MASTERS IN NURSING STUDENTS' EXPERIENCES
AS A MEMBER OF A VIRTUAL CLASSROOM ON THE INTERNET

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Stand before it and there is no beginning; follow it and there is no end.
Lao Tse
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ABSTRACT

There is a growing demand for masters prepared nurses to meet the health care needs of the population. However, adult students find that multiple role responsibilities make it difficult to participate in the leisurely pace of the youth-centered model of traditional higher education. Courses in virtual classrooms on the Internet have been established to provide more convenient access to graduate nursing education. However, few attempts at systematically investigating and rigorously assessing the experiences of graduate students involved in courses in virtual classrooms on the Internet have been published. Disciplined investigation of students' experiences is warranted in order to fully explore the meaning of these experiences to those directly involved. The questions posed for this study were: How do students in masters in nursing courses experience education as a member of a virtual classroom on the Internet? What meanings do they attach to that experience? A qualitative inquiry using an interpretive phenomenologic design was used. Network sampling was used to select fifteen participants for this study from those masters in nursing students at a large midwestern university for interviews. Data analysis used a hermeneutic circle and followed the seven stages outlined by Diekelmann, Allen, and Tanner. Five themes and one constitutive pattern were identified. Themes were:
technology and adapting to a more student centered, reflective mode of learning.

Communicating with others without the benefit of body language and voices was difficult. Most students reported a sense of isolation and a feeling that they did not know their classmates well. Students who participated in chat room sessions described knowing chat group members better than other classmates and perceived less isolation.
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CHAPTER ONE: INTRODUCTION

Introduction

There is a growing demand for masters prepared nurses to meet the many health care needs of the population. As the demand for health care increases across age groups, cultures and settings, education for advanced practice nurses needs to be a priority (American Association of Colleges of Nursing, 1997). It is projected that there will be a shortfall of over 200,000 graduate prepared nurses by the year 2005 (American Association of Colleges of Nursing, 1993). The rapidly expanding job market for advanced practice nurses and the need to continually keep pace with the rapid changes in the knowledge base has led to an increasing number of nurses enrolling in graduate study. However, the perceived compression of time and growing number of events in daily life makes it difficult for adult students to participate in or appreciate the leisurely pace of the youth-centered model of higher education (Twigg, 1994). The shift work and irregular days off that many nurses employed in many health care institutions endure further magnifies potential students' difficulties in attending traditionally scheduled classes.

Distance education became a mechanism to meet the needs of these adult learners with multiple role responsibilities. Distance education has expanded from correspondence courses to the use of interactive television to most recently computer technology via the Internet. This change has provided an increasing number of opportunities for students to participate in education in virtual classrooms via the Internet. Fifty-one percent of respondents to a survey by the American Association of Colleges of Nursing (Potempa, Stanley, Davis, Miller, Hassett & Pepicello, 2001) reported offering distance education courses in schools of nursing. Of the respondents offering distance education nursing
courses, 59% were master’s level. A sharp increase was reported in the number of courses and programs offered via distance education technology within the past five years.

According to Ellsworth (1994), the potential for the Internet to provide computer-mediated communication presents unique opportunities and challenges for higher education. Stakeholders view universities as “educational suppliers that should be willing to change in response to consumer demand. Those who approach higher education institutions as ‘purchasers of a service’ now want a larger say in when, how, and where they get their education” (Twice Imagined, 1995, p. 3A). Faced with declining resources, increased public scrutiny, and pressures to accommodate the needs of a changing student population, institutions are being challenged to provide education in a framework that meets students’ needs in terms of space and time. Computer-mediated education in virtual classrooms on the Internet as a supplement to and alternative for education in the traditional classroom setting is the means by which this goal is being achieved by many universities (Wolcott, 1997). The Internet as a method of course delivery conquers restraints imposed on conventional education by time and space, and allows faculty to optimize existing resources by offering classes that do not need conventional classrooms. Currently, little is known about students’ experiences in virtual classrooms on the Internet. Successful implementation of graduate nursing programs in virtual classrooms requires appropriate use of educational strategies and careful examination of students’ experiences.
Background and Significance

As computers infiltrate the lives of Americans (and people around the world) and technology becomes increasingly sophisticated, Web-based education has become a rapidly expanding tool. The use of computer technology has progressed from students and faculty simply accessing information on the Internet to entire courses being taught on-line. This change has provided an increasing number of opportunities for students to participate in education in virtual classrooms via the Internet.

According to Ellsworth (1994), the potential for the Internet to provide computer-mediated communication will present unique opportunities and challenges for higher education in the future. Stakeholders view universities as "educational suppliers that should be willing to change in response to consumer demand. Students who approach higher education institutions as 'purchasers of a service' now want a larger say in when, how, and where they get their education" (Twice Imagined, 1995, p. 3A). Faced with declining resources, increased public scrutiny, and pressures to accommodate the needs of a changing student population, institutions are being challenged to provide education in a framework that meets students' needs in terms of space and time. Computer-mediated education in virtual classrooms on the Internet as a supplement to and an alternative for education in the traditional classroom setting is the means by which this goal is being achieved by many universities (Wolcott, 1997). The Internet as a method of course delivery conquers restraints imposed on conventional education by time and space, and allows faculty to optimize existing resources by offering classes that do not need conventional classrooms.
The use of the Internet to support the delivery of graduate nursing courses is increasing rapidly (Potempa, Stanley, Davis, Miller, Hassett & Pepicello, 2001). A heated debate currently exists within the educational community about the pros and cons of computer mediated course delivery (Guernsey, 1998; Selingo, 1998; Blumenstyk, 1997; Guernsey, 1997; Young, 1997). The literature is replete with narratives that summarize specific experiences with Internet courses and document students' outcomes (Geibert, 2000; Clark, 1998; Milstead & Nelson, 1998; Schreiber & Berg, 1998; Miller, Piper & Tucker, 1997; Althaus, 1997; McManus, 1996; Beauvois, 1995; Harasim, 1993; Grabowski & Suciatti, 1990). However, few attempts at systematically investigating and rigorously assessing these experiences have been published and little literature was found that reported the experience of nursing students. Disciplined investigation of students' and teachers' experiences with Internet courses is warranted in order to fully explore the meaning of these experiences to those directly involved. This is a necessary first step in addressing the needs and planning appropriate educational strategies for graduate nursing students participating in virtual classrooms on the Internet. The development of effective learning in this new and powerful medium is only possible if nursing educators understand students' experiences with this course delivery method.

Purpose

The purpose of this study was to explore the experiences of students taking masters in nursing courses in virtual classrooms on the Internet and to describe the meanings they attached to their experiences. Findings from this study will address gaps in knowledge about graduate students' subjective experiences in a virtual classroom on the Internet. Information gleaned from the exploration of their experiences in this study may
be used to improve the educational experience of graduate nursing students. In addition, the findings provide direction for design and implementation of graduate nursing courses offered over the Internet. Potential benefits to the organization include recruitment of a new population of students, access for students at a distance, increased student satisfaction with the Internet as a mode of course delivery, and improved retention of students by the institution (Watkins, 1997).

Specific Aims

The aims of the study were to:

1. Explore the experiences of students who have taken a masters in nursing course on the Internet.
2. Describe the meaning that students attach to these experiences.

Research Questions

The research questions posed for this study were:

1. How do students in masters in nursing courses experience education as a member of a virtual classroom on the Internet?
2. What meanings do they attach to that experience?

Definitions

The following definitions were used for this study:

*Internet* is a collection of computer networks around the world that permits free access to information.

*World Wide Web (WWW or Web)* is an Internet service consisting of hypertext linked documents. It resembles a massive collection of electronic libraries.
Distance education is any formal approach to education in which the majority of the instruction occurs while instructors and students are at a distance from each other. Instruction may be synchronous or asynchronous. It may employ correspondence study, audio and/or video technologies, or computer-mediated course delivery (Bedore, Bedore & Bedore, 1998).

Computer-mediated course delivery is a course offering via the Internet. Courses may be offered in two ways: as Web-based courses or as Web-supported courses. The web site for the course is password protected. Information available on the World Wide Web includes a syllabus, reference list, lecture notes, and other information posted on multiple web pages. The course may include use of a restricted listserv, using synchronous or asynchronous communication to hold discussion groups, on-line testing, and e-mail.

Virtual classroom is a group of students taking the same course (either Web-based or Web-supported) offered during the same time period via the Internet and interacting together via asynchronous and/or synchronous communication.

Web-based course is a course meeting in a virtual classroom on the Internet. It is a course structured without traditional campus/classroom experiences.

Web-supported course is a course that has a combination of traditional on-campus classroom experiences and computer-mediated course delivery via the Internet.

Synchronous communication is communication that occurs at the same time, thus there is immediate student-faculty and student-student interaction. In the context of computer-mediated course delivery, it requires students and faculty to be linked through a computer and connected at the same time (i.e., chat rooms).
Asynchronous communication is communication that involves a delay between interactions. In the context of computer-mediated course delivery, students and faculty are not required to be on a computer system or at a specific location at the same time (i.e., listserv, bulletin board, e-mail).

Summary

There is a growing demand for advanced practice nurses and nurse leaders as nursing is challenged to meet evolving health care needs (Lewis & Farrell, 1995). While graduate students are motivated to learn for personal and professional development, the logistics of attending traditional on-campus classes is increasingly difficult for many to manage due to work and family commitments. Those who do not live near a college or university find traveling to a distant campus yet another barrier (Geibert, 2000; Milstead & Nelson, 1998).

The proliferation of computers in the information age has seen the growth of the Internet as an educational superhighway that facilitates the pursuit of education for busy adults. Over half of all institutions of higher education and more than five million students are involved in some form of distance education (Chepesiuk, 1998). Computer-mediated education via the Internet reduces the cost and time related to faculty and student travel (Lotus Institute, 1996). However, the pedagogical implications of computer-mediated education present unique opportunities and challenges for education in the future. "Nursing, like many other disciplines, must move from the concepts of the industrial age to the challenges of the information age" (Lewis & Farrell, 1995, p. 184) as it works to incorporate computer-mediated education via the Internet into nursing education programs.
Although the studies of the effectiveness of this new method of course delivery are beginning to be conducted, little research has been published on the experiences of students taking courses in virtual classrooms on the Internet. Literature describing what it is like to be a student in a virtual classroom is a necessary first step in addressing the needs, and planning appropriate educational strategies for students participating in virtual classrooms on the Internet. Development of effective educational experiences for graduate students in this new and powerful medium is only possible if educators first understand students' experiences with this course delivery method.
CHAPTER TWO: REVIEW OF LITERATURE

Introduction

Consistent with the study's qualitative design, a limited literature review has been conducted prior to the initiation of the study to provide a background for the phenomenon of concern. A comprehensive review will accompany data collection and analysis to place the information shared by participants into the context of what is known.

The Internet as an educational superhighway provides on-demand service, learning via a new paradigm, and changes many time and space barriers, facilitating the pursuit of education for busy adults who have difficulty participating in traditional modes of higher education. Many universities and colleges are now offering nursing courses and entire graduate nursing programs via the Internet (Potempa, Stanley, Davis, Miller, Hasset & Pepicello, 2001). Web-based education is expected to become a major part of mainstream education within the next ten years (Neeley, Niemi & Ehrhard, 1998; Hamman, 1997).

Learning Paradigms

Education is currently experiencing a period of unprecedented questioning of the fundamentals of learning. Advances in communications and information technology have been a major contributing factor in the current debate on new learning paradigms.

"Colleges aim to create environments and experiences that bring students to discover and construct knowledge for themselves...The new learning paradigm does not limit institutions to a single means for empowering students to learn; within its framework, effective learning technologies are continually identified, developed, tested, implemented, and assessed against one another" (Barr & Tagg, 1995, p. 15).

In the new paradigm, learning occurs inside and outside the traditional classroom setting.

In addition to setting, some of the major changes in the learning paradigm are from fixed
curricula to individualized curricula, from front-ended education to life-long education, and from teaching to learning (Khan, 1996). As an increasing amount of learning is occurring outside the classroom setting via distance education, this mechanism has put higher education within the reach of busy adults. Although distance education includes text-based correspondence courses, interactive video, and Web-based education, the greatest rate of growth has been noted in Web-based education (Khan, 1996).

There is general agreement that computer-mediated courses offered over the Internet have potential as an instructional medium to individualize the learning and the instruction processes (McManus, 1996; Miller, Piper & Tucker, 1997). No longer is the Internet simply a text-based information source. The Internet now provides access for students to diverse external sources of information since it is now able to provide text, audio and video materials as well as links to diverse sources of information.

Developers of Web-based courses can use these diverse sources of information to accommodate students’ diverse talents and different styles of learning. Kolb (1985) found that students generally have a dominant learning style by which they learn best. Web-based learning environments permit faculty to develop one course, yet provide a student with a variety of resources. Each student can use materials in whatever way best fits his/her learning style. Gunawardena and Bowerie (1992) studied the interaction of adult learning styles and the media, methods of instruction, and group functioning in a distance learning class compared with similar interaction in traditional classes. They found that learning styles did not impact how students interacted with media and methods of instruction, but did affect student satisfaction. Diaz and Carvalal (1999) compared learning styles of distance education students and equivalent on-campus students and found that
distance education students favored independent learning styles whereas students in the
traditional on-campus class were significantly more dependent and collaborative in their
learning styles. Shih, Ingebritsen, Pleasants, Flickinger & Brown (1998) found that
although students in on-campus and Web-based courses had differing learning styles,
learning style did not have an effect on Web-based learning achievement.

Since information is shared electronically and student-faculty interaction is
limited by time and space, students' ability to work independently and to be accountable
for completion of required readings is imperative. Carefully developed critical thinking
activities can be planned to ensure group learning and personal support using a
combination of synchronous and asynchronous communication allowing students to
apply the information presented in the required readings. Students have to think critically
and judge information for themselves. This new media allows interactivity, thus the
learner need not be a passive recipient of knowledge. This individualization of learning,
increased interactivity, and collaboration with others will add to the shift of education
from being largely teacher-centered to student-centered, something educational
researchers have been advocating for years (Knowles, 1980; 1990). In the new learning
paradigm, "the absence of a highly structured experience may be disconcerting and
stressful. The demands...may require that students change their attitudes and beliefs about

Graduate Students as Adult Learners

Graduate students, as adult learners, have different characteristics and goals from
their younger counterparts and are different from themselves at an earlier stage in their
lives. Many of these distinctions are driven by changed life obligations and learning
expectations. The adult learner brings a rich background of life and work experience to
the classroom (Knowles, 1980; 1990). In general, graduate students have more
sophisticated insights that result from their employment within the nursing profession,
from the skills they have acquired, from their broader life experiences, and from the
relationships they have developed with others (Jackson & Caffarella, 1994). Unlike
younger learners, adult learners who have a broad-based work experience find it easier to
recognize how ideas can be transformed into action and how theory can be transformed
into practice outside the classroom. For these reasons they appreciate direct application of
theoretical concepts and the addition of 'real world' perspectives into their learning

Additionally, adult learners are likely to differ from younger students in
motivation (Knowles, 1980; 1990). The best motivators for adult students are internal and
include self-esteem, quality of life, and increased job satisfaction (Knowles, 1980; 1990).
A number of circumstances contribute to a generally higher level of motivation. Since
adult learners typically have multiple role responsibilities, time is valuable to them. When
adult learners decide to devote time in their schedule to higher education, they take that
seriously. Adult learners are motivated to learn when course objectives are perceived to
be realistic and relevant to their professional and career goals (Norton, 1998).
Additionally, adult learners are often inspired to pursue graduate education because of a
desire to advance in the workplace or to make a shift in their career (Neeley, Niemi &
Computer-Mediated Course Delivery

Information about using the Internet to support learning in traditional classrooms shows an increased use of this technology and generally positive evaluations. Use of an electronic bulletin board and E-mail within a traditional classroom has been shown to increase competence in using computers, provide a sense of student empowerment, increase critical thinking skills, promote cooperation and interactivity among students and faculty both inside and outside the classroom, and improve the quality of instruction (Clark, 1998; Todd, 1998; Collins, 1997a; Althaus, 1997; Saunders, Malm, Malone, Nay, Oliver & Thompson, 1997; Windschitl & Lesehm-Ackerman, 1997; Manning, 1996). E-mail responses to critical thinking questions allowed faculty to identify specific areas where students failed to understand important concepts and enhanced student learning (Todd, 1998). Use of electronic meetings to conduct values clarification exercises provided an opportunity for students to examine issues more closely and analyze their impact, thus leading to them to reexamine their own positions and increase the depth of their consideration of the issue (O'Brien & Renner, 1998).

Student evaluations have indicated that use of on-line documents helped to reinforce traditional lecture material and textbooks (Mitchell, 1997). However, the students found that even use of the Internet in a supplemental manner was very time consuming (Clark, 1998). Students who lacked proficiency with e-mail exhibited anxiety and frustration at first, but most were able to complete the course requirements successfully (Todd, 1998). Faculty workload was noted to increase with integration of e-mail assignments to support traditional classroom work (Todd, 1998; Manning, 1996).
Movement of learning outside the traditional classroom setting led to a proliferation of distance education modes. Distance education modes provide educational opportunities for nurses, as multiple role professionals, that are not possible if they are separated by time and physical location from a university (Pym, 1992; Yeaworth, Benschoter, Meter & Benson, 1995). Students enrolled in Web-based courses cite the ability to reduce the negative effects of distance and scheduling, development of computer skills, and interaction with on-line colleagues as the most common reasons for enrolling in Internet courses (Ridley, Bailey, Davies, Hash & Varner, 1997). However, despite a positive experience with a doctoral course in a virtual classroom on the Internet, Milstead and Nelson (1998) found that students who could come to campus preferred to do so.

With its versatility and interconnectedness, the Internet offers an effective distance education mode for learners who are wide-spread geographically (Carswell, Thomas, Petre, Price, & Richards, 1999; McCollum, 1997; McManus, 1996). Using the Internet as a resource facilitates education of graduate students because of the varied nature of students' backgrounds and their diversity of nursing knowledge (Gillham, 1998). Web-based education provides unique collaborative opportunities for learners from diverse cultures and experiences. Collaboration is more than simply exchanging information or passing on instructions. Meaningful collaborative learning creates "added value" and new understandings amongst the members of each group (Kaye, 1992). Each student can view other students' answers and learn through the exposure to different perspectives. Given the opportunity to collaborate with diverse sources of information outside the walls of the traditional classroom, students will be more able to acquire new
viewpoints. "As learners become aware of the variations in interpretation and
collection of meaning among a range of people, they construct an individual meaning" (Alexander, 1997, p. 1). Students' knowledge, thinking skills and meanings are socially constructed through formulating ideas in their own words, and receiving feedback and evaluation from peers (Harasim, Hiltz, Teles, & Turnoff, 1995).

Since many nurses who are enrolled in distance education remain employed, it also offers them a practical application to link their new theoretical knowledge with their current clinical practice. Advanced learning involves the development of flexible representations of knowledge that promote a conceptual understanding and the ability to apply knowledge to new situations in nursing practice. Delivery of nursing courses via the Internet can facilitate this interconnectedness of learning (Jacobson, 1994).

The Internet, with its dynamic interactions between students and teachers, has been shown to be a powerful approach to distance education (McLellan, 1998). Research about the effectiveness of courses conducted fully in a virtual classroom on the Internet is generally positive in nature (Fredda, 2000; Carswell, Thomas, Petre, Price & Richards, 1999; Baer & Chamberlain, 1998; Milstead & Nelson, 1998; Collins, 1997b; Hamman, 1997). Problem-based learning, increasingly noted in nursing education, has also been found to be effective when delivered fully via the Internet (Wegner, Holloway & Crader, 1997). Although educational outcomes in Web-based and traditional courses were similar, students enrolled in Web-based courses reported additional gains. In addition to learning course content, graduate nursing students in an Internet course were also found to increase in their skill and use of the computer (Bachman & Panzarine, 1998). Baer and Chamberlain (1998) and Henderson (1998) believe that clinical education will also be
increasingly facilitated by the delivery of courses via the Internet. However, little literature was located regarding this topic.

Web-based courses have the potential to foster development of higher order thinking skills required for effective acquisition, management, and use of information. The hypermedia format used by the Internet supports and encourages browsing and exploration, two learner behaviors that are frequently associated with higher-order learning (Thuring, Mannemann & Haake, 1995). Salomon, Perkins, and Globerson (1991) suggest the existence of an intellectual partnership between the student and the computer. The computer performs lower order "hackwork" and frees the student to think more creatively and at a higher level. They suggest that this partnership results in two distinct cognitive effects: effects "with" the technology and effects "of" the technology. Cognitive effects with the technology are those effects obtained during the student's intellectual partnership with the technology. Cognitive effects of the technology are related to those effects that remain with the student following the partnership (Salomon, et al.). These lasting effects can assist students with improved mastery of cognitive and/or psychomotor skills.

Communication in the Virtual Classroom

Computer-mediated course delivery via the Internet can provide an effective medium for interaction between teacher and students and among students when adequate and appropriate computer conferencing software is used (Hobbs, Moshinkie, Roden & Jarvis, 1998; Milstead & Nelson, 1998; Treloar, 1998; Wegner, Holloway & Crader, 1997; Cragg, 1994). Web-based education tools provide ways to increase communication between students and faculty including bulletin board discussions, chat rooms, and e-
mail. Each individual student has the same opportunity to "speak up" by posting messages. Kubala (1998) found that adding these elements to a course increased student motivation and participation in class discussions and projects. Although students do not have traditional nonverbal and verbal cues that help with interpretation of communication, personalization and emotion can be added to typed comments by substitution of comments for gestures (e.g. chuckle, chuckle) and use of "emoticons" such as :) and :( (Milstead & Nelson, 1998).

In recent years, increased emphasis has been placed on the social aspect of computing with students working in groups while using technology (Savignon, 1991; VanPatten, 1991). Synchronous and asynchronous communication via the Internet has been shown to facilitate student interaction and learning while working in cooperative groups (Saunders, Malm, Malone, Nay, Oliver & Thompson, 1997). Enhanced team performance has been noted in students working collaboratively online because the online environment provided structure for group dialogue and decision making, provided a record of rationale used by the group to make choices, and facilitated collective activities (Thiele, Allen & Stucky, 1999; Dede, 1996).

Research has demonstrated the benefits of enhanced educational and social dialogue through increased interaction between students and the opportunity to work collaboratively to build knowledge and understanding of course content (Hiltz, 1994; Mason & Kaye, 1994; Harasim, 1993; Lewis & Hedegaard, 1993; Boston, 1992; Kaye, 1992; Bates, 1991; Mason & Kaye, 1990). Web-based instruction has also been noted to enhance student and faculty collaboration due to the ability to evaluate progress on a daily basis (Geibert, 2000). The networking that occurs can be sustained. Graduate
nursing students in an Internet course became connected with nursing networks (inside and outside of their student groups) and expressed their intent to maintain these networks (Bachman & Panzarine, 1998).

Few people have considered the implications of this new mode of communication and course delivery. However, McLuhan (1964) cautioned that forms of communication should not be viewed as neutral vessels carrying independently determined meaning. Rather, he believed that forms of communication were extensions of the mind and embodiments of meaning: the medium was the message. In "The Global Village", McLuhan and Powers (1989) applied McLuhan's earlier work to the newly emerging field of computerized communication. They cautioned that although the electronic transmission of information will make knowledge available to all, it is important to remember that information is not knowledge. Knowledge is the meaning that humans assign to factual data. The more data that are available, the less one will be able to know. McLuhan and Powers suggest that technology has outpaced our ability to understand the consequences. Therefore, if the medium is the message (as he proposed over two decades ago), the message is becoming increasingly difficult to decipher (McLuhan & Powers, 1989). McLuhan's publications pose questions that continue to perplex educators and have a renewed significance as this new medium for educational communication expands.

Faculty Accessibility

Student success in distance education is enhanced by rich, rapid feedback from faculty (Chickering & Ehrmann, 1996). Web-based courses provide an additional layer of instructor accessibility. Students in Web-based courses do not have to worry about
whether they can attend a professor's regular office hours, since they have the ability to submit questions via e-mail at any time. Faculty are able to respond rapidly rather than solely at a pre-determined time during office hours (Geibert, 2000). The faculty's role in coaching, observing students, providing feedback, and modeling are powerful enhancements to any learning situation and transcend the virtual classroom environment (Oliver, Herrington & Omari, 1996). Rapid responses to both questions and assignments are factors that students enrolled in Web-based courses reported as enhancing their experiences (Carswell, Thomas, Petre, Price, & Richards, 1999).

Attitude Toward Computers

Although computers have been used in nursing education since the 1960s, they have become more widely used in the last decade. Nursing is rapidly evolving into a technologically sophisticated practice discipline (Nagelkerk, Ritola & Vandort, 1998). Generally, instruction using computers has been found to provide effective learning when compared to learning in the traditional classroom (Carswell, Thomas, Petre, Price & Richards, 1999; Baer & Chamberlain, 1998; Milstead & Nelson, 1998; Collins, 1997b; Hamman, 1997). However, problems have been encountered with students who lack computer literacy or who have computer anxiety (Cohen, 1994). As use of computer technology has increased, there has been increased awareness of both its effectiveness and the difficulties encountered in implementation of computer-mediated instruction with a diverse student population. These problems are more difficult to identify and rectify as students move out of traditional classrooms and into virtual classrooms. As the educational process is being transformed because of the advent of technological innovation, it is important to examine experiences of the learner and their resulting
implications to ensure that students will be able to take advantage of technological change.

Summary

The Internet represents a new way of looking at teaching and learning -- at how teaching and learning are organized and how they are presented (McManus, 1996). The Internet is a delivery medium for content and enables faculty and students to create a virtual classroom. Course delivery via the Internet can facilitate the creation of new educational structures and invigorate existing ones (Burbules, 1996). The Internet also provides students with better access to current information, and greater input into their own learning process, making the learning process more proactive and individualized (Sloane, 1997). The challenge is to ease learners into this new mode of course delivery. Although research has shown that learning is effective in this new distance education environment (Carswell, Thomas, Petre, Price & Richards, 1999; Baer & Chamberlain, 1998; Milstead & Nelson, 1998; Collins, 1997b; Hamman, 1997), students are apprehensive at first and a steep learning curve exists, in part because of this apprehension. Studies have shown that students can learn to cope with distance learning if supportive faculty members are available who promote student involvement in the learning process (Baer & Chamberlain, 1998; Everett & Grubb, 1997).

Although the Internet has the potential to revolutionize education, it is evident that much still needs to be learned. Early research demonstrates the ability of this delivery mode to provide effective education to students but unfortunately, little is known about students' experiences while enrolled in Web-based courses and the meaning of those experiences. Limited research has been done on the experiences of students taking...
courses in a virtual classroom, and little research reported is from an emic perspective (that of the participant). The current reported research has only minimally addressed the perspectives and attitudes of students toward this method of course delivery. When little is known about a phenomenon, qualitative methods are useful in determining the scope of the phenomenon. Thus, this research study was conducted to examine graduate nursing students' perspectives of taking Web-based courses in the virtual classroom.
CHAPTER THREE: RESEARCH DESIGN

Introduction

Qualitative research includes a wide variety of methods to investigate broad, complex topics, and involves an experiential interpretive approach to the phenomena of interest. Qualitative methods reflect the post positivist tradition. This tradition believes that "reality" can't be totally understood and captured, and that multiple methods are needed to understand the portions of "reality" that can be captured and studied. Qualitative inquiry is also appropriate when the research context is poorly understood, the boundaries of the domain are ill defined, and the nature of the problem is murky (Morse & Field, 1995). In fact, qualitative research is most appropriate when the aim is to understand, to answer the "why" and "how" questions associated with the phenomena of interest (Wilson, 1993).

Research Paradigm: Phenomenology

Several styles of phenomenologic research exist. A common goal of these styles is capturing the essence of the phenomenon under study through the revealed lived experience of the participant. However, variation exists regarding data analysis, and range from description of data (Giorgi, 1985; Colaizzi, 1978; Husserl, 1965) to interpretation (Heidegger, 1927/1996; Benner, 1994; vanManen, 1990; Diekelmann, 1993).

The primary purpose of phenomenologic studies is to describe the essence of experience, based on reflection of the participant and the researcher, with the purpose of promoting human understanding (Omery, 1983). Experience is described directly without considering the causal explanations that quantitative researchers would want to
investigate. Phenomenology shows the range of human experiences possible, what worlds people inhabit, the power of language to describe these experiences, and the disclosure powers of language. Phenomenology aims to explore the ways of experiencing and meaningfully understanding the world and relations with others (van Manen, 1996; Benner, 1994). Phenomenology provides a sense of the "whole" (Pallikkathayil & Morgan, 1991). Because lived experience is the focus of attention for this research study, emphasis is not on parts or pieces but on the wholeness of the experience. The detailed narratives obtained in interviews of participants during this study made the experience of participating in a course on the Internet come alive and made achievement of the aims of phenomenology possible. This study explored the experiences of nursing students taking masters in nursing courses as a member of a Web-based or Web-supported virtual classroom on the Internet and assisted in development of an understanding of the meaning of these experiences.

Qualitative research methods are most appropriately used to generate knowledge concerned with the discovery and meaning of phenomena. Currently there is a scarcity of knowledge concerning the experiences of students taking courses via the Internet and their meaning, and no research was located specific to nursing students during a search of CINAHL, MedLine, ERIC, and the Internet. This study adds to the knowledge base in nursing education by exploring nursing students’ experiences. Their stories describe what it is like to be enrolled in a graduate nursing course on the Internet, identify what factors facilitate or hinder their education on the Internet, and describe strategies students use to learn as a member of a virtual classroom. This knowledge will help nurse educators provide improved educational offerings to graduate nursing students.
Philosophical Orientation of Interpretive Phenomenology

Interpretive phenomenology subscribes to the constructivist, interpretivist paradigm. In the constructivist paradigm, the facts of the world are never independent of context and participants (Denzin & Lincoln, 1994). Both the researcher and the participants bring their values and beliefs to the experience. Additionally, the research experience is itself another created context of interaction between researcher and participants. Scientific knowledge is always the result of a situated perspective that is created as it occurs and therefore is unique and context bound. People create (construct) their own realities. The interpretivist paradigm adds assessment of the meanings to the traditional observation of human behavior. Implicit in these paradigms are the assumptions of a relativist ontology (that there are multiple realities), and a subjectivist epistemology (knower and participant create understandings) (Denzin & Lincoln, 1994).

Constructivists conceptualize reality as unique to each person because all of reality is created as it happens (Denzin & Lincoln, 1994). Therefore, the facts of the world are not independent of us as observers and scientific knowledge is always the result of a situated perspective. People create (construct) their own realities. Both researcher and participants bring their own beliefs and values to interactions. Therefore, no two people ever have the same experience of reality (hence the belief in multiple realities). A constructivists' epistemology is affected by their ontological paradigm (Denzin & Lincoln, 1994). Thus their epistemology would value multiple realities, the uniqueness of all experiences, context-bound experiences (each location, situation, time, history etc. affects the experience), value-laden experiences (cannot really ever suspend beliefs and values - can only state them for the reader and try to be true to the data by writing what
the participants say), and process over product (i.e. experiences are never finished [a product] but always in process).

Interpretive Phenomenology

A qualitative inquiry using an interpretive phenomenologic design was used to conduct this study. Phenomenologic design is both a philosophy and a method (Cohen, 1987), within which several schools of thought have developed. The method originated with philosophy, using the work of Husserl, Heidegger, Sartre, and Merleau-Ponty. The interpretive phenomenological tradition seeks to understand the meaning of the lived experiences of individuals. The process of understanding and the construction of the meaning of the experience is the ultimate purpose of this methodology (Greenfield, 1998). Phenomenology not only explains what something is, it also explores what this phenomenon can mean by offering possible interpretations (van Manen, 1990). The interpretation "must offer increased understanding, and articulate the practices, meanings, concerns, and practical knowledge of the world it interprets" (Benner, 1994, p. xvii). To truly understand participants' behavior it is necessary to study the person in context. This enables the researcher to identify what the participants value and find significant (Benner, 1994). To understand the lived experience of being a member of a virtual classroom on the Internet, this research went beyond the ready-to-hand practices and taken-for-granted aspects to uncover meanings so that they were not destroyed, distorted, decontextualized, or trivialized.

In interpretive phenomenology, human experience is constituted by both presence and involvement in a situation. It is frequently through the spoken word that this experience can be known to the world. "True" meaning cannot always be extracted from
articulated words, for the essence may lie in an understanding of the background meaning of the words (Heidegger, 1927/1996, p. 142). Heidegger believed that facts are not separate from the meaning of facts. The emphasis from the Heideggerian perspective is not just on that which presents itself (the phenomenon) but what the phenomenon means (interpretation) (Heidegger, 1927/1996, p. 325).

Heidegger was also not concerned with the maintenance of objectivity during phenomenologic research. He believed that background knowledge and practices were integral, and therefore inseparable, elements of being (Heidegger, 1927/1996, p. 141). Because of this, background knowledge cannot, and should not, be bracketed.

"We are beings who are engaged in and constituted by our interpretive understanding. Contrary to Husserl's belief that these interpretations are a product of the individual consciousness of subjects, Heidegger claims that these interpretations are not generated in individual consciousness as subjects related to objects, but rather are given in our linguistic traditions and make sense only against a background of significance" (Leonard, 1994, p. 52).

The researcher uses her understandings, traditions, and experiences to make meaning in encounters with the research participants whose experience is presented as narrative or text. For Heidegger (1927/1996), the researcher is not naive about the world of the participant. In fact, to ask a clear research question the researcher must already have some understanding of what is sought. Preunderstanding is essential to interpretation (Heidegger, 1927/1996, p. 140).

In accordance with interpretive phenomenological method, as the researcher, prior to data collection, I identified my pre-understandings about the phenomena. By examining my own knowledge, I became attuned enough to ask questions that would otherwise have gone unasked and come to understandings that would otherwise not have been reached had I tried to bracket my experiences and remain objective and therefore
detached. Therefore, bracketing (suspension of all that is known about the phenomena being studied to attempt to control judgments based on values, motivations, and preconceptions) was not done since it is inconsistent with interpretive phenomenology. I was concerned with describing the experience and constructing its meaning. To do this, I used a hermeneutic circle and returned to the transcripts.

The hermeneutic circle was a group of individuals with particular areas of expertise (qualitative research and/or Web-based teaching) who met to review and discuss the texts.

"The operations of understanding ... take place within the principle of the hermeneutic circle... The whole receives its definition from the parts, and, reciprocally, the parts can only be understood in reference to a whole... Meaning is what understanding grasps in the essential reciprocal interaction of the whole and the parts" (Palmer, 1969, p. 118).

The hermeneutic circle facilitated the process of understanding by providing a forum for review of texts and discussion. "With its spatial image, the hermeneutic circle suggests an area of shared understanding. Since communication is a dialogical relation, there is assumed at the outset a community of meaning" (Palmer, 1969, p. 87). The interpretation of the lived experiences of the graduate nursing students who had taken a course via the Internet was the interpretation of the participants in the hermeneutic circle, but it was anchored in the facts of the experiences of the participants. Repeated discussion and returning to the texts for examples allowed the interpretation to manifest as the "reality" of the experience, without forcing artificial categories (Palmer, 1969; Dieklemann, Allen & Tanner, 1989). Through this interpretation a new, richer understanding emerged which was greater than the original understandings of the individual research participants (Walsh, 1996).
Assumptions

The following assumptions were the basis of this study and were based on Heideggerian hermeneutics:

1. Individuals' stories or narratives provide insight into ways they understand and enact in their lives (Sandelowski, 1991).


3. Humans are situated and constituted, thus any understanding of lived experience must be context specific (Heidegger, 1927/1996, p. 140).


5. Humans are complex beings best studied using a holistic approach.

6. All participants are equally valued concerning the truths shared during this study.

7. The researcher has identified preconceived notions, expectations, and frameworks about the phenomenon. Interpretations that emerge from the data will be influenced by the researcher's background knowledge and experience brought to bear in the act of understanding (Heidegger, 1927/1996, p. 140).

Research Procedure and Methods

Participants

The participants for this study were drawn from those masters in nursing students currently enrolled in their first course on the Internet or who had completed their first Internet course within the past year (and who had not yet taken another Internet course), who were enrolled in a large Midwestern university, spoke English, had a bachelor's degree in nursing, and were at least twenty-one years of age. In addition, due to the time commitment involved and necessity for introspection and sharing information with the
research, it was essential that the research participant had not only experienced the phenomenon, "but was also intensely interested in understanding its nature and meanings, willing to participate in a lengthy interview..., granted the investigator the right to tape-record...and publish the data in a dissertation and other publications" (Moustakas, 1994, p. 107).

Participants for this study were selected by network (snowball) sampling (Burns & Grove, 2001; Polit & Hungler, 1999). Network sampling is useful when the research population consists of individuals with specific traits that are difficult to identify by ordinary means. Early participants were asked to assist in locating others who had taken a computer-mediated masters in nursing course recently and provided a number of referrals. Early respondents were selected to maximize the range of information obtained, while later respondents were selected based on their knowledge regarding the phenomenon of concern as data analysis yielded particular topics and began to form the parameters of the study (Swenson, 1996).

The number of participants was emergent and was based on the range and scope of narratives being collected. Interviewing proceeded until redundancy in or saturation of the data were reached. The researcher interviewed fifteen participants. The aim with this sample was to elicit as many different voices as possible. This number of participants was within the usual range found in qualitative research. The primary concern was to elicit stories that included both depth and breadth of information. More can be learned from deep responses from a few people in this paradigm than by skimming the surface with many people. Thus, the investigator obtained participants who represented the population according to the knowledge domain rather than according to demographic characteristics.

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Protection of Human Subjects

The protocol for this research study, initial interview schedule, and informed consent were submitted to the Indiana University Purdue University Institutional Review Board for human subjects approval. Approval was granted on July 16, 1999 (Appendix B).

The first time the researcher met with a participant, the researcher ascertained that potential participant met the sample criteria, explained the study, assured them of the confidentiality of their responses, answered all questions, assured them that they could drop out of the study at any time without consequences, and invited them to participate in the study. The study, including risks and benefits associated with participating in the study were fully explained to all participants. Each potential participant was informed of the approximate amount of time that interviewing and follow-up communication would take, the data collection procedures, and how recording and analysis of data would protect their confidentiality.

All study participants were asked to sign an informed consent form (Appendix C) before formal interviews. Participants were asked to read and freely question any aspects of the consent form and were given a copy of the signed consent form. This consent form was verbally explained with emphasis on using a tape recorder during interviews and participants' right to request portions of information not be recorded. Once a participant agreed to participate in this study, they were informed that they were free to withdraw from the study at any point with no detrimental effect on their course enrollment or association with the University. They were informed that if the content of the interviews
caused emotional discomfort or stress, they were free to end the interview at that time and also were at liberty to refuse to answer any questions.

Confidentiality of participants' interviews was maintained by not identifying them by name. Data were recorded with pseudonyms, so that there was no link between these code names and the participant's identity. Only the investigator, who held this information in the strictest confidence, knew names of the participants. A listing of code names was kept separate from the verbatim transcripts and audiotapes were in a locked file available only to the investigator. The list of coded names and all tape recordings will be destroyed upon completion of the study. The tape recordings and the transcripts do not contain any information that could connect data to a specific study participant.

Data Collection

Fliers explaining the study and requesting participation were posted in the School of Nursing, targeting students enrolled in graduate nursing courses both on campus and in virtual classrooms at one major midwestern university. The researcher contacted nursing faculty teaching online courses and asked permission to post information regarding the study and soliciting participation via the online courseware system. Respondents to the fliers and online postings contacted the researcher via e-mail and/or telephone. Respondents who were given preliminary information about the study via e-mail or telephone and brief telephone interviews were conducted to determine eligibility. Then meetings were scheduled in-person with potential participants to further explain the study, obtain informed consent, and begin interviewing.

Data were collected by limited observation and two in-depth interviews conducted in person at a location of the participant's choice. The settings were quiet and private.
places relatively free of everyday distractions. Settings ranged from a private conference room at the university to quiet coffee shops. For the interviews conducted in the coffee shops, a booth in the rear was chosen and the server was asked to provide as much privacy as possible by seating other patrons away from our table. We also chose a time of day that would be less busy.

The initial interview was the longer of the two. The second interview, five to ten days after the first interview, allowed the participant to expand or clarify earlier responses and gave the researcher an opportunity to validate information gathered in the first interview. All interviews were audiotaped to ensure verbatim transcription. The researcher explained the rationale for audio taping to each participant. Participants were told that they might request that audiotaping be stopped for any portion of the interview that they were uncomfortable having recorded, that audiotaping may be turned off. A professional transcriptionist completed all verbatim transcriptions of interviews and entered them into word processing files for data analysis.

The researcher took field notes before, during and immediately following each of the interviews. Field notes written before the interview helped to prepare the researcher for the interview process. These notes contained a description of the physical location of the interview and the researcher's mental preparation for interviewing. During interviews, condensed notes were written that were reviewed later with the transcribed data. The notes written during the interview process revealed information about not only the verbal interview, but also provided in depth data related to the interview process such as nonverbal communication emanating from participants. As soon as possible after each
interview, the researcher reviewed the interview transcript and filled in details such as body language, that were not recorded on the spot.

Four categories (Denzin, & Lincoln, 1994) were used to organize the field notes:

1. observation notes included what was observed and recorded using the five senses (sight, hearing, smell, touch, and taste); 2. methodological notes included the process of collecting data such as who to talk to, what time to arrive, what to wear, etc.; 3. theoretical notes included hunches, hypotheses, constructions of key terms and phrases and critiques of what the researcher is thinking; and 4. personal notes included feelings about the research, the people involved, and any anxieties, doubts, and pleasures of the process. Attention to field notes helped the researcher to reduce or eliminate preconceived ideas about the study (Spradley, 1979).

During the interview, the researcher adopted an open and accepting interviewing style, which permitted participants to voice their genuine views, opinions, and feelings without constraint (Hallett, 1995). The researcher began the first formal interview with a short social conversation aimed at creating a relaxed and trusting atmosphere. Then the researcher requested that the participant choose a pseudonym that would be used to credit her direct quotations, and that name was recorded on the demographic collection tool and the audiotape. Following this, the researcher began the interview with the following statement: "Tell me a story about what taking a graduate nursing class on the Internet was like for you." This enabled the participants to tell their story of being a student in a virtual classroom on the Internet. As suggested by Moustakas (1994), the participant was encouraged to take a few moments to focus on the experience of taking the course on the
Internet, moments of particular importance and impact, and then to describe the experience fully.

An advantage of unstructured interviews was the ability of the researcher to use interpersonal skills to assist the participant with disclosing the lived experience, using cues offered by the participant to guide the interview. Interviews became more focused as they proceeded, as the researcher attempted to clarify previous statements. Once the initial question was asked, then the participant's responses were used to help guide further questioning. This process followed Morse's (1994) recommendation that initially the researcher should use nonspecific language and open-ended questions, but further interviewing could be best conducted by using the participants' own language, terms and phrases to get into their world and encourage an emic description of their experiences. As the interview came to a close, the researcher asked the participants the following final questions "Is there anything else you would like me to know? Is there anything else you would like me to understand? Is there anything you would like to ask me?"

Upon completion of the first interview, the following demographic data (Appendix D) were collected on all participants: age, race, marital status, length of time in the graduate program, employment status, family composition, whether they own a computer at home, and where students accessed the Web course most often. Demographic data were used to describe the participants, not to separate participants into different groups.

To ensure thick description of the data, a second interview was scheduled (Sandelowski, 1986). Thick description of the data presents a detailed commentary on the participants' experiences. It provides information about the affects, relationships,
contexts, and backgrounds and leads to interpretation of the tones of the voices, the feelings, and meaning of the situation (Morse & Field, 1995). At the second interview the participant and researcher discussed information obtained at the first interview to clarify the information. Additional questions were posed during the second interview, depending upon the need for clarification of information, and as data collection and analysis yielded particular topics that began to form the parameters of the study and as validation of the themes occurred. Additional questioning attempted to clarify or seek more depth when needed for better understanding of the dimensions of the experience and continued until all of the initial themes identified during data analysis of previous interviews had been covered.

Data Analysis

Within the phenomenologic paradigm, data analysis is not a matter of reduction but induction. Induction begins with the data analysis, rather than with established theories or hypotheses. In interpretive phenomenology, multiple pieces of data, generally narratives or stories, are used to explain the phenomena and identify meaning. The investigator used the transcripts of the interviews and field notes as the sources of data analysis. "Data analysis begins shortly after data collection commences and continues during data collection and beyond. The concurrent processes of data collection and analysis allow the analysis to guide continued data collection...The outcome is that the researcher maintains control rather than 'drowning in data' " (Morse, 1994, p. 229).

Data were analyzed according to the seven stages outlined by Diekelmann, Allen, and Tanner (1989) because they were compatible with the interpretive phenomenologic approach taken with this study. The process of data analysis was facilitated by a
hermeneutic circle as described by Diekelmann et al. (1989) to include other voices in the interpretation, identify inaccurate interpretations of the narrative, and clarify analyses.

The hermeneutic circle consisted of the researcher, three other nurse educators currently participating in qualitative research, and an educator experienced with Web-based teaching. The stages were as follows:

1. Each member of the hermeneutic circle read the entire description of each subject's responses to gain a general sense of the whole statement and to facilitate an appreciation of their experience (Diekelmann et al, 1989).

2. Each member of the hermeneutic circle summarized the interview. The transcript was then analyzed in more depth so that significant words, statements, and passages could be extracted. When unsure about the relatedness of information, the unit was included rather than excluded. Unrelated conversation was not included in the analysis. Examples of unrelated conversation included getting acquainted talk and stories about unrelated life events (events at work or regarding family escapades). Initially, meaning units (pieces of narrative that contain one idea) were cut from the transcripts and placed on index cards for ease of sorting. However, the mountain of index cards quickly grew to such proportions by completion of the second participant’s interviews and this approach was abandoned. A more workable process was developed using transcripts with wide margins. The researcher used a highlighter to mark meaning units on a copy of the transcript. Ideas regarding the meaning unit were marked in the margin (Appendix F). At this point, preliminary themes were identified. During meetings of the hermeneutic circle, the researcher read her interpretations of the preliminary themes and provided supporting excerpts from the interview. Each
member of the circle then read their own interpretation of the themes and provided supporting excerpts. Dialogue among members of the hermeneutic circle then clarified the themes in a search for consensus or the “best” interpretation (Diekelmann et al., 1989).

3. Following the initial work on each transcript, there was additional independent analysis of the transcript by each member of the hermeneutic circle (Diekelmann et al., 1989). The researcher continued to use a word processor to highlight individual meaning units from the transcript and information gleaned from these analyses regarding the meaning units was written in the margin of the transcript in a second color of ink.

4. During this stage, themes were further refined (Appendix G). The researcher sorted and resorted the meaning units until they fit together. Ideas about the theme running through the meaning units were noted in the margins of the transcripts in a third color of ink. The researcher reviewed the transcript so that narrative from the text could be selected to provide supportive information during the analysis process. The researcher then returned to the hermeneutic circle to discuss the themes identified in a search for consensus. This process was repeated for each transcribed interview, and the resulting aggregate of formulated meanings was then organized into relational themes running across the transcripts. These themes were supported by referring to the verbatim transcripts to ensure that no data had been ignored or added and by performing member checks. Member checks were performed during second interviews with later participants as theme identification progressed. During this time, the participant and researcher discussed information obtained at the first interview to validate the
information. The researcher also stepped back and further analyzed themes across interviews (Diekelmann et al., 1989).

5. Through the process of making comparisons and asking questions, connections between themes became clarified and a constitutive pattern was identified. This pattern contained conceptualizations, understandings, and trends from the perspective of the participants that are present in all of the transcripts (Diekelmann et al., 1989). The results of the analysis were then integrated into an exhaustive description of the nature of the phenomenon illustrated by verbatim quotations from the participants.

"This working of the text with experiential accounts, evocative constructions, intensified language, and thoughtful reflections embeds and converts thematic claims into a narrative text that contains and safeguards phenomenological meaning" (van Manen, 1997, p. 355).

6. Individuals not involved in the hermeneutic circle, but who were familiar with Web-based course and interpretive phenomenology, corroborated the analysis (Diekelmann et al., 1989).

7. Once the themes and constitutive pattern had been identified and supported with narrative from the participants, the researcher returned to the literature to search for relevant concepts, theories, and research to help explain the themes and patterns identified in the analysis. Following this, the final research report was prepared. The report contains significant sections of narrative to allow the reader to validate the research findings, as well as supporting data from nursing and education literature to explain the themes and pattern (Diekelmann et al, 1989).
Assuring Quality and Rigor

"Rigor is a commitment to the established rules for conducting inquiry" (Kincheloe & McLaren, 1994, p. 151). This study used Diekelmann's (1989) seven stages to guide data analysis and add to the rigor of the research. The foundation for assessing the quality and rigor of qualitative inquiry rests on the evidence that data collected are trustworthy and authentic. In the past, trustworthiness consisted of four components: credibility (truth value), transferability (applicability), dependability (consistency), and confirmability (Guba & Lincoln, 1994; Sandelowski, 1986). Trustworthy materials in interpretive phenomenology are subjected to analysis within a hermeneutic circle.

However, increasing discomfort has been expressed by Guba and Lincoln (1994) that researchers were attempting to use credibility, transferability, dependability, and confirmability as parallel items to those found in quantitative research (reliability and validity). There is no longer a need to defend the value and rigor qualitative research with criteria that parallel those in quantitative researchers (Keddy, 1994). This has led to an effort to determine more appropriate methods of determining the rigor and value of qualitative research studies (Sandelowski, 1993; Schwandt, 1981).

To assure quality and rigor of the research for this study, the following four criteria were used:

Relevance - this includes clarity of the research question, whether the research question is worth asking and the significance (of the question & findings) to nursing (clinical and theoretical significance). The research findings have been situated in the literature to assist with clarified relevance and guide others who wish to apply the
findings in similar situations. Relevance, like transferability, is relative and depends on the degree to which salient conditions overlap or match.

*Epistemological and Methodological Congruence* - between the research question(s) and methodology, between the researcher's beliefs and the methodology, and use of steps in the research process appropriate for the methodology. Congruence is critical because disagreement prevails on how to perform phenomenological research (Beck, 1994).

The researcher and a member of her dissertation committee experienced in qualitative research performed assessment for congruence. The seven stages outlined by Diekelmann, Allen, and Tanner (1989) were chosen to guide data analysis because they were compatible with the interpretive phenomenologic approach of this study. The hermeneutic circle used the steps as a guide during data analysis.

*Methodological Rigor* - this included use of participants appropriate for the research question, clarity of the research plan, clarity and consistency of data collection/analysis, careful recording of data, data rooted in the contexts of the participants and thorough documentation of the research process (audit trail), whether the problem was adequately researched by the investigation, and whether signals for closure appear.

Participants were carefully selected to make sure that they were appropriate for the research question. Only students who had taken a computer-mediated masters nursing course via the Internet within the past year were invited to participate. Participants assisted in identifying additional participants for the study and provided several referrals. The researcher attended to credibility issues by maintaining consistency within each
interview and throughout the entire data-gathering process. Moreover, a milieu was created that encouraged free response. The standard of descriptive vividness was important. There was accurate and adequate recording of the events of the study, the procedures followed, and assurance that participants' rights were maintained. A decision trail provided auditability and was reviewed by members of the hermeneutic circle.

Methodologic rigor also rested in the richness of the discussion. This richness of discussion was further enhanced by use of the hermeneutic circle during data analysis. Did the description of essence make sense to anyone else? Did it make sense within the context of nursing education (Ray, 1994)?

An understanding of the meaning of a phenomenon could not be assumed without obtaining clarification from the participant (von Eckartsberg, 1986). Lincoln and Guba (1989) described member checking as a process of checking with the individuals who served as sources for the data. The second interview with each participant provided this opportunity. The accuracy of the information obtained was supported since those who have lived the phenomenon of taking a course in a virtual classroom were able to see their own reality mirrored in the narrative during review of the topics from their first interview.

The signals for closure of data collection that appeared were increasing data redundancy, theoretical saturation, rich/thick descriptions, emergence of regularities, and exhaustion of resources.

Researcher's self-understandings - All research is an interactive process shaped by the researcher's personal history, biography, gender, social class, race and ethnicity, as well as those of the study participants. It is critical for the researcher to identify her ideas
regarding the research before beginning the study, her social and cultural positions, and her beliefs regarding epistemology. This allows readers to identify potential impacts on the research (Denzin & Lincoln, 1994). My self-understandings are clearly identified within the research report (Appendix H).

Limitations

1. In this study, the participants are MSN students from a large midwestern university. Since humans are situated and constituted, the descriptions of the participants’ experiences as members of a virtual classroom on the Internet at this large midwestern university may be different from the experience of students who attend other universities/programs and from those who are undergraduate, rather than graduate students.

2. All of the participants in the study were female and the majority of the participants were Caucasian. The experiences of men and minority students as members of a virtual classroom on the Internet may be different than the participants in this study.

3. The ability of the researcher and the participants in the hermeneutic circle to deal with the tremendous volume of information and analyze it completely are likely to limit the study. Using a word processor to organize and track the data helped to minimize loss of data. Use of the hermeneutic circle in data analysis also assisted in dealing with the volume of data generated.

4. Interpretations that emerge from the data may have been influenced by the researcher’s background knowledge and experience brought to bear in the act of understanding (Heidegger, 1996).
5. Although the data directed conclusions, it is possible that further analysis would uncover further conclusions despite the use of a hermeneutic circle.

Summary

Qualitative research focuses on the wholeness of human experiences rather than solely on its parts and provides a wealth of descriptive data. Analysis of these data provides insights into the meaning of the experiences for those involved (Burns & Grove, 2001; Morse & Field, 1995; Munhall & Boyd, 1993; Leininger, 1985). This study explored the experiences of masters in nursing students in a virtual classroom on the Internet and describes the meanings of their experiences. Data analysis was an iterative process following the seven stages outlined by Diekelmann, Allen, and Tanner (1989). A hermeneutic circle to include other voices in the interpretation, identify inaccurate interpretations of the narrative, and clarify analyses facilitated the process of data analysis. Assessment of relevance, epistemological and methodological congruence, and methodological rigor, and identification of the researcher's self-understandings assured quality and rigor of the research.
CHAPTER 4 FINDINGS AND DISCUSSION

Introduction

This study was undertaken to explore the experiences of graduate nursing students taking nursing courses in virtual classrooms on the Internet and to describe the meanings they attach to their experiences to address gaps in knowledge about graduate nursing students' subjective experiences in a virtual classroom on the Internet. The themes and constitutive pattern emerged after considerable analysis within the hermeneutic circle. Identification of themes was an evolutionary process and examples of early, intermediate and final themes can be found in Appendix G.

Description of Participants

The participants for this study were drawn from those masters in nursing students at one large midwestern university who were currently enrolled in their first course in a virtual classroom on the Internet or who had completed their first course within the past year. Network (snowball) sampling was used to select fifteen participants for this study. Upon completion of the first interview, the demographic data were collected on all participants. Demographic data were used to describe the participants, not to separate participants into different groups. A complete summary of the demographic data can be found in Appendix E.

All of the participants were generous with their time, setting up two interviews (each lasting at least an hour) and rearranging their lives to travel to the interview location and expend energy on this project. They all voiced their desire to help others and stated that they were interested in the topic of the study. Although there were a number of frustrations identified by participants, they noted that any type of advanced education was
stressful and involved a lot of change. Most comments were made in a positive manner. Participants were not angry or upset and appeared to have no “ax to grind”. They simply wanted others to have a better understanding of their experiences in this new educational medium.

Participants for the study were all female. This was not unexpected since 92% of students enrolled in masters programs are female (American Association of Colleges of Nursing, 1999). Participants ranged in age from 24-49 years, with a mean age of 39 years. Thirteen of participants were Caucasian and two were Asian. The AACN (1999) survey found that 80.6% of students in masters programs were Caucasian, 4% were Asian, 7% were black, and 3% were Hispanic. Eight of the participants were married. Six participants had children living at home. Eight participants worked full-time, six worked part-time, and one was not employed.

Nine of the participants were part-time students and six were full-time students. The length of time enrolled in the masters program ranged from 3 months to 3 years, with a mean of 1.3 years. All of the students owned a computer at home. IBM-compatible Pentium computers were owned by fourteen of the fifteen participants, one participant owned a Macintosh computer. Participants stated that they were most likely to access the Web course from home, but two participants said they often access the course from on-campus computers despite having a computer at home. Participants who accessed the course from on-campus computers cited the speed of the on-campus network connection compared to the modem on their home computer. Both those students owned older Pentium computers with slower modems. Prior to taking the Web course, eight of the
participants stated that they had used a computer daily or several times a week. One participant reported never using a computer prior to taking the Web course.

Themes

The cluster of themes identified in data analysis included: 1. Changing Expectations → Adapting to New Roles; 2. Learning the System → Technology's Potholes and Pitfalls; 3. Feeling Overburdened; 4. Is Anyone Really Out There? → Communicating Without Voices; and 5. Learning as a Growing Experience → Recognizing New Strengths. The interviews revealed the complexity inherent in each participant's experience. Participants were able to provide rich detail and vivid examples of what had occurred during their online course.

Changing Expectations → Adapting to New Roles

Most participants said that they had registered for the class knowing it would be held via the Internet. However none of the participants knew much about computer-mediated courses or the differences in learning in this venue. The conflict between students' expectations and the reality of learning in a virtual classroom forced them to adapt to new roles. The need for adaptation meant uncertainty and discomfort to the participants. This led to feelings of frustration during the adjustment process.

Participants identified that some of their expectations were fulfilled but others were not. Some of these expectations were affected by the new roles that learning in the virtual classroom involved. Participants hadn't thought about how learning might be different in a virtual classroom and the impact of those differences. After completion of the course, they were able to clearly articulate some of those differences from their previous experiences.
Most participants verbalized that one of the expectations they had prior to the class was that there would be less time involved because they wouldn't be driving to campus. Madison said:

"I registered for the course because I wouldn't have to drive to campus and thought I could work on it whenever I wanted. I like being able to pick when I want to work on the class. I'm kind of a night owl. I get home late from work and can unwind for a while and then go to work on stuff for my class. Or I can get up in the morning, work on an assignment, or go to the class chat room without even getting dressed."

Another difference in expectations involved students' roles in the learning process. Participants identified that they took a more active role in their own learning although they often felt uncomfortable doing so in the beginning. Faculty members were not seen as knowledge providers but were identified as being facilitators of learning. Amanda said:

"I'm more independent, I guess, self-directed. I have to make sure that I do the work, and I am not just going there, just listening and just getting information from a lecture. I have to search out information and then come to conclusions on my own."

Jessie noted:

"You have to be prepared before you log on. On campus, you can wing it sometimes when you walk into a class. Especially if you haven't read the material for this week. So you can fake it. With the Web-based class, you can't fake it. They're seeing what you know or don't know. You actually have to read the book before you can post and then you have to think about things too. I mean you have to really be prepared. It's a lot of work to get prepared for class. You have to be more organized and keep on top of things so you know what you are doing. You are in charge of your learning. If you don't get it, it's your own fault. I mean the instructor is there to help you if you need it. All you have to do is ask. But you can't just sit back and try to hide. At least not if you want to pass the class."

The increased independence noted in learning in the virtual classroom is consistent with Knowles' (1990) theory of adult learning. Knowles believed that adults take more responsibility for their own learning, are self-directing, have a readiness to
learn and are intrinsically motivated to learn. The emphasis in learning is on fostering the student’s motives, drives and ambitions (Murphy, 1995). Through support and facilitation, the learner analyzes his/her own experiences and learns from them. Because the experiences are personal, learners have ownership and are therefore more likely to integrate their knowledge into practice (Rogers, 1994).

However, students are often initially most comfortable with the traditional mode of learning where transfer of knowledge occurs from the expert to the passive learner (Jonassen, 1995). Adult learning theory places the faculty member in the role of a coach or facilitator.

Another learning model that views faculty members as facilitators is the constructivist model. The constructivist model of learning assumes that knowledge is not transferred but created by the learner with the assistance of faculty as guides or facilitators. In this model, learners take control of the learning process and work more independently (Jonassen, 1995). It is paramount for constructivists that learning environments are as rich and diverse as possible (Reeves & Reeves, 1997). The virtual classroom, with its access to a wide variety of rich resources, may be just the environment for this richness and diversity. Duffy and Jonassen (1992) believe that purposeful knowledge construction may be facilitated by learning environments that focus on knowledge construction, not reproduction; present authentic tasks (contextualizing rather than abstracting instruction); provide real-world, case-based learning environments, rather than predetermined instructional sequences; foster reflective learning; enable context and content dependent knowledge construction; and
support collaborative construction of knowledge through social negotiation, not competition among learners for recognition.

Computer-mediated instruction currently varies from tutorial-based instruction that is primarily an instructivist structure to interactive, problem-oriented instruction that is primarily a constructivist structure. Interactive software for computer-mediated instruction allows greater use of interactive, problem-oriented instruction that is based on constructivist principles (Duffy & Jonassen, 1992) and adult learning theory (Knowles, 1990). This allows the instruction to focus on tasks relevant to learners. Participative approaches fit well with the idea of adults as responsible, independent, and interdependent learners. Education that focuses on shared control and relevance yields learners who not only gain the information they need to be effective and successful, but more importantly, gain the judgment making competence and confidence that enable them to be self-reliant.

Computer-mediated instruction can be designed to use principles of constructivism and adult learning and promote collaboration in the virtual classroom. Learners can benefit from collaborative learning both instructionally and socially by forming learning networks. Collaborative learning can enable two or more learners to accomplish more than an isolated learner because the interaction between the learners may be just as important for learning as the interactions between the learners and the faculty and the instructional material (Reeves & Reeves, 1997).

Participants identified varying levels of comfort with the increased independence and collaboration in their learning in the virtual classroom. Carmen was typical of many when she said:
“I’m a foot soldier. You tell me what to do and I’ll die trying. In this course, you had to play a lot of different roles, leader, organizer and group member. And if you were the leader you had to set the pace and decide the parameters. And that was intimidating for me.”

Madison expressed frustration too, saying:

“T’m not sure what they want all the time. Just tell me what I need to know and I’ll learn it. It seems that a lot more is up to me and that I can help direct where we go. But I don’t know where I’m going. So how can I lead?”

Hira commented on the change in learning roles:

“We have 10 or 15 years of education. And in those years we have it all face to face. There is communication. I heard and listened to the faculty, but thought it. Sometimes I just sit in front of the computer and it seems passive. Not like being in class. I’m not passive there. I’m very verbal, but not good at thinking just in front of a computer alone. I like to talk back and forth with other students and the faculty about what we learn. When I am in class, I have to hear what each person has to say and I can absorb more information. That helps my learning. On the Web, I think I do less sometimes and then I learn less.”

But Gwen noted a positive response saying:

“It was so cool to be given the ball and allowed to run with it. We didn’t have to follow a prescribed path, we just had to get to the same goal by the end. Sometimes we plowed straight ahead toward the goal. But sometimes, we took wonderful detours. And we looked at things that I would have never considered before. But if we got too far afield, the instructor guided us back to the path and pointed us in the right direction.”

A consequence of the work in this environment was a focus on text-based materials. Participants noted that they had a lot more reading to do since the course was in a virtual classroom and most information was communicated in writing. Freda noted:

“There was a lot more reading than in a regular class. It was almost like what I think taking a correspondence class would be like except you got to interact with other students too. You read the readings in the articles and the book. Then you read the material that the professor posted. Then you clicked on the links and read the material at the Web links. Then you had to read what other students had posted about the material. I could only do it for so long before my eyes would go buggy. So then I’d log out of the class and think about what I’d read. Sometimes I printed out what students had posted to read later because I ran out of time or because I wanted to put points together from several students’ comments when I
made my reflection on the topic for the week. It did make me think about the material more though. Especially since once you said something on the bulletin board it stayed up there. It wouldn't go away. And you couldn't get away with hiding in the back of the classroom. Sure some people talked more than others in the bulletin board postings. That's always going to happen. But everybody had to "talk" in order to get the points for class participation. Plus the professor made the points based on the quality of the discussion that you participated in. You couldn't just nod and smile and agree with others. You had to have some meat to your responses."

Participants identified some concerns about their new role in learning and using these types of learning strategies for all classes and Madison said:

"Reading is an OK way to learn about some things but I wouldn't want to take Health Assessment as a Web course. I want to see things demonstrated and have someone watch me while I practice working with the equipment and doing those things. I think that some things really need to have time for hands on work. Plus getting that immediate feedback about how you are doing it."

Taylor voiced another concern:

"There wasn't a lot of variety in the way you could learn either. It was mainly just words. Sure the professor put up some activities for us to complete to give us ways to apply the concepts. But there were no videos to watch. Not that many pictures or illustrations of things either. I like overheads in class. They can emphasize the main points of things and provide illustration of other things that are confusing. So that made it different for me. Pictures and some thing to summarize things would have been helpful even on the Web."

Limited research exists regarding the impact of computer-mediated courses on students with different learning styles. Preliminary research indicates that although students in on-campus and Web-based courses have differing learning styles, learning style does not have an effect on Web-based learning achievement (Diaz & Cartnal, 1999; Shih, Ingebritsen, Pleasnats, Flickinger & Brown, 1998).

Learning the System → Technology's Potholes and Pitfalls

Learning the system used in the virtual classroom involved much time and effort initially. The potholes and pitfalls meant further uncertainty to the participants and
feelings of inadequacy. Could they master the technology? Would it really work this time? Ultimately learning the system meant that they were successful and led to feelings of accomplishment and pride.

Learning how to maneuver around in the virtual classroom led to some frustration early in the semester even for those who attended the introductory demonstration to the Web CT course management software. Monique said:

"I had some problems at first getting the hang of things. Especially since I wasn't used to WebCT. It took me a while to be able to move around easily but I did OK after a week or so. But some people seemed to have even more trouble getting used to the software than I did. Knowing you are logging on for the first time and being graded on top of it was scary. Then I'd make dumb mistakes. At first I kept clicking the back button on my Web browser when I wanted to go back a page in WebCT and I'd get kicked out of WebCT and have to log back on to the course. That was a pain. I learned pretty quickly not to do that. I learned to look at the buttons on the course page too. If they have green lines around them, then it means that something new has been posted in that area. So you don't have to go in and look around if there's nothing new. But I didn't notice those lines at first and wasted a lot of time checking each area of the course for new postings. Once I figured out about the green lines...it saved me a lot of time."

Learning to use the Web CT software was a real challenge since most students were not familiar with the software prior to beginning the Web courses even though orientation was provided during the first week of classes and support was offered from an expert in Instructional Systems Technology within the School of Nursing. Denise was typical in her report of the adjustment needed to hold class discussions on the bulletin board:

"There was a little bit of handling in order to get it into the right thread. I mean, your response under the correct thread. I learned to go to the forum, find the original citation or question or response, and then reply to that one. That way I could do it. Otherwise when you read the bulletin board and somebody hasn’t done it, it’s real confusing cause you can’t figure out what response was to what question. It’s like having a bunch of threads loose on the dining room floor and you’re trying to figure out the tangled mess. You lose track of what the original point was and where the topic is headed."
There were inevitable technological glitches that caused frustration for students as well. Amanda said:

"My Internet browser was set up wrong and caused all sorts of problems in the beginning. I was all gung ho and ready to go, and had this positive attitude and it was just a big flop. Thank heavens for my husband, who is pretty much a computer and electronics wizard, thank God, because I have no clue about these things. I just know how to use them. It took three days to get things all worked out, but we did. And once we sorted that out things worked ok."

She also reported server problems:

"The server just went down. It froze up. We were kind of out there in cyberspace I guess. I couldn’t do a thing. It was very stressful. For all the class knew, I had blown them off. What a terrible first impression."

Amanda took the server problems in stride once she realized that they were happening to other students as well.

"Now last night, we were all knocked out again. It only really lasted about five or ten minutes and everybody was able to get back in. I finally said, ‘Look, it’s beyond my control; there is nothing I can do. It’s not my fault.’ So I just took each week as it came and that has helped me to get through it."

Carmen became frustrated when her Internet service provider timed out and disconnected her from the Internet. This led to lost assignments until she realized what the problem was. She said:

"After we met in the chat room, we were supposed to submit a report that night. Or by the next day or something. Well, I got on in my limited knowledge, was intimidated in typing it in Microsoft Word and sending it as an attachment. So I was typing it all on the web site page. Oh yes. I more than once typed it all on the web site page, didn’t know how to save it or even if I could save it I’d think ‘Oh great, it’s quarter to 12, hurray. And I’d send it. And it would say ‘Sorry, you’re disconnected from your web server’ or something and it would be gone. This happened to me four times in a row one night. I wanted to scream! Nobody else at home was awake. Finally I went to bed and got my daughter to help me in the morning. I learned to do my work in Word and send it as an attachment."
Carmen also noted frustration caused by server problems:

"I got extremely frustrated because I would be in the chat room and then I'd get kicked out. Then I'd have to sign back on and then everything I had before was lost. Cause once you get kicked out, your chat room experience is gone and you have to start over. And then you have to wait for the whole thread to pick up again and you'd have to say 'Okay where are you? I'm back.' So that was difficult."

Participants reported that glitches decreased as they became more familiar with the system, but some things such as intermittent server problems remained throughout the semester.

Participants reported having to wait to get help with technology questions and glitches. Jessie reported:

"The technology did not always work. You could call for help, but no one's there when I was working on it late at night. It was frustrating to have to wait until the next day to get help with a problem, especially when you were on a roll."

Some participants reported that they had relatively few technology problems and attributed that to their experience with computers. However, Cragg (1994) found that no matter how much computer experience students had, all students reported problems. Kearsley, Lynch, and Wizer (1995) noted that graduate students involved in online courses reported frustrations associated with hardware and software programs, and unfamiliarity with the system as major problems. Schutte (1997) and Cragg (1994) also noted student frustration.

Despite being informed of computer requirements and competencies well in advance of the beginning of the on-line course, some participants reported that they at first tried to take the course with a computer that did not meet the minimum requirements. Most soon gave up and purchased a new computer or used a computer on...
campus. Catrina continued to use her Macintosh computer despite the problems that occurred, stating, “I’m just a Mac person. I can’t get the hang of those other ones.”

Participants admitted that they often over-stated their computer competencies believing that as Madison said, “they would do OK anyway”. They reported that they sought help from friends and family members to get up to speed when they realized they really needed to know more than they did to be successful in the virtual classroom.

Jessie is typical of many of the participants who reported feeling increased comfort and skills in working with the computer by the end of the course.

“Despite my lack of computer experience, I had a positive experience. I mean, look at what I can do now. As I see it, this is the way the facility I work at is moving. Toward total computer processes. So I might as well get on board now rather than later. At first I was a bundle of nerves. I was afraid that I touched something it would go wrong. I just remember that feeling in my stomach that if I touched the wrong thing or clicked on the wrong thing, the whole thing is going to collapse. And I would have my student guide in my lap, was going through it just to sort of reassure myself. Really the best way I learned was people would give tips in the class of how to shortcut through things. I took me about halfway through the class to get comfortable. After that you just jump on and do it. You kind of know what to expect.”

Increased comfort and skill in working with the computer is supported by the findings of Yucha and Princen (2000) and Leasure, Davis and Thievon (2000) who noted that students became more comfortable with the Web-based instruction medium over time and reported increased technological skills and comfort in using the computer.

**Feeling Overburdened**

Participants spent a great deal of time discussing *Feeling Overburdened*. Feeling overburdened meant being overwhelmed to participants. This was compounded by feelings of uncertainty and perception of technological inadequacy early in the semester.

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This led participants to wonder if they would be able to accomplish all that was required in the classroom while maintaining their home life and job commitments.

Participants made many comments about the increased time commitment required by a course in the virtual classroom compared to a regular course. Participants had a perception that faculty had no conception of how much time the course requirements took. Freda is typical of an overburdened learner:

"One way it was really different was the workload... There was probably twice as much work for that class as compared with my others. It wasn't just the subject area. I think that the professor sort of overcompensated for it being a Web course and us not spending hours in class. So instead we spent hours and hours doing busy work. More time doesn't mean more learning. She just seemed to have no conception of how much time the course requirements took. She hadn't done a course on the Internet before and so it was all new to her too. I expected a computer to make things faster and easier, not slower. But I guess it's not the computer that's slow, it's the amount of work we had to do using the computer. I'm glad I had a newer computer. Some of the people in class had older computers and slower modems and that made things slower than molasses. I wouldn't have been able to function that way, not with the workload. It was much too time consuming to be efficient. I had to sort through more than 500 bulletin board messages. But how do you sort when they ALL are somewhat significant? I had to log on daily just to keep up. It was difficult to fit in with work and family obligations even though I was just going to school part-time."

Catrina noted:

"If you ignored the bulletin board for a couple of days you felt like you were buried under an avalanche. There would be a ton of postings to go through. At least so you could decide what to read and what to ignore. You had to read some of them so that you could post responses. It was kind of overwhelming too because they didn't disappear after you looked at the list. And sometimes it was a really long list. You had to read them for them to disappear. It was there forever. So you had to open everything for it to disappear. And I'm good at ignoring, but they just wouldn't go away. So I just bit the bullet and went through them. Just to make them go away."

Gwen said:

"Sometimes the postings got repetitious. You are all posting about the same thing. How many original thoughts can there be about one thing? And some people have opinions on everything. Some of us are old enough to realize that 'You know that
Chris noted:

"I have thought to myself, if I just went to campus once a week for this class, I probably would not spend nearly this amount of time on this class. It’s 2 to 3 times as much work."

Participants’ comments that the time they spent on the course offered in a virtual classroom was greater than in a traditional classroom has been noted in other studies (Soon, Sook, Jung, & Im, 2000; Schutte, 1997; Pinch & Graves, 2000). These studies found that students in a virtual classroom perceived that they spent significantly more time on coursework than students in a traditional classroom setting. Time constraints may be a particular problem for graduate nursing students since they are primarily female. VonPrummer (1994) noted that women enrolled in education placed higher standards on their family roles which created role and time conflicts, whereas, male students reported no role conflicts and mentioned being relieved of family duties and given uninterrupted time and space for studying.

Is Anyone Really Out There? Communicating Without Voices

Participants expressed frustration about changes in communication imposed by the technology. Participants wondered if anyone really was out there in cyberspace. Is Anyone Really Out There meant abandonment and isolation to the participants. This persisted until participants learned to communicate without voices and made connections with faculty and other students. Carmen expressed her frustration this way:

"I don’t know if I want to say it was difficult, but you had to think critically or try to act intelligent while you are discussing things, but there was no voice feedback. There was nobody to say right away ‘You guys are going down the wrong path’
or ‘You’ve got it.’ So we just kind of went down a path and heard later whether it was the right one or not.”

Rhonda said:

"It was just different trying to talk to people using a computer all the time. At first it was confusing to following the train of thought in the discussions (on the bulletin board) at first. But everyone got the hang of it after a while. It was just different. But it took forever to have a class discussion. Some people read the readings early and post early. Others read them on time or close to the time that they are due and post."

Adapting to a different type of communication has been shown to cause difficulty for students. Kearsley, Lynch, and Wizer (1995) noted difficulty with using the bulletin board system of communication persisted throughout the semester for graduate students in their first computer-mediated course.

Participants noted that unless the professor required interaction on bulletin board postings between students, they simply posted the required assignments, often not bothering to read the submissions of other students. Participants noted that when interactivity was required by the professor (and especially when interactivity/participation was graded) that they would read the postings of other students and make comments to one another. These comments often led to more of a social “chit chat” between students as they offered feedback regarding ideas and support to one another, which led to the formation of tentative relationships. Denise said:

“This chatting back and forth on the bulletin board sort of helped me to get to know other students. But I don’t really ‘know’ them since I’ve never met them. And I haven’t keep in contact with them now that the course is over.”

These on-line relationships served meaningful purposes during the course, but Eastmond (1995) noted that they rarely continued beyond the course. Participants in this study verified this and most indicated that they did not keep in contact with students from their
on-line class. Social patterns of role taking, conformity, and social expectation were replicated from the classroom environment when required by the professor. Interaction between students ceased when the course was over.

Vygotsky's (1978) sociocultural theory of cognitive development emphasizes the importance of social interaction with peers and faculty members as a means of assisting students to reach cognitive developmental levels that they would be unlikely to reach independently. Bonk and King (1998) noted that computer-mediated courses have the potential for influencing the way students and faculty interact and may assist in further development of collaborative learning and increased cognitive development. Harasim (1993) and Hiltz (1994) note that the virtual classroom is an ideal location for collaborative learning approaches and describe how collaborative learning can assist with internalization of information and increased learning.

The concept of interactivity is grounded in communication theory. Belanger and Jordan (2000) note that Wiener's (1948) cybernetic model of communication, which incorporated the concept of feedback loops in communication, has recently received greater attention. Feedback loops are especially important in computer-mediated communication where teachers are geographically separated from students. Belanger and Jordan (2000) noted that feedback is a reciprocal process. Teachers need feedback from students to ensure the comprehension of material delivered via the computer and to evaluate the effectiveness of their performance. Students need feedback from faculty regarding their progression and achievement. Computer-mediated courses provide adequate opportunities for interactivity and feedback, providing that the opportunities are used.
Communication differences were noted in synchronous (not just asynchronous) communication. Amanda noted:

"The chat room was helpful because you could interact in real time. But it was hard to get everybody together at one time. And then you might make one comment and someone would respond and someone else would make another comment that went off on a tangent. Sometimes there were several conversations going on at once in the chat room. The questions weren't immediately followed by an answer from someone else. That chat room was kind of messy."

Additionally, participants reported feeling isolated from people who they couldn't see. They also perceived that communication via the Web was impersonal in nature and reported missing the cues provided by body language. Patsy said:

"It was kind of hard to feel connected with people and get to know them. You don't ever get to 'see' them unless they've created a student home page and put a picture on it and hardly anybody did that."

Catrina reported missing physical contact with other students and the professor. She said:

"I really missed the human contact, the touching. I didn’t really develop a relationship with anyone in the class since I didn’t know them. There wasn’t much chit chat like you do on break or in the hall. Learning about others is a part of education, it helps you learn about yourself."

The lack of having a 'mind picture' of the person really seemed to have an impact on several participants who returned to that topic many times. Kitty was typical of the participants and said:

"I couldn't get a picture of them in my mind so I'd know who I was talking to. They were a name, but not really a person."

Another impact of computerized communication was the lack of visual cues from body language. Chris explained:

"You couldn't see what gestures and expressions people made when they talked, even when it was real time conversation in the chat room - it was kind of impersonal compared to class."
Carmen noted:

"Meeting in person at least once would have helped. When you have flesh and
blood and you see body language. There's another thing, in the Web course,
there's no body language. I feed off of other people's body languages and I am
approval seeking. And don't like conflict. And I read that, I read how I
communicate, how I phrase, how I tone, what my body language is, I read that off
a person. And when you're typing it in, and some people are just all over the
place, you can't get it. I'm divorced in a Web class. One of my communication
skills is taken away from me."

But Jessie noted a positive about the lack of visual cues:

"You don't have to deal with personalities on the Web. You have them sort of,
but you don't have to deal with them. It's kind of culture shock to be back in a
classroom where you have 20 people in a classroom and someone has yakked too
much and everybody else is getting irritated. You can't see that on the Internet.
You don't see someone across the room rolling their eyeballs. To get used to
being in a relationship with 20 other women is tough. On the Web one someone is
being annoying, you click off his or her message and don't read it all. Or I'll wait
until the subject matter goes to something that I find less offensive. So the
classroom it took me a week or two to get used to being back in with personalities
again."

The relative lack of social cues and the feedback delays in asynchronous
communication (which was the primary mode of communication reported by participants
in this study) can lead to higher uncertainty and more difficulty in reducing uncertainty
about how to behave, how the other participant will behave, and how to explain the other
person's behavior (Parks & Adelman, 1983). The inability to reduce uncertainty may
have had a negative effect on the development of personal relationships. Carmen noted:

"I didn't really get to know the people in my Web course. I didn't like that. I'm a
relationship person. How many people are nurses that aren't relationship people?
And then you put us in Web courses."

Rhonda reported:

"I didn't feel connected, not right at first, partially because of the fact that we all
felt a little disconnected from the very beginning. You weren't sure when you
typed something in if someone would understand the context in which you said it.
Whether you were serious, whether you were derogatory, whether you were
humorous. And you were afraid in a lot of ways, if you didn’t phrase what you were saying just a certain way, that maybe you might hurt someone’s feelings. As you started sharing things you feel more connected to the other students, but I didn’t know how to get my point across totally and have it understood. I couldn’t read people well either since I couldn’t see them. Toward the end of the course we found that there was some general conversation. There was even some supportive conversation for someone who had someone die in their family. It seemed like there was more camaraderie at the end of the course. But it was weird because we just didn’t know each other very well.”

Taylor noted:

“No networking went on in my class. Usually that happens on campus in that time before and after class. On the Web I don’t think it happened because you don’t have that human moment. That is the core value of nursing to me – the human moment. But the Web takes me away from that because I don’t know who that person is.”

Freda reported that she didn’t notice when someone had been missing for a while.

“I know there were things that happened over the course of the semester that eluded me. Like one student evidently had a house fire and was off the bulletin board for several weeks. But there was nothing really posted until like 6 or 7 weeks down the way. It was like, ‘Now that I’ve recovered from the house fire...’ It’s like, ‘Oh, I’m sorry, I didn’t see you had a house fire.’ So those things that you would normally have human contact for were missing. I didn’t really know her well enough to miss her.”

Existing theories of relational development assume both physical proximity and frequent interaction (Berger & Calabrese, 1975, Huston & Burgess, 1979; Kelley, 1983). These theories also emphasize the importance of physical appearance in the development of relationships. Information about physical appearance is generally unavailable in a virtual classroom on the Internet. Online communications also lack physical proximity, cues about group membership and body language. Communication may be further complicated if interactions are infrequent.
These changes in communication led some participants to report a perception of decreased interaction. Hira said:

"I felt so isolated. Like I was doing it all alone most of the time. There just wasn’t much interaction."

At first glance, the perception that there wasn’t much interaction would appear to be contradicted by participants’ comments regarding the need to sort through a large number of bulletin board messages. However, participants noted that often time the volume of messages on the bulletin board was related to completion of required assignments and simply submission of material rather than interaction between individuals in the class.

This perception of isolation and decreased interaction also affected perceptions of faculty accessibility. Chris reported that despite 24 hour, 7 day a week access to faculty via e-mail and the course bulletin board:

"It was very inconvenient, if not difficult to seek help with problems. I was frustrated having to wait until the next day (or week) for help. Being unable to get immediate feedback on assignments or questions was a problem. Sometimes I needed immediate input to know if I was on the right track. You lost time when you had problems and needed help to figure them out. Maybe no one else was online, so you’d either e-mail the professor or another student. Then you’d have to wait until someone responded. You couldn’t just talk about it in class or on break and get ideas."

Some participants noted that the differences in communication affected whether they would take another course via the Internet. For example, Taylor said:

"I wouldn’t want to have all of my classes this way. Or if most of my classes were this way, I’d really like to have the class be a combination of time on the Internet and time to meet face to face. That would help us all to connect and provide some time for in person group work."

While it may seem obvious “that education depends upon acts of communication” (Salomon, 1981), not all communication fully qualifies as being educational. Educational
communication in its best sense should be reciprocal, consensual, and collaborative. Anderson and Garrison (1998) noted that too often educational conversations are dominated by the one-way transmission of information without considering the process of constructing meaningful and worthwhile knowledge. Educational communication must facilitate the construction and negotiation of meaning, which is dependent upon critical discourse and knowledge confirmation. Therefore, it is critical that the interactive component of educational communication be included in the virtual classroom.

The literature supports the observation that communication patterns change when classes were held exclusively via the Internet. Schutte (1997) also found that students in a virtual classroom seemed frustrated, but not entirely from the technology. Rather, he noted that it stemmed from students' inability to ask the professor questions in person. The perception of decreased interaction with other students by some participants is in contrast to Schutte (1997) and Cragg (1994). Schutte observed more involvement among peers in the virtual classroom. He found that the highest performing students reported the most peer interaction, however in his study, peer interaction was built into the assignments for students assigned to the virtual classroom but not for students in the traditional classroom. Cragg (1994) reported that computer conferencing allowed students to participate in discussions and schedule their own learning time. The group of students observed formed a cohesive, friendly group despite initial frustrations with the equipment. However, these classes contained both males and females. Differences in communication and support needs between men and women may be a consideration.

Campbell (1998) and Magotra (1996) noted that women may have different needs for support from men since women more frequently talk about a discomfort with isolation
and place a higher value on connecting with others than men do. Magotra (1996) noted that feminine groups valued relationships more than did masculine groups. Magotra also noted that males placed greater value on task orientation and individualization. Because of these differences, teachers must remain vigilant for difficulties with peer interaction and the impact of gender related differences in computer-mediated courses.

**Learning as a Growing Experience → Recognizing New Strengths**

The experience of taking a course in a virtual classroom on the Internet was generally described as a positive experience resulting in personal growth. The ability to grow and recognize new strengths meant that participants felt successful and had resolved their earlier feelings of inadequacy by the end of the class. Learning included things that the students had not expected. Monique said:

"My writing improved during the course. I had to be succinct and clear to get my point across. Besides, what you post is going to be there for the rest of the course. It’s not like in class when your words just disappear."

Jessie reported:

"It made us think more critically because we had to. I thought about what I was going to post more than I would have if I were going to speak up in class. I thought about what I wanted to say, looked at the readings again, then wrote it out and edited it before posting. This sure took a lot of extra time, but I really began to understand the material. I kind of felt I had to do that… You know if you say something dumb in class, the words disappear into the air and are gone. If you say something dumb on the bulletin board, it’s there for everybody to read again and again for the rest of the semester."

Kitty agreed saying:

"The instructor was not real happy when we made wild, unsubstantiated postings. Just opinions. And so she kind of let us know in a nice way that ‘Yeah, you can run around and have an opinion, but if you can’t substantiate it or if you don’t know what you are doing, it’s not valuable.’ So she made us show how we came to that decision or understanding. She made me really think about things and the whys behind them."
Carmen noted:

"The chats forced me to be more of a leader. When it was your turn you had to organize the discussion and keep things rolling along the right path. That's not to say I liked doing that. I really like to hang back and be more of a group member. But I definitely got better at doing it."

Patsy said:

"The course forced me to learn technology that I don't know I would have taken upon myself to learn. The computer has become a regular part of my life. I enjoy the ability to go and search for things on the Web now."

Jessie agreed saying:

"I am much more at ease with the computer, I know I will always have one now, it will always be a part of what I do professionally and personally, it exposed me to a whole different way of learning, where I have to manipulate a machine and share ideas through it. I think it is a very helpful addition to learning. I would not have gotten a computer if I hadn't had to take a Web-course. I didn't for years. Never occurred to me to have one. Now I use the computer even when I'm not in school. I e-mail like crazy now. It's just integrated into my life."

Research has confirmed the secondary benefits of Web-based courses, including increased student confidence with the computer and improvement in writing skills (Rose, Frisby, Hamlin & Jones, 2000; Leasure, Davis & Thievon, 2000).

The participants in this study identified critical reflection as an additional secondary benefit to the experience. Their reflection was an active, thoughtful, and intentional consideration of the learning material that provided opportunities for additional insights that enhanced the learning experience. Use of reflection within the learning process is based on the works of Kolb (1984) and Dewey (1963) and has been found to enhance disciplinary understanding and understanding of complex material, and bring greater relevance to course material (Kraft & Kielsmeier, 1995). Attention by faculty to this secondary benefit could make reflection activities more deliberate and
provide additional benefits. Reflective tools that may be of use to teachers include journaling, small group discussion, case analyses, writing portfolios, and presentations.

Constitutive Pattern

Although a cluster of five themes was identified, they have a commonality in the constitutive (overarching) pattern of "Learning the Ropes: Finding a Way Through the Forest". Participants spoke in a generally positive manner about the experience of taking a course held totally in a virtual classroom on the Internet and being able to "learn the ropes" along the way. Learning the ropes meant success to the participants. Madison reported:

"I felt exhilarated once I figured things out, sort of like I had scaled a mountain."

Monique was more matter of fact and said:

"It wasn't too bad. But it wasn't what I expected. I thought that if you were pretty good at using a computer that it would be a breeze. It was really different though. Different than taking a regular class I mean. But I was able to do it once I learned what was expected."

Students enrolled in graduate education face many changes that can have short and long term effects on their lives. These changes may be enhanced by a change in the delivery mode of instruction to computer-mediated instruction. Schlossberg's (1984) transition theory provides insights into factors related to the students' transition to graduate study and a new mode of learning using technology. Schlossberg (1984) defined a transition as "any event or non-event that results in changed relationships, routines, assumptions, and roles" (p. 27). Schlossberg stressed the role of perception in transitions, noting that a transition exists only if it is so defined by the individual experiencing it.

Participants in this study clearly identified a variety of transitions. To understand the meaning that a transition has for individuals, the type, context and impact of the
transition need to be considered. Schlossberg described three types of transitions: anticipated transitions, unanticipated transitions, and nonevents (transitions that are expected but do not occur). Whereas transitions may be precipitated by a single event or nonevent, dealing with transitions is a process that extends over a period of time. Participants in this study noted the extended transition period. Their narratives demonstrated how they moved from a preoccupation with the transition to an integration of the transition over the period of time that the Web course was offered and the period of time following the course.

Schlossberg noted that transitions may lead to growth and may be viewed with ambivalence by the individuals experiencing them. This ambivalence was true of the participants in this study. They were able to identify the transition and the growth that occurred, but some were ambivalent.

Schlossberg identified four major factors that influence a person's ability to cope with transition: situation, self, support and strategies. Graduate programs can assist students in the transition process by helping students to manage stress, provide opportunities for students to develop a support system with other graduate students, and facilitate access to support services and learning resources (Mueller & Billings, 2000). This assistance can truly help students to Learn the Ropes and help them to Find a Way Through the Forest.
CHAPTER 5 IMPLICATIONS, DIRECTIONS FOR FURTHER RESEARCH AND SUMMARY

Implications

The Internet represents a new way of looking at instruction -- at how it is organized and how it is presented (McManus, 1996). Course delivery via the Internet can facilitate the creation of new educational structures and invigorate existing ones (Burbules, 1996). The Internet also provides students with better access to current information, and provides students with greater input into their own learning process, making it more proactive and individualized (Sloane, 1997). Too often, higher education becomes enamored of the latest technology without dealing with the underlying issues of learner characteristics and needs, the influence of the new media upon the instructional process, and the new roles of faculty and student in the distance education process.

The challenge is to ease learner adjustment to this new mode of course delivery. Although limited research has shown that learning is effective in this new distance education environment, students are apprehensive at first and a steep learning curve exists. Studies have shown that students can learn to cope with distance education if supportive professors are available to promote student involvement in the learning process (Baer & Chamberlain, 1998; Everett & Grubb, 1997). Students’ ability to cope with distance education is supported by the constitutive pattern in this study “Learning the Ropes: Finding a Way Through the Forest”. Most participants did learn to cope with learning in the virtual classroom despite the steep learning curve.

The data provided by the participants’ illustrate the transition occurring and resulting stress. The situation triggering the transition is not only the return to graduate school, but also the change to a new learning paradigm and a new content delivery mode.
using technology. Research is needed on this transition process and the interventions that facilitate a smoother transition.

A further area of exploration includes the impact of the medium on the message. As was identified previously, McLuhan (1964) noted that the channel through which a message is sent exerts an enormous impact on the message itself and how it is perceived. Little has been done to investigate how educational information is perceived when obtained from a virtual classroom. If the quality and depth of our perceptions is dependent upon the medium (McLuhan, 1964), then this area merits further attention.

This study shows the impact of text-based communication via the Web with the participants' wondering Is Anyone Really Out There?" Few people have considered the implications of this new mode of communication and course delivery. However, McLuhan (1964) cautioned that forms of communication could not be viewed as neutral vessels carrying independently determined meaning. Rather, he believed that forms of communication were extensions of the mind and embodiments of meaning: the medium was the message. In "The Global Village", McLuhan and Powers (1989) applied his earlier work to the newly emerging field of computerized communication. They cautioned that although the electronic transmission of information will make knowledge available to all, it is important to remember that information is not knowledge. Knowledge is the meaning that humans assign to factual data. The more data available, the less one will be able to know. McLuhan and Powers suggest that technology has outpaced our ability to understand the consequences. Therefore, if the medium is the message (as he proposed over two decades earlier), the message is becoming increasingly difficult to decipher (McLuhan & Powers, 1989). McLuhan's publications pose questions
that continue to perplex educators and have a renewed significance as this new medium for educational communication expands.

This research provides information to help address the needs of students enrolled in courses in the virtual classroom on the Internet. Although the Internet has the potential to revolutionize education, it is evident that much still needs to be learned. Future research needs to identify whether desired outcomes have been achieved and which teaching-learning practices produce the best results in the virtual classroom.

Findings from this study address gaps in the knowledge about graduate students’ subjective experiences in a virtual classroom on the Internet. Potential implications include providing direction for curriculum development of courses offered in virtual classrooms and providing guidance for optimal learning experiences.

Recommendations for Future Research

Student Related

Further exploration of student characteristics and their objectives for learning is needed. This information can help higher education institutions to reach a larger market and provide the opportunity of higher education to a larger number of people. Additionally, determination of the characteristics of successful learners in the computer-mediated environment would be helpful.

Milstead and Nelson (1998) found that despite a positive experience with a doctoral course in a virtual classroom on the Internet, students who could come to campus preferred to do so. Further exploration is needed to identify why students preferred to travel to campus rather than take another Web-based course. Students’
barriers such as time, distance, work, family, technical skills, support and communication and their impact on learning need to be examined in computer-mediated courses.

Teaching and Learning

Content that is easily and successfully taught through online interaction needs to be identified. Additionally, there is a major need for research about instructional methods (including problem-oriented instruction, collaboration and reflective learning) that can foster the use of computer and communication technologies. There is a need to move beyond the “no significant difference phenomenon” (Shutte, 1997) toward the use of technology to improve teaching and learning (Twigg, 2001). What approaches are most effective in assisting students to construct their own knowledge when strategies such as active learning, collaboration and reflection are used in computer-mediated courses via the Internet? Most of the current design of processes of teaching and learning are based on the face-to-face methods of teaching and learning. Does a shift to computer-mediated instruction via the Internet broaden or narrow the possibilities for teaching-learning approaches?

Further clarification is necessary to discover the importance of the concerns regarding the lack of variety in learning modes identified by the participants of this study and further research is needed regarding the impact of the virtual classroom on students with different learning styles.

While we take the existence of interaction between faculty and students for granted in the traditional classroom environment, specific efforts must be made to effectively promote student-faculty dialog in computer-mediated courses offered via the Internet. Many questions still remain regarding faculty-student interaction. Does
mentoring and socialization still occur in the distance education environment? Does instruction delivered via the Internet redefine the teaching/learning interaction that occurs between faculty and student? And if so, is this desirable? Research should address these concerns and identify the best practices to maximize student-faculty interaction.

As Twigg (1994) said, "the emphasis must not be on the technology, but on change in pedagogy enabled by information technology" (p. 1). Faculty members need to have some level of knowledge for design and development of digital resources. Effective training programs to assist with knowledge acquisition and development of quality teaching in the virtual classroom are needed as well as evaluation of the success of those training programs. Benchmarking of best practices in the online environment has already begun (Billings, Connors, & Skiba, 2001) and research in this area should continue to provide optimal learning experiences for students.

Teaching's new roles as facilitator, technology expert, digital content developer and problem solver must be evaluated. Important questions to investigate include: How do faculty members experience teaching in virtual classrooms on the Internet? How do these additional responsibilities necessitated by computer-mediated instruction affect faculty's contributions and advancements within their discipline? And what kinds of reward systems are needed to further development of asynchronous education?

Learner Support

Evaluation of the necessary support programs for faculty and students in computer-mediated courses is necessary. Potential questions include: How necessary are support programs? What types of support programs are essential in computer-mediated education? What types of programs provide optimal learner support? Is an orientation
needed to the changed student role in a virtual classroom? When and how should programs be offered?

**Computer Skills**

More research should be done regarding the level of computer and communication skills adequate for a successful and positive educational experience in computer-mediated courses. When computers are the only means of delivery and communication, every student should be able to operate comfortably from the first day of class. Then they will be able to devote their attention more fully to the course at hand instead of being distracted by the technology and influenced by their learning needs in that area.

Research should include assessment of the level of technical skills of students at the beginning and end of computer-mediated courses. There is also a need to evaluate training and orientation programs to assess their effectiveness in assisting students to participate successfully in computer-mediated courses.

**Communication and Socialization**

Successful computer-mediated courses involve interactivity between faculty and students, between students and the learning environment, and among students themselves. McNabb (1994) noted that, although students felt that the accessibility of distance education courses far outweighed the lack of dialogue, there was still a considerable lack of dialogue in distance education courses when compared to on-campus courses. Further investigation is needed into the causes of this lack of dialogue and the resulting impacts on students, faculty, and learning outcomes.
Further research is needed to update theories of relational development to include the online environment. Perhaps, people communicating online simply take longer to reduce their uncertainty about one another. Arranging synchronous meetings in a chat room or in person (where feasible) and exchanging photographs electronically or posting them to student/faculty “homepages” may overcome the lack of proximity and of visual information. Researchers also need to assess how relationships are developed in the online environment and the impact relationships (or lack of relationships) have on perceived isolation, student satisfaction ratings, and learning outcomes. Continued vigilance is also necessary for difficulties with peer interaction and the impact of gender related differences in computer-mediated courses.

Social accounts of learning and human knowledge (Dewey, 1963; Vygotsky, 1978) led to attempts to reorganize educational delivery to include formation of learning communities. However, learning communities are difficult to build because they have high social and material requirements. The communication described by the participants in this study showed a wide variation. Most of the participants reported a perception of not knowing their fellow students in the virtual classroom well. None of the participants mentioned the word community in their interviews and few descriptions of community-like behavior were given. Rheingold (1993) defined virtual communities as “social aggregations that emerge from the Net when enough people carry on public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace” (p. 5). The notion of a virtual community raises many issues, particularly with regard to the notion of community. Anecdotal accounts of virtual communities have been reported (Jones, 1997) but little research has been published regarding virtual
learning communities. Virtual learning communities bear further investigation to define the characteristics of a virtual community, the aids and barriers to the establishment of a virtual community and then to investigate the impact of the development of a virtual community on academic outcomes such as student learning and satisfaction.

Further research is also needed to demonstrate the outcomes of collaborative learning activities in the virtual classroom and whether collaborative activities can overcome the communication differences noted in the virtual classroom.

Recommendations For Faculty

Faculty can assist students in Web-based courses with the transition to new roles involved with learning in the virtual classroom by identifying role changes for students and setting clear expectations early in the semester. Students then have clear expectations and are on the same page as faculty from the beginning.

Technical support is critical to the success of courses in a virtual classroom on the Internet (Mueller & Billings, 2000). Since students work on course work at a wide variety of times, technical support should be available twenty-four hours a day / seven days a week. Participants also suggested that an orientation to the courseware be offered (but not required) “live” on campus so that someone could help them in person. They also suggested that a student lead the orientation so they would be likely to “learn what they really needed to know”. Students need to be informed of computer requirements and competencies well in advance of the beginning of an on-line course. Information about the type of computer needed and referral to a selection of vendors may be helpful to students.
Faculty can reduce the perception of being overburdened that many participants reported by evaluating the workload that is assigned and assessing assignments for fit with the new learning pedagogy required in the virtual classroom. Attendance at a workshop to learn the courseware and receive instruction on Web-based learning pedagogy is a must for faculty new to teaching in this environment. Attendance at workshops and sharing of ideas between faculty in a ‘working group’ would help to refine assignments and help provide the learning outcomes that faculty seek.

Faculty can help students to connect with them by holding virtual office hours either via phone or chat room. Faculty may also wish to hold an optional on-campus meeting once or twice during the semester for students who want to come to campus and wish to have a more physical connection. Posting pictures helps students to get a mental picture of what faculty and other students look like. This mental picture was what many participants in this study reported wanting. Faculty and students should be encouraged to make home pages with photos early in the semester and post an introduction to the class to begin the connection process. Faculty could also set up a “virtual café” to facilitate student connection outside the formal classroom and provide a space for students to “talk”.

Educational Policy Issues

As opportunities arise in learning via a new medium, so do problems that must be dealt with. New educational policy issues must be addressed as well. Items for future consideration include:

- New forms of assessment and evaluation of student learning outcomes.
- Development of methods to ensure that the student’s work is original.
- Nationally accepted institutional accreditation standards to ensure the quality of distance education.
- Development of institutional standards to insure quality of courses and ability to meet expected learning outcomes.
- Discovery of new pedagogies are important to facilitate learning.
- Development of policies related to intellectual property issues especially those related to ownership of computer-mediated course materials.
- Technology training and accessibility for all, not just for progressive students and faculty at well-funded, public universities.

Summary

This new field of instruction will continue to grow. It is important to have a rich knowledge base in order to build a strong foundation for the future of computer-mediated education. The reality of global networks and the capability of the World Wide Web are revolutionizing teaching and learning. Asynchronous education and digital resources are the way of the future for higher education institutions in the global marketplace. Competition for students, coupled with students' demands for quality education, obligates educators to generate new knowledge about this method of education.

The penetration of technology in life, work and social interaction has changed the traditional assumptions and operations of society. The prosperity of the nation is related to the ability of educational systems to succeed and implement needed changes to provide quality educational opportunities for citizens independent from time, place and resources. Higher education institutions must understand that providing the opportunity for lifelong learning is vital, asynchronous education is a must, Web-based resources and delivery are
a reality, cooperation and collaboration is the only way to succeed, and the global education and economy are the hallmark of the 21st century (Nasseh, 1998).
References


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Appendix A: Letter of Support
June 10, 1999

Carla Mueller

Dear Ms Mueller:

I am pleased to give you permission to solicit subjects for your research project from the Master of Science Program. The School of Nursing has been a pioneer in the use of WEB delivered courses for MSN students. We as a faculty are very interested in the learning experience of the students and all that we can integrate back into the teaching of WEB delivered courses. Satisfaction, quality and effective learning experiences are priorities for us and we will value all the input we could gain from studies such as yours.

If I can facilitate the process of contacting students, please let me know.

Sincerely,

Linda M. Finke, PhD, RN
Associate Dean for Graduate Programs

Located on the campus
Indiana University
Purdue University
Indianapolis
Appendix B: IRB Approval
INTERDEPARTMENTAL COMMUNICATION
Research and Sponsored Programs
Indiana University - Purdue University Indianapolis

DATE: July 16, 1999

TO: Diane Billings
Environments for Health
NU 346
IUPUI

FROM: Shirley Ernest
Research Risk Specialist. UN 618

SUBJECT: Final Approval

Study Number: 9906-10-B The Lived Experiences of Master of Science in Nursing Students as Members of a Virtual Classroom on the Internet

Sponsor: School of Nursing

The study listed above has received final approval from the IRC Behavioral/Social Sciences. As the principal investigator of this study, you assume the following reporting responsibilities:

1. CONTINUING REVIEW - A status report must be filed with the Board. The Research Risk staff will generate these reports for your completion; however, you must request and complete these forms if the study is terminated for any reason in the interim. This study is approved from July 16, 1999, to July 16, 2000.

2. STUDY AMENDMENTS - Investigators are required to report on these forms ANY changes to the research study including protocol design, dosages, timing or type of test performed, population of the study, and informed consent statement. An amendment form is attached for your future use in submitting study amendments for committee review.

3. ADVERSE EVENTS - If this is a medical study, all side effects or adverse reactions which are serious and unexpected must be reported immediately to the Board as they occur (see attached requirements).

4. UPDATED INVESTIGATIONAL BROCHURES, PROGRESS REPORTS and FINAL REPORTS - If this is an investigational drug or device study, updated clinical investigational brochures must be submitted as they occur (see attached requirements). Three copies of progress or final reports must be provided to the Board with the investigator’s written assessment of the report, briefly summarizing any changes and their significance to the study.

5. ADVERTISEMENTS - If you will be advertising to recruit study participants for a drug or device study regulated under FDA requirements, i.e., investigational drugs or devices will be used, and the advertisement was not submitted to the Board at the time your study was reviewed, a copy of the information contained in the advertisement and the mode of its communication must be submitted to the reviewing board as an amendment to the study. These advertisements must be reviewed and approved by the Board PRIOR to their use.

6. LEAVING THE UNIVERSITY - If the principal investigator leaves the Institution, the Board must be notified as to the disposition of EACH study.

PLEASE REFER TO THE ASSIGNED STUDY NUMBER AND THE EXACT TITLE IN ANY FUTURE CORRESPONDENCE WITH OUR OFFICE. All documentation related to this study must be neatly typed and must also be maintained in your files for audit purposes for at least three years after termination of the research. If you have any questions, please call Research and Sponsored Programs at 274-8289.

Enclosures: Documentation of Review and Approval

Expedited Review Checklist

Amendment Form

Informed Consent Statement

Report of Updated Clinical Investigational Brochures

Report of Adverse Reactions

Copy of Assurance Letter

DHHS Multiple Project Assurance #M1167, IRB No. 01 available at http://www.iupui.edu/it/rspinfo/assurance.html

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EXPEDITED RESEARCH CHECKLIST (continued)

If, after having completed the above checklist, the investigator still believes the study qualifies for expedited review, complete the rest of this page and submit it along with the original plus 2 copies (3 total) of:

- A completed Documentation of Review and Approval page
- Summary Safeguard Statement
- Informed Consent Statement
- Protocol
- Other supporting documents

to: RESEARCH AND SPONSORED PROGRAMS (for IUPUI IRB)
UNION BUILDING
RM. 618
IUPUI

or

METHODIST IRB OFFICE (for Clarian/Methodist Hospital IRB)
ACADEMIC AFFAIRS - RESEARCH
B BUILDING, RM. 343
METHODIST HOSPITAL

The IRB/IRC will notify the investigator of its findings.

Project Title: The Lived Experiences of Master of Science in Nursing Students as Members of a Virtual Classroom on the Internet

Sponsoring Agency: Indiana University School of Nursing

Grant No. ___________________________ Period: ___________________________ From __________________ To ___________________________

Principal Investigator (Must have faculty/staff status or faculty sponsor):

Diane M. Billings Ed.D., R.N.

Name __________________________________________________________ Signature ___________________________ Date ___________________________

Campus Address: School of Nursing NU 346 317-3
Department Building/Rm.No. Telephone Number ___________________________

E-Mail Address: _____________________________ FOR OFFICE USE ONLY

Expedited Review:

Accepted [X] Denied __________ Authorized IRB/IRC Signature ___________________________ Date JUL 1 6 1999

DHHS Multiple Project Assurance #M1167, IRB No. 01

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Appendix C: Informed Consent Form
IUPUI AND CLARIAN/METHODIST HOSPITAL INFORMED-CONSENT STATEMENT
for

PROJECT TITLE: The Lived Experience of Master of Science in Nursing Students as Members of a Virtual Classroom on the Internet

You are invited to participate in a study of master of science in nursing (MSN) students who are currently enrolled in a course offering on the Internet or who have completed one such course within the last year. My name is Carla Mueller and I am a doctoral student at Indiana University School of Nursing at Indianapolis. This study is part of the requirements of completing a doctorate in nursing. I am working on my dissertation with Dr. Diane Billings who is a professor at Indiana University School of Nursing.

STUDY PURPOSE:
The purpose of the study is to explore the experiences of nursing students taking MSN courses on the Internet and to describe the meanings they attach to their experiences. Findings from this study will address gaps in our knowledge about graduate students' subjective experiences in a virtual classroom on the Internet. Study results will be used to improve the experiences of graduate nursing students by using the information gleaned from the exploration of their experiences. In addition, the findings will provide direction for design and implementation of graduate nursing courses that are maximally accessible using the Internet and provide an optimal learning experience. You will be one of at least 12 participants in this study.

PROCEDURE FOR THE STUDY:
The researcher first contacted you by telephone or electronic mail to explain the purpose of the study, the subject matter to be addressed, and what participation would entail. If you tentatively agreed to participate a mutually convenient date, time and place was established. If you decide to participate, you will participate in 2 audiottaped interviews, each lasting approximately 1-2 hours. I will begin the interview with the statement “Tell me a story about what taking a graduate nursing course in a virtual classroom on the Internet was like for you.” I want you to talk until you have nothing else to say. During the interview I may ask you questions about anything I did not understand or that I need more information about. When I have completed all of the interviews and am trying to understand them, I may contact you again by phone, electronic mail, or in person to ask if this is what you were saying.

Subject's Initials

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RISKS OF PARTICIPATING IN THE STUDY:
There will be no physical risk to you in this study. The interview procedures have no
direct risk or discomfort other than possible inconvenience and potential
uncomfortable feelings about talking about any difficult experiences with learning in
a virtual classroom on the Internet. If you experience any uncomfortable feelings, I
will talk to you about these feelings. This study is of no benefit to you personally, but
may benefit others by helping nurse educators to understand how students
experience taking courses in virtual classrooms on the Internet.

COSTS OF PARTICIPATING IN THE STUDY:
The only cost to you as a participant is 2-4 hours of your time for the interviews.

CONFIDENTIALITY:
The responses you give will be confidential; the only identifying information will be
a pseudonym that you select and that will be placed at the beginning of your audio-
taped and transcribed interviews. There will be a single sheet with participant names
and pseudonyms that will be kept in a locked file cabinet. This cabinet will only be
accessible to the investigators. The list of participant names and pseudonyms used
for the study will be destroyed at the completion of the study. The tape recorder will
be turned off during interviews whenever you wish. The faculty member of your
course will not know of your participation in this study. Any information that is
obtained in this study cannot be connected to you. Your name will not appear in any
report. All of the information you give will be combined with other participants' responses for analysis and for use in professional publications and presentations.

PEOPLE TO CONTACT:
If you have any questions regarding the study, you can reach:
Principal investigator: Diane Billings Ed.D., RN  at  
Co-investigator: Carla Mueller MS, RN  at  

PAYMENT FOR PARTICIPATION:
You will receive no payment for participation in this study.

SUBJECT'S CONSENT:
In consideration of all of the above, I give my consent to participate in this research
study. I understand that I may drop out of or withdraw from the study without fear
of changing the quality of education which I may seek or receive in the future.

I acknowledge the receipt of a copy of this informed consent statement.

Participant's Signature ___________________________ Date ____________

Signature of Witness ___________________________ Date ____________
Demographic Data

1. Age ________

2. Race (Please check)
   ___ Asian
   ___ Black
   ___ Caucasian
   ___ Hispanic
   ___ Native American
   ___ Other (Please list) ____________________

3. Marital Status (Please check)
   ___ Divorced
   ___ Married
   ___ Single
   ___ Widowed

4. Where do you live?
   City ______________________
   State ________

5. Length of time enrolled in MSN program _____ month(s) _______ year(s)
6. Employed
   Yes/No __________ If yes, Part-time or Full-time? __________
   Where ________________________________________________
   Position Type __________________________________________

7. Do you own a computer at home?
   Yes/No __________
   If yes, type of computer owned:
   ___ IBM Compatible 486
   ___ IBM Compatible Pentium
   ___ Macintosh
   ___ Other (please list) _________________________________
   ___ Don't know what type

8. How often did you use a computer prior to taking the Web-based course?
   ___ Daily
   ___ Several times per week
   ___ Weekly
   ___ Several times per month
   ___ Monthly or less

9. What is your major in the MSN program?
   ___ Adult Psychiatric/Mental Health Nursing
   ___ Child/Adolescent/Mental Health Nursing
   ___ Community Health Nursing
   ___ Nursing Administration
   ___ Nursing of Adults
   ___ Nursing of Children at Risk
   ___ Family Nurse Practitioner
   ___ Adult Nurse Practitioner
   ___ OB/GYN Nurse Practitioner
   ___ Pediatric Nurse Practitioner
   ___ Perinatal Nursing
   ___ Primary Health Care
   ___ Women’s Health

10. You are a full-time or part-time MSN student?
    ___ Full-time (taking 8 credits per semester or more)
    ___ Part-time (taking 1-7 credits per semester)

11. How many courses have you taken in the MSN program?
    ___ This is my first class
    ___ 2-3 Courses
    ___ 4-5 Courses
    ___ 6-7 Courses
    ___ 8 or more Courses

12. Where do you access the web course most often?
    ___ Home
    ___ Computer Cluster at IU
    ___ Work
    ___ Other location. Please list ___________________________
Appendix E: Respondent Summary: Demographics
Summary of Demographic Data

Age:  Mean age: 39 years
  Age: 20-29  13% (2 participants)
  Age: 30-39  27% (4 participants)
  Age 40-49  60% (9 participants)

Race:  Caucasian 87% (13 participants)
       Asian 13% (2 participants)

Sex:    Female 100%

Marital Status:  Married 53% (8 participants)
                 Single 47% (7 participants)

Residence:  Indianapolis: 40% (6 participants)
            Within 50 miles of Indianapolis: 27% (4 participants)
            Greater than 50 miles from Indianapolis: 33% (5 participants)

Family Composition:  Husband/significant other living at home: 53% (8 participants)
                     Children living at home: 40% (6 participants)

Length of time enrolled in program:
  Range: 3 months – 3 years
  Mean 1.3 years

Student Status:  Full-time 40% (6 participants)
                 Part-time 60% (9 participants)

Number of courses taken in the MSN program:
  This is the first class: 7% (1 participant)
  2-3 Courses: 47% (7 participants)
  4-5 Courses: 33% (5 participants)
  6-7 Courses 13% (2 participants)
  8 or More Courses 0

Employed:
  Full-time 53% (8 participants)
  Part-time 40% (6 participants)
  Not currently employed 7% (1 participant)
Own Computer at Home:
   Yes 100%

Type of Computer Owned:
   Pentium: 93% (14 participants)
   Macintosh: 7% (1 participant)

Computer Use Prior to Web Course:
   Daily: 33% (5 participants)
   Several Times Per Week: 20% (3 participants)
   Weekly: 0
   Several Times Per Month: 27% (4 participants)
   Monthly or Less: 13% (2 participants)
   Never Used a Computer Prior to Taking Web Course: 7% (1 participant)

Where students accessed the web course most often:
   Home: 87% (13 participants)
   University Computers: 13% (2 participants)
   Work: 0
   Other: 0
Appendix F: Example of Transcript Analysis
Why do you think that is so?

One of the reasons that I know, and I understood at the time, but it still doesn't help you when you're taking a course and trying to figure out what the heck you're supposed to be doing. It's that there's so much that she has to respond to. All these people in her class sending her e-mail, sending her assignments, and then all the time that she has to spend looking at our correspondence back and forth to each other and to her on the bulletin board of the class. In order to save herself time and probably her own sanity, she writes down just the bare minimum of what she needs to, to each person. And so you don't ever get a level of comfort you get when you're talking to these people, like they're even approachable. It's so much work. They really want to make sure that you're learning something. And in order for their comfort level to feel like they're teaching you something, they almost just overcompensate, give you too much work to do. I have thought to myself, if I just went to campus once a week for this two hour class, I would not spend nearly this amount of time on this class. It's 2 to 3 times as much work. Cause you have to read the correspondence of everyone else in the class, so that you know what's going on, and lots of time your assignments are based around that and what everyone else has said. You need to respond to other people in your section. And you have to sit there and do the assignment and you don't have that security of feeling like there are other people in the class, that when you meet them in class you can look at them and say, I don't think I understand what it is that we're supposed to be doing here. Does anybody else know? Or, this is what I did, what did you do? Let's compare. You don't ever have that because most of the time you don't know the people in your class. I've seen people write on there, I'm so confused. But most of the time it is very inhibiting for somebody to actually put something like that down and let everyone read that. Plus your instructor is reading these things too. You can private e-mail, sure. But out of a class of 40, who are you gonna pick unless you know someone?

And you hope they don't forward it to someone else. How do you know they're gonna know what they're talking about too? You miss that person-to-person talking. It's a really stressing communication. We need to communicate, and what we're doing is putting ourselves farther and
Appendix G: Examples of Initial, Intermediate and Final Themes
<table>
<thead>
<tr>
<th>INITIAL THEMES</th>
<th>INTERMEDIATE THEMES</th>
<th>FINAL THEMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Changes in communication</td>
<td>Communicating without body language</td>
<td>Is Anyone Really Out There? → Communicating Without Voices</td>
</tr>
<tr>
<td>Hiding behind the keyboard</td>
<td>Feeling alone</td>
<td></td>
</tr>
<tr>
<td>Safety in anonymity</td>
<td>Feeling the distance</td>
<td></td>
</tr>
<tr>
<td>Missing face to face</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Missing human contact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Need to &quot;meet&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chatting online</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Posting assignments isn't interaction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isolation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I don't really &quot;know&quot; anyone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unknown competition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning how to communicate via a computer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finding a buddy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Getting to know people (the other students/the professor)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seeking approval</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overestimation of computer skills</td>
<td>Learning new skills</td>
<td>Learning the System → Technology's Potholes and Pitfalls</td>
</tr>
<tr>
<td>Learning to e-mail</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning to word process</td>
<td>Learning the ropes</td>
<td></td>
</tr>
<tr>
<td>Learning to surf the web</td>
<td></td>
<td></td>
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<tr>
<td>Learning WebCT</td>
<td>Feeling lost</td>
<td></td>
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<tr>
<td>Do you really need a computer for an online course?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computers!<em>!</em>!*</td>
<td>Searching for help</td>
<td></td>
</tr>
<tr>
<td>Feeling frustrated</td>
<td>Waiting for help</td>
<td></td>
</tr>
<tr>
<td>Feeling inadequate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Why does trouble only happen at night and on weekends?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overcoming problems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calling for help</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waiting for a response</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Giving up</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Persevering</td>
<td></td>
<td></td>
</tr>
</tbody>
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Appendix H: Researcher's Self-Understandings
Researcher's Self-Understandings

I am in the philosophical camp identified by Guba (1990) as constructivism. I conceptualize reality as unique to each person because all of reality is created as it happens. Therefore, the facts of the world are dependent on us as observers and scientific knowledge is always the result of a situated perspective. People create their own realities. Both researcher and participants bring their own beliefs and values to interactions. Therefore, no two people ever have the same experience of reality (hence my belief in multiple realities). My epistemology is affected by my ontological paradigm. Thus, my epistemology values multiple realities of knowledge, the uniqueness of all experiences, context-bound experiences (each location, situation, time, history etc. affects the experience), value-laden experiences (as a researcher you cannot really ever suspend your beliefs and values - can only state them for the reader and try to be true to the data by writing what the participants say), and process over product (i.e., experiences are never finished [a product] but always in process).

I view myself as both a nurse and an educator. I have been in nursing education for over fifteen years. For as long as I can remember, I have been interested in helping students succeed and in understanding their experiences, so that I might better help them. The questions that I usually have are meaning questions, not problems to be solved or attempts to establish relationships among variables. I am interested in understanding the meaning of students' experiences so that I may better understand their experiences and act more thoughtfully when interacting with them. These types of questions fit well with phenomenology.
Currently as an educator, I want to come to a better pedagogic understanding about students' experiences of taking courses in a virtual classroom on the Internet. I am also interested in what technological "progress" such as use of the virtual classroom means to/for students. The meaning that will be constructed from the proposed research will be filtered through my experience as an educator and as a person who is interested in/enjoys technology. I believe that qualitative work provides great value as it probes for deeper meaning rather than examining surface features. I believe that qualitative methodologies are powerful tools for enhancing our understanding of teaching and learning.

My preunderstanding regarding the proposed research includes the following things. Education can be delivered in a number of different ways. Distance education is instructional delivery that does not constrain the student to be physically present in the same location as the instructor but still provides two-way communication between student and instructor. Computer-mediated course delivery via the Internet has become one of the most common methods of distributed education. I believe that it is important to differentiate between distance education and distance learning. Often these two terms are used interchangeably. However, this is inaccurate since delivery of educational content does not guarantee learning. Although the faculty is responsible for delivery of course content, the student is responsible for their own learning.

Hopefully, distance learning is the outcome of distance education. Students learn in many ways, what works for one student may or may not work for another whether the student is in a traditional or virtual classroom. I believe that learning should be an experience with shared responsibilities between faculty and students. However, not all
students share this belief. Some students are more comfortable with faculty who are the "sage on the stage" rather than the "guide on the side". When I teach, I tend to be more of a facilitator or guide. This is the type of learning that is most often written about being used in the virtual classroom. I wonder if the discomfort that some students note about taking classes in a virtual classroom might have more to do with learning preferences than technology. These remain questions to be addressed.
Vita
Carla L. Mueller M.S., R.N.

<table>
<thead>
<tr>
<th>Home</th>
<th>Office Address:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home Phone:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Work E-mail</td>
<td></td>
</tr>
</tbody>
</table>

License  
Registered Nurse  
IN # 28073166  
1978-Present

Certification  
On-line Course Facilitator, Convene International.  
San Francisco, CA. 1/16/99

Education  
Indiana University, Indianapolis, IN  
Ph.D. Candidate  
Dissertation in Progress  
Graduation Planned 6/2001  
Nursing Science  
Major: Environments for Health  
Focus on Development and Evaluation of  
Web-Based Courses  
Minor: Higher Education

Ball State University, Muncie, IN, 1986  
M.S., Master of Science in Nursing  
Clinical Specialist: Medical-Surgical Nursing  
Minor: Nursing Education

University of Cincinnati, Cincinnati, OH, 1978  
B.S.N., Bachelor of Science in Nursing

Wright State University, Dayton, OH 1973-1974  
Nonmaltriculating High School Student

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<table>
<thead>
<tr>
<th>Title</th>
<th>Name/Address of Employer</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Director of University of Saint Francis</td>
<td>2701 Spring Street Fort Wayne, IN 46808</td>
<td>2001-present</td>
</tr>
<tr>
<td>Distance Education and Online Curriculum</td>
<td>University of Saint Francis</td>
<td>2000-2001</td>
</tr>
<tr>
<td>Director of Instructional Technology for Nursing and Allied Health</td>
<td>2701 Spring Street Fort Wayne, IN 46808</td>
<td></td>
</tr>
<tr>
<td>Associate Professor Tenured University of Saint Francis</td>
<td>Baccalaureate and Graduate Nursing Program</td>
<td>1986-1999</td>
</tr>
<tr>
<td>Research Assistant Indiana University School of Nursing</td>
<td>Principal Investigator – Dr. Diane M. Billings</td>
<td>1999-2001</td>
</tr>
<tr>
<td>Research Assistant Indiana University School of Nursing</td>
<td>Principal Investigator – Dr. Karen Cobb</td>
<td>1998-1999</td>
</tr>
<tr>
<td>Community Health Education Nurse Lutheran Hospital Health Promotion Department</td>
<td>7950 West Jefferson Blvd. Fort Wayne, IN</td>
<td>1990-1993</td>
</tr>
<tr>
<td>Level II Chair, Instructor St. Joseph Hospital Diploma School of Nursing</td>
<td>700 Broadway Fort Wayne, IN 46806</td>
<td>1981-1986</td>
</tr>
<tr>
<td>Instructor Lutheran Hospital Diploma School of Nursing</td>
<td>3024 Fairfield Ave. Fort Wayne, IN</td>
<td>Jan.-June 1981</td>
</tr>
<tr>
<td>Staff Nurse Lutheran Hospital</td>
<td>7950 West Jefferson Blvd. Fort Wayne, IN</td>
<td>1978-1981</td>
</tr>
</tbody>
</table>
Membership in Academic, Professional and Scholarly Societies

Midwest Nursing Research Society (1998-Present)
Sigma Theta Tau International Nursing Honor Society (1977-Present)
Original Membership in Beta Iota Chapter, University of Cincinnati, 1977
Current Membership in Xi Nu At Large Chapter,
Charter member of Xi Nu At Large Chapter 12/00
Northeast Indiana Nursing Image Task Force (1990-1995)
Nursing Honor Society at Saint Francis College (1991-1994)

Research Grants

2000 Midwest Alliance for Health Education Research Fellowship
$2300; Competitive review
Dissertation Research “The Lived Experience of Master of Science in Nursing Students as Members of a Virtual Classroom on the Internet”

Indiana University Graduate Student Research Grant
$3977; Competitive review
Dissertation Research “The Lived Experience of Master of Science in Nursing Students as Members of a Virtual Classroom on the Internet”

1999 Indiana University School of Nursing Graduate Student Research Grant
$1000; Competitive review
“The Lived Experience of Master of Science in Nursing Students as Members of a Virtual Classroom on the Internet”

1994 Midwest Medical Research Foundation Nursing Research Fellowship
$2250; Competitive review
"Quality of Life in Patients with Implantable Cardioverter Defibrillators"

Alpha Chapter Sigma Theta Tau
$1500; Competitive review
Pilot Study: "Quality of Life in Implantable Cardioverter Defibrillator Patients"

1993 University of Saint Francis/Lilly Grant
$2500 and 1/4 release time; Competitive review
“Indiana High School Guidance Counselors' Attitudes about an Ideal Career Versus a Nursing Career”

University of Saint Francis Faculty Development Research Grant
$500; Competitive review
"High School Students' Attitudes about an Ideal Career Versus a Nursing Career"
Fellowships

2001  Travel Fellowship - Indiana University School of Nursing  $500
2000  Travel Fellowship - Indiana University School of Nursing  $500
1999  Travel Fellowship - Indiana University Graduate School  $800
1999  Research Incentive Fellowship Indiana University School of Nursing
       “On-line Learning Communities in Nursing Education: The Students’
       Perspective” $10,000 plus tuition; Competitive review within Indiana University
       School of Nursing
1998  Research Incentive Fellowship Indiana University School of Nursing
       “The Role of National Accreditation in Curriculum Evaluation”
       $10,000 plus tuition; Competitive review within Indiana University School of
       Nursing
1998  Travel Fellowship - Indiana University School of Nursing  $500
1997  Indiana University Predoctoral Fellowship
       $10,000 plus tuition; University wide competitive review

Research Studies

2001  Dissertation “The Lived Experience of Master of Science in Nursing Students as
       Members of a Virtual Classroom on the Internet”
1999  Research Incentive Fellowship “On-line Learning Communities in Nursing
       Education: Students’ Perspective”
1998  Pilot Study “The Lived Experience of Graduate Nursing Students as Members of
       a Virtual Classroom on the Internet”
1995  “Quality of Life in Patients with Implantable Cardioverter Defibrillators”
1994  Pilot Study “Quality of Life in Patients with Automatic Implantable Cardioverter
       Defibrillators”
1993  "Indiana High School Guidance Counselors' Attitudes about an Ideal Career
       versus a Nursing Career"
       Pilot Study "High School Students' Attitudes about an Ideal Career versus a
       Nursing Career"
       Pilot Study "Allen County High School Guidance Counselors' Attitudes about an
       Ideal Career versus a Nursing Career"
1985  Masters Thesis "The Effect of Preoperative Holding Areas on State Anxiety"
Honors

2000 International Who’s Who of Professionals
2000 Chancellor Scholar - Indiana University - Purdue University at Indianapolis
2000 Carol McMullen Marsh Award - Indiana University School of Nursing Alumni Association
2000 Who’s Who Among America’s Teachers
1999 Who’s Who Among Students in American Universities & Colleges
1998 Who’s Who Among America’s Teachers
1997 Achievement in Nursing Research Award, Midwest Medical Research Foundation
1997 Excellence in Nursing Research, Midwest Medical Research Foundation
1977 Inducted into Beta Iota Chapter, Sigma Theta Tau International Nursing Honor Society

Creative Endeavors

Articles in Scholarly Journals

Book Chapters

Paper Presentations at Professional Conferences with Abstracts in Refereed Published Conference Proceedings
“Master of Science in Nursing Students’ Experiences as Members of a Virtual Classroom on the Internet” Paper Presented at:
- Illuminating Practice Through Research, Midwest Nursing Research Society Annual Conference, Cleveland, OH 3/4/01
- New Dimensions in Nursing Research: Expanding the Foundations of Practice, Northwest Indiana Nursing Research Consortium, Merrillville, IN 11/3/00

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Creating Learning Communities in Courses in Virtual Classrooms on the World Wide Web. Creating a Learning Community Conference, a collaborative effort of Northeast Indiana Colleges and Universities, Fort Wayne, IN 2/25/00

"Evaluation of Technology by Students Enrolled in Nursing Courses Offered via the WWW: Using the 'Flashlight'," Assessing Program Outcomes: Fourth National Conference for Nurse Educators, Center for Teaching and Lifelong Learning, Indiana University School of Nursing, Indianapolis, IN 11/10/99


"Graduate Students' Views of an On-Line Learning Community", The Use of Computers and Related Technologies for Instruction Conference, a collaborative effort of Northeast Indiana Colleges and Universities, Fort Wayne, IN 5/28/98

"Quality of Life in Patients with Implantable Cardioverter Defibrillators", Northwest Indiana Nursing Research Consortium and Zeta Epsilon Chapter of Sigma Theta Tau Research Conference New Dimensions in Nursing Research: Expanding The Foundations of Practice, Merrillville, IN 10/27/95

"Quality of Life in Patients with Implantable Cardioverter Defibrillators", Zeta Theta Chapter of Sigma Theta Tau Research Conference Research Utilization: Linking Practice and Research, Toledo, OH. 9/8/95

"Quality of Life in Patients with Implantable Cardioverter Defibrillators", Midwest Medical Research Foundation Research Fellowship Program, Fort Wayne, IN. 8/9/95

"Quality of Life in Patients with Automatic Implantable Cardioverter Defibrillators: A Pilot Study", Kalamazoo Nursing Research Collective Promoting Health - The Cutting Edge of Nursing Research, Kalamazoo, MI. 4/6/95


"Quality of Life in Patients with Automatic Implantable Cardioverter Defibrillators: A Pilot Study", Lambda Sigma Chapter of Sigma Theta Tau and Indiana State University School of Nursing Research Conference, Terre Haute, IN. 9/30/94

"High School Students' Attitudes about an Ideal Career versus a Nursing Career" Delta Omega Chapter of Sigma Theta Tau Research Symposium, Akron, OH. 4/15/94

Paper Presentations at Professional Conferences with Abstracts in Refereed Published Conference Proceedings (cont.)

"Women in White: High School Students' and Counselors' Misconceptions about Nursing" Paper presented at:
- Northwest Indiana Nursing Research Consortium, New Dimensions in Nursing Research: Expanding the Foundations of Practice, Merrillville, IN. 10/15/93
- The Practical Application of Research. Saint Francis College, Fort Wayne, IN. 5/7/93

Poster Presentations at Professional Conferences with Abstracts in Refereed Published Conference Proceedings

"The Lived Experience of Master of Science in Nursing Students as Members of a Virtual Classroom on the Internet"
- Fort Wayne Research Colloquium, Fort Wayne, IN 10/23/00
- Midwest Alliance for Health Education Research Fellowship Program, Fort Wayne, IN 8/2/00

"A Comparison of High School Students' Attitudes about an Ideal Career versus a Nursing Career", Fort Wayne Nursing Research Colloquium Creating Nursing Research, Fort Wayne, IN. 11/5/93

Presentations at Workshops for Peers

"Providing Web-Based Support for Students in Virtual Classrooms on the Internet"
Distributed Education: Designing Courses for the World Wide Web Workshop, Indiana University School of Nursing, Indianapolis, IN 6/7/01

"Adoption of a Web-Based Courseware System", Instructional Technology Conference: Web-based Teaching and Learning. University of Indianapolis, Indianapolis, IN 5/21/01

"New Blackboard Tips and Tricks: A Blackboard Refresher Course for Current Users"
Faculty Development Program for University of Saint Francis Faculty, Fort Wayne, IN 5/18/01

"Using Blackboard in Web-Based and Web-Supported Courses"
Faculty Development Program for University of Saint Francis Faculty, Fort Wayne, IN 5/9-10/01

"Using Blackboard in Web-Based Courses"
Faculty Development Program for University of Saint Francis Faculty, Fort Wayne, IN 1/9/01

"Providing Web-Based Support for Students in Virtual Classrooms on the Internet"
Distributed Education: Designing Courses for the World Wide Web Workshop, Indiana University School of Nursing Center for Teaching and Lifelong Learning, Indianapolis, IN 6/6/00

"Organizing References Using EndNote"
Staff Development Program for Research Assistants and Staff of the Nursing Research Center, Indiana University School of Nursing, Indianapolis, IN 3/10/00

"Utilizing the Web for Nursing Instruction"
Faculty Development Program for Department of Nursing, University of Saint Francis, Fort Wayne, IN 1/28/00

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Presentations at Workshops for Peers (cont.)

"Web Courses Are A Matter of Degrees: To What Level Will You Take Them?"
Faculty Development Program, University of Saint Francis, Fort Wayne, IN.
10/5/99

"Benefits and Pitfalls of Taking a Course on the WWW"
Distributed Education: Designing Courses for the World Wide Web Workshop,
Indiana University School of Nursing Center for Teaching and Lifelong Learning,
Indianapolis, IN 6/2/99

"Service Learning: Connecting Higher Education with the Community"
Saint Francis College Mission and Values Committee, 1997

"Service Learning: Developing Values and Social Responsibility"
Faculty Development Program, Saint Francis College Faculty, 1997

"Variables Affecting Student Recruitment into Nursing"
Northeast Indiana Nursing Image Task Force. Parkview Hospital, Ft Wayne, IN.
5/10/93

Service

Service to the University of Saint Francis, Fort Wayne, IN

Campus

Distance Education Working Group
    Chair 2000-Present
Distance Education Subcommittee
    Member 1998-2000
    Chair, 1995-1997, 1998-1999
Campus Technology Committee 1998-Present
Promotion and Tenure Committee 2001-Present
Faculty Issues Committee (At that time responsible for Promotion and Tenure)
    Chair 1995-1996
    Secretary 1994-1995
    Alternate 1987-1988
General Education Committee 1994-1996
External Assessment Committee 1993-1995
Ethics Round Table Ad Hoc Committee 1995-1996
Faculty Subcommittee for University Presidential Inauguration 1993
Faculty Development Committee 1991-1993
Library Committee
    Chair 1990-1991
    Secretary 1988-1990
Freshman Seminar Task Force 1988-1989
Health and Safety Committee 1986-1992
Nursing Department

Educational Resources Committee
BSN Committee 1998-2001
MSN Committee 1998-2001
Nursing Faculty Committee 1986-1999
Nursing Faculty At-Large Committee 1999-2001
Curriculum Committee
- Chair 1989-1990
RN to BSN Curriculum Development Subcommittee 1992-1993
LPN to BSN Curriculum Development Subcommittee 1992-1993
Planning Committee for NCLEX-RN Mosby Review Course for New Graduates
- Chair 1994-1995
Nursing Graduation and Pinning Subcommittee 1991-1993
- Chair 1991-1992
Faculty Facilitator for Honors Student in Honors Mythology 1992
Open House Subcommittee 1991-1992
Admissions Committee 1989-1990
Nursing Student Brown Bag Lunch Subcommittee Chair, 1988-1989

Service to Nursing and Higher Education

Grant Reviewer
- (2000) Reviewer of Technology Enhanced Teaching Grants for Independent Colleges of Indiana to evaluate grant proposals for the 2000 IHETS Faculty Development Initiative.
- (1999) Reviewer of Technology Enhanced Teaching Grants for Independent Colleges of Indiana to evaluate grant proposals for the 1999 IHETS Faculty Development Initiative.

Book and Book Chapter Reviews
- Prospectus for three laboratory test books. FA Davis. 1999.
- Medical-Surgical Nursing: Clinical Management for Continuity of Care. Philadelphia: W.B. Saunders. Chapters: Theories of Health Promotion & Illness Management; Health Promotion in Young & Middle Aged Adults. 1998
- Chapters: Shock; Care of Clients with Cancer

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Software Reviews
Computerized NCLEX-RN and NCLEX-PN preparation programs. 1997

External Reviewer for Promotion Case
Review of promotion case of Evelyn Stephenson, Clinical Assistant Professor, Indiana University School of Nursing. 2000

Research Preceptor
Erin Mullins-Rivera, Midwest Alliance for Health Education 1995-1996

Professional Program Planning Committees
Northeast Indiana Nursing Image Task Force
Shadow A Nurse Day Program, Fort Wayne, IN 1990-1992
Fort Wayne Annual Nursing Research Colloquium, 1993-1997

Service to Professional Organizations
Sigma Theta Tau International Honor Society of Nursing, Xi Nu Chapter
Web Master 1998-Present
Publicity Committee 1996-1998, 2001-Present
Secretary 1994-1996
Eligibility Committee 1993-1997

Nursing Research Consortium of the Midwest Alliance for Health Education
Membership, Marketing, and Nominating Committees 1996-1997

University of Saint Francis Nursing Honor Society
Eligibility Committee 1993-1995
Secretary 1992-1994

Northeast Nursing Image Task Force Speakers Bureau 1990-1994
Speaker to students and high school guidance counselors on "Nursing as a Career", "Selecting an Educational Program", and "Educational Routes in Nursing".
Service to the Community

Consulting Activities
Nursing Research Center at IUPUI, Indianapolis, IN
Using EndNote to manage and organize bibliographic references. 2000

Kathy Sawin, Postdoctoral fellow at IUPUI.
Consultation on setup and use of Naturally Speaking software. 2000

DeKalb Memorial Hospital, Auburn, IN
Introducing research based nursing practice. 1995

Parkview Memorial Hospital, Fort Wayne, IN
Setting up a nursing reference area in an Intensive Care Unit. 1994
Documenting nursing care effectively. 1988
Setting up hospital based learning laboratories. 1987

Saint Joseph Hospital, Fort Wayne, IN
Setting up a student nurse externship program. 1989

Public Service Activities

American Red Cross - Focus on Health Volunteer 1990-1998

Noble County 4-H Dog Training Showmanship Leader 1998

Catholic Charities Speaker's Bureau 1990-1995
Speaker on: Parenting Adopted Children and Open Adoption

St. Mary Catholic School
St. Mary’s Scrip Vice-President of Fundraising (1997-1998)
Piano Lab Volunteer (1999-2000)
Chairperson of Grant Committee (1994-1997)
Started Grant Committee 5/94. Researched grant information to determine possible grant prospects. Met with Dekko Foundation to insure eligibility for potential grant. Wrote grant for Phase I of Information Technology program for $60,000 and submitted to Dekko Foundation. Grant funded for $25,000 1995. Cowrote grant for Phase II for $83,000 and submitted to Dekko Foundation. Grant fully funded 1996. Edited grant for Keyboarding Lab submitted to Dekko Foundation. Grant fully funded 1997.
Member of Computer/Technology Purchasing Committee (1994-1997)

St. Mary Catholic Church
Labor Day Festival Volunteer (1993-Present)
Professional Conferences Attended 1996-2001:

"Web-Based Teaching and Learning", Independent Colleges of Indiana, Indianapolis, IN. 5/21-23/01


"Illuminating Practice Through Research", Midwest Nursing Research Society Annual Conference, Cleveland, OH. 3/3-3/5/01

"Innovative Designs in Qualitative Research, Midwest Nursing Research Society Preconference, Cleveland, OH. 3/2/01


"Blackboard Training for System Administrators", Fort Wayne, IN. 1/10/01

"Four Pot Hominy: Using Humor and Building Spirit in the Workplace", Fort Wayne, IN. 12/15/00


"Prioritization in Higher Education", Dr. Gary Quehl, Fort Wayne, IN 10/10/00


"Critical Thinking Test Item Writing", Health Education Systems Inc., Fort Wayne, IN. 3/16/00

"Creating a Learning Community", Fort Wayne, IN. 2/25/00


"Nursing Research for the New Millennium", Fort Wayne, IN. 10/22/99

"Franciscan Education Means Work" Mary Meany Ph.D., Fort Wayne, IN 8/20/99

"Team Building: What Shape Are You In?" Fort Wayne, IN 5/10/99


"Holistic Health" Fort Wayne, IN 12/13/98

"Learning Leadership for Shared Governance: Governance and the Role It Plays in Building a New University" Fort Wayne, IN 10/6/98

"The Use of Computers and Related Technologies for Instruction". Fort Wayne, IN 5/28/98

"Family Research". Indianapolis, IN. 3/26/98

"Sexual Harassment in Education". Fort Wayne, IN. 2/27/98

"Quality of Life and Sexual Functioning in Cancer Patients". Indianapolis, IN. 2/26/98

Sigma Theta Tau International Biennial Convention. Detroit, MI. 12/2-5/97

"Andrews and McMeel Conference on Service Learning", Notre Dame, IN 11/13-15/97

"Advancing Nursing Practice Through Scientific Inquiry", Fort Wayne, IN. 11/7/97

"Active Learning", Fort Wayne, IN. 10/7/97

"Nursing's Challenge: Research Based Practice", Fort Wayne, IN. 11/8/96

"Pacific Crest's Teaching Institute on Process Education", Dayton, OH. 7/22-24/96

"Nursing Research: Challenges in Managing Care", Kalamazoo, MI. 4/18/96

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