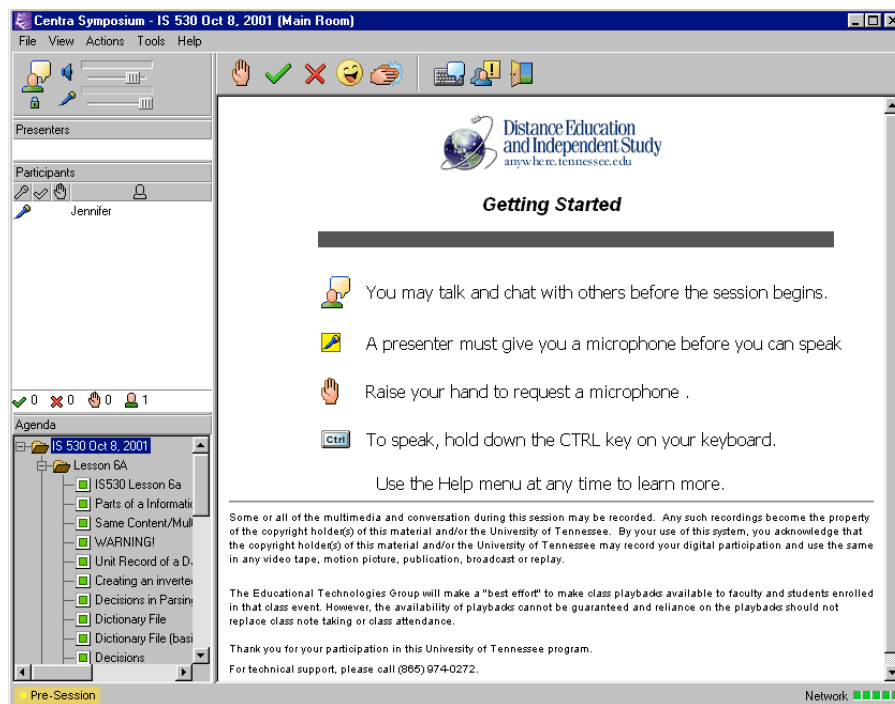


Figure 2.0: CentraOne – Getting Started

the space bar on their keyboards and talk into a microphone. Their voices were then broadcast over the network and through the participants' speakers on their computers. Only one person could talk at a time. The small microphone next to the name designated that the floor was open, and anyone could speak. When someone was talking, a yellow highlight appeared around the microphone next to his or her name on the list. During a lecture, the instructor would often lock the microphone and as students raised their hands she would give them access. She also unlocked it during break time and after the class session officially ended.

At the top of the screen were menu options and list of icons, also known as "emoticons," participants used to communicate. Figure 3.0 illustrates the emoticons available to users of the system. Clicking on the hand symbol caused a small mark to appear in the area labeled "Participants," underneath the picture of the hand and next to



Figure 3.0: CentraOne - Emoticons

the name of the person who selected it. This allowed everyone else to see that the person was raising his or her hand. Selecting the green check mark caused a green check mark to appear in the list under the picture of the check mark and was to indicate yes; the red x meant no; the smiling face blinked to indicate laughter, and the hand held horizontally designated applause. As these selections changed for participants, the numbers next to the corresponding icons at the bottom of the participant list also changed.

Selecting the icon with the small computer screen on it opened up a text-chat window separate from the CentraOne screen. The symbol with the outline of a person and an exclamation point brought up a feedback screen with the choices OK, not clear, too fast, too slow participants could select from with the information sent back to the instructor. The open door icon allowed participants to “step out,” or momentarily leave the session. When someone chose this option, his or her name in the list appeared gray instead of black. Selecting the phone icon brought up information about any conference calls taking place. There was also a volume control and a way to view the screen at different sizes. Picking different items from the “Agenda” list caused the content appearing in the main screen to change. During the active sessions, the instructor controlled the pace at which these screens changed.

I introduced myself on the first night of class and explained my research project. I told them their participation was completely voluntary, and that I would be mailing out informed consent letters for them to sign and return. I told them to feel free to ask me any questions as the semester unfolded, and gave them my email address and phone number.

I was interested in what was taking place prior to the official start of class, or “pre-session,” as it was called. This word appeared in the bottom left-hand corner of the screen and designated that recording had not begun. Once the instructor began to record, “pre-session” changed to “in-session.” Was there any chatting during the pre-session? Did students have technical questions they wanted to have answered? Would they feel comfortable having a discussion everyone else could hear? Having already observed the campus-based course, I recognized that some of these questions were the result of that experience.

During the class sessions, I tried to keep my observations broad while taking copious notes about how the course content was delivered, which students asked what types of questions, who used the icons at the top of the screen, how often and under what conditions, when where students’ comments directed at one another and when were they directed at the instructor, did they talk during the breaks, and if so, what about?

The process of recording field notes evolved during the semester. In the beginning I did my best to write down every single thing the instructor and each participating student said, taking notes about the content while trying to maintain a constant count of who was in the room, who had stepped out, who had questions and who thought certain things were funny. Although, I knew the class was being taped, and

would be available for me to listen to at any time later, I felt the need to write as much as possible verbatim.

However, as I became increasingly familiar with the settings, events and social groups, I was able to shift to more focused observations, directing my attention to what Adler and Adler (1993) call “deeper and narrower portion of the people, behaviors, times, spaces, feelings structures and/or processes” (p. 381). I reviewed my field notes at the end of each class and again the next morning. Using a word processor, I converted the notes to observational protocols.

I traveled to one participant’s home to observe the student during a synchronous class session. I paid attention to the participant’s surroundings and interactions before, during, and after class. I observed him as he worked with the technology and communicated with his classmates and the instructor. I reflected on my own experiences as a student isolated in a lab setting compared to the student’s surroundings and his role in that environment.

Labs and Term Project.

Students generally completed their labs and their end of the semester project by communicating through email, or meeting in one of the private rooms in CentraOne. I did not have access to all of the private rooms, since some students had not agreed to participate in the study. I was able to observe some discussions taking place in the text-chat area. I made it a point to ask participants during the interview sessions to speak about their experiences as related to the labs and term project.

Document Analysis

In addition to the CentraOne audio-conferencing system, the web-based section of IS 530 used Blackboard’s course management system to host the online content and provide access to computer-mediated communication tools including an asynchronous

discussion board and a virtual chat room. Students were given a web site address and a password for accessing the Blackboard site. The documents to be analyzed from the web-based course included information contained areas labeled announcements, course information, staff information and course documents. Text-chat messages, discussion board postings, and messages sent to the class listserv were also included in the document analysis.

Text-Chat.

While the synchronous class was being held, students had the opportunity to use the “text chat” feature to ask questions of the technical support person and to communicate with one another. The “text chat” window appeared on the desktop separate from the main interface. When students were done using the “text chat,” they could simply close the window by clicking in the right left hand corner. I kept the text chat window opened during the synchronous class sessions. At the end of the evening, I copied and pasted the text from the text chat window into a Word document for later analysis.

Discussion Board Postings.

Eight times during the semester students in the Web-based course were required to post messages to the discussion board in Blackboard. The discussion board is an asynchronous communication tool that allows participants to post messages, also known as threads, at any time, and to respond to someone else’s message at their own convenience. The IS 530 discussion board posts were responses to questions listed under activities in the Topics and Calendar section of the syllabus. For example, the instructor asked students to “post message to discussion board about what makes an interface ‘user friendly’; to “post a message to discussion board on the topic, ‘how can information professionals help users find the best quality resources? What are the risks

associated with doing so?” Some of the discussion threads were begun by the instructor, including a description of ‘background and experience.’ I printed threads as the semester progressed, reading each post. I made comments in the margins each time I read a response. I placed all of the printouts from the discussion board in a notebook in the order in which they were posted.

Listserv.

Information about the required technology skills and procedures for joining the 530 listserv were detailed in the section labeled “Technology,” located under “Course Information.” Students needed to use “some basic computing and Internet skills,” during the first few weeks of the class, including being able to search the UTK catalog, using email and telnet programs, getting access to the world wide web, subscribing to a listserv; using a word processor; and downloading and importing a captured file into a word processing program. Any additional technology skills would be taught in class.

Similar to students in the campus-based section, DE students were required to join the IS 530 listserv as soon as they activated their email accounts. According to the syllabus, the listserv would be “used for communications between 530 students and between the instructor and students.” This included students in both the campus-based and Web-based sections. Students were encouraged to “feel free to post useful information for 530 topics on the list....” Details about joining the listserv were provided in the syllabus. I read the messages as they came across the list, and printed out responses from participants in both sections of IS 530. I made my observations directly on the printouts, and recorded reflections in my journal.

Interviews

Similar to the campus-based course, I used semi-structured interviews to engage in a discussion with participants about their social experiences in the class. I randomly

picked ten students to interview from the stack of consent forms participants had mailed back to me, and emailed those students to schedule interviews. I offered to drive to meet participants, however, since class ended in the middle of December, participants found it more convenient to be interviewed over the phone, generally in the evenings between 7:00 and 10:00pm. Since I would not be interacting with participants face to face, I knew I would need to pay close attention to voice inflections, changes in tone, laughter and pauses during the phone conversations. I felt confident I would be able to capture the perspective of the participant and the essence of meaning in the conversation.

The interview itself was “guided by a list of questions or issues to be explored”, but “neither the exact wording nor the order of the questions [was] determined ahead of time” (Merriam, 2001, p. 74). These questions included, “What was your experience with the social environment of the course?”, “When were you aware of other students?” and “Describe a meaningful activity that took place between you and your classmates.” I wanted to know the same kinds of things from students in the campus and web-based sections: What was your experience with the social setting of the class? How would you define the term, social presence? Describe meaningful activities that took place during the semester between you and your classmates and you and the instructor.

Conversations that begin the same way do not necessarily have to end the same way, and I made sure to allow participants an opportunity to move the conversations in the directions they saw fit. As I was speaking to participants over the phone, I typed our discussion directly into a word processor verbatim. I immediately went back and filled in any gaps as soon as the interviews had ended. I kept a separate interview journal in which I recorded my feelings and reflections. Table I summarizes all the different pieces of data collected during the study.

Table I

Summary of Data Collection Methods Used in Each Case

Campus-Based Section	Web-Based Section
Participant Observations	Participant Observations
Class Meetings	Class Meetings
Labs	Labs
Term Project	
Interviews	Interviews
Document Analysis	
Hand-outs	
Listserv Postings	Listserv Postings
	Discussion Board Postings
	Text-chat

Assuring Trustworthiness

In a naturalistic qualitative study, trustworthiness is established in terms of credibility, transferability, and reliability (Lincoln and Guba, 1985). Qualitative research assumes reality is continuously changing, and therefore, does not exist as a static element waiting to be discovered. A goal of qualitative research is to understand the perspectives and realities of the participants involved, and to provide a holistic description of the phenomenon under study. In order to establish a credible study and one that reflects participants' understandings, I spent a semester with the course and the students. I observed their culture and daily processes, trying to uncover the complexities of the people and the situations. I consistently observed the same setting, collecting handouts, emails and other documents relevant to the social environment of the course.

Prolonged engagement and persistent observation help alleviate distortions in the data caused by my presence in the classroom. Credibility is further extended through triangulation of data sources, in this case participant observations, interviews, and document analysis. At least one participant from each section reviewed the findings and confirmed that they align with what took place during class.

In qualitative research, observations are defined by the specific circumstances in which they occur. As a result, generalizability is avoided. However, this does imply that knowledge gained from one context will have no bearing on other contexts, or for the same context at a different time (Merriam, 2001). A “thick” (Lincoln and Guba, 1985) description provides as much detailed information as possible about specific sights, sounds and relationships in the phenomenon under study. Thick description facilitates transferability by allowing readers to have an experience similar to that of the participants.

Purposive sampling is also important to the idea of transferability. In the study, cases and participants were chosen because the instructor is an experienced distance education practitioner, teaching in a department well known for its distance education Master’s program. I wanted to know about the social environment and the concept of social presence as it existed under these specific circumstances. I did not want the experiences of all distance education instructors or all distance education students.

Dependability suggests that, given the data collected, the results of the study make sense. The study’s dependability can be traced through documents and records kept during data collection and analysis. These include observational notes and protocols, interview transcripts and a reflexive journal.

Data Analysis

Data analysis began with the first piece of data collected, and continued throughout the study. This section discusses additional steps taken, and examines the cross-case analysis performed on the data after each case had been analyzed.

Observation Protocols

I used the inductive analysis model outlined by Hatch (2002, p. 171-179) as a guide to analyzing the observational data. Inductive analysis is characterized by a “search for patterns of meaning in the data so that general statements about phenomena under investigation can be made” (Hatch, p. 161). In other words, inductive analysis starts with the specifics and moves toward the general. In this type of analysis, the researcher does not place pre-existing expectations on what she will find, but rather, lets the data speak for itself (Patton, 1990, p. 44). Hatch’s model is based on analytic steps described by Spradley (1980), and presents a flexible set of guidelines with which large amounts of data can be examined (Hatch, 2002).

I printed the observational protocols and stapled them to my original notes. I reread the notes, looking for information in brackets. When I found bracketed data in the observational notes, I thought about the circumstances around which those thoughts or impressions arose. Was there a pattern among my reflections and what might the pattern reveal about the emerging themes? For example, one evening right before the beginning of a synchronous class meeting in the web-based course, I mistakenly thought the software I needed had been erased from my computer. I immediately became frustrated and anxious. This caused me to think even more about what it would mean to be a student in that environment. What if my grade depended upon my ability to log into this class session and participate using the technology? What if someone else who worked here erased the software and unintentionally hindered my progress in the

course? Suddenly, I felt overwhelmed by a sense of loss of control. Up until that moment, I had always taken the method of instructional delivery for granted. All I needed to do was show up in the room and everything else would fall into place. I became increasingly aware of the role technology was playing in every aspect of the class.

I continued to read through the observational protocols, looking for frames, or units of analysis. These are potentially meaningful data or “segments of text” representing the “smallest piece of information about something that can stand by itself” (Lincoln and Guba, 1985, p. 345). Frames, also referred to as “conceptual categories” (Hatch, p. 164), shift and change as data analysis progresses. However, they served as guidelines around which to start looking at the observational data from the campus and web-based sections of IS 530. As I read and re-read the protocols, verbal exchanges between instructor and students appeared full of meaning, and seemed like one logical place to begin framing my analysis.

I continued to use Hatch’s model as a guide in that my next step was to develop a set of categories or domains that illustrated relationships represented in the protocols. For a category to exist, all the elements within it must be related to one another. According to Hatch (2002), domains are categories organized around relationships that can be expressed semantically. I used the following semantic relationships identified by Spradley (1979, p. 11) to steer my search for domains: strict inclusion (X is a kind of Y); spatial (X is a part of Y); cause-effect (X is a result of Y); rationale (X is a reason for doing Y); location for action (X is a place for doing Y); function (X is used for doing Y); means-end (X is a way to do Y); sequence (X is a step in Y); and attribution (X is a characteristic of Y). Domains can be represented by “included terms” and “cover terms” that are linked by a semantic relationship (Spradley, 1979, p. 114). Hatch (p. 165)

explains that “included terms name the members of the category and a cover term names the category into which all the included terms fit.”

I began to look for specific semantic relationships within my frames of analysis. I noticed the means-end relationship almost immediately. I read through all of my protocols, looking for examples of where this particular semantic relationship occurred, and made a note in the margin each time I discovered it. I used index cards to record the cover term and included terms for each domain. For example within the means-end domain, “ways to communicate with instructor” had the included terms: “speaking out”, “raising a hand,” “asking a question”, “offering a response/answer,” “sending email”, “making a phone call”, “posting a message to the listserv.”

I repeated this process by going back through my frames of analysis and looked for additional semantic relationships. I found examples of spatial, sequential, and cause-effect relationships, just to name a few. Once I recognized one of them, I read through the protocols looking for examples and identifying included and descriptive terms. I continued to fill in note cards with this information. I also began making an outline with the categories and domains in mind. Domains that did not appear relevant to the study were placed to the side.

I continued to read over the included terms and cover terms, asking myself, “can these categories be broken down further?” This was a time consuming step, however, it allowed me to dig even deeper into the data for a greater level of understanding. Once I had flushed out additional sub-domains, I decided to look and see how individual domains might be connected to one another. With Hatch’s (2002) model in mind, I asked myself, “What are the broad elements that bring these pieces together?” How are the pieces related to the whole? How are they similar, how are they different? What does all of this mean?” (p. 173-174). As I searched for themes, I found it helpful to begin

sketching the picture that was starting to form in my mind. This image reflected categories that emerged from my initial analysis, including time, structure, teaching, and learning.

Interviews and Documents

As I moved from the observational data to the interview transcripts and documents, I had the categories of time and structure in the back of my mind. I took a slightly different approach when analyzing the interview transcripts and documents than I had taken when I was reviewing the observational data. After I transcribed the first interview, and printed the first discussion board posting, I began reading the data, playing with “metaphors, analogies, [and] concepts,” as well as my own imagination (Bodgan & Biklen, 1992, p. 162). I made notes in the margins, and opened up a word processing document to free write about individual words and phrases used by participants.

My goal in analyzing the interview transcripts and documents was to begin “constructing categories or themes that capture[d] some recurring pattern that cut across ‘the preponderance’ (Taylor and Bogdan, 1984, p. 139) of the data” (Merriam, 2001, p. 179). These categories are “abstractions derived from the data, not the data themselves” (Merriam, 2001, p. 181). I read the marginal notes I had made, and tried to group comments that seemed to go together. I made a list of these groupings on a separate sheet of paper labeled participant 1, or posting 1, and stapled it to the corresponding interview transcript or discussion board posting.

I repeated this process for all of the interview transcripts and documents, keeping in mind what I had already discovered from the analysis of observation protocols. I compared the lists I made from the first data set with the additional data sets, asking myself, “How are the lists similar? How are they different? I created a “master list”

(Merriam, p. 181) of comments, terms and notes that reflected the recurring patterns in the interview transcripts and documents.

I wanted to identify how the ideas of time and structure presented themselves in the interview data. As I read and re-read the data, searching for these themes, new concepts began to emerge, including teaching and learning, I went back through the observational data, making notes about where and under what circumstances the new categories appeared. The following themes: time; teaching, learning, and connecting; compassion; absence of pre-class and in-class conversation; and technology emerged as categories pertinent to understanding participants' experiences of the social atmosphere and their ideas of social presence.

Cross-Case Analysis

The methods used in the cross-case analysis were similar to those used in each single-case analysis. I looked at the themes that emerged from each case and asked questions about each category as it related to both the campus-based and web-based sections of the course. I looked for recurring patterns while keeping in mind the semantic relationships outlined by Spradley (1979). In what ways are the events in both sections alike? In what ways are they different? How do students express emotions and feelings in each class? In what kinds of space are the sections taking place? What are the goals of each class and how do students communicate those goals through interactions with one another and with the instructor? I examined the data repeatedly, looking for categories that revealed a relationship between the two sections of the course

CHAPTER 4: FINDINGS

This chapter presents findings of data analysis and answers the research questions, “what is the social environment of the campus-based and web-based sections,” and “what are students experiences of social presence?” The chapter is divided under the major headings: Overview of the Social Environment, Case A, Case B, and a Cross-Case Analysis. Case A describes the campus-based course, Case B focuses on the web-based section, and the cross-case analysis examines the relationship between the two learning environments.

Overview of Social Environment

The social environment of the campus-based and web-based sections is characterized by verbal, non-verbal, and written exchanges between and among instructor and students. The social environment is comprised of students and an instructor interacting with each another about personal and professional issues, sharing new knowledge and building and extending relationships over time. Whether using computer-mediated communication tools such as email or speaking face to face, students found meaning in a social atmosphere that facilitated connection and understanding. The social environment is like a large, intricately woven rug whose borders extend far beyond any classroom walls. Students bring their backgrounds into a course along with a wide variety of experiences and ideas that color and enrich the social fabric. The resulting pattern is subject to change, depending upon whose is involved in the class and who is examining the social atmosphere.

Case A: Campus-Based Section

East Tennessee generally remains hot and humid well into autumn. Long before noon, the sun asserts its presence in the sky, and by 6:00 in the evening, everyone is

convinced that September is the hottest month of the year. I am reminded of this as I make the short walk from my office to Volunteer Court, the building where the campus-based section of IS 530 meets twice a week. Having weaved my way through the hustle and bustle of a busy campus crosswalk, I am also reminded that the beginning of fall semester at a large university is unlike any other time of year on campus. I can sense the presence of newness and possibility drifting in the air, its texture not unlike that of spring, but with a deeper, more robust taste. The leaves have not changed colors, and the air is not cool, but the sheer volume of people and cars forecasts change, growth and endless possibilities.

Bodies walk past quickly, and I arrive at the large steps leading to the porch of Volunteer Court. Located at one of the busiest intersections on campus, the building has seen its fair share of instructors, students, bike riders, and cars pass by. The structure is unassuming from the street, with a Crapemyrtle, various shrubs, and a Japanese Zelkova tree masking the rear of the building as it extends far back toward the Student Center. The prosaic view from the porch is rare for this part of campus: a lush grassy slope dotted with stately trees. The building's engraved marble lintel and leaded glass panels are impressive, but the years show through cracks in the sandstone-colored brick.

The sizable porch welcomes visitors by way of either four large steps or a ramp extending from the side of the building. It offers plenty of rail space for sitting and is a popular place for people to gather before class and during breaks. Two tall ashtrays remind the numerous smokers to put out their cigarettes prior to opening the ample size door and entering the building.

A bookcase highlighting the School's faculty has a prominent place in the entryway, along with two chairs and an artificial plant. There is a large staircase on one

side of the room. Stepping through an arched doorframe reveals the Director's office to the left, and more offices to the right, including those belonging to the technology and distance learning staff. Volunteer Court is reminiscent of a house and its setting is comfortable, yet professional.

Class meets in a room at the end of the second floor hallway. I take the stairs, and come out on the appropriate floor, walking along the blue carpet toward two large windows, one of them leading to a fire escape. The building's age is revealed in the multiple coats of white paint, and dark brown paneled walls. However, as I pass computer labs, tables filled with professional journals and modern vending machines, I realize the surroundings have adapted quite nicely to the present. I arrive at a large couch right outside the classroom door, and pass by two students who are sitting there talking.

I have entered the classroom as a participant-observer for the semester, hoping to learn as much as possible about these students, their instructor and the meanings they have assigned to their social surroundings. I have already introduced myself and explained my project. Most students are cordial, a few are friendly; but for the most part, no one pays attention when I enter the room and sit down in the back.

At the end of the room furthest from the door are a podium, a table, and an overhead projector. A Proxima projector hangs from the ceiling, and a sink sits in the front left hand corner of the room next to the chalkboard. Four windows line one of the walls, overlooking a small parking lot. An air conditioner pumps frosty air from a fifth window located directly in the back of the room. A bulletin board on the remaining wall is covered with various book-jackets, their topics ranging from politics to gardening to British literature.

The class is large and consists of mostly women between the ages of twenty-three and thirty-three. All but three of the participants are full-time students working on their first Master's degree. Several of the men sitting together in the front right corner, and a few others scattered throughout the room. The desks closest to the podium are arranged in traditional rows. However, in the back in the room the desks are in disarray, remnants, perhaps, of a previous class's collaborative efforts. Students that choose to sit in those desks drag them back into alignment with the others, so that by the time class gets going the room is back in order.

Dr. Smith walks through the door of the classroom, trailed by several students. She is chatting with a woman who follows her to the podium and then turns to take a seat nearby. Class usually starts on time, and Dr. Smith begins by asking if anyone has questions. She mentions specific assignments and waits to see if a student offers a comment or makes an inquiry. Often, she reminds them of upcoming events within the college or those related to professional organizations.

During a typical class lecture, she shares information directly related to course content and the successful completion of lab assignments and class projects. Along the way, she poses questions and waits for students to respond. A few students raise their hands, although, it is not uncommon for students to speak out loud, rather than waiting to be called upon. Neither is it uncommon for one student's comment to be followed by another student's comment. Occasionally, this leads to even more student input, with the professor eventually stepping in bring the focus back to the lecture. Dr. Smith has already expressed her feelings about the importance of class participation, revealing in the syllabus, "even if you don't know the topic, you can participate in the discussion." The reciprocal process that characterizes the social environment is apparent as Dr. Smith's interacts with students in class. She gives information to the students, who in

turn, process it, relate to a specific or hypothetical situation, share it with classmates and eventually return it to the instructor in the form of completed assignments and class discussions.

As Dr. Smith lectures, students appear focused on listening and taking notes. The professor tells students early in the semester how critical it is that everyone “defines things the same way.” There is a need to establish a consensus regarding definitions and concepts related to the course content. There is very little noise as she discusses the day’s topics, and students are not observed fidgeting in their seats or looking around.

In-class group work generally occurs as a method for facilitating the discussion of lab assignments. Dr. Smith allows students to group themselves, requesting they pull their desks close together. Laughter and talking begins to fill the room. Students are sitting in circles and talking about the assignments, but they are also discussing their favorite television shows, their least favorite professors and a wide variety of subjects in between. The social atmosphere is characterized by easy-going and comfortable exchanges between the students and instructor.

Today, Dr. Smith is drawing a picture on the board of what is supposed to be the world. She comments that it “looks more like South America,” which causes several students to laugh. Next, she confesses the image “really looks like the Galapagos Islands,” and more laughter results. As Dr. Smith stands smiling and talking with students, it appears that she is comfortable in this environment and that she enjoys what she does. During class, she uses words, and illustrations to reveal personal information about herself. She is overheard commenting, “I just love these cartoons,” and “I’ve finally learned how to use this computer.” She may talk about an upcoming conference or a particular topic of interest. An accomplished researcher and teacher, Dr. Smith appears

to have a good sense of humor. She laughs easily, and engages with students about a variety of topics beyond the class content.

Students smile and nod their heads when the professor shares professional information or personal experiences. Students ask questions, not just of her, but also of one another. They appear alert and enthusiastic, but remain respectful of the instructor. The social environment of the course is dynamic and seems to align with the instructor's beliefs regarding the importance of collaboration and discussion. The structural elements for student-student, student-instructor, student-interface, and student-content interaction, are evident in the syllabus, which outlines the course goals and objectives. Written by the instructor and given to students at the beginning of the semester, it influences many of the social components of the class, describing the course methodology as a "combination of lecture, individual participation, and small group work." Students are required to work with various online databases to complete their assignments and must communicate using web-based technologies. The syllabus dictates to students a required level of interaction with the content, with the technology, with the instructor, and with one another.

As the semester unfolds, I watch the class grow closer, both physically and intellectually. Students that at one time sat and read quietly in the room until the beginning of class now sit and talk on the couch or busily chat with fellow students in the hall. They linger at the instructor's podium before and after class. When asked to discuss a lab assignment, students eagerly share their opinions and findings, nodding their heads in agreement, and cracking jokes about the content. The social environment is a mixture of students' backgrounds and beliefs and it extends beyond of the walls of the classroom in Volunteer Court.

Themes

Time

Time emerged as a category associated with the social environment of the course. The syllabus outlines what assignments are due when and provides details about a take-home mid-term and final. It includes a chronological outline of course meetings and class topics. Dr. Smith communicates to students how much of their time will be involved completing work for the class. From “day one,” the instructor tells participants they will be “very busy” and can “expect to spend many hours in both physical and virtual libraries.” During the semester, she frequently reminds students about upcoming assignments and makes suggestions within the syllabus about when they should begin working on certain projects.

Participants are conscious of the temporal dimension of the class and see it as having an affect on interaction. Many students express an awareness of the instructor in terms of time. Participants recognize “when she wanted to stay on topic,” and when she was “running out of time,” As one student comments, “it was obvious when [the instructor] wanted to get her point across...class always seemed to go by quickly on the days we had a lot to discuss, there wasn’t as much eye contact.” Participants discuss how “quickly” Dr. Smith responded to their questions in email, and that “knowing you could get an answer quickly” was important for their “peace of mind.” One student reveals:

“There was a lot of work in this class...it kept me busy, but it seemed like [the professor] understood it was a heavy load. She always asked if we had questions and if we were lost. If I emailed her she emailed me right back and was always willing to talk after class. I liked that...it made me feel like we had more of a social relationship.”

Participants’ awareness of one another was also connected to time. A male participant stated, “There are people I engage with everyday and I don’t know their first

names. And I feel terrible about it because it's well beyond the point that I should have had it, or I should have been able to do some underhanded method to figure out what it was, but haven't done it yet." There seems to be some fixed point in time by which certain social conventions, such as knowing someone's name should have been accomplished. When asked about a certain day in class, another student commented, "by then I really should have known their names, but [after that] I never forgot." Respondents appeared embarrassed to admit they interacted with people in class whose names they did not know.

Some students experience a "lack of time" as restricting their contact with fellow students and with the instructor. "It just doesn't seem like there's enough [time] in the semester to get to know people very well. There wasn't really a lot of time for interaction," explains one student. Other participants see interacting with one another as inhibiting their interaction with the content: "I am trying to listen in class and don't have time for a lot of small talk." "Since I work full time and have a lot of other activities outside of school, I considered it more of a learning opportunity and not a chance to interact with others. My focus was just getting to the class, getting my work done and leaving." For this participant, social interaction is seen in opposition to learning and is considered a distraction from her overall educational experience.

On the other hand, the "passage of time" is also characterized as the "best way to get to know something about someone." A participant explains, "Over time, I noticed these people were familiar with one another. They gradually began to let their hair down." Time allows the participant to understand more about her classmates and to recognize an evolving pattern in student-student interaction. Another student states that "it took time" to really get to know fellow classmates and to "develop friendships." Dr. Smith tells

students they “will get to know each other as the semester progresses,” suggesting their relationships will grow over time.

Teaching, Learning, and Connecting

Participants understand social presence in terms of teaching, learning, and connecting with each another. Common to participants’ descriptions of social presence are the words “helping,” “instructing,” and “coaching,” In regards to social interaction, lab assignments hold meaning for participants who are required to work with a partner to complete the web-based activities. They describe lab work as a time of “learning from previous mistakes”, and “getting to know a person and what’s important to them.”

Students associate social presence with a reciprocal process of information sharing and knowledge building. They explain in detail situations in which they knew a tactic or search strategy that would benefit someone else, often referring directly to other students and specific situations that took place both in and out of class. Participants taught things to one another, mentioning specific assignments that were difficult, or online databases that proved challenging. Students revealed that they “solved issues” and “made progress” with fellow students through “discussion” and “debate,” with fellow students.

Participants are aware of one another when they connect on a topic and when they have something in common. Besides being enrolled in IS 530, numerous participants had at least one other class in common. When asked about their social environment, students repeatedly discussed situations in which they talked with a classmate about the coursework from another class. A participant explains:

a lot of times you’d bump into someone from 490...in the building or outside...it was easy to start talking about the current assignment, especially if it was hard or you had questions. It was good, really, to have that chance to discuss the work, even though it was sometimes more fun to talk about other stuff.

Other respondents discussed situations in which they spent time thinking and talking about issues from other classes. Occasionally, they would confuse the two courses, making comments such as, “wait, “that’s from the other class,” or “no, that happened in 490.”

Students notice Dr. Smith when she “acts like a professor,” and often describe her as “kind” and “helpful,” someone who “motivates by example.” As one participant reveals, “I watch her try and figure out new ways to explain things in order to get the people who aren’t on board on board.” Another student states, “I was aware of her the most when she was trying to give details and examples about topics in class.” They notice her as she asks and answers questions, as she teaches, as she assesses where people are cognitively in relation to the content. They recognize her role as the leader in the group and “as a professional.” Dr. Smith is aware of students “when they contact” her, when they “don’t turn in papers on time, when they turn in very good papers...or when they are really into a discussion.”

Students experience social presence on a deeper level than simply knowing another person is enrolled in the course or sitting in the room. One participant explains:

“for a person to be socially present, he or she must know that other people exist with other viewpoints, and somehow try to communicate to those people. [A socially present person] asks himself, “we’re in a situation, what can we actually get across here?”

A fellow classmate agrees, stating, “I supposed on some level, of course, presence is about their physical presence...their being there in front of you. But it could also imply having something that makes you human...being someone who’s thinking and feeling.” Participants acknowledge one another as individuals with “feelings,” and “limitations,” capable of “making mistakes,” and “dropping the ball.” Participants valued

the humanness of their fellow classmates, and expressed willingness to work through differences of opinion and breakdowns in communication.

Summary

The social environment of the campus-based section revolved around a reciprocal process in which students and instructor engaged in pedagogically driven communication and interaction. The process was shaped by the instructor's beliefs regarding the importance of collaboration and discussion, and driven by the assignments, and revealed, to an extent, in the syllabus. The social atmosphere was dynamic, a vibrant mix of auditory, visual, and tactile stimulation in which interpersonal and intellectual exchanges were continuously being made. Class was structured in such a way that student-student, student-content, student-instructor and student-interface interactions were entwined and impacted participants' understanding of social presence. Students' experienced the social environment temporally and acknowledge that it takes time to build social relationships. Participants' assigned meaning to social presence in terms of teaching, learning, and connecting with fellow classmates.

Case B: Web-Based Section

Beginning each fall semester, the School of Information Sciences at the University of Tennessee offers an M. S. in Information Sciences to a select number of students through distance education. University of Tennessee faculty teaches these courses and are "delivered directly to the student's location" using web-based technologies including two-way audio video conferencing, email, discussion board, and listserv. My location for the asynchronous class session is a development lab on campus, which I also refer to as my office. Located in D Hall, the lab contains computers that meet the specifications required for using the Centra audio-conferencing software.

After 6:00pm the door to the front of D Hall automatically locks and in order to enter you must have the proper identification. At nearly 6:05pm I let myself into the building, a former dormitory, now the home of several administrative departments. The building is old and the elevator consistently breaks down, so I elect to take the stairs to the fourth floor. I exit the stairwell, enter another secured door and walk the length of a long hallway. I pass numerous office doors until I reach an open area at the end of the hall known as the development lab. Most nights I enter the building alone, and with the exception of a brief visit by a member of the maintenance department, remain alone in the lab throughout the evening.

The area contains four desktop computers, two on each side of the room. A round table sits in the center, and a bookcase on wheels rests along the side of one wall near a small table containing the telephone and various office supplies. I walk to the desk on the right side closest to the windows, and sit down at the computer screen. To my right is a brightly colored poster advertising a computer company and to my left is a row of large windows that open by lifting the latch and cranking the handle. The view is of D Hall's horseshoe parking lot and another dormitory to the left. Within the horseshoe is a large patch of grass and a volleyball court complete with sand. During this time of the year, there is an occasional evening game, and the sounds of laughter come drifting through the windows.

I take out my notebook, sit down at a computer, and turn it on. I know that class officially begins in twenty minutes. I have stopped at the vending machine downstairs and bought a Dr. Pepper and a package of powdered donuts, which I proceed to open. If I get too hungry, I'll run over to a nearby sandwich shop during the break and order something to bring back and eat in the lab.

About 150 miles to the east of D Hall, another distance education student, Steve, is finishing dinner with his family prior to the start of class. He has had a busy day assisting patrons at the Randolph City library and values this time with his wife and daughter. Steve's house is decorated with holiday lights and a host of candles whose scents evoke Christmas. Steve talks with his wife and four year old daughter, Christy, about his day at work and their upcoming plans for holiday shopping.

After dinner, Steve heads to a small room next to the kitchen to sit down in front of his computer. The room, which is occasionally used as a laundry room, has hardwood floors and a large bookcase along one wall. The only light in the room comes from a small lamp on the desk and from the computer screen itself. A few papers lie on the desk, including two print-outs from the class web site.

In the lab on campus, I wait for my computer to boot-up and then open my email. I locate the reminder from infohelp@outreach.utk.edu that this week's class is a synchronous session and meets online. Out the fourteen planned class lessons, seven are synchronous and seven are asynchronous, meaning students work through the material on their own. I copy and paste the URL from the reminder into the address bar in my browser. At approximately 6:15pm EST, I am logged into the class with the Centra interface open on my desktop.

The first names of participants in the class are listed on the left side of the screen. By the time class begins, the list will have grown to include forty-one students, the instructor, several technical and graduate assistants, and myself. The majority of students are between the ages of twenty-seven and forty-five, and nearly all of them are earning Master's degrees while working full-time. For most students, this is the first web-based course they have ever taken.

The professor's name appears at the very top of the list of participants. Women's names far outnumber men's names on the list. The session is not being recorded yet, as evidenced by the words "pre-session" appearing in the bottom right hand corner. At this point, the microphone is open to everyone and to speak, one must hold down the "ctrl" button on the keyboard and talk into a microphone connected to his or her computer.

Time passes and all is quiet. No one says anything. At 6:30pm Dr. Smith's voice comes out of my speakers, and a small, highlighted microphone appears next to her name in the list. She opens class by reminding everyone that the session has officially started and is being recorded. Dr. Smith reminds students that their "microphones have been taken away." Students can no longer simply press on the "ctrl" button and talk to the whole class. Instead, they must request the microphone by pressing the button that causes a hand to appear next their name in the list. A small hand flashes, and the professor then "gives" the student the microphone, allowing her or his voice to be broadcast to the entire class once the "ctrl" button is pushed.

Dr. Smith asks if anyone has questions. The hand symbol flashes next to the names of several students indicating they have a question. Numerous students have questions about their grades as they appear in the course web site. Although, she has gone over the "elaborate grading procedure," she reiterates some of the information, including which graduate assistants students should be in contact with regarding labs and assignments. "The highest priority is getting back individual grades and comments." Dr. Smith states. Detailed questions about grades continue for several more minutes.

The professor calls on a student whose hand is flashing next to her name on the list. Seconds pass, but no sound comes out of the speakers. Red Xs start popping up beside other names in the list. Her classmates are trying to tell her that there's a problem with her sound and she's not coming through. Dr. Smith comments that she will ask the

technical support person to give the student a call. She gives her the microphone once more, but to no avail. "Sorry, we'll try you again a little bit later," she says, adding, "you might try and run the audio wizard one more time." She suggests that the student seek advice from a technical support person through text-chat.

Today, Dr. Smith is providing reassurance as class enters the middle third of the semester:

"Those of you who haven't been in school in a while, the second third is probably the hardest. It's when you begin to feel a little bit overwhelmed, we're throwing a lot of things at you. You've got some due dates coming here and there and there's going to be things that maybe aren't quite as clear as you would like; it will all get sorted out at the end. The last third of the class is less confusing. So if you're feeling overwhelmed right now, it's natural. It's also important to ask questions when you have them. I always want to encourage you to ask me questions."

As students are called on to speak, they almost always start by saying, "Hello Dr. Smith, or "Hi everyone." They often introduce their questions, stating whether there are multiple parts to the inquiry. Once Dr. Smith has provided an answer, they reply, "thank you."

At his home in Randolph City, Steve has been logged into the session since the beginning of class, listening to his classmates' questions. He hears his daughter's voice in the other room announce that when she "grows up" she "wants to be a princess." Soon, she appears in the doorway, dressed to go out with her mother and grandmother. After saying goodbye to her father, she heads out the door. Steve waves goodbye to his wife and sits back to listen to the class lecture.

Dr. Smith is beginning to discuss the evening's topic, stating, "Let's see if we can put up with my drawing." As she talks, a circle appears on the screen. "That's a user," she comments. "Let's give him a smile. What a horrible smile," she states, laughing. "The user thinks or wants to interact directly with content." A box appears and an arrow is drawn from the circle to the box. As she moves through the explanation, she continues

to draw squares and label her illustration, erasing some of the connections and adding others. Finally, once the picture is complete, she comments, “so that big mess illustrates the relationship” we’ve been talking about.

As Dr. Smith talks, smiling faces flash next to names in the list, indicating that students are amused and laughing. The professor’s sense of humor is apparent as she talks about course content and shares information about her research and personal life. She navigates the technical components of the Centra interface with ease, speaks clearly into the microphone, and rarely, if ever, has computer problems.

I click on the icon that opens the text-chat window. The screen is already filled with text. There are several conversations overlapping one another. A line of text appears related to one topic and the following line of text appears related to some other topic. A student has a technical problem and the support person offers suggestions. Other students occasionally offer their own tips for fixing problems with audio. Participants in text chat discuss lab grades and assignments, where and when groups will meet, and offer answers to a variety of questions, most related to the course content. Students use exclamation points, abbreviations such as “lol” for “laugh out loud,” and emoticons like smiling and winking faces.

I check the text-chat window a few more times before Dr. Smith’s lecture is over. She asks students if they have any questions one final time before she stops recording the session. Once the session is no longer being taped, Dr. Smith “gives” everyone back the use of their microphones, and students are free to talk amongst themselves. Several students have specific and detailed questions that both Dr. Smith and fellow students try to answer. This continues for several minutes as numerous students offer advice and lessons learned from their own experiences. Once Dr. Smith has logged off, most students’ names begin disappearing off the list as they too log out of the system.

Once the class session has officially ended, Steve meets his group members in one of the separate chat rooms in Centra. Several members are concerned about an assignment from another class, and part of the conversation is centered around group members offering suggestions and advice. The conversation is filled with humor and occasionally takes on an inter-personal tone. Tonight's after class discussion is not long, however, and Steve has chance to read Christy a bedtime story before he settles down to work on class assignments.

Themes

Orientation Weekend

When asked about the social environment numerous participants described incidents that took place during orientation weekend, suggesting the event "laid the foundation" for certain social interactions during the semester. The weekend was meaningful socially for students in that it provided an opportunity for them to interact with the professor as well as many of their classmates. "I met my group members at orientation," stated a participant. Several others indicated they had formed groups and gotten together with lab partners during the event. A student described choosing a partner, explaining, "I keyed in on her because she seemed responsible and mature...grades were important to her...and we were similar minded." Participants characterized orientation weekend as a time of learning about the master's program and as an indicator of a busy upcoming semester. As one participant suggested, "orientation weekend was a bit overwhelming, but I was really grateful for it about two weeks into the class."

Compassion

When describing their experiences with the social atmosphere of the class, students discussed the terrorist attack on the World Trade Center in New York City, an

event that caused them to “think about” their classmates regardless of where they lived. As one participant explained, “when I heard what happened, I thought, Oh God, is there anyone in the class who’s family was there or who had [loved ones] in the area? It was almost too much to comprehend...to horrific to understand.” They described feeling “compassion” and “sympathy” for their fellow students. One participant stated, “When I heard the pain in [my classmate’s] voice. I wanted to reach out and give her a hug.” Several students talked about the fact that they felt closer to other students as a result of the tragedy, and that “even the physical distance between [them] didn’t seem to matter.”

Participants discussed classmates who sent encouraging emails and “really seemed to care about what we were all dealing with.” Students discussed an “understanding of sorts” that this event had been the worst tragedy many of them had ever witnessed. Fear and apprehension were common feelings for people to have in the days and weeks afterwards. Students in the class had their feelings acknowledged and validated by fellow classmates, which proved to be socially meaningful. The social atmosphere was a place of comfort and security for participants.

Absence of Pre-Class and In-Class Conversation

During synchronous sessions, the lack of in-class and pre-class discussions was socially significant to students. Numerous participants mentioned the absence of conversation and chatting during class as “strange” and “off-putting.” As one participant explained, “in Centra we’d all log in and we’re just sitting around and not saying anything. I don’t know if people are uncomfortable or working on other things. It kind of bothered me that no one ever talked before class.” Another participant discussed her experience, stating, “It would be nice to be able to mention something in small talk in class and be like, OK, I understand now. There just wasn’t a lot of talking going on before class.”

Respondents discussed these experiences in detail, offering their own interpretations of what is happening:

“People do not openly chat between classes. I would log in and think is my machine working? It surprised me that they didn’t do that in class. Maybe, it’s because everyone can hear you. I equate using the microphone before class to standing up at the podium in the front of the room and asking someone, “hey, how are you?”

Another student states, “You can ask questions, but you feel like you’re asking the whole class. And then you’re thinking, how stupid do I look?” “It’s difficult when two people cannot talk at once,” states a participant. “I guess that’s just a limitation of the medium.” Numerous students expressed a desire for more frequent and spontaneous exchanges before, during, and after synchronous class meetings.

Participants acknowledged, however, that as the semester wore on, they grew “more comfortable” using the microphone and that “after-class discussion seemed to increase.” Several participants revealed that this was their first experience with web-based education, and that they might have had a few things to learn in regards to this new environment. A female student explained, “This is the first online course I’ve had. I mean, I surfed the web and everything, but I knew taking a class on the Internet would be totally different...I knew it would take some getting used to...and I was right.”

Participants characterized asynchronous weeks as “missing something,” namely, “assistance from the entire group.” A student explains:

“During the asynchronous weeks, it took me awhile to realize I wasn’t surveying the full scope of everything that went along with that lesson. That was where it felt as though I didn’t have the benefit of group support. Working with others might have helped me see what I was doing wrong earlier in the semester. It was October before I realized I might not be using my time wisely during the asynchronous weeks.”

Another participant stated, “I felt like it was an independent study project most of the time. I work well on my own, but I would also get frustrated and would have liked the

benefit of talking with others in the class right then, when a concern was fresh in my mind.” Students revealed that they did not like waiting to receive answers in email, and would have benefited from a chance to ask their classmates questions in a more timely manner.

Technology

Students experienced social presence largely in regards to the technology used during the course, including the Centra software and computer-mediated communication tools such as text-chat, email, and discussion board. “Socially, I felt kind of tied to the computer,” states a participant. “I had to go through the machine in order to make my presence known.” Participants were aware of the technology’s place in the class. A female student reveals, “I eventually started recognizing names with voices, but I didn’t have a face. It was almost half imagination and half reality. During class time, we didn’t interact with each other as much as we did with the professor and with the computer screen.” Another participant suggests, “even though, I know a person’s name, when I would think of them, in my mind their little email person comes up.”

Several participants discussed imagination, “creativity,” and a “new way of looking at school” that resulted from using the technology. As one participant explains, “I tried to imagine what everyone looked like even though I couldn’t see them.” Another suggested, “having the computer between me and my classmates made it interesting...I was forced to use my mind’s eye a lot of the time and I tried to have fun with it.” Students seemed to enjoy opportunities to reexamine their traditional ideas about teaching and learning.

The Centra interface allows students to hear each other’s voices and to see their names listed on the computer screen. When asked about an awareness of others, participants discussed these specific characteristics of the technology. “I was always

conscious of other people in the class,” stated a student, “because their names were listed in Centra.” Another student explained, “Centra let you hear everyone, and after awhile you could pick up laughter and irritation in people’s voices.” “Centra was cool,” another student suggested, “it let you see names and hear the [corresponding] voices, so eventually I became aware of who certain people were. One participant discussed how she “tried to say something every class period, “ noting that she “felt invisible” otherwise. Another student commented, “there are some people who speak up a lot more than others. You get to know them and form an opinion even though you don’t see them face-to-face.” Participants frequently discussed the auditory and visual aspects of the technology as playing a part in their experiences of the social environment.

When asked about social presence, students talked about the use of emoticons available in the Centra interface. “I like the smiley face and the clapping hands,” revealed one student. Using those buttons made me feel like I was being a little more social.” Another participant expressed a desire for “more emoticons,” including a “frowning face, rolling eyes,” and one that “sticks out its tongue.”

In addition, to the emoticons, the text-chat feature was especially meaningful to students in the web-based course:

“When I discovered text-chat,” explained a female student, “I felt so much more connected because it’s a whole other conversation going on. It’s a whole world I didn’t discover until the fifth week of class. I kept it open. Sometimes, if you can’t hear anyone talking you can ask if the sound is on. You can also ask the technical people there if you have a question.”

This participant suggested that text-chat provided additional opportunities for students to socialize and to discuss class-related topics beyond the Centra interface.

Another respondent states, “I was conscious of certain people through text-chat. I always opened it to read what other people were writing and I always read other people’s comments – they were funny.” Participants revealed that text chat was both a

“teaching” and a “socializing tool.” “When people came in late,” a student revealed, “we’d use the text-chat to get them updated, especially if there were any changes in the assignments.” Students remained conscious of their classmates through the text chat feature. “I was aware if people were having problems or if someone was missing from my group, or if someone was ill,” explained a student. The text-chat was one of my closest links to the other students. I kept it open fairly consistently.” Participants repeatedly discussed using the text-chat as a way to help or assist others in the course.

Students also described the class discussion board as a place to “interact” with fellow students. “I learned a lot about my classmates from the discussion board,” stated a student. “I enjoyed reading [other students’] views and opinions.” “There were a lot of posts,” revealed another respondent, “but it did make you aware of people that wrote really well or had really strong beliefs about a topic.” Students spoke of the routine of reading and responding to the discussion board. “Once you got in the routine of them it gave you more of a sense of what was going on with other people in the class. You could tell about their beliefs and opinions largely based on what they wrote.”

Students associate social presence with the ability to effectively use the technology. “There were some sessions when I was alert to do the hand button. There were times when I felt like I was invisible if I didn’t say anything.” Another participant suggested, “I always seemed to use the emoticons two seconds too late, but some people were good about using them, or using the check marks. I was always more aware of those people because that impressed me.” Some students were self-conscious about using the technology:

“I was really apprehensive about using the microphone. I always thought twice about making a comment, but one night I raised my hand and was called on, but I had audio problems. I’m talking and all these red Xs start popping up on the screen. That was a day when I really didn’t need that. I thought, you won’t hear from me anymore. I’d been rejected once.”

This participant suggests that technical problems may cause her to refrain from speaking in class again. It's "hard to be have fun and be sociable when you're stressed out about your computer," stated another student. Students were self-conscious about using the technology, especially the Centra system and several respondents expressed a desire to "conquer whatever technology issues came up."

Technology also impacted students' awareness of the professor. Participants were aware of Dr. Smith as she "moved easily" through the content and interacted with the technology. A participant recalls, "I noticed that the professor never seemed uneasy or unsure of herself...she always sounded positive and encouraging." One student remembers her "laughing a lot" and "enjoying herself," during class. The professor has a certain way of saying things in email," remarked a student," everything from smiley faces to just the way she writes phrases." "I tried to use the clapping hands and smiley faces when she'd say something funny," stated a female participant. "It thought it must be hard to try and teach without having the students right in front of you."

Technology facilitated the lab activities and group work which students referred to as "socially meaningful" and "the most social thing I did." Students grouped themselves early in the semester to work on projects for IS 530 and another web-based IS course. They were also required to have a lab partner for the online lab exercises. When asked about the social environment of the class, participants repeatedly talked about discussions and interactions with their lab partners. "My lab partner and I emailed each other every day," explains a participant. "If we didn't hear from each other we knew something was wrong." Participants talked about times when they "called [their] lab partners and vented," and occasions when "we reviewed each other's work." Students characterized lab activities as meaningful and beneficial. Several participants described

times when “they got together physically” with their lab partners, or “hooked up with [other students] in the area.” One student stated, “I had a partner that was here in town and we got together a lot. The two of us got along well and I really enjoyed the work.” Students assigned meaning to social interactions in which they are together in the same physical location.

In addition, group work was labeled as a “outlet for socializing,” and as “venue for making longer-lasting connections.” One participant explains, “I had certain things I talked about [with each group member]. I would look for their messages, and before work I’d check to see if anyone sent anything funny overnight.” Others expressed feeling closer to group members than other students in the class. “I felt more connected to the people in my group than I did to everyone else,” stated a participant. Another student confessed, “I generally stuck to communicating with my group. There were a lot of people in the class I never talked to.” The number of people logged into in the course during asynchronous sessions was often between thirty-five and forty, and consequently, it became difficult for students to interact with every one of their classmates.

Summary

The social environment of the web-based section was heavily influenced by students’ interaction with the technology used to deliver the course. Student-interface interaction promoted and facilitated student-student, student-instructor, and student-content interaction. For participants, socially significant events were those in which they engaged with classmates or the instructor either face to face or via the Internet. Students, many of whom were library and teaching professionals, brought elements of their individual surroundings into the social atmosphere as well as their own creativity and imagination. The social environment was characterized by compassion and understanding. Furthermore, this was the first web-based course for most participants.

The social environment evolved as students' became more comfortable with the technology. Students experienced social presence as an awareness of fellow students based on their classmates' ability to use and manipulate the technology, and computer-mediated communication tools.

Cross-Case Analysis

At the heart of a relationship between the social environment of the campus-based section and the web-based section is the significance students placed on their abilities to connect with and relate to the instructor and to classmates. Connections were meaningful whether face to face or via the web. While students in both sections enjoyed opportunities to interact face to face with classmates, they also valued interpersonal and intellectual exchanges in text-chat, discussion board postings and emails.

The class afforded frequent occasions for group work and collaboration among students. These interactions held meaning for participants as they shared information, worked through problems, contributed to other people's knowledge base and added to their own. Students related to one another through positive and negative events, and connected with fellow students when discussing classes and assignments they had in common. Figure 4.0 illustrates how the components of student-student, student-instructor, student-content, and student-interface interaction in both the campus-based and web-based sections of the course are connected. In the campus-based class, the social environment is characterized by a fluidity resulting from a reciprocal and occasionally spontaneous dialogue taking place between and among students and instructor. This dialogue impacted students' awareness of one another as well as their consciousness of the instructor. They experienced social presence in terms of teaching, learning, and connecting with other students.

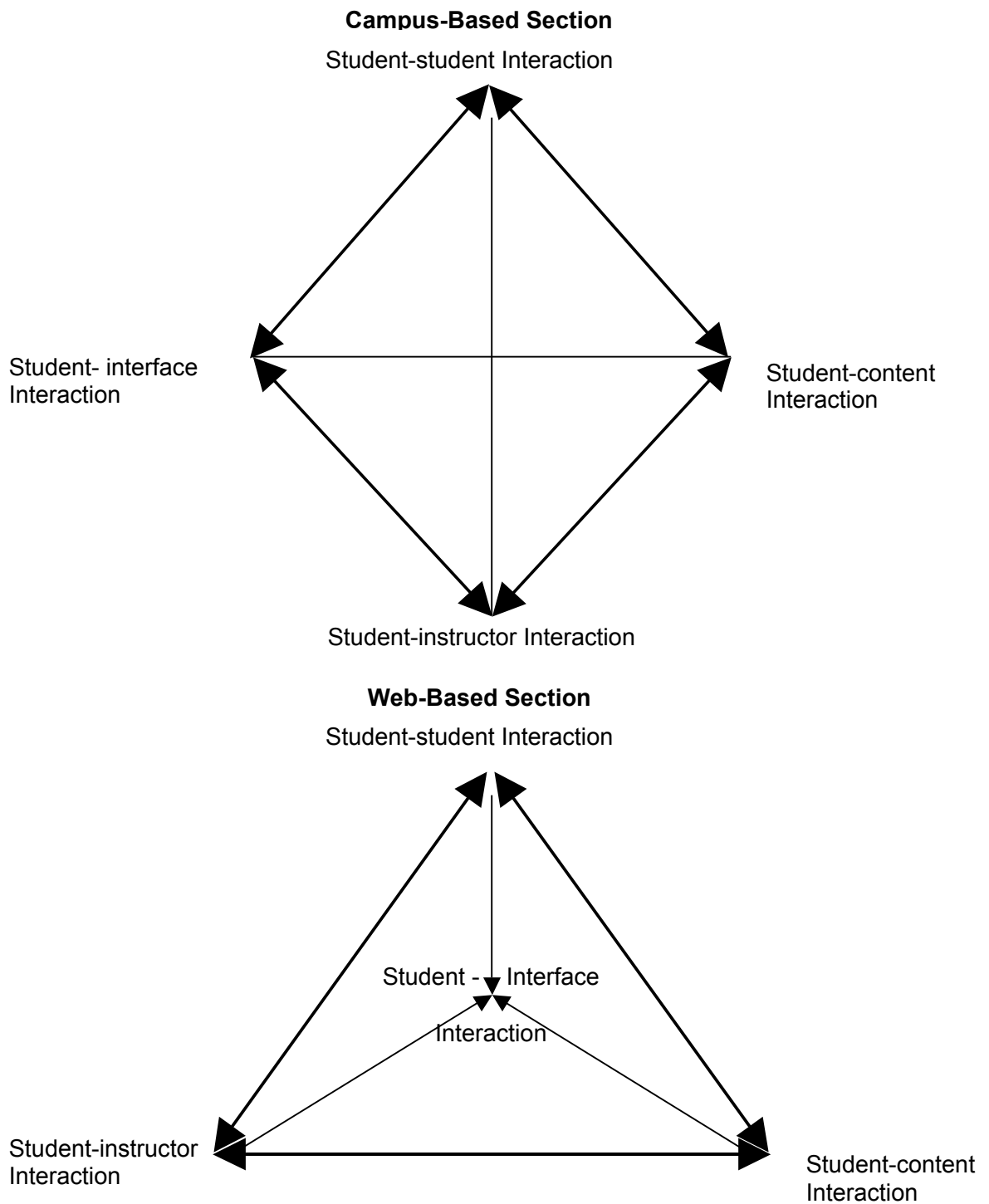


Figure 4.0: Connection between student-student, student-instructor, student-content and student-interface interaction in the campus and web-based sections

A connection existed between these components in the web-based section as well. The interaction taking place between students and the computer interface used to deliver the course content mediated many of the social aspects. Technology held tremendous influence over certain social processes, as well as students' understanding of social presence. In the distance education course, participants discussed specific technologies, including the Centra audio-conferencing system, email, discussion board and listserv. Students needed to know how to interact with the computer, how to turn it on, how to download the content and how to trouble-shoot problems if necessary. They had to understand how to use the microphone and how to make use of a variety of telecommunications tools to communicate with the instructor and classmates. Participants perceived the technology as a way to facilitate and limit interaction. Numerous students mentioned the lack of opportunities for unplanned, private exchanges as detracting from their social experience.

Both the campus and web-based sections of the course had the same instructor. Students described her as "professional", "funny", and an "excellent teacher." Dr. Smith was a leader in the field and the kind of individual students responded to in a positive way. "I was aware of her credentials...but, she was a regular person," a student described, "She seemed very approachable." She expertly utilized a variety of communication methods with students in both sections of the course, and provided direction and feedback in a timely and consistent manner. The professor explained, in detail, the assignments and procedures for receiving grades. She welcomed questions and "made herself available" to students throughout the semester. Her skill with the technology and her responsiveness to students' needs impacted their experiences with social presence.

Although the content and syllabus were nearly identical for both sections, students in the campus-based section were much more aware of a temporal dimension to the social environment of the class than students in the web-based section. This may be related to the asynchronous nature of a large portion of the web-based course.. Participants in the web-based section perceived the structure of the class to be “flexible” They were free to work through material at their own pace and to interact with other students and lab partners as they deemed necessary.

CHAPTER 5:

CONCLUSIONS, DISCUSSION, AND RECOMMENDATIONS

Summary of Study

The purpose of the study was to describe the social environment of two sections of IS 530: Information Access and Retrieval, to determine how students in both sections define the social environment, and to understand students' experiences with social presence. One of the sections was taught in a web-based distance education format, using asynchronous and synchronous text-based chat, audio-conferencing software, and computer-mediated communication tools. The other section was delivered in a traditional, campus-based setting using face to face delivery methods and computer-mediated communication tools. Both sections were taught by the same instructor and covered the same material. The following research questions were addressed by the study:

- What is the social environment of a campus-based section of an Information Sciences graduate course and what is the social environment of a web-based section of the same course.
- What was the relationship between these two environments?
- What were students' experiences of social presence in each section?

The study used a multiple case study design, within the frameworks of naturalistic qualitative research. Case study "investigates a contemporary phenomenon within its real-life context...using multiple sources of evidence" (Yin, 1984, p. 23). A case is a "bounded system" (Smith, 1978) in that it must have a beginning and an ending. In the study, there were two cases; the IS 530 section being taught on the UT campus, and the IS 530 section being taught via the Internet. The beginning of the cases corresponded to the start of the fall semester, with the cases ending once the semester was completed.

Each of these was treated as an individual case, with a cross-case analysis performed once the data for each case had been analyzed. Interaction between students, between students and the instructor, between students and the content and between students and the interface was examined in both sections, along with the overall social environment of the class, and students' experiences of social presence. Observations, interviews, and document analysis the study were used to gain insight into what was meaningful for students. Within the naturalistic research framework, a multiple case study design was used "to gain an in-depth understanding of the situation and meaning for those involved" (Merriam, 2001, p. 19).

Data analysis began with the initial piece of data collected and continued throughout the study. I used the inductive analysis model outlined by Hatch (2002, p. 171-179) to analyze the observational data. I identified frames of analysis and potentially meaningful segments of text. I began to look for semantic relationships in the data, including strict inclusion, spatial, cause-effect, rationale, location for action, function, means-end, sequence, and attribution (Spradley, 1979). I read through all of my protocols, looking for examples of where this particular semantic relationship occurred, and made a note in the margin each time I discovered it. I used index cards to record the cover term and included terms for each domain. I repeated this process by going back through my frames of analysis and looked for additional semantic relationships. I also began making an outline with the categories and domains in mind. Domains that did not appear relevant to the study were placed to the side. I searched for themes

As I moved from the observational data to the interview transcripts and documents, I remained conscious of the categories time, space, and structure. I took a slightly different approach when analyzing the interview transcripts and documents than I had taken when I was reviewing the observational data. After I transcribed the first

interview, and printed the first discussion board posting, I began reading the data, playing with “metaphors, analogies, [and] concepts,” as well as my own imagination (Bodgan and Biklen, 1992, p. 162). I made notes in the margins, and opened up a word processing document to free write about individual words and phrases used by participants.

My goal in analyzing the interview transcripts and documents was to begin developing categories and themes that reflected recurring patterns in the data. I read the marginal notes I had made, and tried to group comments that seemed to go together. I made a list of these groupings on a separate sheet of paper labeled participant 1, or posting 1, and stapled it to the corresponding interview transcript or discussion board posting.

For example, when analyzing the interview data from the campus-based section, I wanted to identify how the ideas of time and structure presented themselves in the interview data. As I read and re-read the data, searching for these themes, new concepts began to emerge, including teaching and learning. I went back through the observational data, making notes about where and under what circumstances the new categories appeared. The following themes: time; teaching, learning, and connecting with classmates; and technology emerged as categories pertinent to understanding participants’ experiences of the social atmosphere and their ideas of social presence.

Summary of Findings

Campus-Based Section

The social environment of the campus-based section revolved around a reciprocal process in which students and instructor engaged in pedagogically driven communication and interaction. The process was shaped by the instructor’s beliefs

regarding the importance of collaboration and discussion, and driven by the assignments, and revealed, to an extent, in the syllabus. The social atmosphere was dynamic, a vibrant mix of auditory, visual, and tactile stimulation in which interpersonal and intellectual exchanges were continuously being made. Class was structured in such a way that student-student, student-content, student-instructor and student-interface interactions were entwined and impacted participants' understanding of social presence. Students' experienced the social environment temporally and acknowledge that it takes time to build social relationships. Participants' assigned meaning to social presence in terms of teaching, learning, and connecting with fellow classmates.

Web-Based Section

The social environment of the web-based section was heavily influenced by students' interaction with the technology used to deliver the course. Student-interface interaction promoted and facilitated student-student, student-instructor, and student-content interaction. For participants, socially significant events were those in which they engaged with classmates or the instructor either face to face or via the Internet. Students, many of whom were library and teaching professionals, brought elements of their individual surroundings into the social atmosphere as well as their own creativity and imagination. The social environment was characterized by compassion and understanding. Furthermore, this was the first web-based course for most participants. The social environment evolved as students' became more comfortable with the technology. Students experienced social presence as an awareness of fellow students based on their classmates' ability to use and manipulate the technology and computer-mediated communication tools.

Cross-Case Analysis

At the center of a relationship between the social environment of the campus-based section and the web-based section is the significance students placed on their abilities to connect with and relate to the instructor and to classmates. Connections were meaningful whether face to face or via the web. While students in both sections enjoyed opportunities to physically interact with classmates, they also valued interpersonal and intellectual exchanges in text-chat, discussion board postings and emails.

Conclusions

The study was conducted to determine the social environment of two sections of an Information Sciences course, and to begin understanding students' experiences with social presence in web-based education. From the study's findings, it seems reasonable to conclude that for students enrolled in the campus-based and web-based sections of IS 530: Information Access and Retrieval:

- Opportunities for group work, collaboration, and mentoring influenced the social environment of both sections and enhanced students' social presence within the sections.
- The instructor's knowledge level and experience with the course content and technology impacted students' experiences with the social environment of both sections.
- Events such as student orientation and group gatherings influenced the social environment of the web-based section.
- Opportunities for private and spontaneous dialogue between students could have enhanced the social environment of the web-based section.

- The greater a student's comfort-level with technology, the greater her or his chances of having a social presence in the web-based class.

Discussion

Learning is a social process involving conversation, dialogue, and interactivity. Student-student, student-instructor, student-content, and student-interface interaction are considered integral to meaningful learning in both campus-based and web-based education (Moore, 1989; Hillman, Willis and Gunawardena, 1994). A review of the literature suggests that social factors are of increasing concern to distance learning researchers and practitioners. In particular, the concept of social presence has emerged as essential to comprehending the social context of web-based teaching and learning and to students' overall satisfaction with a course.

Short, Williams, and Christie (1976) define social presence as "the degree of salience of the other person in the interaction and the consequent salience of the interpersonal relationships" (p. 65). Recently, the definition of social presence has been expanded to include social context, said to be comprised of social process, purpose, setting, interactivity, use of affective language, online communication, motivation and privacy. (Walther, 92; Tu, 99). However, researchers continue to call for studies that reexamine and redefine social presence in the context of online teaching and learning.

The study examined the social environment of a course and the idea of social presence from the perspective of the students enrolled in two sections of a master's level Information Sciences class. One section was taught using a traditional, campus-based format, and the other section was taught via the Internet using web-based technologies and telecommunications tools. In both sections the social environment reflected a myriad of characteristics, including the students' and teacher's previous

educational experiences, values and attitudes, as well as interpersonal and intellectual exchanges between and among students and the instructor. The social atmosphere reflected students sharing knowledge and building relationships over time. Whether using computer-mediated communication tools such as email or speaking face to face, students found meaning in a social environment that facilitated connection and understanding.

The instructor's beliefs about the importance of interaction are apparent in the syllabus, assignments and course methodology. The sections were structured in such a way that interactions between students, between students and instructor, between students and content, and between students and interface worked together to promote a sense of social presence.

The social environment of the campus-based section was characterized by a fluidity, a movement in which students took in new information from the professor and from other students, processed the information, related it to a specific and/ or hypothetical situation, shared what they learned with others, and eventually repeated the entire process. In the web-based section, this sense of movement was inhibited by a lack of spontaneous pre-class and in-class conversation during the synchronous class sessions.

The social environment of both sections was characterized by verbal, non-verbal, and written exchanges between and among instructor and students. The social environment was comprised of students and an instructor interacting with each another about personal and professional issues, sharing new knowledge and building and extending relationships over time. Most of the students in the campus-based class were full-time students in their first semester of Graduate school. This fact influenced the social atmosphere as students engaged in interpersonal and intellectual discussions,

while commiserating about the amount of work required in the class. Students brought their backgrounds into the course along with a wide variety of experiences and ideas.

Participants in the web-based course were slightly older and most worked in the fields of either library science or education. Nearly all of the students were taking distance education courses for the first time. As participants began to gain more experience with the technology they used it more often and expanded the social environment.

In the web-based sections, students were especially conscious of the technology and the interface used to delivery the course content. From the study, we know that technology plays a critical role in meaningful interaction among participants enrolled in a web-based distance education course. However, we also know that social environment is very much about people, their feelings, insights and histories. Further research is needed on the relationship between the student and the computer interface used to engage with classmates.

The study suggests that the instructor is critical to shaping the social environment. Course content and assignments promoted group work and collaboration in and out of class, an indicator that the instructor valued social interaction. Furthermore, the professor's comfort level and experience with technology was high, helping to ease any anxiety students had about the distance delivery method. Her even-tempered and casual, yet professional demeanor facilitated an atmosphere in which students felt comfortable to share ideas.

Students in both sections were most aware of their classmates when they were learning from, teaching, and connecting with one other. This has implications in the field of distance education in terms of instructional design. Instructors must acknowledge the importance of social interaction by promoting and facilitating collaboration as part of the

course content and assignments. Providing students with opportunities to teach, mentor and engage in peer reviews can lead to an enhanced awareness of fellow classmates.

The study also suggests that researchers, when attempting to redefine social presence in terms of online learning, must reexamine individual distance education students' experiences with technology and computer-mediated communication tools. Qualitative research methods lend themselves to studies related to social issues in distance education. Qualitative methods such as participant-observation and interviewing allow researchers to understand complex social processes from the viewpoint of the people involved.

Research on web-based distance education needs to be conducted in the context of online learning, using web-based technologies and telecommunications tools. Swartz and Biggs (1990) assert, "Distance education is a practice, not a laboratory setting; therefore, we need to know more about the practice in a practical context-bound environment" (p. 71). Naturalistic qualitative methods provide the researcher a chance to immerse herself in a setting similar to that of the distance learning student. In that setting, the researcher can gain a deeper, more in-depth understanding of how students' use, interact with, relate to, misuse, and feel about technology, computer-mediated communication, and teaching and learning via the Internet.

Recommendations for Further Research

The study was limited to two sections of an Information Sciences master's course meeting during fall 2001. Based on the review of literature and the major findings and conclusions of the study, the following recommendations for additional research can be made. Researchers should:

1. Examine students' understanding of the social environment and experiences with social presence in additional distance learning contexts, including undergraduate courses, and classes taught by novice distance educators.
2. Study student-interface interaction in depth and as it relates to students' experiences of social presence.
3. Examine instructor's understanding of social presence in web-based education, including instructors that have experience teaching at a distance that those that are new to this environment.
4. Continue to examine the relationship between social presence and privacy.
5. Examine the relationship between social presence and time.

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APPENDICES

APPENDIX A
IS 530 SYLLABUS

IS 530: Topics and Calendar

Lesson 1: August 27 (Synchronous)

Topics:

1. Welcome; Introduction to class; requirements
2. Overview of information access and retrieval and information services
3. Types of information needs

Activities:

1. Read course materials before class.
 2. Read BOPP & SMITH, Chapters 1 and 12.
 3. Before or after class: post message to discussion board describing your background and experience in information services.
-

Lesson 2: September 10 (Synchronous)

Topics:

1. Discuss Library and Reference Evaluation assignment
2. Type of reference sources
3. Media options for information resources

Activities:

1. Read WALKER & JANES, Chapter 1
2. Take CourseInfo quiz on types of sources (click "Assignments" on the left tool bar to take quiz)
3. Before or after class: post message to discussion board on topic "how can signs or tutorials be used to make libraries easier to use?"

DUE: Library and Resources Evaluation

Lesson 3: September 17 (Asynchronous)

Topics:

1. Electronic information resources
2. Interfaces

Activities:

1. Read BOPP & SMITH, Chapters 5 and 6; WALKER & JANES, Chapter 2; WALKER & JANES, Chapter 4
 2. Do online lesson on overview of electronic information resources
 3. Read Tenopir, Carol, "Envisioning Online Services," *Library Journal* 122 (March 1, 1997).
 4. Look at interface type examples within the lesson and under "External Links"
 5. Post message to discussion board about what makes an interface 'user friendly'?
-

Lesson 4: September 24 (Asynchronous)

Topics:

1. Introduction to labs
2. Relevance
3. Recall and Precision

Activities:

1. Before or after class: Post message to discussion board on topic "will print be obsolete in ten years?"
2. Read Tenopir, Carol. "Why I Still Teach Dialog." *Library Journal* 126 (May 1, 2001): 35-36.
3. Do Labs #1 and #2 after class this week with your partner; Before doing labs read: 530 Lab Workbook Chapter 1 and Chapter 2 ; WALKER & JANES, Chapter 3 and Chapter 6, pgs. 90-91 and 96-107.
4. Complete online lesson on introduction to labs
5. Complete online lesson on relevance, recall and precision

DUE: Access Methods for Print paper

Lesson 5: October 1 (Synchronous)

Topics:

1. Record structure
2. Boolean logic
3. Introduction to Labs #3 and #4
4. Begin inverted files

Activities:

1. Read WALKER & JANES, Chapter 12 and Chapter 6, 96-107; 530 Lab Workbook, Chapter 3; BOPP & SMITH, Chapter 5 (Boolean Logic); 530 Lab Workbook, Chapter 4.
2. After class take Boolean logic quiz online
3. Small groups for final project meet in chat sessions to decide which resources in Bopp & Smith chapters will be covered by each member.

DUE: Labs #1 and #2

Lesson 6: October 8 (Synchronous)**Topics:**

1. Inverted files
2. Introduction to Lab #5
3. Controlled vocabulary; free text
4. Introduction to Lab #6

Activities:

1. Read WALKER & JANES, Chapter 5, pgs. 55-74; Chapter 6, pgs. 91-95; 530 Lab Workbook, Chapter 5; BOPP & SMITH, Chapter 4; WALKER & JANES, Chapter 7 and Chapter 8, pgs. 139-151; 530 Lab Workbook, Chapter 6.
2. Post message to discussion board on topic "can we afford to use human indexing anymore with so much information being created?"

DUE: Lab #3 and #4

Lesson 7: October 15 (Asynchronous)**Topics:**

1. Finish controlled vocabulary
2. Introduction to Lab #7
3. Aids for selecting sources

Activities:

1. Read WALKER & JANES, Chapter 9, pgs. 177-185; 530 Lab Workbook, Chapter 7; BOPP & SMITH, Chapters 13 and 10.
2. Complete selection aids online lesson.

DUE: Labs #5 and #6

Lesson 8: October 22 (Asynchronous)**Topics:**

1. Selection and Evaluation
2. Introduction to labs #8 and #9
3. Discuss second access paper

Activities:

1. Read Rettig, James, "Beyond Cool--Analog Models for Reviewing Digital Resources," *Online* 20 (September/October 1996): 52-64.
OR: "Beyond 'Beyond Cool': Reviewing Web Resources," *Online* 23 (July/August 1999)
2. Read BOPP & SMITH, Chapter 12
3. Read WALKER & JANES, Chapter 10; 530 Lab Workbook, Chapter 8 and Chapter 9
4. Complete selection and evaluation lesson online
5. Post message to discussion board on topic "how can information professionals help users find the best quality resources? What are the risks associated with doing so?"

DUE: Lab #7

Lesson 9: October 29 (Synchronous)**Topics:**

1. Full text: evaluation and strategies
2. The journal history from a publisher's perspective
3. Introduction to Lab #10

Activities:

1. Read BOPP & SMITH, Chapters 7, 15, 17, 18, and 19 (scan); WALKER & JANES, Chapter 11, pgs. 237-247; 530 Lab Workbook, Chapter 12
2. Read Tenopir, Carol, "Linking to Full Texts" *Library Journal* 123 (April 1, 1998): 34, 36.
3. Work on final projects sources in: government/statistical sources; all others.

DUE: Labs #8 and #9

Lesson 10: November 5 (Asynchronous)**Topics:**

1. Search strategies
2. Introduction to Lab #12

Activities:

1. Read BOPP & SMITH, Chapter 4 (search strategies); WALKER & JANES, Chapter 11, pgs. 247-261 and Chapter 12; 530 Lab Workbook, Chapter 10
2. Complete Search Strategies quiz

DUE: Lab #10

Lesson 11: November 12 (Asynchronous)**Topics:**

1. Indexes/abstracts: evaluation and strategies
2. Introduction to Lab #13
3. Directories and biographical sources: evaluation and strategies
4. Statistical and numeric sources: evaluation and strategies
5. Introduction to Lab #11

Activities:

1. Read BOPP & SMITH, Chapters 20 and 21; WALKER & JANES, Chapter 8, pgs. 152-175; 530 Lab Workbook, Chapter 13.
2. Read BOPP & SMITH, Chapters 14, 16 and 22; WALKER & JANES, Chapter 9, pgs., 198-202 and Chapter 11, pgs. 227-237; 530 Lab Workbook, Chapter 11.
3. Work on final project sources in: indexes/abstracts; bibliographies; directories; biographical sources; government documents and statistical sources.
4. Post message to discussion board on "winners: the best system I looked at in my second access paper and why I think so."

DUE: Lab #12 and Access Methods for Electronic

Lesson 12: November 19 (Synchronous)

Topics:

1. Statistical Retrieval; relevance ranking
2. Introduction to Lab #16

Activities:

1. Read BOPP & SMITH, Chapters 5 and 6; WALKER & JANES, Chapter 6, pgs. 107-114 and Chapter 9, pgs. 185-189; 530 Lab Workbook Chapter 16
2. Read:
 - a. Liddy, Elizabeth. "How a Search Engine Works." *Searcher* 9 (May 2001):38-45.
 - b. Feldman, Susan and Elizabeth Liddy. "The Searching Quagmire." *Searcher* 9 (May 2001):66-75.
3. Post message to discussion board: "My favorite web search engine and what statistical features it has and how I think it works."

DUE: Lab #11 and #13

Lesson 13: November 26 (Asynchronous)

Topics:

1. Multimedia: Evaluation and strategies
2. Hypertext

Activities:

1. Read Bush, Vannevar, "As We May Think," *Atlantic Monthly* (July 1945).
2. Complete online lesson on multimedia
3. Complete online lesson on hypertext
4. Post message to discussion board on topic "why do so many people still quote Vannevar Bush's 1945 article?"

DUE: Lab #16

Lesson 14: December 3 (Synchronous)**Topics:**

1. Understanding user needs
2. Reference interview; intermediaries
3. Introduction to Lab #14 and Lab #15
4. User instruction

Activities:

1. Read 530 Lab Workbook, Chapter 14, BOPP & SMITH, Chapter 3; WALKER & JANES, Chapter 13 and Chapter 14; 530 Lab Workbook, Chapter 15.
2. Read Taylor, Robert, "Question-Negotiation and Information Seeking in Libraries," *College & Research Libraries* 29 (May 1968): 178-194.
3. Read BOPP & SMITH, Chapters 8, 9, and 11.

DUE: Term Project

Final exam period, Monday, December 10

DUE: Lab #14 and #15

TAKE HOME FINAL

APPENDIX B

SAMPLE OBSERVATIONAL PROTOCOL

Campus-based Observation

The day is sunny and warm. Campus is fairly busy, especially in front of the building as people come and go in the crosswalks. I arrive just a couple of minutes before class begins. Most students are already at their desks. It is pretty quiet and not very much discussion prior to official start of class. I didn't notice anyone sitting outside on the couch. A student was working on the computer in the hallway, but she is not in IS 530.

11:25am: Instructor asks students if they have any questions about the previous assignment. Students are still getting settled at their desks, they look down at their notes and flip through notebooks. No one seems to have any questions.

(instructor is bringing up something from the past and the future; an act – single action of bringing up the past, does this imply a connection to the past? how is that accomplished? how does she remind them of something they already (should) know?)

11:29am: Instructor begins to pull out a transparency and places it on the overhead projector. The cartoons are related to different types of information sources. She comments "this falls into the irrelevant, but I love to show these cartoons." Several students laugh out loud at the cartoons. Instructor smiles.

(act: single thing instructor is doing; moving beyond the lecture – not auditory, but visual, revealing something personal about herself in the process – also, something about what she thinks is important)

(relevant: what is and is not pertinent, applicable, germane? does prof determine this? how does she determine this? what is the criteria?)

11:32am:

Instructor begins to discuss the importance of definitions of terms saying "we need to all define things the same way.

(goal: everyone in agreement during the semester, she seems adamant about this, has something negative happened in the past? what is the feeling associated with this?)

She begins to give them definitions of basic terminology. Some students begin to "hunch" over, and look more closely at the paper on their desks.

(space: instructor stands in the front of the room, moving within about a ten inch diameter?)

[prof throws out a lot of questions...she seems very comfortable in front of the class...steady movements...steady lecture,]

During the lecture, CT talked about being interviewed by a British journal about indexing on the web. [she is one of the most cited people in her profession]

There are several students who talk more than the others...they sit in the middle and back left side of the room.

11:52am:

question from student: "I have kind of an odd question....I would think of the Web, I would go to the web (when doing research). CT did not seem to think this was strange. "yes, you probably would...a lot of you probably would." But remember, you are the end user when you're on the web, you are searching databases that someone else has created.

[it is absolutely freezing in this room, several people have jackets on – I guess they knew to bring them for their classes (or this class, at least) because it is very warm outside.][will it be freezing in the DE classroom?]

lecture continues, students are taking notes, not a lot of movement, not a lot of questions, they seem to be concentrating, occasionally, there will be talking amongst just two or three people.

121:00pm:

she reminds them of work they have already done, things they have learned in the past.

12:20pm

one of the students that speaks more than others says, "I'm just curious, but what is the fee for proquest and some of the those other high end search tools..."

CT gives an example: Web of Science is \$80,000, but for the user it looks like it was free. OCLC first search can be bought on a subscription. Info is not free, it's created by people who are staff members and employees of the company.

[reflect on what I can take from this observation into my next one]

[ways to ask questions, kind of comes full circle]

(feelings: sense of odd, or odd man out,

goals: everyone coming to a common understanding about something, an agreed upon format (but instructor has set the determined the definition)

objects: overhead projector, transparency)

APPENDIX C
SAMPLE JOURNAL ENTRIES

October 4

I spoke with RK today about my concerns over getting participants to volunteer from the web-based course. What if the email I initially sent out sounded stupid. Will people think I'm untrustworthy since they can't see me? Is my email personal at all reflective of what I'm really like? I'm not so sure. I try to use emoticons and smiley faces in my emails, and usually the winking sarcastic one. Sometimes this makes me feel silly since I'm not really a smiley face kind of person. RK gave me some materials to look over and I appreciate it b/c it is related to my topic.

This is causing me to think about what it means to just be voice, etc.? When you cannot be seen, only heard, how does that impact the impression (or lack, thereof) you might make on someone else.

In today's campus-based class I really noticed people were listening and I could tell by their body language. Everyone was sitting up and not slouching. They seemed alert and very set on paying attention to what she was saying and then writing it down on the paper in front of them. What must this be like when the instructor can't see that students are or are not paying attention? Why do I feel so awkward when I'm in the DE class and I have to use the microphone?

October 15

I am in California at the CVC conference: Online learning and higher education. Everyone here is talking about their online and DE stuff, and I am thinking about the DE students. Why is what the professor does so special? Is it because the students are given a chance to interact (or do they do this b/c it's part of the requirements of the course?). What about the CentraOne system? Why was that particular piece of software selected? What were the other choices and who made the decision? Do the DE professors like it, I wonder? The professor easily holds your attention during the lecture, but in what ways does she hold your attention? Is it the same way as the face to face format?

I'm still wrestling with the new knowledge that I am not as comfortable online as f2f, especially when it comes to getting folks to participate. I am excited about this project, but how can I make sure that translates through the computer and in my emails? I feel as though I can sense the students' personalities during class (at least the one's that speak), but can they sense mine...I have only spoken a few times b/c it makes me feel kind of strange...what is my voice like?

APPENDIX D
INTERVIEW GUIDE

- How would you describe the social environment of the course?
- Describe meaningful events that took place between you and your classmates and you and the instructor?
- How would you define the term, social presence?
- What were your experiences with social presence in the course?

APPENDIX E
IRB APPROVAL



09/26/2001

Institutional Review Board
Office of Research
404 Andy Holt Tower
Knoxville, Tennessee 37996-0140
865-974-3466
Fax: 865-974-2805

IRB#: 6097 B

TITLE: Social Presence in Web-based Distance Education

Gramling, Jennifer
Instructional Technology, Curriculum &
4th Floor Dunford Hall
Campus

Ray, Dr. John
Instructional Technology, Curriculum &
A510 Claxton Addn.
Campus

Your project listed above was reviewed. It qualified for expedited review and has been approved.

This approval is for a period ending one year from the date of this letter. Please make timely submission of renewal or prompt notification of project termination (see item #3 below).

Responsibilities of the investigator during the conduct of this project include the following:

1. To obtain prior approval from the Committee before instituting any changes in the project.
2. To retain signed consent forms from subjects for at least three years following completion of the project.
3. To submit a Form D to report changes in the project or to report termination at 12-month or less intervals.

The Committee wishes you every success in your research endeavor. This office will send you a renewal notice (Form R) on the anniversary of your approval date.

Sincerely,

A handwritten signature in cursive script that reads 'Brenda Lawson'.

Brenda Lawson
Compliances

APPENDIX F
PARTICIPANT CONSENT FORM

Revised

Informed Consent Statement
"Social Presence in Web-based Distance Education"

SEP 24 2001

You are invited to participate in a qualitative research project. This study involves human research regarding Internet-based distance education. The purpose of this study is to understand the social context of an Internet-based distance education course, and to know the meaning of social presence for students enrolled in a Web-based course and for students enrolled in a traditional, face to face course covering the same content.

In order to answer the research questions, the researcher will conduct qualitative research within the guidelines of case study design. The unit of analysis for a case study is the phenomenon of interest. In this study the phenomenon of interest is the social environment of the course.

Students enrolled in IS563: Information Access and Retrieval will be part of this case study. The researcher will come in and act as participant observer during the fall semester, making notes regarding the overall teaching and learning atmosphere, activities taking place during class, and students' interactions with one another and with the instructor. In the Web-based course, the researcher will make observations through the CentraOne software, online chat forums, discussion board postings and email. The researcher may request to do an on-site interview with the distance education participants, and travel to locations chosen by the participants in order to observe their activities during the class.

It is the hope of the researcher that all consent forms will be signed and returned. However, if this is not the case, no recorded observations will be made of students who have chosen not to participate, and in no way will any information related to them appear in writing or in the study.

Participants will be asked to respond to an open-ended interview question via email mid-way through the semester. Ten participants from each class will be randomly selected to meet with the researcher for a face-to-face interview at the end of the course. This interview will last between 45-60 minutes and will be scheduled during a time and at a location convenient for the participant. Interview questions will center on students' experiences of social presence, interactivity and collaboration.

Sample questions:

- Describe the social setting of this class.
- Describe meaningful activities that took place during the semester between you and your classmates and you and your instructor.
- How would you define the term, social presence?
- Based upon that definition, what was your experience with social presence in this course?
- In what ways did you collaborate during the semester?

There are no foreseeable risks associated with this study. While there are no direct benefits for participants, findings from this study can contribute to the larger body of research on distance education, social presence, and collaboration.

All information obtained in this study will be kept confidential. After the interviews have been transcribed, the audiotapes will be destroyed. All email correspondence will be coded and then deleted once the research is complete. Signed informed consent forms will be kept for the duration of the project and for at least three years in a secure location at UTK.

Contact Information:

If you have questions at any time about the study or feel you are experiencing adverse effects as a result of your participation, please feel free to contact me at the following address:

Jennifer Gramling
Innovative Technology Center
4th Floor Dunford Hall
Knoxville, TN 37996
865-974-9670
jgramlin@utk.edu

For questions related to your rights as a participant, please contact:

Office of Research Compliance
University of TN, Knoxville
404 Andy Holt Tower
865-974-3466

Your participation in this study is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at any time without penalty and without loss of benefits to which you are otherwise entitled. If you withdraw from the study before data collection is completed your data will be returned to you or destroyed.

I have read the above information. I have received a copy of this form. I agree to participate in this study.

Participant's signature: _____ Date: _____

Investigator's signature: _____ Date: _____

APPROVED
By Minda Lawton
Date 9-24-01

VITA

Jennifer Lynn Gramling was born in Asheville, North Carolina on March 23, 1972. She moved to Jacksonville, Florida when she was eleven years old. After graduating from Fletcher Senior High School in Neptune Beach she attended the University of North Florida. Her love of Literature and History prompted her to major in both of those subjects as an undergraduate. After earning a Bachelor of Arts in 1995, she moved to Knoxville, Tennessee to pursue a master's degree in Secondary Education at the University of Tennessee. After completing coursework and year long teaching internship at Heritage High School in Maryville, Tennessee she graduate with a Master's of Science in 1998.

Soon after, Jennifer decided to enroll in the doctoral program in Instructional Technology in the College of Education where Dr. Dale Doak served as her major advisor during the first several two years. Jennifer has worked as both an adjunct instructor and a Graduate Teaching Associate in the College of Education, where she was responsible for teaching pre-service interns a required Instructional Technology course. In addition, she has worked for nearly five years as a Graduate Assistant at the Innovative Technology Center (ITC) where she collaborates with faculty, staff and graduate students interested in using technology to enhance their teaching practices. Her research interests include the impact of computer-mediated-communications in online learning, the use of qualitative research methods in distributed learning environments, and the role of technology in faculty development.

Jennifer has accepted as position as an Assistant in Distance Learning at Florida State University's Office of Distributed and Distance Learning. She looks forward to a career in which she can help promote, design and implement quality distance education programs.