STUDENT ISOLATION ISSUES IN THE E-LEARNING ENVIRONMENT

By

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STATEMENT BY AUTHOR

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Thank you all,

~ Joanie
DEDICATION

To Dr. Guy Bensusan, whose zeal kept students interested, personal interaction kept them connected, and ability to stretch the mind kept them inspire.
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ABSTRACT

E-learning is one of the newest forms of education and has the potential to offer rich educational opportunities. With increasing demands for convenience, universities are forging into this educational frontier; however, a potential problem that has received little exploration is student's feelings of isolation while taking online coursework. This study explored isolation in a group of online nursing students. The results of the exploratory online survey revealed that 48% of the 21 respondents felt isolated from other students and 43% felt isolated from their instructor. In an effort to correlate course design strategies with feelings of isolation, the results showed that 67% had never worked on an assignment with a group and 29% stated they had only worked on group work 1 or 2 times.
CHAPTER 1

INTRODUCTION

Introduction

As the nursing shortage continues, more non-traditional students are returning to school for nursing degrees or to further their nursing careers. These non-traditional students approach education with many extracurricular responsibilities, such as families and jobs. These responsibilities often make large demands on students’ time and can even hinder their access to continuing education opportunities (Christianson, 2002). E-learning provides educational opportunities for those students with time or distance constraints who might not otherwise have that accessibility. In 2002 there were approximately 350,000 students enrolled in fully online courses (Hamilton-Pennell, 2002). In addition, new opportunities exist for employers to provide continuing education (CE) and training courses via e-learning (Cobb, 2003). Nurses, in particular, seem to recognize the value of online education. A recent survey found that nurses are the largest group of health care professionals using the Internet for education, with 42% indicating that they participate in Internet CE (Cobb, 2003).

Time constraints are one of the reasons that nurses cite for choosing online educational courses (Atack & Rankin, 2002). However, recent research also indicates that although online learning is a potential remedy for time and distance constraints, there are potential problems nurses might face while taking online courses (Kenny, 2002). The types and extent of these potential problems need to be explored and solutions identified in order to refine online education to provide a positive and valid educational experience.
One problem that is often cited in the literature is students' feelings of isolation while attending classes that are not face-to-face with instructors and peers (e.g., Shaw & Polovina, 1999; Smith, Ferguson, & Caris, 2002; Wegner et al., 1999). Unfortunately, isolation may be one of the more difficult problems for instructors to solve (Palloff & Pratt, 1999). Social isolation in the e-learning environment is the focus of this study. Results of the research will be used to propose strategies that prevent student isolation in e-learning environments.

Problem

There are many pros and cons to e-learning, as opposed to a traditional face-to-face course. One benefit to taking courses online is that the online structure is typically more student-focused than teacher centered, encouraging more active participation by students in collaborative learning activities. Active participation is not only a benefit to learning, but also one strategy assumed to prevent isolation (Smith, Ferguson, & Caris, 2002). Other benefits include an increase in peer exchange of ideas, which can lead to better understanding and a decrease in stereotyping (physical, cultural, racial, gender, etc) due to the largely text communication, which precludes judgments based on perceptions derived from in-class face-to-face contact (Smith, Ferguson, & Caris 2002). Online learning can also be credited with expanding a student's access to additional educational resources, which too can promote active learning (Cravener, 1999). One of the benefits that students are most likely to applaud is the convenience of being able to attend class when and where they choose. For organizations, additional benefits come from not
having to worry about classroom space, air conditioning, heating, and other financial burdens of a building (Hamilton-Pennell, 2002).

Some disadvantages to e-learning that students encounter include technical difficulties, gaining access to computers, location of computers/internet, social restraints, time spent on learning new technology, and feelings of isolation (Attack & Rankin, 2002). Because of a problem with drop out, one instructor developed a virtual student to entice students to participate in class. By using such a tool the instructor was able to help build a collaborative learning community (King, 2002). However, this new way of learning is vastly different than anything we have known before, and is being implemented in a variety of ways despite the lack of an adequate research base from which to make decisions (Hopper, 2001).

Significance

Universities are rapidly placing courses online in order to provide education to more individuals. Increasingly, nursing courses are among the available offerings. Northern Arizona University (NAU) is a leader in the advancement of online education in Arizona (NAU website: http://www.nau.edu). NAU offers several degrees that are web-based (among hundreds of online classes) including an Registered Nurse to Baccalaureate in Nursing (RN-BSN) track, Certificate in Dental Hygiene, Bachelor of Science in Health Promotion, a Master’s of Science in Management, and even a Doctor of Physical Therapy degree. The University of Arizona (U of A) is also making advancements; with the College of Nursing offering their Master’s and Ph.D. programs online (U of A website: http://www.arizona.edu). Arizona State University (ASU) offers some nursing courses
online, with plans for expansion into more e-learning opportunities (ASU website: http://www.asu.edu). Colleges such as the University of Phoenix offer entire programs online (http://www.uopx.edu), and nearly all community colleges have at least one class that is offered online. In 2002, there were more than 6000 accredited college courses online (Cuellar, 2002).

Purpose

The purposes of this study are to identify the extent of isolation occurring in a group of e-learners and understand the degree of isolation in conjunction with the instructional design and technology being used.

Research Questions

1. How prevalent is isolation among nursing students in an e-learning environment?

2. What are the characteristics of the e-learning environment that might cause nursing students to feel more isolated?

Definition of Terms

For the purpose of this study, the following definitions are used:

**Co-learner** – A person who builds an atmosphere of mutual trust and respect, sincerely engages in learning, stimulates enthusiasm and interest in others, and challenges others’ values and beliefs (MacIntosh, MacKay, & Mallet-Boucher, 2002).

**Distance Education** – Planned learning that normally occurs in a different place from teaching and, as a result, requires special techniques of course design, special instructional techniques, special methods of communication by electronic and
other technology, as well as special organizational and administrative arrangements (Cravener, 1999).

**E-learning** – Learning via the Internet; online education (Ward & LaBranche, 2003).

**Isolation** – To be separated from a group or whole and set apart. (The American Heritage Dictionary, 1983).

**Online Learning** – “an educational philosophy for designing interactive, responsive, and valid information and learning opportunities to be delivered to learners at a time, place, and in appropriate forms convenient to the learners” (Boettcher, 1999; Hopper, 2001).

**Summary**

E-learning, or online education, offers a way to make educational opportunities available to a larger percentage of the population. Colleges and universities are continuing to forge ahead to meet the demands of students by placing more courses online. E-learning has the potential to improve students’ learning outcomes because of the increased active interaction with materials, peers, and faculty. However, students and teachers face a number of obstacles when participating in online education, which clearly need to be addressed in order to offer optimal educational opportunities (Smith, Ferguson, & Caris, 2002). Solutions could then be available for those organizations that offer e-learning opportunities in order to provide effective remedies and preventative strategies (Cuellar, 2002). This thesis examines the extent of isolation in e-learners, explores how those feelings of isolation might be correlated with specific instructional designs and technologies, and proposes strategies that might best prevent this barrier to learning.
CHAPTER 2
REVIEW OF THE LITERATURE

Introduction

The review of literature and scope of the study followed a model that was developed to systematically guide the research. Chapter Two presents this conceptual model. This model helped channel the relevant reviews and current literature on e-learning and student isolation. The purpose of looking at current literature on the subject of e-learning and student isolation was primarily to examine what others have found in primary or secondary research that might prove useful when developing strategies that would help students overcome the problem of isolation.

The following model attempts to cover the experiences of students including learner characteristics, technology, and outcomes of the e-learning experience.

FIGURE 1 Conceptual Model
Review of Literature

Learner characteristics

The ability to obtain education conveniently has been a struggle for many students for over a century. The initial solutions to the problem focused on correspondence courses. Recently, the Internet has become the means to support distance education. Because the Internet has opened such a vast world of education, nontraditional students are flooding the education system. These students are motivated to come back to school because online education is more suitable to their lifestyle. They are able to access their course work and complete assignments at their convenience and still maintain their employment or family obligations (Hamilton, 2002).

Many aspects of e-learning are not well understood. We know little about what makes a committed independent learner. Moreover, concerns are raised in the literature about the issues such as dropout rates, isolation, faculty frustration, course effectiveness, and the vast patchwork of cyber education. Some even proclaim that e-learning is a practice without a research base (Hopper, 2002).

E-learning forces students to work independently, which may contribute to dropout rates in distance learning. Some believe that students conditioned by more than twelve years of passive classroom style instruction must contend with more than a change in technology to succeed in an online course. Many are frustrated at the isolation and absence of social cues, which can be a major drawback of online learning (Hopper, 2002). Shaw and Polovina (1999) found that when students in an online course were actually located close enough that they could meet together, they frequently did so, both
to meet socially and for group discussion. These students ultimately performed better in the class than the students whose physical distance precluded their meeting together. In addition, the latter group of students voiced more feelings of inadequacy and despair in personal logs, a course component.

An interview with twenty-one nursing students who were asked two main questions: “Has the use of computer-assisted learning enhanced your educational program? [And] Is there any aspect of computer-assisted learning that has detracted from your learning?” revealed some insightful themes. These included computer confidence, flexibility, active learning and practicalities of teaching. Responses were expanded in detail with an emphasis on the anxiety that nursing students feel when confronted with any computer components in their courses. Students pointed out in the interviews that active involvement in learning results in a “very social atmosphere for learning.” The high level of personal interaction in e-learning encourages a sense of teamwork and requires independent responsibility for the learner (Kenny, 2002).

Often there is a mismatch between technology and social interactions that might relate to student personality and individuality. This explains why e-learning might foster socialization in some individuals but cause others to feel socially isolated. Learning styles, as well as individual factors such as personality, must be taken into consideration in any teaching/learning environment, e-learning being no exception. Given our present base of understanding in the e-learning environment, it is impossible to predict whether the uses of technology will increase or decrease social interactions. Even though we have this new educational tool, it may be the social factors (motivation, etc.) that make the
most impact for learning online. This would certainly put more weight on research
conducted regarding e-learning opportunities and the importance of implementing social
interactions (Hughes et al., 2002; Reyna et al., 2001).

A statewide survey solicited information from 103 nurse practitioners in Nevada. The purpose of the survey was to assess their preferences, and reasons for those preferences, when choosing a method for furthering their education. The results of the study suggested that, although online education has great potential, it should include special help sessions to teach the student how to use the program. Respondents cited “lack of knowledge or skills as the main reason for declining to choose the Internet” for their method of learning and that perhaps these help sessions would improve the quality of the online experience (Charles, 2002).

Technology

Designing an online course is extremely time-consuming for instructors. Because the organization of the course is so important and instructors are expected to present their material in a way that might be unfamiliar, it may take months for the instructor to create a form of delivery that is user friendly and acceptable. Most of today’s instructors did not enter teaching because they enjoy teaching via the internet; in fact, the better a teacher is in the class room the more difficult it may be to adapt to online teaching. One way the teacher can build into the class design a strategy to reduce student isolation issues is by developing a supportive and interactive environment in which students are encouraged to air their problems and gain support. The amount and quality of interaction between the
instructor and the student, as well as among students, has been shown to be vital to the success of the course (Smith, Ferguson, & Caris, 2002).

Hughes et al. (2002) report that collaboration in an online course can reduce students' feelings of isolation. However, the authors noted that, if collaboration is to be successful, students must see the value of putting the effort into online activities, they must trust and be comfortable with the medium, as well as with the facilitator and their fellow students, and must feel part of a rich, social, educational experience.

A plan to help make the transition from traditional face-to-face classroom delivery to the e-learning environment includes making the courses stimulating and entertaining, using praise frequently, having a flexible positive attitude, making learning modules easy to navigate, identifying isolation issues, and using technological resources, graphics, animation and video, along with text, to enhance learning (Cuellar, 2002).

E-learning typically works from an Internet website that requires a student's access using their name and a password. An instructor will provide links to assignments, discussions, and reading material, and quizzes as well as providing a deadline for work to be completed. It is the student's responsibility to access the requirements and fulfill them by the deadline. At the end of a course when all the assignments and discussions are completed the student is given a grade for the course. Often the students and teacher never meet face-to-face. While this structure is reasonable for the didactic learning curve, the social aspects of learning are sometimes missing (Hamilton, 2002).

A review of 68 articles selected from 185 publications related to distance learning focused on the advantages and disadvantages of distance education as identified by online
instructors. Most of the challenges appeared to be related to course configuration, faculty workload, student support, and the challenge of learning new technology. Interestingly, one of the disadvantages noted by the instructors focused on the increase in student communication both with each other and with the instructors, making the course more time consuming for the instructors. Certainly written communication is more time consuming than oral dialogue; however, one reported plan used to facilitate effective communication was for the instructor to provide a time for synchronous communication (Cravener, 1999).

One hundred seventy one faculty members answered a survey that was designed to evaluate their feelings regarding the transition from traditional style teaching to web based learning. One of the four research questions that addressed faculty perception included their perception of the successes and failures of their teaching experience with online classes. Eighty nine percent of the 171 faculty that were surveyed stated that their teaching experience was successful, and 76% stated that web courses are an appropriate method of learning for undergraduate education. The authors pointed out that the most important aspect of their research, however, was that the interactivity between participants was more apparent than the interactivity in a traditional classroom style environment. The students’ overwhelming enthusiasm for online learning, despite some initial trials and ongoing challenges, were expressed as “highly interactive, student-centered learning experiences” (Christianson, Tiene, & Luft, 2002).
Outcomes

Without an interactive environment, feelings of being isolated can be a real drawback to e-learning. Some students who are accustomed to networking and learning from others in the traditional classroom setting feel they are missing out on a large part of the learning process in the e-learning environment and begin to feel disconnected. Students are not the only ones who feel the isolation problem; teachers who have spent most of their careers adapting and evaluating their teaching based on the looks on their students’ faces now find they must rely on email or a discussion board to evaluate their effectiveness. The lack of face-to-face interaction can add to the feelings of isolation because social cues are not available. Students might not reveal their genders or much of their “personalities” if they are merely completing assignments and answering discussion topics with dialogue that is strictly instructive in nature. This non-personal interaction may contribute to the feelings of isolation and dissatisfaction; however, some instructors have discovered strategies that prevent these feelings including frequent feedback and instructor involvement, posting rules of netiquette, and using video (Hamilton, 2002; Hughes et al., 2002).

Some outcomes listed in the experiences of some nurses enrolled in a particular web course included computer skills, personal lives, and experience with web-based courses. Some of the nurses dropped the course, listing “missing classroom learning” as one reason why they quit. Of the nurses who completed the course, some expressed their feelings of disconnectedness and listed a few preventative measures that might have alleviated those feelings. The students pointed out that a well-prepared teacher who
conveys interest with frequent interaction with a lot of support, along with photographs and brief biographies, helps prevent some of the feelings of isolation. The students stressed that teachers who respond frequently and in a timely manner to a student’s online comments are effective in dispelling student isolation issues (Atach & Rankin, 2002).

One study reported that 82% of surveyed master’s level students stated that they were satisfied with the amount of interaction they had with instructors and 94% were satisfied with the interaction they had with other students. Despite problems of student isolation in online learning, the online learning itself often becomes the cure for isolation. This is illustrated in the article by a quotation from a student:

I have enjoyed being able to communicate with other students around the state. It is frustrating working with tech stuff at times, but I believe it is a powerful way to learn. I am not just this lone hick in the sticks wondering what is going on out there. I can get on the Web Board and read other student’s thoughts (Cartwright & Menkens, 2002. p. 147).

An evaluation of nursing students in New Brunswick, Canada was conducted using surveys and interviews in an attempt to study the student’s experience with what the article calls a “co-learning” situation through distance education. The authors were aware of the disadvantage of student isolation from their own literature review; however, they did not find evidence of isolation in their particular study. They attributed the lack of student isolation to a commitment to interactive learning and stated that the learners in their study appeared positive about their learning experience (MacIntosh, MacKay, Mallet-Boucher, and Wiggins, 2002).
As more specific research studies focus on specific student concerns, identify target problems and implement workable solutions, this medium for education will continue to improve with even greater opportunities for all ages around the world (Cartwright & Menkens, 2002).

Summary

Chapter 2 described the conceptual framework for the research and used the framework to guide a literature review. Although many studies have been conducted in the realm of e-learning, relatively few nursing education studies have focused on the problem of student isolation. Most at least mention the problem and some offer solutions based on the type of research conducted in the study. By compiling these solutions coupled with primary research that assesses learner characteristics, evaluates the technology of course design, and analyzes the outcomes, possible strategies that best prevent student isolation issues can be offered.
CHAPTER 3

METHODOLOGY

Introduction

This chapter will explain the design and methods used in the research including setting, participants, instrumentation, data, and data collection.

Methodology

To gather an understanding of student isolation issues in the e-learning environment, nursing students enrolled in five courses in an RN-BSN track at NAU were asked to complete a survey about their e-learning experience. In addition, their instructors were also asked to complete a survey that asked them to describe the kinds of technology and instructional strategies used. The results of the completed surveys are reported in chapter 4.

Research Design

Design

An exploratory design was chosen using a survey methodology to investigate the feelings of isolation that each student may currently be experiencing in their e-learning environment. The questionnaire was designed to gather a broad spectrum of information, including students’ personal learning characteristics, the design of the online class, and certain requirements that require peer interaction.

Instrumentation

A web-based survey was created from a database of questions that the Flashlight group uses to examine the implications of online education. The Flashlight group is a
nationally recognized evaluation research group with which the University Of Arizona College Of Nursing currently has a contractual arrangement.

The survey questions themselves were designed to explore aspects of the courses and the e-learning experience that might indicate student isolation issues including what measures were taken to overcome those issues. A Likert scale was used for the majority of the responses. A copy of the student survey can be found in Appendix A.

Validity

As a basis for designing the survey, specific questions were selected from the Flashlight database that were expected to relate to the concepts and constructs described in the conceptual framework presented in chapter two. To establish face validity, a panel of research prepared instructors was asked to match each concept and construct to the purposed question. The questions and concepts were scrambled and sent as an email attachment to each individual faculty member. A copy of the instrument used for validation can be found in Appendix A.

Participants

Setting

Northern Arizona University offers an RN-BSN educational track that can be taken via the Internet. The courses in that program served as the setting for the study. The students in six core courses were asked to complete the online survey that was provided as a hyperlink accessible from their course homepage. Since some students may be in more than one course in the track they were asked to only take the survey once. Demographics such as gender and age were also collected.
Course instructors were sent an email prior to the administration of the survey asking them to participate in the study by completing a survey of their particular course. Questions about their individual course design, as well as personal questions such as how long they have taught online and how long they have taught that particular course, were included on the survey. Course components, such as whether the course is completely online or incorporates some face to face meetings, whether there is an online syllabus, criteria for discussions, assignments (such as group work), and frequency of feedback were all investigated. The faculty survey was distributed via email attachment a few weeks prior to the student survey. This survey can also be found in Appendix A.

**Sample**

Every student in the RN-BSN track courses at NAU who was currently enrolled at the time of the study was eligible to participate. Approximately 10-15 students were expected in each class and a fifty percent desired return on the survey was anticipated.

Age served as a proxy to estimate if the students were primarily traditional or non-traditional students. For the purpose of this analysis, a traditional student was assumed if the student was less than 25 years of age and a non-traditional student is assumed if the student was 25 years of age or older.

The students were asked in an introductory cover letter to complete the survey within a two-week period of time around mid-semester and while in the same course to be evaluated. The introductory letter to the student also explained the research and purpose for the survey. A copy of the introductory letter to the students can be found in Appendix B.
In addition, the instructors for each of the six courses were asked to complete a survey in which they described the technology used in the course and their instructional design. The instructors had a disclaimer letter attached as the first page of their survey and sent as an email attachment. This disclaimer letter can also be found in Appendix B.

**Human Subjects Protection**

Prior to posting the survey online at NAU, permission to conduct the study was obtained from both the University of Arizona and NAU Human Subjects Testing Approval Committees, along with consent from NAU nursing administration. A letter sent to the administration at NAU requesting permission to survey their nursing students about their e-learning experiences in these courses and the returned permission letter along with both human subjects’ approval letters can also be found in Appendix B.

Course administrators were asked to provide a hyperlink to the survey and forward all responses to the researcher. The researcher kept private any identifying information from instructors, who were not privy to raw data.

**Data Collection**

**Primary Analysis**

Responses to the survey were available online following the close of the two-week time frame in which the students could access the survey. I had access via user name and password to the results. The survey was placed online using the Flashlight, Inc. web tool so results were generated by clicking on an “analyze” icon that then produced the total for each question on one tally sheet. The responses were further analyzed using descriptive statistics for each question. Following analysis, each question was then
compared and analyzed in relation to the conceptual model and research questions. The results of both surveys as well as the survey’s relationship to the conceptual model and research questions may be found in Chapter 4.

Summary

This chapter explained the methods and process of gathering information about the experiences of NAU nursing students’ and their feelings of isolation in the e-learning environment. Setting and sample were described with reference to protection. Data collection, examination, and breakdown of data and how it was analyzed were explained.
CHAPTER 4

RESULTS

Introduction

The results of the research are presented in this chapter in three sections. Section one will introduce the results of the NAU nursing student survey responses using descriptive statistics. The responses will be presented in relation to the conceptual model; section two will describe the sample and results of the NAU instructor survey responses; the last section will provide the research questions and the proposed survey questions that directly answer those questions.

Validation of the Student Survey

To ensure that the student survey had face validity, three faculty members were asked to match the questions with the corresponding concept and construct from the conceptual model. After the validity test was completed, the faculty members emailed it back to the researcher. The answers from each test were compared. In cases where there was not general agreement majority rule was assumed for the final score. If the majority of the responses to a certain question did not match the model, the researcher chose the appropriate concept or construct that the question was intended to match. These results may be found in Appendix A

Results of the Student Survey

The student sample was composed of 21 student nurses enrolled in six Northern Arizona University College of Nursing courses. There were 19 females and 2 males. There was one student less than 25 years old and 20 students older than 25 years old.
Three had never taken an online course before, four had taken 1-2 courses prior, seven had taken 3-5 courses online, and seven had taken 6 or more online courses.

The complete results of the student survey are summarized in a table found in Appendix C. The results are by survey question with percent of responses included. Percentages have been rounded to whole numbers and may not equal exactly 100%.

The following table summarizes the student responses to the survey in relationship to the constructs and concepts of the conceptual model.

**FIGURE 1 Conceptual Model**

**TABLE 1 Relationship of Results to the Conceptual Model**

<table>
<thead>
<tr>
<th>Survey Question</th>
<th>Self Motivation</th>
<th>Computer Skill</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-learning causes me to be at a disadvantage because I do not possess adequate computer skills</td>
<td>35% disagreed and 65% strongly disagreed. No one agreed.</td>
<td></td>
</tr>
<tr>
<td>E-learning causes me to waste too much time communicating with others on topics that are not related to coursework</td>
<td>43% disagreed and 48% strongly disagreed. 10% agreed.</td>
<td></td>
</tr>
<tr>
<td>Survey Question</td>
<td>Group Work</td>
<td>Feedback</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------</td>
<td>-------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>E-learning makes it difficult to relate to other students in the class</td>
<td>34% disagreed and 34% strongly disagreed. 29% agreed.</td>
<td></td>
</tr>
<tr>
<td>I have frequently assisted other students who asked for help in this course</td>
<td>38% assisted 1-2 times, 19% helped 3 or more times, and 43% none.</td>
<td></td>
</tr>
<tr>
<td>Because this course is online I get to know students who are different</td>
<td>43% about the same, 38% somewhat more likely, and 29% somewhat less likely</td>
<td></td>
</tr>
<tr>
<td>Because this course is online I ask for clarification when I don’t understand</td>
<td>52% about the same, 10% somewhat more likely, 10% somewhat less likely, and 24% much more likely</td>
<td></td>
</tr>
</tbody>
</table>

**Technology**

<table>
<thead>
<tr>
<th>Survey Question</th>
<th>Group Work</th>
<th>Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have frequently worked on an assignment with a group</td>
<td>67% state none and 29% state 1-2 times.</td>
<td></td>
</tr>
<tr>
<td>I have frequently discussed concepts of course with other students</td>
<td>62% say 3 or more times, 34% say 1-2 times with only 5% that state none</td>
<td></td>
</tr>
<tr>
<td>Because this course is online I receive detailed comments on assignments</td>
<td></td>
<td>38% much more likely, 29% somewhat more likely, 24% about the same, and 24% somewhat less likely</td>
</tr>
<tr>
<td>Because this course is online I receive comments on assignments quickly</td>
<td></td>
<td>19% somewhat less likely, 19% about the same, 34% somewhat more likely and 19% much more likely.</td>
</tr>
<tr>
<td>I feel priority was given to working with teams/groups</td>
<td>19% rated 1 (lowest priority), 24% rated 2, 29% rated 3, 19% rated 4, and only 10% rated 5 (highest)</td>
<td></td>
</tr>
<tr>
<td>I have frequently discussed with other students comments they have made</td>
<td>14% state none, 29% state 1-2 times, and 57% state 3 or more times.</td>
<td></td>
</tr>
<tr>
<td>I have frequently commented on other students’ assignments or exams</td>
<td></td>
<td>14% state none, 24% state 1-2 times, and 62% 3 or more times.</td>
</tr>
<tr>
<td>Because this course is online</td>
<td></td>
<td>38% say much more</td>
</tr>
<tr>
<td>Survey Question</td>
<td>Satisfaction</td>
<td>Isolation</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------</td>
<td>---------------------------------------</td>
<td>------------------------------------------------</td>
</tr>
<tr>
<td>I would recommend this course to others</td>
<td>52% agree, 38% strongly agree</td>
<td></td>
</tr>
<tr>
<td>The technology used in this course is appropriate for performing the tasks required</td>
<td>62% agree and 38% strongly agree</td>
<td></td>
</tr>
<tr>
<td>Because this course is online I feel isolated from other students</td>
<td>24% much less likely, 24% about the same, and 48% somewhat more likely</td>
<td></td>
</tr>
<tr>
<td>Because this course is online I feel isolated from the instructor</td>
<td>24% much less likely, 24% about the same, and 43% somewhat more likely</td>
<td></td>
</tr>
<tr>
<td>I feel priority was given to learning to overcome difficulties with working with groups</td>
<td>43% rated 1 (lowest priority), 19% rated 2, 29% rated 3, 10% rated 4, none rated 5 (highest priority)</td>
<td></td>
</tr>
<tr>
<td>I feel priority was given to building students' confidence in their ability to learn difficult subject matter</td>
<td>19% rated 5 (highest priority), 19% rated 4, 34% rated 3, 24% rated 2, with only 5% rating 1 (lowest priority)</td>
<td></td>
</tr>
<tr>
<td>I feel priority was given to helping all students learn in this course</td>
<td>29% rated 5 (highest priority), 14% rated 4, 34% rated 3, and 14% rated 2</td>
<td></td>
</tr>
</tbody>
</table>

**Learner characteristics.**

1. *Computer skills.* All students seemed to feel they had adequate computer skills for e-learning.

2. *Self motivation.* Almost none (10%) felt that they spent too much time discussing topics not related to coursework with their peers. A significant number (29%)
felt that e-learning made it difficult to relate to other students. The majority of students had helped their peers. Slightly more students (38%) felt that they were likely to get to know other students who were different from them in the online environment than those who disagreed (29%). The largest group (43%) saw no difference. Nearly a quarter of the students (24%) stated that they were much more likely to seek help from their instructor in the e-learning environment than in the face-to-face setting. Only 10% said they were less likely to seek instructor help in this environment.

Technology

1. Group work. Nearly 30% of the sample reported that they had worked on a group assignment 1-2 times during the course. Group work was not seen as having a high priority in the course design by nearly half the students (43%). Nearly all students had discussed concepts relevant to the course with other students. The majority (57%) had discussed with students comments they had made.

2. Feedback. Slightly more students (38%) felt that because the course is online the instructor is more likely to be interested in what they had to say than not (19%). Approximately 75% of the students felt that they received more detailed comments from faculty on their assignments; the majority felt that faculty feedback was quicker in the online course. Most had provided feedback to other students on their assignments.

Outcomes
1. *Satisfaction.* All students would recommend the course and all felt the technology used was appropriate. Most (62%) did not feel that a priority was placed on learning to overcome difficulties working with groups. Thirty-eight percent felt that there was a high priority in the course on building students’ confidence in learning difficult material and 43% felt that there was a priority in the course for helping all students learn.

2. *Isolation.* Nearly half (48%) of the student respondents felt that they were somewhat more likely to feel isolated from other students and only slightly less (43%) from the instructor.

Results of instructor survey

Four of seven NAU nursing instructors completed the instructor survey, a 57% return rate. Because the survey did not ask instructors to name their course, it is not clear whether all instructors were from different courses because some courses were team-taught. According to their responses, their courses were completely online at the time the research was conducted. Of the respondents, 75% were the primary instructor, and 75% had taught previous online courses. All of the instructors require their students to participate in class discussions at least once a week, and half of the instructors themselves participate more than five times a week. A table with the summarized responses can also be found in Appendix C.

Answering the Research Questions

The following table summarizes the results by research question.
TABLE 2 Relationships of Results to the Research Questions

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Survey Question</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>How prevalent is isolation among students in the e-learning environment?</td>
<td>Because this course is online I feel isolated from the instructor.</td>
<td>24% that said much less likely, 24% said about the same, and 43% said somewhat more likely</td>
</tr>
<tr>
<td></td>
<td>Because this course is online I feel isolated from other students</td>
<td>24% say much less likely, 24% say about the same, and 48% say somewhat more likely</td>
</tr>
<tr>
<td>What are the characteristics of the e-learning environment that might cause students to feel more isolated?</td>
<td>I have frequently worked on an assignment with a group</td>
<td>67% state none and 29% state 1-2 times.</td>
</tr>
<tr>
<td></td>
<td>E-learning makes it difficult to relate to other students in the class</td>
<td>29% agreed, 34% disagreed and 34% strongly disagreed.</td>
</tr>
</tbody>
</table>

1. How prevalent is isolation among students in the e-learning environment?

Nearly half of the student respondents (43%) said that they were somewhat more likely to feel isolated from their instructor. A quarter (24%) said they their sense of isolation from their instructor was similar to a face-to-face course; and the same number (24%) said that isolation was much less likely in the online course. In terms of perceived isolation from other students, 48% reported that they were somewhat more likely to feel isolated from other students; while 24% reported that they were no more likely to feel isolated than in a face-to-face class and the same number (24%) felt that they were actually less likely to feel isolated.

2. What are the characteristics of the e-learning environment that might cause students to feel more isolated? Most students had not worked in groups; nor did they see groups
having a high priority in the course. A significant number found it difficult to relate to other students in the course. Nearly 30% felt that the online environment made it difficult to relate to other students.

Summary

Chapter 4 presented the results of the study. Results of the student survey were reported by question as they related to the conceptual model. Results of the instructor survey were reported, and finally, the collected data were used to answer the research questions.
CHAPTER 5

CONCLUSION AND IMPLICATIONS

Introduction

The purpose of this research was to examine firsthand the experiences of students enrolled in online educational courses and explore any feelings of isolation they might feel while enrolled in that type of learning environment. Survey questions such as rating their computer skill were included in an attempt to discover any characteristics of the e-learning environment that might cause students to feel more isolated. Other questions such as how likely a student might get to know others in the e-learning forum were asked in order to uncover strategies that might decrease/increase feelings of isolation.

Discussion of Findings

Research Question 1: How prevalent is isolation among students in the e-learning environment?

Nearly half of the student respondents (43%) said that they were somewhat more likely to feel isolated from their instructor. Christianson et al (2002) quoted one instructor as saying “It seemed in my regular classroom that I would always develop a connection with certain students, students for whom I had more of a preference for some reason. That doesn’t happen online. It’s easier for me to treat every student equally in my Web course.” Perhaps in the e-learning environment those individual social interactions that make students feel accepted are reduced to generalized one-line greetings that might be perceived as cold or distant, thus making the student feel more isolated from the instructor. About a quarter (24%) said their sense of isolation from their instructor was
similar to a face-to-face course; and the same number (24%) said that isolation was much less likely in the online course.

In terms of perceived isolation from other students, 48% reported that they were somewhat *more* likely to feel isolated from other students; while 24% reported that they were no more likely to feel isolated than in a face-to-face class and the same number (24%) felt that they were actually less likely to feel isolated. Surprisingly, all students stated that they would recommend the course to others. This differs from the usual findings in the literature. Perhaps, in this case, because the survey was online within each course, students were concerned that the results would be available to their instructors.

King explains that key factors in the higher “dropout” rate in distance education include feelings of isolation, frustrations with the technology, anxiety, and confusion (2002). Despite the statements made regarding student isolation there are some who feel e-learning is a cure for their isolation (Cartwright & Menkens, 2002). Yet others claim not to have found evidence of student’s feeling isolated at all in their particular studies (MacIntosh, MacKay, Mallet-Boucher, & Wiggins, 2002). Christianson et al. (2002) elaborates on the importance of instructors developing learning activities that encourage dialogue and collaboration among students, listing the primary objective of online teachers was to design an active learning environment for students in an attempt to dissuade any feelings of isolation.
Research Question 2: What are the characteristics of the e-learning environment that might cause students to feel more isolated?

This question was explored with many of the survey questions, for example, exploring computer skill adequacy, the question “E-learning causes me to be at a disadvantage because I do not possess adequate computer skills” resulted in 34% students who disagreed and 62% who strongly disagreed and no one agreed. Therefore, it was concluded that since none of the students felt they were at a disadvantage due to computer skill that component is presumed not to be a possible cause of student isolation issues.

Relating to other students in the e-learning environment also does not appear to be a significant cause of student isolation; 68% responded that e-learning did not make it more difficult to relate to other students in the class. This result would seem to disagree with findings of other researchers (e.g., Palloff & Pratt, 1999). However, 67% of the students surveyed stated they had never worked on an assignment with a group and 29% had only 1-2 times. Since group work is highly interactive we might explore the potential isolation prevention characteristics this aspect of the e-learning more thoroughly in future research. King (2002) addresses the problem of isolation by citing the key to success is for learners to become part of a collaborative community of learners and that the most valuable activity of any kind in the classroom is for students to work and interact together. This helps to build a learning community. One might speculate, then, that students needed more active participation in a variety of activities. It is also possible that, because the
survey was done at about mid-semester, students may not have had opportunities to participate in some group activities.

It is possible that not all students want to collaborate, and perhaps this may be truer of practicing nurses who are in the clinical environment collaborating with colleagues and interacting with patients daily. Ragoonaden and Bordeleau (2000) reported that students resented having to collaborate with other students who had different work habits than they did.

Instructors might opt to assess students’ preferences and design courses accordingly. However, this can be difficult and result in unequal treatment. An alternative is to employ strategies that encourage collaboration, such as sharing positive collaboration experiences of other students, creating short-term collaborative projects that are likely to be successful, and rewarding individuals for their contributions to groups. In addition, to develop the necessary trust, instructors might facilitate student introductions through online biographies, structure group activities so that each individual has a defined assignment, and provide frequent feedback on group and individual performance (Hughes et al., 2002).

One study (Smith, Ferguson, & Caris 2002) found that the fewer channels of communication the higher the need for more explicit communication to decrease feelings of any isolation effects. For example, the limited channels of communication may create ambiguity and student insecurity that might force a more personal interaction between student and instructor (frequent emails). When students are encouraged to use the threaded discussion to ask questions it helps facilitate the online community, thus
minimizing student isolation. Interestingly, 62% of the students had discussed concepts of the course with other students and 57% had discussed with other students comments they had made. However, nearly half (43%) of the students had not actually assisted other students who asked for help in the course; the same percentage (43%) felt that learning to overcome difficulties working in groups was given lowest priority in their courses.

According to King (2002), working collaboratively is the key to decreasing isolation and building a collaborative learning community should be of highest priority. Shaw and Polina (1999) suggest that instructors build opportunities for social interaction into online courses. Adding synchronous to asynchronous discussions can also facilitate creating an online sense of “self” for students, but in either mode, providing clear communication guidelines is essential (McInerney & Roberts, 2004).

Shea et al. (2004) identify the need for instructors to carefully facilitate discourse by noting areas of agreement and disagreement, encouraging students to build consensus, recognizing students’ contributions to the discussion. In addition, because students do not always have the necessary skills to participate in a highly interactive online class, they recommend initial “ice breakers” and ungraded class activities that encourage discussion and help students develop the skills they will need.

Creating a “social presence” is emphasized in current educational literature as crucial to the success of online education. Strategies that have been suggested for instructors to maintain social presence include: 1. providing prompt responses to questions, 2. participating in the group discussion, 3. sharing pictures and biographies of faculty and students, 4. using instant messaging or online chat, and 5. creating shared
space through software that uses virtual “rooms” for particular activities (Hughes et al., 2002). Another strategy often suggested is an initial face-to-face meeting; however, that may not always be possible.

More questions involving student interaction were explored to gather understanding into strategies that might prevent student isolation. For example, only 29% of the students had ever worked on an assignment with a group, 62% has discussed concepts of course with other students at least 3 or more times and 34% has discussed concepts 1-2 times. These interactions may be one of the most important strategies that prevent student isolation issues in the e-learning environment. Smith, Ferguson, & Caris (2002) suggest that although a student might initially lose their sense of identity when first embarking on the e-learning environment there is a community effect that develops with a new “online” identity for the learner, the more community effects that are established, the more the students will succeed. Perhaps this explains why the results of the current study portray nearly half of the students who claim they feel isolated and 67% of them have never participated in group work, however, further research will be needed to test this hypothesis.

Implications

The e-learning environment is expanding into all aspects of education and for most the availability of education is becoming more and more reachable. With this new avenue of attainment comes a steep learning curve. Students who are used to one way of education must learn how to learn and communicate in a virtual world. Instructors also must learn the importance of developing a community of enthusiastic learners that will
meet each other’s needs socially as well as intellectually. One way to do this is by developing an interactive environment as soon as possible in the course and maintaining that community in order to bring students in from feelings of apprehension and isolation to successful and interactive. Christianson et al., 2002 purport that e-learning could be as effective as traditional education and the interactivity could actually be increased in the e-learning environment. We are on the edge of a virtual galaxy and with a little more research and a lot of commitment; e-learning could prove to be the next generation’s traditional education.

Limitations of the Study

Several limitations to the study were identified. The limitations with the instrument include: individual student response sheets that could have helped release more information into the results as responses related to each student as well as helped to link course designs with student comments. Since all courses were analyzed on one tally sheet, this limited the analysis correlation with the instructor survey. Age became a limitation because only one student was less than 25 years old; therefore the results may not be generalized for the traditional student population. The small sample size of 21 students was also a limitation because the variability of differences has a larger impact. The sample size of only 4 instructors is also a limitation for the same reason. We were also not able to ascertain the total number of students in each course despite repeated requests.

The sample also consisted of only registered nurses who may be more comfortable with computerized communication; therefore, the results may not be
generalized to those who are not comfortable using computers. The fact that the survey was web-based limits data collected from those not comfortable communicating online. Finally, the instrument itself was a limitation because survey questions were gathered from a database that had already pilot tested them; there use limited the freedom to explore more specific regions of student isolation that a more original focused questionnaire might have allowed.

The conceptual framework used to guide the study generated several limitations. The definitions for the concepts and constructs such as the term “technology.” which should have been defined more clearly to mean “course design;” and definition of terms should have been defined conceptually rather than literally. The model itself is a limitation because face validity could not be completely established when the survey was ranked by question to the model. These inconsistencies and the assumed results by the researcher can be found in Appendix A. Another limitation includes the literature review; more literature from non-medical sources could have revealed more insight.

Perhaps a better model could have constructed as follows:

FIGURE 1: Recommended Conceptual Model
The questions taken from the Flashlight database focused on group work, rather than collaboration, e-learning communities, and other strategies suggested in the literature to reduce isolation. Using the Flashlight ready-made survey questions limited the study in that respect.

Recommendations for Further Research

1. A larger and more diverse group of students should be surveyed that would insure a larger group of traditional as well as nontraditional students and greater sample size.

2. Individual survey response sheets should be analyzed alongside instructor survey responses.

3. A larger number of courses should be analyzed in order to gather a larger group of instructors.

4. A more diverse population of students should be analyzed to gather a broader variation in isolation issues.

5. Original and focused questions should be used that differentiate between group work and discussion groups in relation to isolation issues.

6. Other sources for survey questions should be explored and used in addition to Flashlight to generate survey questions.

7. The survey should be validated and pilot tested prior to use.

Conclusions

Despite the limitations to the study, the results of this exploratory research suggest that nearly half of nursing students in a particular e-learning environment felt
isolated from their instructors and other students. This result, coupled with the large percentage of students that had not participated in group work led me to believe that by creating an environment conducive to interactive activities students would be less likely to experience feelings of isolation that may lead to frustration and drop out. The results also suggested that, for these students, lack of computer skills did not appear to play a role in their isolation. Furthermore, these students did not find it difficult to relate to other students or get to know others who are different. Despite their professed feelings of isolation, all students found the technology for the course appropriate and would recommend the course to others. Although this research suggests that isolation is a significant problem, further research will be needed to identify the specific course design strategies that induced isolation in these students and why the students were otherwise so positive about the courses.

Summary

Chapter 4 provided a discussion of the results of the study, as well as a review of limitations of the research and recommendations for future research.
REFERENCES


APPENDIX A: STUDENT SURVEY

Student Survey

You are about to complete a survey of your e-learning experience. Please read each stem question carefully and select the appropriate response based on the answering instruction.

Place an X in the appropriate box:

<table>
<thead>
<tr>
<th>Age:</th>
<th>[ ] Less than 25</th>
<th>[ ] 25 or older</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender:</td>
<td>[ ] Female</td>
<td>[ ] Male</td>
</tr>
</tbody>
</table>

Number of online course completed:  
[ ] None  [ ] 1-2  [ ] 3-5  [ ] 6 or more

Since this course began, how frequently have you done each of the following:

1. Worked on an assignment for this course with a group of other students
2. Discussed the ideas and concepts taught in this course with other students
3. Discussed with other students the comments they made on one or more of your assignments or examinations for this course
4. Assisted other students who asked for help with work for this course
5. Commented on other students’ assignments or examinations for this course

<table>
<thead>
<tr>
<th></th>
<th>Three or More Times</th>
<th>One or Two Times</th>
<th>None/Not at All</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>2.</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>3.</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>4.</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>5.</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

In your opinion, to what extent were each of the following given priority in this course:

Please rate each of the following from 1 to 5 where: 1 is the lowest priority, and 5 is the highest priority.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Learning how to overcome the difficulties of working in teams/groups</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>7. Building students’ confidence in their ability to learn difficult subject matter</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>8. Helping all students in this course learn</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>9. Working in teams/groups</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

Because of the way this course uses Electronic Communication:

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>No Basis for Judgment/Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. It is difficult to relate to the other students in this class.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>11. I waste too much time communicating with others on topics that are not directly related to my course work.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>12. I am at a disadvantage, because I do not possess adequate computer skills.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>To what extent do you agree or disagree with the following:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Because of the way this course uses electronic communication, how likely are you to:</strong></td>
<td>(Mark the appropriate circle, select only one response per question)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Much More Likely</td>
<td>Somewhat More Likely</td>
<td>About the Same</td>
<td>Somewhat Less Likely</td>
</tr>
<tr>
<td>13. ...feel isolated from the instructor.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>14. ...feel isolated from other students</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>15. ...ask for clarification when you didn’t understand something.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>16. ...get to know students who are different from you in their cultural and socioeconomic background.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>17. ...feel the instructor is interested in what you have to say</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>18. ...receive detailed comments on assignments.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>19. ...receive comments on assignments quickly.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td><strong>Please answer the following:</strong></td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>20. The technology used in this course was appropriate for performing the tasks required.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>21. I would recommend this course to others</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>
# STUDENT VALIDITY TESTS

**Survey Validity Test**

The following is the exact set of questions used to measure student isolation issues in the e-learning environment of NAU nursing students. To test the validity of the questionnaire with the assumed conceptual model you are being asked to match the following concepts and constructs to each posing question (again).

After each question are two boxes. Place the concept number in the first box that you feel best describes the question followed by the letter of construct in the second box that you feel best explains the question. There are no wrong answers.

![Concepts and Constructs Diagram](image)

<table>
<thead>
<tr>
<th>Since this course began, how frequently have you done each of the following: [the three faculty member’s answers separated by commas]</th>
<th>Concept</th>
<th>Construct</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Worked on an assignment for this course with a group of other students</td>
<td>2,1,1</td>
<td>I,B,I</td>
</tr>
<tr>
<td>2. Discussed the ideas and concepts taught in this course with other students</td>
<td>3,1,1</td>
<td>I,B,I</td>
</tr>
<tr>
<td>3. Discussed with other students the comments they made on one or more of your assignments or examinations for this course</td>
<td>3,1,1</td>
<td>B,B,D</td>
</tr>
<tr>
<td>4. Assisted other students who asked for help with work for this course</td>
<td>3,1,1</td>
<td>I,B,I</td>
</tr>
<tr>
<td>5. Commented on other students' assignments or examinations for this course</td>
<td>3,1,1</td>
<td>D,B,D</td>
</tr>
</tbody>
</table>

**In your opinion, to what extent were each of the following given priority in this course:**

| 6. Learning how to overcome the difficulties of working in teams/groups | 2,3,1 | I,I |
| 7. Building students’ confidence in their ability to learn difficult subject matter | 2,3,3 | D,C,C |
| 8. Helping all students in this course learn | 2,2,2 | D,E,C |
| 9. Working in teams/groups | 2,1,1 | B,B,I |

**Because of the way this course uses Electronic Communication:**

| 10. ...It is difficult to relate to the other students in this class. | 1,2,1 | B,E,B |
| 11. ...I waste to much time communicating with others on topics that are not directly related to my course work. | 1,2,3 | E,E,E |
| 12. ...I am at a disadvantage, because I do not possess adequate computer skills. | 1,1,1 | A,A,A |
Think about a similar course you have taken that relied primarily on face-to-face discussions. Compared to that course, because of the way this course uses Electronic Communication (computers linked for information exchanges; such as computer conferences, “chat groups”, and electronic mail):

<table>
<thead>
<tr>
<th>Statement</th>
<th>Likelihood</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>13. … feel isolated from the instructor.</td>
<td>3,2,2</td>
<td>B,D,B</td>
</tr>
<tr>
<td>14. … feel isolated from other students</td>
<td>3,2,2</td>
<td>B,D,B</td>
</tr>
<tr>
<td>15. … ask for clarification when you didn’t understand something.</td>
<td>3,2,3</td>
<td>C,D,D</td>
</tr>
<tr>
<td>16. … get to know students who are different from you in their cultural and socioeconomic background.</td>
<td>3,2,3</td>
<td>B,D,B</td>
</tr>
<tr>
<td>17. … feel instructor for this course is interested in what I have to say</td>
<td>3,2,3</td>
<td>B,E,D</td>
</tr>
<tr>
<td>18. … receive detailed comments on assignments.</td>
<td>3,2,1</td>
<td>E,D,D</td>
</tr>
<tr>
<td>19. … receive comments on assignments quickly</td>
<td>3,2,1</td>
<td>E,D,D</td>
</tr>
</tbody>
</table>
### Survey Validity Test

**SCORE AS DETERMINED RESEARCHER**

<table>
<thead>
<tr>
<th>Since this course began, how frequently have you done each of the following:</th>
<th>Concept</th>
<th>Construct</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Worked on an assignment for this course with a group of other students</td>
<td>1</td>
<td>I</td>
</tr>
<tr>
<td>2. Discussed the ideas and concepts taught in this course with other students</td>
<td>1</td>
<td>I</td>
</tr>
<tr>
<td>3. Discussed with other students the comments they made on one or more of your assignments or examinations for this course</td>
<td>1</td>
<td>B</td>
</tr>
<tr>
<td>4. Assisted other students who asked for help with work for this course</td>
<td>1</td>
<td>I</td>
</tr>
<tr>
<td>5. Commented on other students' assignments or examinations for this course</td>
<td>1</td>
<td>D</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>In your opinion, to what extent were each of the following given priority in this course:</th>
<th>Concept</th>
<th>Construct</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Learning how to overcome the difficulties of working in teams/groups</td>
<td>1</td>
<td>I</td>
</tr>
<tr>
<td>7. Building students' confidence in their ability to learn difficult subject matter</td>
<td>3</td>
<td>C</td>
</tr>
<tr>
<td>8. Helping all students in this course learn</td>
<td>2</td>
<td>C</td>
</tr>
<tr>
<td>9. Working in teams/groups</td>
<td>1</td>
<td>B</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Because of the way this course uses Electronic Communication:</th>
<th>Concept</th>
<th>Construct</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. ...It is difficult to relate to the other students in this class.</td>
<td>1</td>
<td>B</td>
</tr>
<tr>
<td>11. ...I waste too much time communicating with others on topics that are not directly related to my course work.</td>
<td>3</td>
<td>E</td>
</tr>
<tr>
<td>12. ...I am at a disadvantage, because I do not possess adequate computer skills.</td>
<td>1</td>
<td>A</td>
</tr>
</tbody>
</table>

**Think about a similar course you have taken that relied primarily on face-to-face discussions. Compared to that course, because of the way this course uses Electronic Communication (computers linked for information exchanges; such as computer conferences, “chat groups”, and electronic mail):**

- How likely are [were] you to:
  - 13. ...feel isolated from the instructor. | 2 | B |
  - 14. ...feel isolated from other students | 2 | B |
  - 15. ...ask for clarification when you didn’t understand something. | 3 | D |
  - 16. ...get to know students who are different from you in their cultural and socioeconomic background. | 3 | B |
  - 17. ...feel instructor for this course is interested in what I have to say | 3 | E |
  - 18. ...receive detailed comments on assignments. | 1 | D |
  - 19. ...receive comments on assignments quickly. | 1 | D |
INSTRUCTOR SURVEY

Dear NAU instructor,

Please read the attached Disclaimer carefully before completing this survey.

<table>
<thead>
<tr>
<th>Place an X in the column that best describes your response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Are you the primary instructor for this course?</td>
</tr>
<tr>
<td>2. Are there other instructors for the course?</td>
</tr>
<tr>
<td>3. Are there assignments, rubrics, and syllabi available to students online?</td>
</tr>
</tbody>
</table>

For the following questions use the scale from 0 – 5, (0=none, 5=completely)

<table>
<thead>
<tr>
<th>4. To what degree is the course online?</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5+</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. How many assignments require students to participate in group-work?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. How often do you provide feedback on each assignment?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. How many times a week are students required to participate in class discussions?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. How many times a week do you participate in class discussions?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. How many courses have you taught online (not including this one)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. How many times have you taught this course online (not including now)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Do you have any comments you would like to share about student isolation issues in the e-learning environment?

Thank you for your time,

Joanie M. Heath, RN BSN
U of A graduate student
APPENDIX B: DISCLAIMERS

DISCLAIMER - Student

Title of Project: EXPLORING ISOLATION ISSUES IN THE E-LEARNING ENVIRONMENT

Dear NAU Student:

You are being invited to voluntarily participate in the above-titled research study. The purpose of the study is to explore isolation issues in your e-learning experience. You are eligible to participate because you are in this online course.

If you agree to participate, your participation will involve completing an online survey about your e-learning experience that will take about 10 minutes to complete. The survey can be accessed from your online course homepage. Please only take the survey once even if you see it in another course. You may choose not to answer some or all of the questions. The survey will not have identifiers and you will be completely anonymous.

Any questions you have will be answered and you may withdraw from the study at any time. There are no known risks from your participation and no direct benefit from your participation is expected. There is no cost to you except for your time and you will not be compensated for your participation.

Only the principal investigator and her thesis chair will have access to the information that you provide. Survey data will be kept secure in a password-protected electronic database.

You can obtain further information from the principal investigator, Joanie Torbet, RN, BSN at (520) 292 - 3929. If you have questions concerning your rights as a research subject, you may call the University of Arizona Human Subjects Protection Program office at (520) 626-6721.

By participating in the survey, you are giving permission for the investigator to use your information for research purposes.

Thank you.

Joanie Heath, RN, BSN
U of A Graduate student
DISCLAIMER – Instructor

Title of Project: EXPLORING ISOLATION ISSUES IN THE E-LEARNING ENVIRONMENT

You are being invited to voluntarily participate in the above-titled research study. The purpose of the study is to explore isolation issues in the E-Learning environment of students. You are eligible to participate because you teach a course that is online and part of the RN-BSN track at Northern Arizona University.

If you agree to participate, your participation will involve completing the accompanying questionnaire and posting the enclosed script online for your students. The purpose of the script is to recruit your students to take the online survey. Your questionnaire will only take approximately 10 minutes and you may choose not to answer some or all of the questions.

Any questions you have will be answered and you may withdraw from the study at any time. There are no known risks from your participation and no direct benefit from your participation is expected. There is no cost to you except for your time and you will not be compensated for your participation.

Only the principal investigator and her Thesis Advisor, Dr. Judith Effken, will have access to your name and the information that you provide. In order to maintain your confidentiality, your name will not be revealed in any reports that result from this project. Data from the questionnaire will be locked in a cabinet in a secure place.

You can obtain further information from the principal investigator, Joanie Torbet, Master’s candidate, at (520) 292-3929. If you have questions concerning your rights as a research subject, you may call the University of Arizona Human Subjects Protection Program office at (520) 626-6721.

By completing the questionnaire, you are giving permission for the investigator to use your information for research purposes.

Thank you for your participation.

Joanie Heath, RN, BSN
U of A Graduate student

Please post the following script on your course homepage when you receive email instruction to do so and remove promptly at the end of the two-week research period. This course has been chosen by an independent researcher to explore the effects of online education. Please take a few moments to read the disclaimer and promptly complete the survey. Your input is very important and appreciated. Thank you.
APPENDIX C

LETTER TO NORTHERN ARIZONA UNIVERSITY NURSING ADMINISTRATION

Dear Judith Sellers,

Evelyn Wilkerson sent you email regarding my proposal about surveying your online nursing students. I thank you for your interest in my project.

I wanted to give you a little background on the project and my plans for the next few months. This research is my thesis paper for the MSN program at the University of Arizona in which I will complete by May of this year. I'm working with my thesis chair Dr. Judy Effken, and two committee members (Dr. Geri Lamb, a professor here at the U of A, and Becky Hull, a systems manager at University Medical Center). I have yet to be approved by human subjects testing board (which I understand takes about a month), then I might have to present it to the NAU human subjects testing board (?) prior to posting my survey online for the nursing students to complete (and if this takes a month, I'll be pressed a bit for time - but perhaps near the end of the semester would be a better time to survey students anyway, it just means I'll have to compile my data and make my final presentation quickly to meet the deadline to graduate).

I'm looking at student isolation issues in the e-learning environment. There's not much research on this subject so I'm sure it will be interesting to discover just how prevalent these issues might be and with that information be able to develop strategies that would prevent student isolation in the future. I'm sure instructors that are being forced to move from traditional teaching into an online medium are often frustrated with the amount of time it takes to develop such a course let alone be support to students at the same time. The strategies that I hope to develop from this research could be particularly useful for those instructors as they forge into this new frontier. After the research is complete I will submit to publication so if the study becomes recognized rest assured that NAU (as well as U of A) will get some good advertisement for online studies! I enjoyed all of my online coursework at NAU and also recognized the frustration of those (students and teachers) making that transition, my goal is to improve the e-learning experience.

I would like to know what you think about who my subjects should include. BSN level only? MSN level only? PhD level? A combo or a select group? My thinking is that BSN level students are at a higher risk because it might be the first time they have been exposed to e-learning, especially coming out of high school. PhD students are probably least at risk because they are more attentive to and active in their own learning. MSN students might be a good middle ground however the research might be more applicable for BSN level students so they might be the group that needs the analysis in the first place. I was leaning more toward your RN-BSN core courses (the three 9 credit classes) which might give us a good look into isolation issues also related to distance learning. What is your thinking on this?

Thank you again for your interest and I look forward to working with you.

Sincerely,

Joanie Heath, RN, BSN
Hi Joanie,

I surveyed the faculty teaching web courses or who have web components. All responses were positive. I think you will need to go through NAU IRB since they will be NAU students.

The majority of faculty has wanted to move to web based courses. We also have a great deal of university support for creating courses. It DOES take time, but it is something they want to do. The other thing is the amount of work for faculty in web courses. I believe we try to create discussion groups and chat rooms but the work for faculty and student is sometimes daunting.

This would really be wonderful. I think your thesis will give needed information. I know faculty worry about isolation and their need for face-to-face, but is this also a student need?

I am not sure if you would get the sample size needed for adequate power analysis using all three BSN groups. However, I would love to see the differences. I believe the RN/BSN might feel more loneliness because of fewer face-to-face contacts with fellow students and faculty so you may be correct in focusing on them. Remember, however, they are more independent learners.

So, the RN/BSN group might be your best choice if you need to have just one group. Also, I think you would be able to move ahead much faster.

Dr. Sally Doshier and I would be most happy to assist. I believe you heard from Dr. Doshier via Evelyn Wilkerson. I would suggest, if agreeable to your committee, that it MIGHT (not really sure) be good to have Dr. Doshier as an outside member of your committee.

We are looking forward to working with you and the entire faculty feels that this is a very worthwhile topic.

Please let Dr. Doshier or me know what I can do to facilitate.

Thank you for this explanation of your study and your interest in using the NAU student experience with distance learning.

Don't forget, you have to go through the NAU human subjects review. Then, you need to work with Dr. Sally Doshier on the access issues. It would be good if you sent materials to both of us, then we can discuss and decide who can help with what need.

Judith Sellers

Judith Bunnell Sellers DNSc, APRN, BC, FNP
Chair & Associate Professor
Northern Arizona University
Department of Nursing
Box 15035
Flagstaff, AZ 86011
Phone: 928-523-6712
Fax: 928-523-7171
e-mail: judith.sellers@nau.edu
ACCEPtANCE LETTER FROM NAU ADMINISTRATION

NORTHERN ARIZONA UNIVERSITY
DEPARTMENT OF NURSING

July 14, 2004

Ms. Joan Torbet
PO Box 5341
Tucson, AZ 87503

Dear Ms. Torbet,

In consultation with Dr. Judith Sellers, Chair of the Nursing Department at Northern Arizona University, we are pleased that you are choosing to research the RN student experience in online learning here at NAU. You have indicated that you are in process of working with the NAU Institutional Review Board for approval of your study. Pending IRB review and approval, the Department of Nursing will support your study. I will be your future contact person, and will facilitate your study within the NAU Nursing Department. Please do not hesitate to let me know in what ways I can assist you in your research.

Sincerely,

Sally Doshier, EdD, RN
Assistant Professor
(928)523-8367
Sally.Doshier@nau.edu

PO Box 15035, Flagstaff, AZ 86011-5035 (928) 523-2671
HUMAN SUBJECTS APPROVAL LETTER

THE UNIVERSITY OF
ARIZONA.
TUCSON ARIZONA

9 July 2004

Joanie Torbet, B.S.
Advisor: Judith Effken, Ph.D.
College of Nursing
PO BOX 210203

RE: STUDENT ISOLATION ISSUES IN THE e-LEARNING ENVIRONMENT

Dear Ms. Torbet:

We have received documents concerning your above referenced project. Regulations published by the U.S. Department of Health and Human Services [45 CFR Part 46.101 (b) (2)] exempt this type of research from review by the Institutional Review Board. Note: A copy of your disclaimer forms with IRB approval stamp affixed, is enclosed for duplication and use in enrolling subjects.

Please be advised that clearance from academic and/or other official authorities for site(s) where proposed research is to be conducted must be obtained prior to performance of this study. Evidence of this must be submitted to the Human Subjects Protection Program office.

Exempt status is granted with the understanding that no further changes or additions will be made either to the procedures followed or to the consenting instrument used (copies of which we have on file) without the review and approval of the Human Subjects Committee and your College or Departmental Review Committee. Any research related physical or psychological harm to any subject must also be reported to each committee.

Thank you for informing us of your work. If you have any questions concerning the above, please contact this office.

Sincerely,

Rebecca Dahl, R.N., Ph.D.
Director
Human Subjects Protection Program

cc: Department/College Review Committee
APPENDIX D: SURVEY RESPONSES

NAU Nursing Student Survey Responses

<table>
<thead>
<tr>
<th>Survey Question</th>
<th>3 or more times</th>
<th>1-2 times</th>
<th>None</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I have frequently worked on an assignment with a group</td>
<td>1 (5%)</td>
<td>6 (29%)</td>
<td>14 (67%)</td>
<td></td>
</tr>
<tr>
<td>I have frequently discussed concepts of course with other students</td>
<td>13 (62%)</td>
<td>7 (34%)</td>
<td>1 (5%)</td>
<td></td>
</tr>
<tr>
<td>I have frequently discussed with other students comments they have made</td>
<td>12 (57%)</td>
<td>6 (29%)</td>
<td>3 (14%)</td>
<td></td>
</tr>
<tr>
<td>I have frequently assisted other students who asked for help in this course</td>
<td>4 (19%)</td>
<td>8 (38%)</td>
<td>9 (43%)</td>
<td></td>
</tr>
<tr>
<td>I have frequently commented on other students' assignments or exams</td>
<td>13 (62%)</td>
<td>5 (24%)</td>
<td>3 (14%)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Survey Question</th>
<th>1 lowest priority</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5 highest priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel priority was given to learning to overcome difficulties with working with groups</td>
<td>9 (43%)</td>
<td>4 (19%)</td>
<td>6 (29%)</td>
<td>2 (10%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>I feel priority was given to building students’ confidence in their ability to learn difficult subject matter</td>
<td>1 (5%)</td>
<td>5 (24%)</td>
<td>7 (34%)</td>
<td>4 (19%)</td>
<td>4 (19%)</td>
</tr>
<tr>
<td>I feel priority was</td>
<td>2</td>
<td>3</td>
<td>7</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Survey Question</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
<td>No Basis for Judgment</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------</td>
<td>----------------</td>
<td>-------</td>
<td>----------</td>
<td>-------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>I feel priority was given to helping all students learn in this course</td>
<td>(10%)</td>
<td>(14%)</td>
<td>(34%)</td>
<td>(14%)</td>
<td>(29%)</td>
</tr>
<tr>
<td>E-learning makes it difficult to relate to other students in the class</td>
<td>1 (5%)</td>
<td>6 (29%)</td>
<td>7 (34%)</td>
<td>7 (34%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>E-learning causes me to waste too much time communicating with others on topics that are not related to coursework</td>
<td>0 (0%)</td>
<td>2 (10%)</td>
<td>9 (43%)</td>
<td>10 (48%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>E-learning causes me to be at a disadvantage because I do not possess adequate computer skills</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>7 (35%)</td>
<td>13 (65%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Survey Question</td>
<td>Much more likely</td>
<td>Somewhat more likely</td>
<td>About the same</td>
<td>Somewhat less likely</td>
<td>Much less likely</td>
</tr>
<tr>
<td>Because this course is online I feel isolated from the instructor</td>
<td>0 (0%)</td>
<td>9 (43%)</td>
<td>5 (24%)</td>
<td>1 (5%)</td>
<td>5 (24%)</td>
</tr>
<tr>
<td>Because this course is online I feel isolated from other students</td>
<td>0 (0%)</td>
<td>10 (48%)</td>
<td>5 (24%)</td>
<td>1 (5%)</td>
<td>5 (24%)</td>
</tr>
<tr>
<td>Because this courses is online I ask for clarification when I don’t understand</td>
<td>5 (24%)</td>
<td>2 (10%)</td>
<td>11 (52%)</td>
<td>1 (5%)</td>
<td>2 (10%)</td>
</tr>
<tr>
<td>Because this course is online I get to know</td>
<td>1 (5%)</td>
<td>3 (38%)</td>
<td>9 (43%)</td>
<td>6 (29%)</td>
<td>2 (10%)</td>
</tr>
<tr>
<td>Survey Question</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly disagree</td>
<td>No basis for judgment</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------</td>
<td>----------------</td>
<td>-------</td>
<td>----------</td>
<td>-------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>The technology used in this course is appropriate for performing the tasks required</td>
<td>8 (38%)</td>
<td>13 (62%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>I would recommend this course to others</td>
<td>8 (38%)</td>
<td>11 (52%)</td>
<td>1 (5%)</td>
<td>0 (0%)</td>
<td>1 (5%)</td>
</tr>
<tr>
<td>Question</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------------</td>
<td>-----</td>
<td>----</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are you the Primary Instructor for course?</td>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(75%)</td>
<td></td>
<td>(25%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are there other instructors for this course?</td>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(75%)</td>
<td></td>
<td>(25%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assignments, syllabus, etc. all online?</td>
<td>4</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(100%)</td>
<td></td>
<td>(0%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Question</td>
<td>None</td>
<td>Completely</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To what degree is the course online?</td>
<td>0</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Question</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>How many assignments require group work?</td>
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<tr>
<td>(25%)</td>
<td>(0%)</td>
<td>(50%)</td>
<td>(0%)</td>
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<td>(25%)</td>
</tr>
<tr>
<td>How often do you provide feedback per assignments?</td>
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<tr>
<td>(0%)</td>
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<td>(0%)</td>
<td>(25%)</td>
<td>(0%)</td>
<td>(0%)</td>
</tr>
<tr>
<td>How many times per week are students required to participate in class discussions?</td>
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<td>2</td>
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<tr>
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<td>(25%)</td>
<td>(50%)</td>
<td>(0%)</td>
<td>(0%)</td>
<td>(25%)</td>
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<tr>
<td>How many times a week do you participate in class?</td>
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<tr>
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<td>(25%)</td>
<td>(0%)</td>
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<td>(50%)</td>
</tr>
<tr>
<td>How many courses have you taught online?</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
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</tr>
<tr>
<td>(25%)</td>
<td>(0%)</td>
<td>(25%)</td>
<td>(0%)</td>
<td>(0%)</td>
<td>(50%)</td>
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<tr>
<td>How many times have you taught this course online?</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
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<td>(25%)</td>
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<td>(50%)</td>
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