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### Transactional Distance and Course Structure: A Qualitative Study

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Transactional Distance and Course Structure: A Qualitative Study

By

Beth L. Vealé

A DISSERTATION

Presented to the Faculty of

The Graduate College at the University of Nebraska

In Partial Fulfillment of Requirements

For the Degree of Doctor of Philosophy

Major: Educational Studies

Under the Supervision of Professors James L. King and Allen Steckelberg

Lincoln, Nebraska

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To anyone I have forgotten: thank you, too!

## **Dedication**

This dissertation is dedicated to my parents, Howard and Shirley Sylvester who taught me how to learn. I wish you were here to see this!

# Transactional Distance and Course Structure: A Qualitative Study

Beth L. Vealé, Ph.D.

University of Nebraska, 2009

Advisors: James L. King and Allen Steckelberg

The last ten years has born witness to the rapid development and widespread offering of education at a distance. Even though distance education has been around since the 1970s, little attention has been given to how the structure of an online course influences students' connections to the course or the instructor. Based on Michael G. Moore's (1972) theory of transactional distance, this study examined one cluster of his theory—course structure. An extensive review of relevant literature revealed that there was a gap in research related to online course structure. In an effort to contribute to closing this gap, this study explored student experiences related to the structure of online Radiologic Science courses. A qualitative, phenomenological study of these experiences provided a base of knowledge from which conclusions could be drawn and suggestions made.

Twenty students in a fully online Radiologic Science baccalaureate program were interviewed and those interviews were analyzed for emergent themes. The major themes, design, environment, social, and transition help to define the elements of course structure that best serve students by increasing their feelings of connectedness and decreasing transactional distance.

The results of this study may be beneficial to online instructors and developers who are developing new or revising existing courses to better address the needs of their

students. Structuring online courses so that students feel a strong sense of connectedness reduces transactional distance.

## CHAPTER 1

### INTRODUCTION

#### *Statement of the Problem*

In 1972, Michael G. Moore posited a theory that framed distance education as a pedagogical concept he termed “transactional distance”. Derived from a concept of transaction introduced by Dewey and Bentley (1949) and further developed by Boyd and Apps (1980), Moore built his theory around the “psychological and communication space” that exists between learners and instructors in distance education” (p.22). This transactional theory of distance suggested that education delivered at a distance was less an issue of how far a student was geographically removed from the instructor, but more about the distance between the instructor and his/her relationship with the student. He described three clusters of variables: dialog, course structure, and learner autonomy and his belief that the amount of dialog, flexibility of course structure, and degree of interaction between the learner and instructor affects the amount of transactional distance. Moore argued that more learning and greater satisfaction with a course will occur with less transactional distance.

Gorsky and Caspi (2005) reviewed empirical studies attempting to validate Moore’s theory. They found six empirical studies that tried to support the theory; however, three failed in terms of construct validity and three found only limited support. Gorsky and Caspi stated that the theory was actually a tautology (understanding vs. misunderstanding) with philosophical impact and high face validity, but that it lacked empirical study validation and was mostly prescriptive. Gokool-Ramdoo (2008) argued

that there was more than sufficient evidence that Moore's theory "should be accepted as a global theory for the further development of distance education" (p.1).

She thought that educational theorists and practitioners were adopting Moore's theory with and without actually acknowledging the theory and felt it could be expanded to include other educational applications such as quality assurance and policy development. Gokool-Randoo's belief was that the theoretical framework of Moore's transactional distance theory was necessary to validate further research.

Stein, Wanstreet, Calvin, Overtoom, and Wheaton (2005) studied learner satisfaction based on course structure, interactions, and technical expertise. Their study, based on Moore's theory, found that course structure, rather than course delivery, and how interactions were built into the course had a significant impact on learner satisfaction.

Although there was a wide variety of prescriptive literature about the relationship between course structure and student satisfaction (Gould, 2006; Stein & Wanstreet, 2003; Summers, Waigandt, & Whitaker 2005; Vanoshi, Pierce, & Slotkin, 2004), few studies were found that broke down course structure into individual components that specifically contributed most to the reduction of transactional distance. Phipps and Merisotis (2000) identified benchmarks for excellence in online learning in their study of six institutions considered leaders in distance education. Under the category of course structure, they identified seven benchmarks:

- Students are provided with supplemental course information that outlines course objectives, concepts, and ideas.

- Specific expectations are set for students with respect to a minimum amount of time per week for study and homework assignments.
- Faculty are required to grade and return all assignments within a certain time period.
- Sufficient library resources are made available to the students.
- Students are instructed in the proper methods of effective research, including assessment of resource validity.
- Before starting the program, students are advised about the program to determine if they have the self-motivation and commitment to learn at a distance.
- Learning outcomes for each course are summarized in a clearly written, straightforward statement (pp. 16-17).

These seven benchmarks imply that if employed properly, student satisfaction will increase, and consequently, transactional distance will decrease. While this dissertation was not focusing on student satisfaction, it was briefly discussed in the literature review simply because of the number of studies that support the theory that as satisfaction increases, transactional distance decreases.

Mishra (2001) further expanded course structure into five categories: organization, support tools, learning strategy models, learner tools, and evaluation. Similarly, Summers, Waigandt, and Whittaker (2005) found in their study comparing face-to-face with web-based instruction that the design of the course, particularly in the area of organization, had a significant impact on student satisfaction. Despite the suggestions of these research studies, it was unclear how specific components of course

structure influence students' perceptions of what they learn in an online course and how the structure affects transactional distance. Moore (1997) described course structure only in terms of flexibility, or how “the extent to which an education program can accommodate or be responsive to each learner’s individual needs” (pg. 24).

Using a phenomenological approach, this research study examined how transactional distance may be increased or decreased based on the structure of selected online courses. Course structure elements included course flexibility, organization, syllabi, instructions, technology, and evaluation. Because dialog or interactivity was a cluster itself and was the focus of much of the research centering on Moore’s theory, it was not included in this study.

### *Background of Study*

Regardless of the subject matter, students in online course had expectations concerning their responsibilities in the course just as instructors had expectations for students to perform at a prescribed level in that course. Course structure in any environment provided the foundation for those expectations by providing a syllabus, instructions, assignments, interactions, evaluation, and technology components to communicate the instructor’s intent and requirements. A model of transactional distance based on Moore’s theory (Vealé & Watts, 2006) was seen in Figure 1-1. It expanded the theory into tangible elements, providing a framework for this study. In this model, course structure became the major element of distance education, containing the element of dialog. Learner autonomy, defined by Moore (1991) “becomes a direct result of course structure and the dialog contained within it. While course structure was the only

element addressed by this study, it was important to understand the relationship of these clusters describe by Moore (1993).

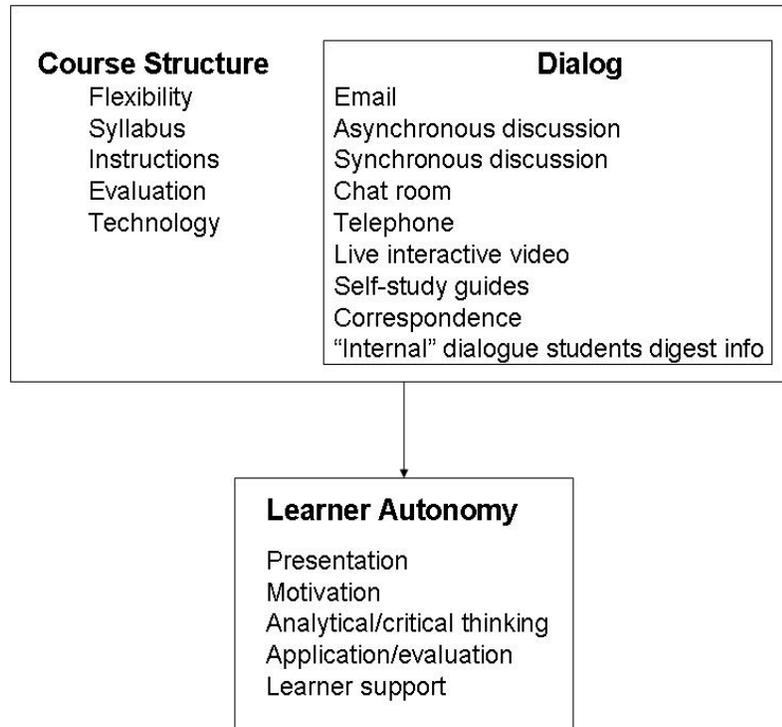


Figure 1: Vealé and Watts (2006). Model of Transactional Distance based on Moore's Theory of Transactional Distance. Note that dialog was situated within course structure and learner autonomy was affected by both course structure and dialog.

### *Purpose Statement*

The purpose of the study was to explore the influence of course structure on students' feelings of transactional distance. Through a qualitative study with a phenomenological approach, this researcher explored students' experiences related to specific course structure elements to determine which elements reduced transactional distance the most. The sample population was undergraduate students enrolled in online classes at a post-secondary institution who were pursuing baccalaureate degrees in

Radiologic Science online. All participants completed at least nine hours of online courses in their program.

### **Research Questions**

#### *Central Question:*

How did transactional distance relate to elements of online course structure?

(Transactional distance referred to the psychological distance a student may feel rather than geographic distance. Psychological distance referred to perceptions about an online course that made a student feel more or less connected to the instruction or the instructor).

#### *Sub Questions:*

1. How did the organization of course elements such as the placement of the syllabus, instructions, navigation of the course, etc, define students' perceptions of transactional distance (their feelings of closeness/nearness to the course and/or the instructor)?
2. How did the syllabus contribute to students' feelings of connectedness to the course/instructor?
3. How did the units of course instruction (assignments or modules) shape students' perceptions of transactional distance?
4. How did course technology components (system of delivery, video, and audio components influence students' perceptions of transactional distance?
5. How did evaluation components (exams, quizzes) change students' perceptions of transactional distance?

### ***Definition of terms***

#### Online course

- instruction delivered by a course management system through the Internet with no classroom or face-to-face component

#### Transactional distance

- separation of the learner from the instructor in terms of psychological and communication space rather than physical distance (Moore, 1997). May be referred to as connectedness when referring to feelings of closeness to the instructor or instruction. Disconnectedness refers to feelings of greater psychological distance from the instructor or instruction.

#### Course structure

- referred to the combination and interdependence of specific elements that result in conveyance of the objectives and desired outcomes of instruction. Bills (1997) defined structure as “the instructional strategy that provides the framework for the learning activity, giving the learner an advanced organizer.

#### Course flexibility

- “the extent to which an education program can accommodate or be responsive to each learner’s individual needs” (Moore, 1997, p. 24). In this context, flexibility often referred to the extent to which the learner could design his or her course pathway.

#### Course organization

- the way an online course was assembled; the placement of various components within a course

#### Feedback

- messages or information returned to a source; in educational courses delivered online, feedback may take the form of grades, comments on written assignments, emails from the instructor or students, or any other method of response.

#### Technology components

- computer-based supplements to online courses such as video, audio, presentation software, email, discussion boards, or activities that require user interactivity.

### *Assumptions*

One underlying assumption of this study was that components of online course structure can be identified and related to transactional distance. It was assumed that the degree of flexibility in course structure has an effect on perceived learning, and increases or decreases transactional distance based on Moore's (1997) theory of transactional distance. It was assumed that course materials were present in the courses for the purpose of increased learning with the belief that learners would be more connected to the course and instructor.

### *Delimitations*

The courses represented in this study were from one four-year public university, Midwestern State University, in Wichita Falls, Texas. This university was mid-sized with a student population of close to 6,000 students. It recently gained recognition as the only liberal arts university in the state of Texas. Online students comprised more than 30% of the total student population. The findings were limited to undergraduate Radiologic Science student experiences within this institution. For these findings to be generalized to a larger population, geographic representation would need to be greatly expanded, a wider variety of educational programs included, and other institutions such as community colleges, private institutions, and other institutions of higher education should be included.

### *Limitations*

Moore's theory of Transactional Distance included three clusters of variables: dialog, course structure, and learner autonomy. Only the cluster of course structure was

addressed in this study. While the variables of dialog and learner autonomy were touched on, no attempt was made to fully address these areas. In addition, no attempt was made to determine instructor motivation or actual intent related to course structure components.

Another limitation was that only courses delivered entirely online were addressed. There was no attempt to include hybrid course structures or supplemental online course content.

### *Researcher Bias*

The researcher has been teaching distance education courses since 1990. These courses have differed in structure from paper and pencil courses mailed to students to fully functional courses delivered entirely online. The subject matter of courses have varied from radiation physics and medical imaging modalities to sectional anatomy, quality improvement, and applied research. Between 1995 and 2007, she had developed five fully online baccalaureate Radiologic Science courses for delivery through WebCT® or WebCT/Blackboard® course management systems.

Since August 2005, this researcher has completed 16 courses as part of a doctoral program at the University of Nebraska/Lincoln. Fourteen of these courses were delivered completely online through the Blackboard© course management system and two were delivered through a web-based instructor-designed system.

Participation in online courses and experience in the development of online courses give this researcher a unique perspective. Acknowledgement of and attention to elimination of personal bias related to online course experience diminished its effects on this study.

### *Significance of the Study*

The delivery of education at a distance increased dramatically in the past 5 years. Student enrollment in at least one online course increased from 1.9 million in 2003 to 2.35 million in 2004, and by the fall of 2005, online course offerings by post-secondary (both private and public) had increased by 62% (Sloan Consortium, 2005). With this steady and rapid growth of enrollment and course offerings, and the wide variety of literature recommending changes in teaching strategies, it makes sense to look deeply at the way course structure affects student learning. Because students were not physically present in a traditional classroom, it also makes sense to look at how transactional distance impacts learning.

If course structure has an effect on learners, it would be valuable to know what specific components of that structure lead to increased perceived learning and decreased transactional distance. Knowledge gained by this kind of study would better inform any researcher, course designer or instructor who wishes to include these components in an online course. If this researcher discovered which components lead to greater perceived learning, transactional distance may be lessened which would decrease the students' feelings of isolation and further encourage students to continue taking online courses.

This researcher was interested in the relationship of course structure to transactional distance and in discovering if certain components of course structure have a greater effect on perceived learning than did others,. Future course developers may gain information that may lead to restructuring of courses in such a way as to increase perceived learning, as well as to reduce transactional distance.

## CHAPTER 2

### LITERATURE REVIEW

#### *Transactional Distance*

The terms transactional distance arose from a theory (Moore, 1993), which was based on a concept by John Dewey and Arthur Bentley, two American philosophers. Dewey and Bentley (1949) presented education as transactional, or as situational relationships between learners, their environments, and learner behaviors. Moore expanded this concept by defining distance education as a type of transaction, and the distance between learners and teachers as psychological rather than physical. He described this transactional distance as a “continuous...variable...; relative rather than an absolute term”. (p.22), and constantly changed depending on the situational environment. According to his theory, teaching and learning strategies have to be adjusted to avoid potential misunderstandings due to transactional distance. In his definition of transactional distance, Moore stated the existence of three clusters: course structure, dialog, and learner autonomy.

A number of studies conducted on each of these clusters focused on dialog or interactions between learners, learners and instructors, and occurring within the learner (Chiou & Chung, 2003; Tuovinen, 2000; Vonderwell, Liang, & Alderman, 2007). Learner autonomy, (the extent to which the learner rather than the teacher determined learning) had also been studied as evidenced by the following examples: Cotterall, S., (1995); Little, D., (1991); Schwienhorst (2003); Pearson and Lewin (2005); Filak and Pritchard (2007); Ciekanski (2007). While a good deal of attention has been given to the clusters of dialog and learner autonomy, the third cluster, course structure, has largely

been ignored, appearing most often as a repeat of Moore's (1993) description of it as a part of transactional distance. This literature review centered on studies related to the cluster Moore referred to as "course structure." This review also attempted to reveal what course structure was and what specific elements constituted course structure.

An extensive search of relevant literature was conducted using ERIC, Academic Search Premier, First Search, and the Internet. Over 200 articles were found which included one or more of the clusters of transactional distance theory. Those that focused only on dialog or learner autonomy were excluded. Keywords in the search included the following: transactional distance, course structure, flexibility of course structure, student satisfaction, online education, online course development, online syllabus, online instructions, online assessment, and perceptions of learning.

### **Course Structure**

Moore (1997) described course structure as the amount of flexibility of instructional elements such as course goals, instructions, evaluation methods, and teaching strategies. Additionally, he described structure as the ability of a course to respond or adapt to the needs of the learner. If activities within a course were rigid and did not allow individuals to vary or adapt activities to their needs, transactional distance increased. Bills (1997) defined course structure as "an instructional strategy that shows students how the instructional material was organized and how it relates to what they have previously learned" (p. 4). In his study of the effects of structure and interactivity on student achievement in Internet-based instruction, Bills found that well-structured Internet learning materials resulted in successful learning outcomes.

Most studies that focused on Moore's theory simply reiterated the description of course structure without specifically addressing elements contained within the course that contributed either positively or negatively to flexibility (Gorsky & Caspi, 2005; Jung, 2001; Stirling, 1997). Lemak, Shin, Reed, and Montgomery (2005) defined course structure as the degree of responsiveness of a course in meeting the needs of an individual student; the less structure a course has, the smaller the transactional distance. They further described rigid course structure as one with fixed objectives, limited evaluation strategies, and only one teaching strategy. In their study of 406 business students in 15 courses delivered online, they found with regard to course structure that instructor effectiveness was rated higher when students experienced flexibility in teaching strategies and evaluation, which reduced transactional distance.

### **Elements of Course Structure**

#### *Course Flexibility or Rigidity*

Drennan, Kennedy, and Pisarski (2005) investigated factors affecting student satisfaction with flexible online learning. They framed flexible learning as a trend in education, defining it as a move toward students as active participants in their own education. In their study of 256 first-year students in an introductory management course, Drennan, Kennedy, and Pisarski used surveys at the beginning and the end of an introductory management course to examine factors that affected student satisfaction with flexible online learning. They found that course structure had a significant effect on student satisfaction; the more flexibility of course structure, the higher the student satisfaction and the greater the learning.

In a review of studies on structural features of Web-based learning, Jung (2001) discovered three key features of flexible and adaptable Web course content: expandability of course content, adaptability of that content by the learners for their needs, and visual layout of the course on the computer screen. Gerson (2000) stressed consistent educational structure as very important for online teaching no matter what the subject or discipline. Chen & Willits (1998) studied 121 learners to determine if their videoconferencing experiences supported Moore's theory of transactional distance. While they did not find a significant correlation between course structure and learning outcomes, the rigidity of the course design or organization was affected by the level of the course. No explanation was given regarding what was used to determine or differentiate course level.

Sahin (2008) described course structure in terms of the relationship between learner control and dialog. He associated rigid course structure with low dialog and high individual learner control, and flexible course structure with high dialog and high social learner control. His study determined that the more dialog within a course and the more flexible the content, the smaller the transactional distance. Lemone (1997) explored course structure in terms of the amount of dialog between the learner and instructor and described a rigid course structure as one with little or no dialog and in terms of time and date constraints imposed upon the learner.

### *Organization*

While many of these studies focused on structure as the amount of active participation of the students and describe certain features of structure such as having a syllabus, instructions, evaluation, and interaction, few pointed to how the instructions

should be organized. For example, Huang (2002) studied 37 students in three different courses to determine their experiences in online learning. A good portion of this study was based on Moore's (1997) theory of transactional distance. The section on course structure asked questions related to course organization (syllabus, assignments, and grading criteria) and course delivery (materials, access, active participation, relevance of course materials to student needs). Huang found that well-organized courses that delivered course content in a flexible way were critical in decreasing transactional distance. It has been the experience of this researcher that in all online courses (taught and taken), course materials have been organized into units or modules, both at the undergraduate and graduate level. This may be a common feature in online courses simply accepted as standard and not thoroughly discussed in the literature.

In the Southern Regional Education Board's (SREB) *Standards for Quality Online Teaching*, under the Standards for Instructional Design, course units and lessons appeared as an indicator of course, unit, and lesson design. The standard further described quality unit or lesson design as one that included an overview. According to the SREB, the overview should describe objectives, activities, and resources for each unit with activity descriptions and central assignments. Despite the lack of studies focusing on organization and composition of units of instruction, it should be beneficial to discover if organization and content of units of instruction or lessons affect students' perceptions of learning and if there was any effect on transactional distance.

A few studies were found that addressed specific content elements that constitute course structure. Moore and Kearsley (1996) identified learning objectives, content themes, presentation of information, case studies, projects, exercises, and tests as key

elements in course structure. Chen (2001) further identified “learning materials, discussion questions, hyperlink keywords, assignment requirements, chapter resources, chapter quiz, concept/theory presented by instructor and perspective/ideas post [sic]” (p. 466) as key course content/structure elements.

### *Syllabus*

Grigorovici, Nam and Russill (2003) studied the effects of online syllabus interactivity on the students’ impression of the course syllabus and instructor. They found that courses with high numbers of “links and navigation options” (p. 48) resulted in negative first impressions of the professor. This would suggest that negative first impressions could increase transactional distance. Grigorovici, Nam, & Russill (2002) looked at online syllabus interactivity and its effect upon students’ impressions of the syllabus and instruction. They found that a high number of hyperlinks, considered a high level of interactivity, resulted in a negative first impression of the instructor. In addition, this study focused on large amounts of text-based materials that they thought may have also contributed to negative impressions. Behnke and Miller (1989) found that the course syllabus works as the first impression of the course as a whole and helps to establish course goals and expectations and to communicate teaching strategies that would increase students’ interest and participation.

### *Instructions*

Huang and Liaw (2004) looked at multiple learning theories with the intent of linking these theories to instructional design and teaching practices. Based on these theories, including Moore’s (1993) theory of transactional distance, they developed 12

instructional principles. One of these principles suggested that well-structured instructions should result in “simplifying, generating new propositions, and increasing the manipulation of information” (p. 131).

In Desharnais and Limson’s (2007) discussion of 10 guiding principles for the development of Web-based activities, they emphasized “detailed context-sensitive instructions for students” (pg. 34) as critical aspects of online support for students, that should include detailed descriptions of activities, suggestions for assignments, and scientific background information. Chin and Williams (2006) identified another principle that “adult learners must understand the rationale and purpose of their learning” (pg. 14). It made sense then that clearly defined instructions in an online course should lead to increased perceptions of learning and decreased transactional distance. Steinman (2007) suggested, “Through leadership, online instructors can design online learning so that students are engaged in the process” (p. 50). She found that as engagement or interaction increased, transactional distance decreased. One way she suggested for accomplishing this decrease was that online classes should offer meetings such as “interactive office hours” (p 47).

### *Technology*

Online course structure often includes elements related to technology. The technology element was two-fold. The platform for the delivery of education courses was one aspect, and the various technology components situated within the course was another. Blass and Davis (2003) discussed selection of an appropriate technical platform for online learning support. Specifically, they identified a need to determine the balance between technical modalities such as text, graphics, audio, video, email, navigational

aids, and messaging to determine how the platform should “look and feel” (p. 239) so that the best student support could be achieved. They also suggested that development of online learning platforms were relatively simple but not necessarily appropriate and cited interaction, belonging, and applicability and usability of electronic resources rather than functionality as key concerns when choosing and/or developing course delivery mechanisms. The SREB *Standards for Quality Online Teaching* cites ease of navigation, availability of alternative resources, content-specific tools and software, and interoperability standards that allow content, question, assessment, and result sharing as some of the key indicators of course delivery quality.

Vonderwell and Zachariah (2005) noted that the technology interface has an influence on student participation and interaction, and noted that interface design, which “affords spatially and visually well-organized discussion” (p. 223), enabled meaningful participation. Gerson (2000) suggested that the design traits of an online course were important in establishing the flow of the course and in keeping students engaged. He believed that students could easily become confused or lost if not constantly reminded of what was required. He recommended a mixture of lecture notes, visual and audio support, online chat links, and quizzes to accomplish a connection between the student and the course, reducing isolation. These practices also should result in a reduction of transactional distance and an increase of satisfaction and perceived learning.

### *Evaluation*

All students, regardless of educational level, have an expectation that some type of evaluation strategy will be employed during or after their involvement in a course. Blass and Davis (2003), in a discussion of the lack of consideration given to designing

effective instruction, cited two guiding principles for the development of effective and appropriate evaluation. These included reinforcement strategies such as providing feedback, enforcing deadlines, setting appropriate attendance controls, and establishing rewards. They refer to a balance of “carrot and stick” (p. 241) where the assessment process was the punishment (stick) or reward for the “carrot” composed of feedback and recognition for success or completion of learning activities. The question remains as to whether or not evaluation strategies in an online course affect perceptions of learning and transactional distance.

Beise and Wynecoop (2001) described a framework for the design and evaluation of online courses based on Maslow’s Hierarchy of Needs. With respect to evaluation, they found that students believed they learned more from practice and graded quizzes than from Web discussions and group projects. These students also preferred more structure and familiar tools such as quizzes to Web discussions and virtual teamwork. Beise and Wynecoop suggested that both students and instructors needed “flexible toolkits” (p. 83) to allow a more progressive approach to advanced and challenging course tools.

### **Satisfaction and Perceptions of Learning Online**

DiBiase (2004) used the Five Pillar Framework from Sloan-C to develop questions to help educators insure quality in online courses. For student satisfaction, he posed the following questions related to course content:

- What are students’ perceptions about the quality of course content?
- In what ways can student satisfaction be increased? (p.7)

It was his position that when faculty can answer these questions, courses can be developed or revised that will result in increased student satisfaction. Shin (2006) looked at online learners' "flow" experiences,(i.e., the amount of perceived control a student has over the learning experience, the amount of attention the learner gives to an interaction, the amount of curiosity that arises in the learner during an interaction and the amount of intrinsic interest the learner derives from the interaction). Shin determined that "flow is a strong indicator of student satisfaction with online learning" (p. 719). His assumption was that the higher the flow, the greater the student satisfaction.

Gould and Padavano (2006), in their discussion of improving student satisfaction in online courses, suggested that inclusion of the syllabus was important for the purpose of informing students about expectations and course organization. They also suggested frequent student-to-student and instructor-to-student interactions and flexibility in course structure, including elements that influence student satisfaction and perceptions of learning. Other components of course structure, such as time management, interactions, and technology, were found to have a profound effect on student satisfaction. (Vamosi, Pierce, & Slotkin, 2004). In a study examining three aspects of the learning environment, Stein & Wanstreet (2003) found that the ability to choose the type of collaborative format and increased flexibility in course structure with regard to collaboration choices increased student satisfaction with online courses, increased the amount of learning they perceived, and decreased transactional distance.

Summers, Waigandt, and Whitaker (2005) studied an introductory undergraduate statistics course to determine if a difference existed between online and face-to-face offerings of the course where student achievement and satisfaction were concerned.

While they did not address specific components of course structure as such, they did find that bulletin board discussions resulted in lower student satisfaction. Due to possible problems with clarity, students were less satisfied with the quality of questions presented in the Web version of the course, even though each group received nearly identical questions. Clarity of explanations also was cited as a possible reason that the Web course students felt dissatisfied with evaluation and grading techniques. The authors emphasized the need for explicit instructions in an online course.

The next chapter described the research design and the qualitative methodology chosen for this study. It included a review of qualitative research and follows prescribed steps for the completion of a phenomenological study. The purpose of the study and the research questions were included.

## **CHAPTER 3**

### **Research Design and Methodology**

This research study investigated the effects of specific elements of course structure on transactional distance. According to Moore (1991), the amount of flexibility or rigidity in course structure also affects student learning. Because the format of the Radiologic Sciences program presented all course material through the WebCT/Blackboard® hybrid course delivery platform, and the program was undergraduate in nature, the flexibility of the courses were fairly rigid in that learner's had fewer options to design their own learning. Despite this, course structure was examined beyond Moore's (1972) definition of course flexibility and took into account the specific components of course structure.

### **Purpose of Study**

The purpose of the study was to explore students' perceptions of the contribution of specific course structure elements to their learning and the influence of course structure on their feeling of transactional distance. Through a qualitative study with a phenomenological approach, this researcher explored students' experiences related to specific course structure elements to determine which elements reduce transactional distance the most and which have the greatest impact on their perceived learning. The sample population will be undergraduate students enrolled in online classes at a post-secondary institution who were pursuing baccalaureate degrees in Radiologic Science online. Participants were chosen from this program because it was the largest program

on campus and access to these students was convenient. All participants will have completed at least nine hours of online courses in their program.

### **Research Questions**

#### *Central Question:*

How did transactional distance relate to elements of online course structure?

(Transactional distance refers to the psychological distance a student may feel rather than geographic distance. Psychological distance refers to perceptions about an online course that make a student feel more or less connected to the instruction or the instructor).

#### *Sub Questions:*

1. How did the organization of course elements such as the placement of the syllabus, instructions, navigation of the course, etc, define students' perceptions of transactional distance (their feelings of closeness/nearness to the course and/or the instructor)?
2. How did the syllabus contribute to students' feelings of connectedness to the course/instructor?
3. How did the units of course instruction (assignments or modules) shape students' perceptions of transactional distance?
4. How did course technology components (system of delivery, video, and audio components influence students' perceptions of transactional distance?
5. How did evaluation components (exams, quizzes) change students' perceptions of transactional distance?

## Methodology

### *Assumptions of Qualitative Research*

Moustakas (1994) explained that the phenomenological approach in qualitative research focuses on the “concrete relations implicit in the original description of experience” (p. 14) by the participants in a particular context or situation. With phenomenology, the particular experience revealed itself. For this study, the situational context was the Radiologic Science students’ experiences and their relationship to the specific elements of online course structure. The participants were enrolled in courses in the Bachelor of Science in Radiologic Sciences (BSRS) program at Midwestern State University (MSU) in Wichita Falls, Texas. MSU had an enrollment of approximately 6000 students with 30% of the entire student population online. Hatch (2002) described the assumptions of phenomenological research studies as the existence of “multiple, socially constructed realities” (p. 30) and that the focus of these kinds of studies should be on the meanings that the participants ascribe to their experiences of the phenomenon. Similarly, Morse & Richards (2002) viewed the assumptions of phenomenological research as two-fold: the experiences as lived were critical and that living in the world was meaningful and was “of interest” (p. 45). Creswell (1998) said “For a phenomenologist, an a priori decision was made that he or she will examine the *meaning of experiences* for individuals” (p.48).

### *Limitations of Qualitative Research*

With any research tradition that involves observation or personal contact, the researcher must establish trust so that participants feel comfortable in sharing feelings

and experiences. Maxwell (2002) reported that the relationship between the researcher and participants needs to be reciprocal and that the researcher needs to consider how he/she would feel in the place of the participant. In addition, according to Maxwell, participants must believe it was a worthwhile experience.

The qualitative method lent itself well to this study because of the lack of research describing the personal experiences of students in undergraduate courses with regard to how specific course components contribute to their feelings of connectedness or transactional distance.

Because phenomenological research dealt with the beliefs and perceptions of the participants, it was possible that the participants did not reveal completely honest feelings and perceptions. Since the participants were knowledgeable about online courses, it was possible they could be biased towards a particular course design structure and be reluctant to consider flaws in courses they were taking simply because they utilized the same procedures.

There was a quantitative component to this study; however, this component was descriptive in nature and represented only characteristics of the participants. Discussion of the quantitative component is seen in Chapter 5.

### *Phenomenology Approach*

Because perception of learning was intrinsic in nature, it made sense to use a tradition of research inquiry that delineated the feelings and experiences of students. To accomplish this, the tradition of inquiry known as phenomenology was used. According to Creswell (1998), this tradition selected individuals who had collectively experienced the same “thing” or phenomenon. Moustakas (1994) described empirical

phenomenology as a “return to experience in order to obtain comprehensive descriptions” (p. 13) and he noted that these descriptions provide the foundation for analysis without predetermined outcomes. Meaning was derived by the experience in a particular context.

A qualitative research approach allowed the researcher to seek one important factor that all participants have in common and understand why it was essential to that phenomenon (Creswell 1998). By utilizing a phenomenological approach, the human experience of involvement in an online course was the focus and uncovered the essential meaning of the value of online course structure as it related to perceived learning was the main objective. With the interviews, understanding was gained through the voices of the participants, allowing the use of techniques of data collection to help gain in-depth information leading to a greater understanding of this phenomenon from the perspective of those intimately involved in online education courses in a higher education setting.

#### *Sampling Method*

This study used a purposeful sampling method. According to Morse and Richards (2002), the purposeful sampling method involved choosing participants who were interested in the phenomenon, were willing to share their experiences, and were willing to invest time and energy by participating. Maxwell (2002) cited four goals as most important in purposeful sampling. Those goals resulted in representation of people experiencing the phenomenon and define the “dimensions of variation in the population most relevant” (p. 89) to the study; provide illumination of what was really happening through deliberate choice of participants, and establish comparisons of individuals to find reasons for similarities and differences.

Participants in this study were enrolled in an undergraduate Radiologic Sciences online baccalaureate program at Midwestern State University (MSU), a four-year, public, liberal arts, university in Wichita Fall, Texas. The annual enrollment at MSU was approximately 6,000 students. The number of participants was based on research by Creswell (1998) who recommended a sample of ten for interview lasting 2 or more hours. This study utilized 20 participants for interviews of 30 minutes followed by distribution of the transcribed interview to the participants for review. Participants were chosen off enrollment rosters from four sections of a capstone writing course. This insured that the participants had completed at least nine hours of online course work. Participants who were enrolled in this researcher's courses at the time of the interviews or who were this researcher's advisees were eliminated.

#### *Data Collection Methods*

Using the phenomenological tradition, the experiences of 20 Radiologic Science students who had completed at least nine hours in the discipline were explored. This group of students at the undergraduate level was contacted by email to invite them to participate in this study (See Appendix C). Each received the informed consent form and was asked to sign and return the form prior to the interview. Interviews occurred at the participants' convenience by telephone with as few distractions as possible and lasted approximately 30 minutes. Prior to each interview, participants were informed that no information would be used by any other person for any reason other than this researcher for this study. Participants were given as much time as they needed to answer questions and were encouraged to be honest and open with their responses. Participants received assurance of complete anonymity.

Data were collected through telephone interviews, researcher notes, and follow-up information. A professional transcriptionist transcribed the interviews that the participants reviewed for corrections, and/or deletions. Follow-up emails were sent approximately 1 to 2 weeks later for additional information. Transcripts were analyzed for emergent themes to discover how the participants felt concerning transactional distance and course structure.

### *Instrument Development*

The primary research question to be answered was: “How did transactional distance relate to elements of online course structure?” Eight sub-questions were used to determine which of the specific elements (organization, syllabus, units of instruction, technology components, and evaluation) as well as how these elements contributed to students’ feelings about transactional distance. By conducting two separate interviews, rich, thick descriptions resulted in a deeper understanding of the phenomenon (van Manen, 1990).

Interview questions were tested on ten on-campus students who were also enrolled in online courses. The interviews ranged in duration of 18 to 35 minutes. Because the follow-up interview was for the purpose of determining if any of the participants’ feelings, attitudes, or opinions changed over the period following the initial interview, it was anticipated that the follow-up interview would last from 10-20 minutes. Original research questions were revised based on the test group’s comments. See Appendix D for participant interview questions.

### *Verification procedures*

Rich, thick descriptions, member checks, and confirmation (rather than triangulation) was the source of verification for this study. Maxwell (2002) described triangulation as the use of a variety of data collection methods and sources. According to Maxwell, “this strategy reduces the risk that your conclusions will reflect only the systematic biases or limitations of a specific source or method”(pg. 93). While this study included recorded interviews and outside verification of data, triangulation was determined not to be the most accurate term for this study. Morse and Richards (2002) explained triangulation as a frequently misused term for “three sorts of something” (p. 76) to be used for qualitative research verification procedures. In reality, triangulation refers to the following criteria: 1) a study must meet another in order to challenge or clarify that study; 2) it must add to a concept or theory and function to illuminate it; come to the same conclusion to verify it (Morse and Richards). Because of the lack of studies on this topic, triangulation was a weak possibility. Instead, the interviews, member checks, rich, thick descriptions, and an outside auditor were used to verify this study.

### *Ethical considerations*

Prior to invitation of students to participate, Internal Review Board (IRB) approval was gained through the University of Nebraska in Lincoln, Nebraska, and Midwestern State University, in Wichita Falls, Texas (Appendix A). Because this study centered on human subjects and their experiences and perspectives, this process was essential for the protection of the participants, the universities, and the researcher. There were no physical or psychological effects anticipated from this study, and participants

received no compensation, monetarily or academically. An invitation to participate in this study was sent of all potential participants (Appendix B). Each participant was of legal age and signed an informed consent form legal release document (Appendix C). The informed consent form contained language related to the restrictions on the use of interviews and journals and explained how participants' rights to those materials were turned over to this researcher (Neuenschwander, 2002).

Participants were fully informed about the purpose and use of the study that included language within the informed consent form that allowed the researcher multiple uses of the information gathered, including publication in print, presentations of the study to the public, and publication on the Internet (Neuenschwander, 2002). Participants were informed that they may withdraw from the study at any time for any reason without repercussions.

Names of participants were confidential; names were substituted with pseudonyms, and actual names did not appear in any part of the study. Participants were aware of and agreed to recorded interviews and to the researcher's taking of notes. Following transcription, participants received copies of their interviews so that they could verify the transcribed information and make changes and/or add or subtract from the transcribed information. All information gathered from the participants including recorded interviews, transcriptions, and field notes were placed in a secure location and contained in a locked box used solely for this research project. Audio tapes were destroyed following transcription.

### *Data Analysis Procedures*

Qualitative data analysis, especially regarding the phenomenological trend, seeks to find and examine trends that relate to the participants in the study. Each participant experienced the phenomenon in question, and all of the information was used to gain an entire picture of the question (Hatch, 2002). The purpose of this qualitative study was to discover if selected course elements increased or decreased transactional distance. The interview protocol can be seen in Appendix D.

Interviews were transcribed and analyzed for emergent themes that were coded. According to Moustakas (1994), the procedure for analyzing phenomenological studies includes the following:

- Listing all relevant statements that relate to the experience (“horizontilization” - p. 120);
- Testing of the statements to insure that moments of the experience were essential to understanding the phenomenon and elimination of statements that were irrelevant, “overlapping, repetitive, and vague” (p. 120);
- Gathering relevant statements into clusters and labeled as core themes;
- Checking the validity of the expressions of feelings and experience by insuring they were explicit or compatible with other participants experiences;
- Developing textural descriptions of the participants’ experiences, including sample verbatim excerpts from the transcriptions;
- Developing an “individual structural description” (p.121) for each participant;

- Developing a “textural-structural description” of the statements and experiences of each individual for “meanings and essences of the experience” (p. 121).

This researcher and an outside auditor conducted analysis of the data to confirm correct interpretation. Once common codes and themes were established, irrelevant or extraneous materials were eliminated.

Transcriptions of the interviews occurred within 14 days of the interviews to insure the material was still fresh. A professional transcriptionist was used, participants were informed and a confidentiality agreement was constructed between this researcher and the transcriptionist to insure the participants’ anonymity.

### *Qualitative Data Analysis*

#### Coding

Creswell and Plano Clark (2007) described procedures for analyzing phenomenological data in terms of horizontization, or the process of listing significant statements treated as equal in significance. Participant responses for each question were analyzed for key words and phrases. Repetitive words and phrases were color-coded and listed on a white board without repeat or overlap. Remaining words and phrases were listed next. Once all questions were analyzed connections were made from identification of keyword and phrase commonalities. Common and related statements were grouped into 4 major categories. Those categories were design issues, environmental issues, social issues, and transitional issues. Further qualitative analysis identified a number of subcategories within each of the major categories. Subcategories under the design category were identified as flow, structure, tone, flexibility, and clarity. Under the

environmental category, distractions, access, links, software issues, and employment subcategories were identified. Self-direction, teacher issues, communication, and personal issues subcategories were discovered under the social issues category. The subcategories under the category of transitional issues were computer skills, comfort level, and longing for face-to-face classrooms.

Clustering of the words and phrases into the major categories and subcategories was followed by analysis by an outside person. An educational researcher was enlisted to review the extraction of keywords and phrases, the filtering of those keywords and phrases into emergent themes and the formation of the major and subcategories. The significance of utilizing an outside expert was to strengthen the interpretation of the participant responses and to reduce bias. Creswell (1998) stated that the use of an external auditor (in this case, an educational researcher) resulted in a determination if the “findings, interpretations, and conclusions were supported by the data” (p. 203). Analysis by the outside researcher resulted in further reduction of several major categories to the final four.

### *Quantitative Data Analysis*

The first eight questions were for the sole purpose of providing a picture of the participants as a whole. Questions concerning online course hours, Radiologic Science courses taken online, the number of online instructors, and grade point average (GPA) were asked to help determine the amount of experience with online courses and the level of success. Questions about the participants’ age, gender, current employment and geographic location were asked to provide a richer description of the participants.

### *Participants*

Twenty Radiologic Science students were chosen out of 4 senior level courses in the Bachelor of Science in Radiologic Sciences program. Three of those courses were capstone courses that had to be taken in the last semester of the program. There were too few students willing to participate among those 3 courses so one prerequisite course roster was included. Seventy-five students were contacted and invited to participate. Within two weeks, only seven students agreed to participate. A second email was sent that resulted in 11 participants. The last two participants agreed to participate within one month of the initial email.

### **Summary**

This researcher set out to examine effects of specific elements of course design relative to a student's feelings of transactional distance. Taking a phenomenological approach, this researcher asked a series of focused questions designed to allow the student to express their feelings and experiences related to course structure. The interview format was further designed to foster a sense of trust between the researcher and the subjects enabling the participants to feel comfortable sharing feelings and experiences.

Analysis of transcribed interview data was performed, and coded after Moustakas (1994) seeking common factors in the experience of participants and to determine if these factors were essential to the phenomenon being researched.

## CHAPTER 4

### DISCUSSION

The purpose of this study was to explore students' perceptions of the contribution of specific course structure elements to their feelings of transactional distance. Through a qualitative study with a phenomenological approach, this researcher explored students' experiences related to specific course structure elements to determine which elements reduced transactional distance. This chapter will provide an overview of the participants and an in-depth exploration into the participant's comments that led to the formation of the themes and sub themes.

#### *Participants*

The sample population was undergraduate students enrolled in online classes at a post-secondary institution and was pursuing baccalaureate degrees in Radiologic Science. Twenty participants were chosen from three undergraduate Radiologic Science courses; all participants had completed at least nine hours of online courses in their program and were diverse in their experiences, ages, personal background, and geographic location. Anonymity was maintained by assigned pseudonyms. The name of the current employer was withheld to further protect the participant's anonymity.

The average age of the participants was 34 years old with the youngest at 24 and the oldest at 51. Thirty percent of the participants were male and 70% were female. Geographically, the participants were located in eight different states: Texas (50%), North Carolina (15%), Kentucky (10%), Mississippi (5%), Indiana (5%), California (5%), Arizona (5%), and Georgia (5%). The average number of online course hours completed was 28.2, the average number of BSRS online courses completed was 8.1

(24.3 hours) with an average of 7 online instructors. The average cumulative grade point (GPA) was 3.34 and the BSRS GPA was 3.42. The typical job placement was in a hospital (n=12), followed by employment in a clinic (n=3) or a hospital/clinic combination (n=2). The remainder of the participants worked as instructors in a radiography program (n=2) and one was unemployed. A table of participant demographics can be seen in Appendix E.

***Albert***

Albert was a male Radiologic Technologist working two jobs in hospitals in two cities. Working 63 hours per week, Albert was engaged to be married. His interview by telephone was on September 2, 2009 and 8:36 pm; the interview lasted 29 minutes and 36 seconds. Albert seemed very excited about the interview; he kept thanking me for choosing him. After having 5 online instructors, he was in the last semester of the Radiologic Sciences baccalaureate program and lived in Texas.

***Ashley***

Ashley was a 31 year-old female from rural Mississippi. She had taken 30 online course hours with 5 different online instructors. She was working in a hospital-based satellite clinic as a mammographer and had completed 12 hours of her BSRS program courses. She was interviewed on August 14, 2009 at 10:22 am. The interview lasted 21 minutes and 22 seconds. Ashley seemed nervous and was worried that she would say something wrong. She was assured that there were no wrong answers and that seemed to make her feel better.

***Bill***

Bill was a 33 year-old male from Texas who was working in a hospital as a Radiologic Technologist. He had completed thirty online course hours under nine different online instructors. Bill made it clear from the beginning of the interview that he was not interested in the subject of transactional distance or connectedness, but was interested in contributing to the study. His telephone interview took place on August 31, 2009 at 8:02 pm. The interview lasted 17 minutes and 8 seconds.

***Buffy***

Buffy was a 42 year-old female from western North Carolina who worked as a Radiologic Technologist in a hospital setting. She was within 9 semester hours of graduation and had completed 24 online BSRS courses with 6 different online instructors. She was very interested in the study and was very thorough in her answers. She was interviewed on September 3, 2009 by telephone; her interview lasted 33 minutes and 43 seconds.

***Conman***

Conman, a 36 year-old male, was working as a Patient Archival Communication System (PACS) administrator. Working at an Indiana medical center, he completed 21 online course hours with 6 different online instructors. Like Ashley, he was concerned about being smart enough to participate in the interview. He was nervous he would say something wrong. He was reassured that it was his opinions that were of interest and that no answer he supplied was wrong. He seemed at ease during the interview that lasted 23 minutes and 57 seconds. The interview occurred on August 8, 2009 at 8:09 pm.

***George***

George was the oldest participant at 51 years old and lived in south Texas. He had quit working to allow his wife to work full-time while he took care of the house and kids, and attended school part-time. He completed 33 online course hours with 5 or 6 different instructors. His interview occurred at 7:04 pm on August 31, 2009 for 35 minutes and 13 seconds.

***Janelle***

Janelle was a 47 year-old female from Texas who worked in an outpatient multi-specialty clinic. She completed 5 online classes with 4 different instructors. Her interview occurred on September 2, 2009 at 7:33 pm. Janelle was extremely nervous and extremely careful about choosing her answers. She was a single parent of two teenaged children.

***Jessica***

Jessica was a 35 year-old female Radiologic Technologist who worked in a small hospital in Texas. She had completed 7 online BSRS courses and was enrolled in 2 courses at the time of the interview. She had completed a total of 30 hours in online courses with 6 different instructors. Her interview was on September 2, 2009 at 6:33 pm and lasted 21 minutes and 4 seconds. She seemed very confident and certain of her opinions.

***Joe***

Joe was a 41 year-old male from California who worked as a Radiologic Technologist in a large hospital. He completed 30 online BSRS hours with 9 different instructors and enrolled in his last six hours at the time of the interview. He was very

talkative and seemed very interested in participating. His interview by telephone was on September 1, 2009 at 8:07 pm. The interview lasted 27 minutes and 16 seconds.

***Katie***

Katie was a 30 year-old female, married, with young children. From Kentucky, she worked as an adjunct faculty member at a local community college. She was finished with 42 online course hours; 30 of those hours were in the BSRS program. She was within 3 hours of graduation. Her interview occurred on September 3, 2009 at 2:33 pm and lasted 18 minutes and 33 seconds. Katie spoke very quickly and seemed a bit nervous or excited about the interview.

***Kristen***

Kristen was a 34 year-old female who was engaged to be married. She worked in a hospital in north Texas as a Magnetic Resonance Imaging (MRI) technologist. She completed 18 online course hours, 12 of which were BSRS course hours. She was eager to be interviewed indicating that she had a great deal to say. Her interview was on September 21, 2009 at 9:44 pm and lasted 38 minutes and 58 seconds.

***Lindsey***

Lindsey was a 33 year-old female from Arizona who worked as a Radiologic Technologist at an out-patient clinic. She received 33 hours of online credit, 27 of which were BSRS course hours. She had 7 different online instructors. Her interview happened on September 3, 2009 at 8:34 pm and lasted 23 minutes and 27 seconds.

***Marie***

Marie was a single, 24 year-old female Radiologic Technologist who worked in a large hospital and a clinic in north Texas. A recent graduate of the Associate of Applied

Science (AAS) program, she had completed 24 online BSRS course hours and was enrolled in her final 12 hours. She took courses with 6 different online instructors. She seemed very excited to participate. Her interview was on August 29, 2009 at 2:39 pm and lasted 18 minutes and 14 seconds. Despite the short duration of the interview, Marie detailed her answers.

***Michael***

Michael was a 48-year-old male from Georgia who worked as a clinical coordinator in an educational institution. He completed 36 online hours, 24 of which were BSRS courses. Enrolled in an additional nine hours, he scheduled to graduate that semester. A veteran of the United States military, Michael interviewed on September 1, 2009 at 6:15 pm. His interview lasted 21 minutes and 34 seconds.

***Rachel***

Rachel was a 40 year-old female who worked as a Radiologic Technologist at one hospital and functioned as the director of Diagnostic Imaging Services at another hospital in North Carolina. She completed 24 online hours and enrolled in an additional nine hours at the time of this interview. Twenty-seven of those online hours were BSRS course hours and she took courses from more than 7 instructors. She was interviewed by telephone on August 23, 2009 at 8:23 am for a period of 29 minutes and 45 seconds. Rachel was eager to participate and gave detailed answers.

***Sally***

Sally was a 30-year-old female MRI technologist from northern Kentucky. She worked full-time in a hospital setting and completed 36 online course hours. Thirty of those hours were in the BSRS program and did not include her enrollment in an

additional six hours. She had taken classes from at least five online instructors. Sally was very comfortable talking and had clear opinions of online education. Her interview took place on August 15, 2009 at 2:05 pm and lasted for 33 minutes and 26 seconds.

***Samantha***

Samantha was a 22-year-old female Radiologic Technologist at a mid-sized hospital in Texas. She was enrolled in her final course and completed 33 online course hours with 8 instructors. She graduated from the university in the AAS program and was familiar with most of the instructors. Her interview was on August 29, 2009 at 2:05 pm. Her interview lasted 18 minutes and 33 seconds. Samantha tended to give very short answers and did not seem interested in elaborating on them.

***Sammy***

Sammy was a 33-year-old female scheduled to graduate the next semester. Living in a small town in north Texas, she worked in the local hospital as a Radiologic Technologist. With 24 hours of online BSRS course hours behind her; she enrolled in 6 additional BSRS course hours during the semester of the study. Sammy expressed enthusiasm about being asked to participate and seemed eager to help. Her interview occurred on August 27, 2009 at 2:45 pm and lasted 22 minutes and 26 seconds. It sometimes felt as if her answers were a bit forced and that she was unsure of her answers.

***Trinity***

Trinity was a 36-year-old female from east Texas who worked in a mid-sized hospital as a Radiologic Technologist. Her experiences included 30 hours on online courses with 7 or 8 instructors; she was scheduled to graduate the semester following the study. Trinity was very confident in her answers to the interview questions and seemed

to think through each question carefully. Her interview took place on August 12, 2009 at 845 pm and lasted 24 minutes and 50 seconds.

### ***Victoria***

Victoria was a 34-year-old radiographer from North Carolina. Her education included 42 hours of online education and 30 of those hours were in the BSRS program. At the time of this study, Victoria enrolled in her final six hours and anticipated graduation at the end of the semester. She experienced online instruction from 12 different teachers. Her interview occurred on September 1, 2009 at 10:07 am and lasted 17 minutes and 39 seconds. It seemed as if she were busy or distracted and there was a great amount of background noise. She seemed eager to participate and was clear and specific with her answers.

A table of interview information, including length of interview, transcript length, and date of interview can be seen in Appendix F.

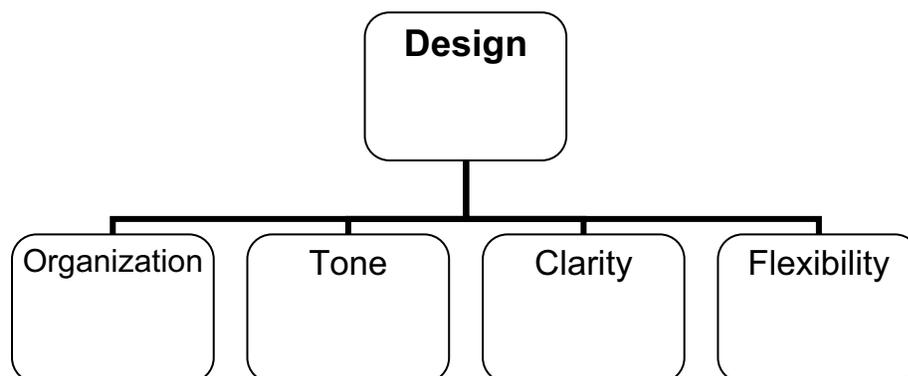
## **Themes**

Coding of the participant responses and subsequent comparisons resulted in the emergence of four major themes titled design, environment, social, and transition. The themes and sub themes of each theme are presented in this chapter. Keywords by question and codes by keywords can be seen in Appendices G and H respectively.

## **Design**

This theme arose from participant comments regarding the way the course was constructed, that is, how the course elements fit together and/or fit the needs of the

learner. Four sub themes emerged from the participant’s experiences related to design



issues: flow, structure, tone, flexibility, and clarity.

Figure 2: Design Theme and Sub themes

### *Organization*

Of all the sub themes under design, organization was the referred to the most by the participants as contributing to their feelings of transactional distance. All participants related experiences that involved structure of the entire course or selected parts of a course.

Kristen said, “I think, um, if it (the course) starts off disorganized, you’re done. Too much junk to look at; it’s confusing. I like a syllabus that is laid out and dated”. This sentiment repeated throughout the interviews. Commenting on the organization of a syllabus from a course taken from another completely online university, Victoria said: “...I took a math course through them and it wasn’t organized well at all. You had to go to multiple different pages. It wasn’t setup like syllabus, course content, and discussions. It didn’t have that level of structure”. It was clear that the participants appreciated consistency in course organization; that is, having the same elements such as the syllabus,

instructions, discussion boards, units of instruction in the same location within each course.

When asked about course organization, Marie replied, "...no, I don't really think it has really affected how I felt about the course. Everything's almost been like the same kind of set up and I have used it for so long that I am really comfortable in navigating through it". Marie also related that the only online courses she took were those from Midwestern State University (MSU) on the WebCT/Blackboard course delivery platform. This was true for most of the participants who had positive experiences with the structure of online courses. George, when asked about the organization of course elements, stated, "The placement actually is, well like I said, I've gotten used to them. Now I know how to navigate to them". A few who experienced other types of course delivery platforms expressed difficulty in the transition. Ashley reflected on a course she took at MSU outside the BSRS program:

Well, at a college here that I took classes online, it was just navigating away from that website to get into the other sit to be able to take your online courses. It was all new to me and it was just not someone right there navigating me through exactly where to go and how to go about doing things.

Jessica experienced that same type of issue:

...I took one online class at a different university and that one was more poorly organized; you had to search for more things on your own. There was no, like the notes were there but you had to go to another site to find part of the notes and then part of the notes were on the instructor's page and the poor organization of that discouraged me from taking online courses for awhile...

Where the course components were located seemed important to several of the participants. Katie said, "Actually, the more evenly they're laid out, for instance if they're all over on the left side of the column or all on one specific page where you can see everything. It makes it more user-friendly and so I get to where I get more connected

to the instructor in the course. It's easier for me to navigate and figure out exactly what I need to do".

The issue of structure was not limited to the course as a whole or to the syllabus as one specific piece. The structure of test components appeared to be important. The sentiments about test structure, where students felt disconnected revolved around incongruence of study material with the actual test. George said, "It [the test] wasn't to the point. And you know, to me, you know if you're gonna put out test questions, state what you really want to know from the student". Michael revealed the same frustration in his reply concerning evaluation components. He said:

I'm not saying I wanted a, umm, you know what's is on the exam, but for instance, one of my classes had study guides and I actually took the time of doing the study guides and answering every question on the study guides and not one of the questions or anything that resembled that was on the test. So, I actually sent an email to the instructor saying I felt I studied the wrong thing; did I get the right study guide? So I felt very disconnected because no only did I not understand, but it took a few days for the instructor to get back.

As Michael stated:

The most disconnected I've felt, with any course I've ever taken online, and it was through MSU, was with a history class I had to take and I didn't get really much input as far as, I felt disconnected because; and it was partially my fault; I misunderstood the timing of... this was when I first started online testing and it was new to me and I misunderstood the timed portion of being timed when you take a test because not all tests are timed so for example, during that same semester, I would have another class where the tests were open-book and not timed so I was free to go back to take my time and in this course I was timed and I wasn't used to it so I actually went over time, but I was penalized for going over and instead of it just shutting off, I was taking points away from myself and didn't realize it on the first test and actually did very poorly the first time.

### *Tone*

The wording of the syllabus, instructions, units, or emails seemed to be an issue with some of the participants. Conveyance of the tone, or the message wording in the

written format, appeared to influence the participants' sense of transactional distance or connectedness.

Conman said,

...sometimes ... the syllabus is worded makes the professor seem a little, like I immediately draw a conclusion. I'm like, oh, this one's a hard ass, ...or ok, this one seems to be grounded in a real world experience...but sometimes I read the syllabus and I'm thinking, oh wow, if I have a problem I'm not so sure he'll understand that, ...so sometimes just the wording itself gives me a connection...

Joe related another experience that initially made him feel disconnected, but later resulted in his feeling closer to the instructor. He said, "I did have one situation where there was very stern language in the syllabus and very...assertive, no nonsense kind of almost dictatorial kind of language...but then, when I actually had communication with this particular professor, there was a wonderful person...".

Jessica expressed a sense of lesser connectedness. She stated, "If they are more laid back in their tone, then they are probably going to be more laid back in their expecting your work. But usually [if] they are more professional sounding the more ...stringent they are in their writings...I think it sort of puts me on edge". Sammy felt the opposite way. He said, "I find that when the instructors use like familiar language, like I am here if you need me, give me a call, email me. Things like that; it makes you feel a bit more at ease with the course".

When asked if the way the syllabus, units of instruction, or instructions were written played a role in his feelings of connectedness, Bill said:

I haven't noticed any that really stick out as far as, you know I always try to picture the instructor and you never hear their voice, so it's like, I don't know, you do this when you read sometimes and you try to think of who wrote it and what they sound like. But as far as like how they type stuff out it doesn't, you know, it doesn't sound to me any different from instructor to instructor as far as I've noticed.

*Clarity*

How well defined instructions and requirements were clearly played a role in how connected the participants felt, that is, how psychologically close to or far away from the instructor or instruction. Concerning the syllabus, participants felt more connected if the expectations and requirements were clear. Janelle, when asked about the syllabus said, "...I think it connects me to both the course and the instructor equally, in that ...it's a clear outline of what the expectations are...and you don't have to worry about it being changed halfway through". Sammy discussed an experience where instructions were vague and made her feel less connected. She stated, "I was wondering why I was apparently not getting all the information that I needed when it came to test time and somebody else....said, 'Didn't you realize...that you have to go in there and open up separate things to get it all?' and I didn't know".

In a statistics course online, Trinity shared her experience that left her feeling more disconnected from a course. "I had to go through and get a new update of a particular Excel® program which I did not realize that I was missing...trying to work out the problem", she said. She felt like the instructions were vague as to the necessity of the program and how she was to obtain it.

George seemed to appreciate a syllabus that was clearly laid out. He said, "With a syllabus, actually, it makes me feel very connected because it's the guideline of what to expect". Joe was even more specific about which parts of the syllabus helped him feel more connected. He said:

The calendar is the most important thing, the second most important thing is how...the points for that semester will be allocated, how much goes to the final exam, how much goes to a term paper and how much goes to whatever other

activities are involved in the class. That, those two things will tell me 90% of what I need to know about how I'm going to approach the course.

During a discussion concerning the syllabus and its components, Katie expressed her feelings about clearly defined expectations and the level of those expectations. She said, "I mean, you know, you've got hurdles to jump over and as long as you know what those hurdles are going into it, you are better prepare to deal with them. You know, if you know that a course is going to be hard like that, I'd rather know it up front".

### *Flexibility*

Moore (1972) described the flexibility of course structure in terms of how the course responded to the needs of the learner. Participants expressed feelings of increased connectedness when given fewer deadlines or a choice of deadlines.

In her reply to the question concerning the syllabus and its components, Sally expressed feelings of more connectedness when assignment deadlines allowed a range of choices rather than a single, strict, date. She said, "...I am trying to be a full-time student and I am working full-time, plus an extra job and to know that I could maybe slack on a certain deadline, but make sure I have it done by this day, I will be okay. But then again, it keeps you organized, but it is also very flexible. I really like that". Victoria expressed her increased feelings of connectedness due to flexibility by saying, "The benefit to being an online student is having the flexibility so it's not as stressful as the time constraints of attending a class". She was speaking specifically about being allowed to "attend" class at anytime, day or night.

Michael revealed an experience that reduced his feelings of connectedness due to timed tests. He said:

The most disconnected I've felt, with any course I've ever taken online, and it was through MSU, was with a history class I had to take. ... I didn't get really much input as far as, I felt disconnected because; and it was partially my fault; I misunderstood the timing of... this was when I first started online testing and it was new to me and I misunderstood the timed portion of being timed when you take a test because not all tests are timed. So for example, during that same semester, I would have another class where the tests were open-book and not timed so I was free to go back to take my time and in this course I was timed and I wasn't used to it. So I actually went over time, but I was penalized for going over and instead of it just shutting off, I was taking points away from myself and didn't realize it on the first test and actually did very poorly the first time.

Trinity expressed a similar feeling of disconnectedness when the syllabus contained a deadline for returning information to the instructor about a test proctor. She said, "I do not know if it may have just been the standard, but those that have, if you do not turn in a proctor [form] by a certain day, you lose a point for every day afterwards."

When asked how he felt about structure, Conman said, "...I definitely like...clear starting and stopping points...because for me I think it...take should this be...[sic] ... the control away from me so that I [don't] put too much pressure on me to try to get ahead of the curve, and not procrastinate". Bill seemed to feel more connected if the deadlines were more flexible, stating, "I feel like the classes that are deadline oriented are better for me than ones that, for example... I'm taking one now that's...got 9 quizzes I have to take, but they don't have due dates so I can, you know, if I want to, sit around all semester and the them all before [the deadline] I can do that. I feel pressured when...I have to meet a deadline".

### **Environment**

Participants revealed a variety of environmental issues that led to the formation of four sub themes. These sub themes were distractions, access, links, and software issues. Environmental issues included such things as where the participant was during an online

course, what type of Internet access they had, and the context of the course itself. Within the context of the course, participants' spoke about issues they had with links within the course and software accessibility and usability.

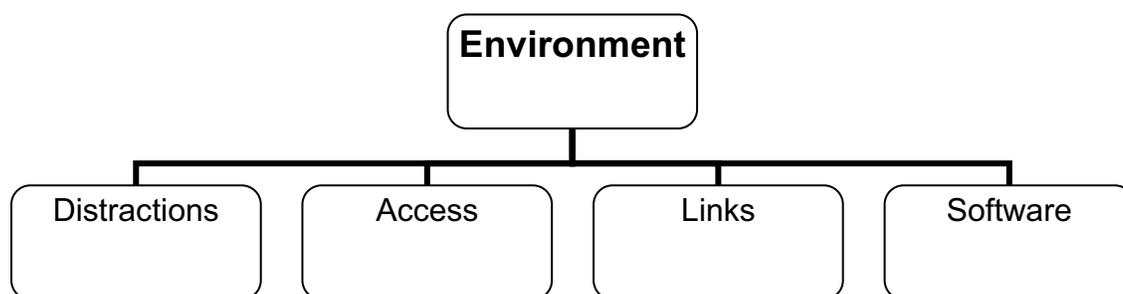


Figure 3: Environment Sub Themes

### *Distractions*

Familial responsibilities and work demands were cited as causes of disconnection from a course. Some participants had to work on their courses late at night at home when their children or spouses would not disturb them. Rachel said, "...I have to get out of the house to get stuff done because here I have too many distractions. Like I could start a load of laundry, or my T.V. show is coming on. I might get a phone call and if I go to the library, I don't have those types of distractions, I can focus on what I am doing, and you know, really get things done". Jessica also talked about feeling more connected to an online course because she was forced to find a quiet place to do her schoolwork. She stated, "...just family life and trying to do the job and take care of family, being able to adjust school around my own schedule instead of going to class because I could never go to class and read my goals". Trinity also discussed distractions of family and work. She stated, "Me personally is I have a 4-year-old daughter and ...she takes up a lot of my time

even now in her room and I am in my room and I am waiting for the last 15 minutes before she comes in and says, ‘Mom, is it time to say prayers?’”. She also said, “...because I am a traveling tech, I may get a call at any time. I am on call 24 hours a day”.

Kristen talked about the importance of a controlled study environment. She said:

I am easily distracted in a classroom. Online, I can control the environment. I have taken several internet courses. I love the autonomy of a non-traditional classroom. I think, um, for me personally, I am easily distracted. Cell phones, texting, people with their laptops, people who carry on conversations during lecture, and lately, all my classes have one person that thinks that they are teaching, you know, monopolizing the class time. Internet classes eliminate all that. I also like the ability I have to come back to an assignment or to a lesson. In a regular classroom, there is a feeling of entrapment, like; you’re at the mercy of 50 or more people. I would much rather be at home, controlling my environment.

When asked how she would describe herself as an online student, Sally spoke as much about the flexibility of a course as she did about her own characteristics. She said, “I have a very busy life. I feel where my strong points are I can work at my own pace. ...I can do it on my own time versus going to a classroom”.

### *Access*

Access issues arose from a variety of sources including downtime of the course delivery platform and the use of computers that were old or not capable of handling downloads. Janelle expressed feeling of frustration related to living in a rural area. She said, “I think there was a video component and in another course audio. My computer...I live up in the middle of the country so sometimes it is a challenge”. Buffy did not own a home computer, stating, “...I didn’t invest in a computer for my home because I work 90 hours a week and both jobs have a computer access. I’d normally do this between

patients on the weekend, because I have more time there...and I never could download the videos...because we get blocked there, and so it was a little difficult”. Jessica expressed feelings of disconnectedness when force to access a system other than WebCT®. She said, “...with the other course that I had taken they had a different delivery system and you had to have, they actually had their own system in which you had to get the disk and install on your computer. And you could not access that from your computer at work or anywhere else. You had to have a workstation that you could access [the course] from. She felt disconnected because “it restricted me”.

Not all access problems increased feelings of disconnectedness. Ashley talked about her experiences with WebCT® downtime. She said, “Usually when I have experienced WebCT® being down, usually the instructor would email the student and let them know that there is some difficulty going on, or that they were aware that there was some difficulty, and maybe a timeframe of when it would be back up and running. A lot of times they have even, if there was an assignment due, they extended the time on the assignment of allow you time o get back into WebCT”. According to her, this experience made her feel more connected to the instructor and the course. About his experiences with WebCT, Conman said, “...I’ve been pretty lucky with that...I’ve never been kicked out of a test or had to call for technical support or anything like that”. When asked about any access problems Bill said, “I’ve always...thought it connects me well. There’s nothing that I’ve really ever needed that I haven’t been able to access”.

### *Links*

Links within a course to supporting information was a component that played a role in feelings of connectedness. Janelle said, “...my biggest challenge is the library. In

previous courses, there was not a direct link to the library and this course I'm taking now does...and I really like that. It makes me feel like the instructor cares and I feel more connected than I did in previous courses". Albert had a different experience with course links. He said:

...it is kind of hard to work around to find some things and I know with this research course, there's uh, there are certain things that are supposed to be on the course, but I haven't been able to find them yet. You have to be able to do the web links or something like that so I feel that the way it is, can draw you away...make you feel less connected because I'm having to ...I don't know, look for stuff more. I'd rather it just be right there. So, I mean, that's going to drive me away from the course.

It should be noted here that he also felt that it was an issue inherent to WebCT© and not the fault of the instructor or designer.

George talked about the links within WebCT®/Blackboard® and his feelings of connectedness. He said:

I think it's a great program. I can navigate through there and the way they have it doctored there, they can put an ungodly amount of information in there, to include, um, you know, study links and reference sites. And I like it because when I go through to click on my class through WebCT® it's all there in a neat little package. It's all there. You click on this, and you've got the course content. You click on another link, or another icon and it'll give you a help list or a tutorial which was really helpful for me.

Sally had problems finding course materials in a course linked to WebCT®/Blackboard®. She felt distant from her instructor when told that all of the course materials linked to the course. Because Sally could not find these things, she felt a disconnect from the course and the instructor.

### *Software Issues*

Participants were asked to describe any experiences they had with respect to technology. In most cases, it was software issues within the course delivery platform that

contributed to their feelings of connectedness. Trinity experienced feelings of disconnectedness when a software glitch in WebCT® caused problems in the testing component. She said, “At that time I am feeling in a panic because everything is on a timeline when you are on distance learning. Everything has to be turned in by a specific time and usually it is a few minutes before midnight or whatever, and if you go the day before and you try to that the test and the computer is down...Wow!...You are feeling like crap, you are going to fail this test because you cannot make it through the test”.

Trinity also felt disconnected with a statistics course because she did not have the proper software. She said, “I also had to download a Mozilla program to look at a video and I had never done that. I felt like, you know, what am I doing in school?” Buffy echoed Trinity’s frustration after having trouble with a software download. She stated, “...there was one class where I was unable to download some things and that was frustrating. I went to our person here at my college, like our person in charge of Blackboard® and they said they pulled up a not and said it was written in...a language that the system could not support. Something like that. It was really frustrating”.

Sally talked about a course that contained a video that instructed students how to submit files. She said, “...it was kind of a tutorial on how to do that and it was from the professor with the audio and you could hear the extra tidbits of information that we needed to know. It was actually kind of nice to get some type of instruction”. She indicated that she felt more connected because of that tutorial. Conversely, Sally discussed an English course she took that was on a system called CourseCompass®. She said, “CourseCompass®, the way it was set up was like. It was so hard to navigate through. I felt like I was falling behind because I never really felt like I could find out

what I had to do.... I was extremely flustered and irritated the whole entire course”.

George expressed increased feelings of connectedness with regard to WebCT®. He said:

I think it’s a great program. I can navigate through there and they way they have it doctored, they can put an ungodly amount of information in there to include...study links and reference sites...I like it because when I go through to click on my class...it’s all there in a neat little package...You click of this, and you’ve go the courts content. You click on another link or another icon and it’ll give you a help list or a tutorial which was really helpful to me.

Sally was eager to express her feelings of connectedness when it came to WebCT®. She said, “I love the way the university uses {WebCT®}, like when you log in to all of your classes. That to me is the best setup, because you have all of your courses and if you are taking multiple courses...in each one you have all your headings on the left...and you can navigate through it...easily”.

Several of the participants talked about embedded PowerPoint® presentations or short instructional videos. Katie talked about a PowerPoint® supplement she had in a course saying:

I had a hard time focusing because it was a monotone voice but probably because they were recording, but I did get a lot out of the PowerPoint®. When asked about her feelings of connectedness related to the PowerPoint®, she replied that she felt “more connected. Because I can visually see something, I can move it around and click on it and that helps. I appreciated the instructor making the PowerPoint for me so I felt like she was really trying to help me...”.

Joe talked about frustrations about online course technology. He said:

...there are little quirks about online usage but, I guess I do have to say if I’m feeling frustrated about stuff, that that does create a feeling of disconnectedness, but that is all technical issues. It’s like you know, why do I have to hit this button four times before I get to the point where I put my password in, you know, silly little issues like that. They don’t really matter, or mean anything, but...there’s a level of frustration sometimes, but there is with everything I do on line.

Bill related an experience he had with video and audio components in a recent course.

He said, “I didn’t really like that. I watched them, but it was....more difficult bringing

that stuff up on the computer, especially if you have one at work....I try to do most of my stuff at work and I get pop up blockers and what-not and all this stuff trying to prevent it from opening”.

Samantha talked about supplementary materials that made her feel more connected to the course. She said:

I do think those [audio and video supplements] are good things for learning materials. I mean, as far as audios and videos are good because they give you something else to look at besides the notes and it kinda makes you feel like your teacher is putting some time into the course instead of using notes from last year and just putting them up for this year. It makes it feel like it's a little new and different.

George had the same reaction when he spoke about a video link to an applied research course. He said, “...they had ...a video link attached to it. And by God, it was just, it was a short clip, but by God it was very instructional. It made me very connected.”

Lindsey stated that she hadn't had problems with audio or video components but that she would have felt disconnected if they were not present.

Kristen was resolute in her dislike of audio and/or video supplements that, in her opinion, added nothing to the class. She said, “The video and audio stuff to me is just extra junk. If there is something really neat or interesting, I like to go look. But to test over video that may or may not download or play smoothly, that's just silly to me. It doesn't seem like effort from the teacher; it more so seems lazy”. In one course, she found value in a video of a computerized axial tomogram (CT) scan of the entire body. She said, “See that was a good learning tool, as a video added to our class. It showed what we were working towards and what our skills could accomplish”.

Victoria talked about an online PowerPoint® made available to her in another course outside MSU. She spoke about a mathematics tool that she didn't feel was

necessary to help her, but she realized the benefit to other students. She said, “It was helpful, you know. A few of the pages were helpful as reference, but it was pretty ...user-friendly”.

In general, most participants were comfortable and felt connected to the course because of software that functioned correctly. Many of the participants had no issues with either the delivery platform or the embedded software.

### Social

The third theme, social issues, arose from the participant’s feelings concerning interactions between themselves and others, and within themselves. Four sub themes emerged that contributed to the formation of social issues as a theme. They were self-direction, teacher issues, communication, and personal issues.

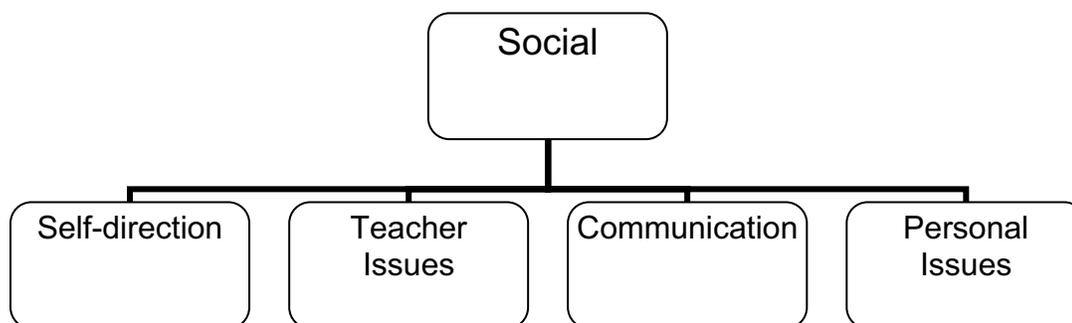


Figure 4: Social Sub Themes

#### *Self-Direction*

The ability to take responsibility for their own education was a common thread among all of the participants. For some, it was in the form of procrastination. For others, it was in the form of drive and ownership. Some of the participants viewed studying

alone as a strength of theirs in an online course. Albert said, "...I enjoy studying by myself rather than in a group. I do better studying by myself so having the advantage of an online course, you know, is having to do everything on my own instead of having other people's opinion as far as how I study goes. I enjoy online courses in that sense". At the same time, Albert felt he was a procrastinator, waiting until the last minute to complete assignments. Jessica mirrored Albert's feelings stating "My weakness is procrastination. ....I tend to put everything off until the last minute. ....I can put it off until the last minute and kind of cram it all in and still get it done".

When asked about her strengths and weaknesses as an online student, Rachel said, "Well, they [my strengths] are certainly not doing things ahead of time. I am a procrastinator and I am trying to get better at that, about not doing that anyway. But making my deadlines; I am pretty good about that". She also described herself as "kind of reclusive" and that it worked for her because she like working on her own and not in a group. Kristen provided some insights into her weaknesses online. She said:

I procrastinate. I also tend to think too much into an assignment, or how a teacher wants something. I don't have the advantage of hearing a bunch of questions from other students to guide me. I always start off with big intentions and end up just doing the assignment and hoping it works. Not to just pass, but I do have delusions of being discovered as a genius. It never happens. But I get good grades so I am happy.

Sammy also described himself as a procrastinator, but justified it somewhat. He said, "Definitely my weakness is procrastination. I will wait until the last minute to get things done. I try to work on that all the time, but I seem to do better in these classes. I don't know why, maybe just age, it being my choice to go back and do it now....Like when you first get out of high school and go to college it seems like a 'have-to' thing and now I choose to go back".

Victoria also discussed her strengths and weaknesses as an online student. She said, “I’ve been successful with it [online courses]; I’ve never been a procrastinator so I’m able to get the course work done in a timely fashion without having to report directly to somebody physically”. Conman also described himself as a non-procrastinator, but also as someone who was very into the details. “I think...I have pretty decent retention... and I’m pretty good at retaining that data and recalling it later. My weakness is that I’m always very concerned that I’m missing something, so a little obsessive-compulsive in the sense that, ok, I finished this but it must not be great. I’d better double check it. So I constantly, and probably my professors could attest to this, am looking for assurances that I’m doing it correctly”. George expressed the feeling that his military experience had prepared him for online coursework. He said, “I try not to goof around when it comes to school. I devote myself to it and...I’m not afraid to ask for help or ask questions”. Samantha talked about starting off strong in the semester and then tapering off towards the end. “I don’t have anybody telling me to do it and I know that’s not really college. I don’t know, I guess I don’t feel that push and since my grades are really good in the beginning, I will slack off towards the end because I know what I have to make to get whatever grade I’m going for”.

Lindsey cited good time management as her strength. “I’m able to plan certain nights and weekends off on my schedule and how I do my work and my chapter quizzes”, she said. Ashley also felt strongly that her strength was also self-direction. She stated, “Probably the strength would be that I am very dedicated and I am one of these that is not a last minute person. I want everything done right then, but I also like being able to do it at my own pace”. Samantha said, “I guess I’m an overachiever so I’m constantly

checking the computer. I'm not a procrastinator; I like to get things done so I guess actually that's what appeals to me about the computer, the online courses". About her strengths, Katie said, "Strengths? I do get things done". Buffy was just as clear. She said, "I'm mature enough to keep up with the deadlines. I'm independent, I'm focused, and I'm responsible enough to keep up with the work without somebody having to remind me of the deadlines and that sort of thing". She also said, "I can pace myself pretty well. To be honest with you, I love the ones that allow the whole here's your 9 units and here's all the information, and take it at your own pace".

Participants often listed the ability to work at their own pace as a personal strength. Sally said, "I feel successful...not extremely successful, but slightly successful. I feel where my strong points are I can work at my own pace...and that I can do it on my time versus going to a classroom". When asked about a statement she made about being independent, Janelle said, "...it makes me feel good; it makes me feel like I'm in control of my own destiny. In courses nowadays, especially in live courses, everything is a team approach, and I'm not saying that distance learning doesn't have that, but there's, umm, I don't know ...maybe the autonomy of it? I'm a relatively shy person in front of other people, so it gives me a little more self-confidence".

Michael didn't realize that he was a procrastinator until he thought through his answer to the question concerning his strengths and weaknesses as an online student. He said, "I am very disciplined and structured with online courses. My weakness, that also I think of as a strength, is that I work well under pressure. I don't have to do something weekly; everything just has to be turned in by the end of the semester and I actually have waited and done a test every night if I needed to do ten tests. I put it off and then I am

usually pleasantly surprised, but in certain ways, you could say I am a procrastinator, yes”.

### *Teacher Issues*

Participants often talked about their feelings of connectedness as related to issues with their teachers. Some participants said that knowing the instructors personally was an advantage for them. When asked if he thought of anything else made him feel more or less connected, he said, “sometimes I would choose my professor if I could”. When asked why, he added:

Because I know all of you from being on campus and I know whose classes I enjoyed, the way they teach the class, which professors were more fun and who cared more. I would base my choices on all of that. I mean, you know, that could definitely draw me in if one was teaching the classes and another was teaching the same class, I would want to take the one I feel closer to...”

Albert also expressed an advantage having instructors online whom he had taken classes from on campus. He said, “...I can kind of tell the attitude that the professors are having toward the course, whether they’re gonna be tougher on the students or a little lighter on the students with the work they’re giving out. You can tell that by reading the syllabus and the intros and stuff”.

Personal notes or introductions from the instructors increased the participants’ feelings of connectedness. Jessica expressed this when the course instructor introduced his or herself to the online students. She said:

It just personalizes it a little bit; it’s kind of nice just to see a face behind the name I guess. And I noticed this semester that the pictures are on there and that’s kind of nice because you always wonder what people look like”.

Rachel expressed appreciation for extra contact information from instructors that made her feel closer to the instructor. She said, “...instructor still gives her cell phone number and office contact number, and she puts her picture up there and so I feel connected that

way. She takes a little bit more time to respond to emails than some, but she will reply.

So that personalization there makes me feel connected definitely”. In talking about the syllabus, Kristen noted:

So it isn't about what they're [instructors] are assigning to you or what they expect of you, as much as you're not upset about how stringent or how complicated or how deep the course is. But if somebody's taking the time to lay it out for you, tell you what you need to know, and they're doing it well, with a personal note, then that draws you in better than when it's clinical. I think the connectedness...is hard to predict most of the time. It has to be hard, with different students, to be connected all the time.

Kristen also revealed an experience she had with an instance of cheating:

Well, I think the connectedness, is up to the teacher and the student. You can't have one without the other. If the teacher doesn't care, the student suffers and vice-versa. I unknowingly cheated in a class once. My boyfriend and I took a computer class together. We were doing these function things for an assignment; I don't remember the exact assignment. There was this really long paragraph we had to type, we were late on the assignment, so I copied and pasted his paragraph. There weren't any functions to do in that paragraph. We got caught. I was annoyed at first, but in the end, I got a zero on the assignment, and I never ever did that again. It was an integrity issue, to the teacher it wasn't about the typing; it was about doing the assignment like I was supposed to. In the long run, it didn't matter who typed it, it was the point of the action. I learned a lot from that mistake. In a classroom, that never would have happened. I knew better, I tried to do a short cut, and it was caught immediately.

Marie also talked about a more personal touch in online courses. She said, “It would probably make me feel like maybe they were more approachable if they were willing to give a little bit of personal and background information to their student”. Buffy also expressed an appreciation of instructors that provided a more personal touch. She noted:

...sometimes to me, it's better when a little bit of the personality of the instructor comes through. Because I've had teachers write with a little bit of humor and use like these little smiley faces and stuff like that. And you know, because you're not seeing them”.

She also said, “You know, that’s kinda funny, when you have a picture of the instructor in your mind. There was a teacher that had her picture on there and it was just kinda different the way it made you feel. The way it, I don’t know, more like you knew her at that point. Instead of being that face of this person and you have no idea. I’ve even gone so far, because I was curious to see what my instructors looked like, the ones who do not have pictures on the Internet site, I have gone ‘oh, crap. I don’t know who this person is that’s teaching me this whole formal class’. You know, because you don’t have that face to face interaction”. Sally agreed. She said, “I love the pictures of the instructors. I do because I feel like you kind of know the person a little bit and you always want to put a face with a name. It is kind of nice to know that you [instructors] kind of know where we [students] are coming from”.

Victoria provided a different issue with instructors. She said, “I feel more connected to the instructors that send out friendly reminders or say hey, here’s some additional information that I found, because then I feel like then they’re part of the class...”. George commented on instructor responses to what title students should use for them. He said, “...sometimes they’ll come back and say just call me so and so. They drop the title off of it and make you feel more at ease. Personally, I call them by their title because they earned it and that’s also nice that they offered that to the students. You know, just call them doctor so and so”. Sammy spoke about her feelings of connectedness and the instructor from the syllabus. She noted, “I guess it is, you know, the professor talks to you, well not to you personally, but within the syllabus, you know, ‘Hi guys, here I am and I hope we have fun in this class and if you have any questions give me a call or email me’. Things like that just make it seem a little more relaxed”.

Trinity said, “There have been a few [instructors] that have included in a message ‘I hope you have a great semester, and then there are those that just give you the work to go by and that is it’”. She indicated that the personal message increased her feelings of connectedness.

Lindsey talked about specific components that, when missing, made her feel more disconnected from the instructor and the course. She said, “...the only time I felt the disconnection from the instructor was when all the unit exams were open from day one and you pretty much had to know the syllabus. There were no discussions, not very many announcements, no weekly deadlines”. Buffy talked about feeling more disconnected when she perceived that the instructor didn’t care when exams were weighted heavily towards the final exam in a course. She said:

...but 55% of your entire grade on one test, that’s just ridiculous to me. ...it feels like the whole semester worth of work that you do, ... You know you’re putting a lot of sweat equity into a course...I mean the payday’s not good when you look at the thing that you’re spending more with and the thing that has taken you hours upon hours of all the work and all together all of those were 45% of your grade and then you get down to a 2 hour test that is very little sweat equity. I mean, of course it’s a compilation of everything that you’ve been learning, but still a two hour test isn’t worth 55% of your grade. It just feels wrong.

### *Communication*

Nineteen of the twenty participants had comments related to communication and their feelings of closeness to the instructor or instruction (connectedness) or their feelings of increased distance (disconnectedness). Relative to an English class Sally took, she said, “I felt as though I was not getting her messages and she was actually getting kind of irritated. I think with me, because a lot of her students ...were actually coming in to see her, where I was only doing what I could do online and she kind of got mad at me

because I was not coming to visit her. ...I said 'I am doing distant ed and I am not getting extra notes or anything that you are giving to these people because you are not putting it on the Course Compass'. I kind of felt like I was out of the class...because I did not live close enough to her". Sally also expressed frustration where she was unable to locate materials and contacted this instructor. She said, "I felt very distant from her [the instructor]. I felt like I had several occasions where I had called my other instructors when I needed to, but I felt almost like I was burdening her because I felt like she thought I should know what I am supposed to be doing. ...at that point, I quit bothering to call her because it was not getting me anywhere".

Marie talked about the slow turnaround time to grade assignments. "The only thing that does make me feel disconnected to the course is having an instructor that takes a long time to grade things even if I turn it in early and that kind of makes me feel disconnected to the class a little bit", she said. Michael also commented on the lack of feedback in a timely manner. He said, "I felt very disconnected because not only did I not understand, but it took a few days to the instructor to get back. I'm used to that because online you have a couple days leeway, but I was feeling overwhelmed".

Albert explained that he was "not a fan of discussion boards". He said, "That would be one thing that pushes me away. In my opinion, on top of everything else you have to do....I just feel that discussion boards....take extra time that I don't think should be spent". Bill shared Albert's sentiment. He said, "...I know they try to make it...personal, you know, with discussion boards and whatnot...I would rather just not have to do all of that stuff, but I know it is part of it. ...if it asks for two posts on a topic, then I'll do the minimum and that's usually all I'll post". Joe also felt that discussion

boards were unnecessary. He said, “I don’t feel like that [discussion boards] creates a community among classmates and I generally ...just kind of do the minimum...and it doesn’t really add anything...” Reflecting on the lack of strict time restraints on discussion board postings, Janelle said, “...I feel like I can sound more intelligent, you know, it’s like this conversation we’re having now. It is like, okay, what’s in my head right now, but tonight...I’ll probably think of a hundred things I should have said”. Sally talked about difficulties in an English course where there were no discussion boards or connections with other students in the class. She said, “I had never really experienced that [lack of connection] with any distance education classes, not feeling like I couldn’t just call my professor or email back and forth between my classmates”.

Albert expressed the same feelings of disconnectedness concerning communication. Albert said, “Well, I guess with any online course, not being able to actually sit down and talk with the instructor, you know, on a personal level....you don’t have access to that. You have to go by email. That, in my opinion, can kind of push you away from the course just because when it comes to me needing help ...I’d rather be able to sit down and talk instead of just having to email and wait for a reply”. Samantha also commented on her feelings of connectedness with regard to communication with the instructor. She said, “I guess it’s mainly the communication ; everything is open and comfortable like when you would go and submit an assignment, he would email back, ‘I got it’, or ‘Thanks, I got it’ and that little confirmation ...made you feel like you were getting in your work and he cared and appreciated your getting it in on time “. Many other participants commented on feedback from the instructor on a variety of items such as quizzes, exams, discussion boards, and on questions they asked. Kate commented,

“When I take a class, I want to take the class to get the whole thing. I want to get as much as I can out of it. So even if I didn’t do good on a test, there’s something I obviously need to learn, that I didn’t get, that I need to go back and figure it out. So if that instructor helps me go back and figure it out, I appreciate that”. Rachel related an experience that initially decreased her feelings of connectedness. She said, “I have learned to pay attention to how the instructor likes to be contacted because not everyone appreciates phone calls. They are like, ‘Why are you calling me’. I don’t like that. And then the email etiquette has to be right on point explicit to the letter or it is a problem. The reply is not always pleasant”.

Several of the participants commented about instructor presence within discussion boards. Victoria said, “I feel more connected to the instructors when I feel like they are a part of the discussion”. Lindsey seemed to share Victoria’s position. She said, “...instructors have actually gotten involve with discussion with the students, the required discussions. And that was very interesting to be a part of”. Ashley also expressed feelings of increased connectedness related to discussion boards:

If there is a discussion board and you are required to do, say, so many discussion boards for that semester, usually if the instructor gets involved in the discussion boards and kind of walks you through some things, or even gives you feedback, to me that makes me feel a little more connected as opposed to somebody just putting something in there and they never go back and look at it again. You know, and nobody responds back or anything like that. I do not like that part of it. Other than just frequent communications and organization of the class overall; that’s my main thing. I love that part, because I am not at an advantage where I am right there in Texas and I get to go to class. You know I can do this at my own pace, on my own time, but I like for the instructor to be as much involved as possible even during the session whether it be just during discussion board, or you know like the online chat that some instructors do, or anything like that. Anything to pull the instructor back in where you do not feel like you are just a student taking a class.

In discussion boards where the instructors never participated, Michael said, "...I felt much more disconnected from the instructor and the class because I really like to know, since I wasn't in class and didn't visually see the instructor, what their input was."

### *Personal Issues*

The participants revealed personal issues that made it more difficult for them to go to school. They presented parts of their lives and personalities that increased or decreased their feelings of connectedness. Sally said, "I am not a student that reads. I do have a learning disability. I have a comprehension problem. So actually, it is kind of a big challenge for me to do this because you are reading stuff and you are not hearing it and seeing in person. Having the course notes to go along with your book material kind of helps you pick up really what is more important out of the book material and what more to focus on". Victoria talked about problems she had with courses in general and responded to a question about whether or not the issue was the level of difficulty. She said:

No, I don't want it to be easy because, you know, you hear things that online programs can be easy. This isn't the easy way of doing it. It's a matter of it's a necessity when you're in your 30's and you're working full time and you have a child. So you need to be challenged; you don't want people coming out with a degree that they bought online, you know? There needs to be some level".

Albert felt the same way. He said, "It [the course material] draws me away. Yeah, I get drawn away from it if it is not challenging, you know, because if I don't have to spend as much time studying or researching, then you find time to do other things. But when you have a course that's tough, and very challenging ...you have to use your brain power and take the time that you need to get it all done".

Speaking about issues concerning the placement of course elements within the course, specifically navigation problems, Rachel said that the more difficult the navigation, the more disconnected she felt. She said, “Well, it kind of makes me feel like I just don’t get it, like no one else is going through this but me. Like, why am I not able to find this and you know, am I just the dense one in the class”? George also talked about personal issues that contributed to his feelings of disconnectedness. He said:

I believe I’m not a sponge. I’m not as young as I used to be and it takes me a little longer. I’ve got to read it and re-read it, and absorb it. It just doesn’t stick there. I can’t just study for a test next week, you know, today. I have to read and re-read it, dissect it”.

Bill described his lack of trust of relying on information online. He stated, “I print everything out... Yes, I’ll print everything out, as far as the syllabus, notes, anything that has to do with instructions. I have to have it out in front of me like in a folder or whatever so I can look through it”.

Conman expressed a lack of trust in himself by stating, “Well, I think that I like to have assurances from either other classmates or the instructor himself that I’m doing it correctly, or I’m on the right path. So, online, you have to make more of a concerted effort to get those assurances, so that makes me a little more paranoid since I also don’t want to look like...I’m being needy”. Janelle said, “I’m a little bit of a control freak. If you do have questions, you do feel a bit disconnected. It could be one or two o’clock in the morning when you’re looking at it, and...I just need an answer to this now so I can get through it and understand it and you’ve gotta wait until the next day to get your response”.

Lindsey claimed a weakness of hers was a lack of participation in communication during a course. She said, “There’re some classes that do not require them so, you know,

I don't try to email back and forth and I just pretty much do things on my own and go, so, and I try to just figure things out. I don't do a lot of corresponding; that's probably my weakness. I don't try to stay in touch". Joe expressed a weakness that made him feel more disconnected. He stated, "I have a tendency to study to what I perceive (*sic*) the test to be until my retention is not everything that I would like it to be. In other words, six month down the road, do I remember as well as I wish I had? Umm, no. I wish I retained it a little bit better".

### **Transition**

The theme titled transitional issues came from the participant's comments about experiences they had because of the transition from face-to-face courses to online courses. Some of these problems were due to lack of computer skills, fears that resulted from a lower comfort level with online courses, and their comparisons of certain experiences that could not be duplicated in an online course. This gave rise to the three sub themes under transitional issues which were computer skills, comfort level, and face-to-face.

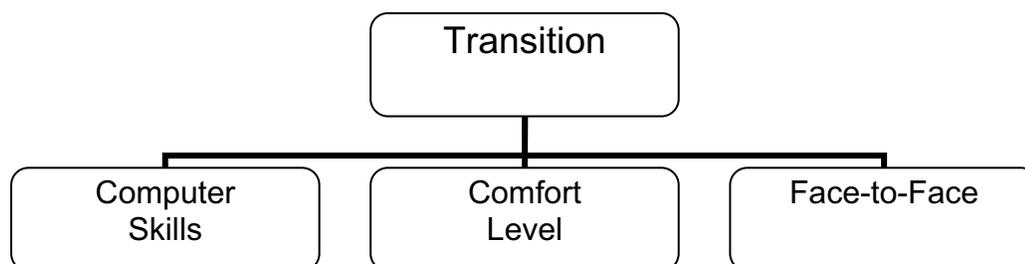


Figure 5: Transition Theme and Sub Themes

### *Computer skills*

While the issue of computer skills wasn't very big, it was important to note. Participants who talked about computer skills agreed that good computer skills were important even if they felt theirs were less than perfect. When asked if she could think of any strengths or weaknesses, Trinity said, "...my computer background. My personal computer background...I think once I started the class, I gained better computer skills. Beforehand, I was just a copy and paste [type person]. Now I can do a graph and I can do a pie chart".

Ashley felt that her computer skills were a weakness. She said, "...I need a little more computer skills". When asked how she got her computer skills, she replied that she was "pretty much" self-taught and that "My husband is a computer analyst and that always helps. I have an inside scoop there". Sally cited what she felt could be a weakness for others wanting to take online courses. She said, "I think if you are not a test taker, you know, a computer test taker...it definitely would be a weakness". George added, referring to accessing the syllabus, "And your computer's gotta be, it's gotta have a certain browser, but once you can get in it, its position is very user-friendly. I mean, from the syllabus to home, to how to ask the instructor questions, to assignments. I think it makes me feel way more connected...because on some of those you actually get a response".

### *Comfort level*

Seven of the participants (35%) talked about their level of comfort either with online courses over all, or specific components. When asked if she could describe any specific instances that mad her feel disconnected or connected to the instruction/course,

Trinity spoke about having to give a presentation in a course. She said, “It made me feel so much better about myself to do a video presentation of me which I had to send ...off to somebody to watch me on video”. George talked about his comfort level about contacting an instructor. He said:

I think, actually, you know, the introductory that the professor do really will make the student feel comfortable as far as jumping into it or making the student more comfortable in asking a question. The welcome part where the professor goes on there [WebCT] and says welcome, I am so and so, and ...we are going to cover this, this, and this. Feel free to ask me for anything, I will be here, and opens it up. You know, you’re not afraid to ...ask him or ...call him in his office”.

George also talked about the structure of the course online and his comfort level. He said, “The placement [of the course icons] actually is, well like I said, I’ve gotten used to them... Now I know how to navigate to them. ...If you’re not afraid to touch the computer...and you know that you’re not going to erase something or whatever, and you can just click right back...it makes it pretty easy...”.

Michael expressed disconnectedness when he and his fellow students in an online course discussed the differences between what the assignments and study guides covered and what the exams covered. Despite the fact that he and his fellow students “...all felt the same way. All of us did the exact same thing as far as the study guide, answered all of the questions, and we did the same things and not one of the things [test questions] resembled what we had studied”. Michael felt much less comfortable with that online course due to the mismatch of the test to the material. Lindsey said that her type and amount of correspondence on a discussion board decreased if she was not comfortable with the instructor. She said, “Well, I do better when it’s required, really probably the most particular reason why I don’t [correspond] is because I don’t know the professor

...because there's not that going back and forth and so I really don't know the instructor".

In an online statistics course, Katie commented about her level of comfort when she had doubts about the material:

I felt ok with it, but you know, I felt like I was comfortable with it that I didn't feel like I needed to call the instructor or email them because I, at the same time, didn't want to be a bother. So I feel like I understood it pretty good but there was a doubt that I have and if I was in class, I would have gone on and asked the questions, but because it was an online class I didn't bother with asking questions

Sally talked about her lack of comfort with reading online and how that made her feel more distant from the course. She said,

...I printed out the syllabus to have it in front of me when I am not at the computer. When you do not put all the information like when assignments are due and stuff like that, when that is not on there then it causes kind of a problem because you are not always there to look at it on the computer. Sometimes you just have to have it printed out in front of you. That to me kind of distances you from the class a little bit because you have to be connected to the computer and not be able to ...work on your own.

Rachel had problems feeling connected when she did not know the software program.

She said, "There was a tutorial about using Excel and I am completely unfamiliar with Excel. I was disconnected in that class the whole time, and just confused. There was a different language that one speaks when dealing with statistics. So it is like taking a class in Chinese ...I do not know Chinese, so I did not understand".

Samantha felt very comfortable with the courses, WebCT, and her instructors because she had experienced WebCT and most of the instructors when she was in the AAS program. She was very comfortable with both but said about other students who might not know the instructors or WebCT:

I took a course this summer; and she has a picture on there, and it was kinda ok. I mean, it was kinda neat for people that didn't' actually get their associate's

there. I mean, I think that would be neat to have that; to know a face and get to know the person and stuff. But for me, I wouldn't say it was that big of a deal, But I do think it's beneficial.

Marie expressed a high level of comfort with WebCT, but was concerned if she were to have to learn on another system... She said, "Maybe just kinda in general, that I am comfortable with it [WebCT] and have used it so much. This makes me feel better about the class overall. I feel like I am not gonna miss anything once I know how to navigate through everything well and I am not going to miss a due date ..."

#### *Face-to-face*

Referring to having a picture of the instructor posted somewhere within the online course, and missing that in a face-to-face course, Buffy said, "...because you don't have that face-to-face interaction, you're just kinda curious about who this person is and...because these people have a big role in your education and they're impacting lives and maybe you never see them, you never have any personal interaction with them,".

When asked if he missed the classroom, Sammy said:

Yeah, I think so, because you get to be acquaintances with these people and you just feel like you know them better. ... You kind of can pick up on personalities then and it makes dealing with people a little easier that way. ... You know, when you type the messages in the discussion board, you know, when you type something your tone may be completely different that what it actually reads and I find that a lot of people sometimes read something and take it differently than the way you had intended it. You know, because it is typed and not spoken. That can sometime, I guess, be a cold aspect of online.

On the other hand, Rachel said, " Well, you know, I just got finished taking a class at a community college here in town and having to go to class everyday, and be in a class, hearing the feedback from other students, I am thankful that there are online classes and that I do not have to go to class everyday". Buffy blamed many of her issues on her age

and said, “You know, I kind of prefer the face-to-face interaction and as a teacher, I definitely prefer going face-to-face in the classroom with a student. I like seeing their expressions and all that kind of stuff. For me, I like to be in there and be part of it”. She also said, “A face-to-face classroom can’t fit schedules, so it’s [online education] a huge, huge advantage, and in that way, it is a need. The very first class I took online, I was stressed about it and I’m very much comfortable with it right now”. Bill also preferred the classroom setting. Because there were no BSRS degrees available to him locally, he chose to take the courses online. He said, “I’m kind of limited to what I have to do so I’m kind of forced to do it online. I’d rather sit in a classroom, but then, that also takes time as well from work and stuff like that”.

Sally had an interesting perspective on proctored exams. She said, “I mean, honestly, I feel like I am definitely sitting in a classroom. It makes you study more because I know I am not going to be able to find it in my book in time. So when you are proctored it is feeling like you are with a teacher”.

The major themes that emerged from the participants’ descriptions of their online experiences concerning course structure were: design, environment, social, and transition. Two participants made comments that were considered outliers. Both commented either during or at the end of the interview that they were not particularly interested in the subject matter of the interview and said that they didn’t really care about course structure. Both participants gave very short answers throughout the interview and said that contact with an instructor was rarely necessary; in fact, they both said they would rather just get through the material as soon as possible.

This chapter centered on the analysis of the participants' comments and answers to each of the research questions. This resulted in the formation of themes and sub themes:

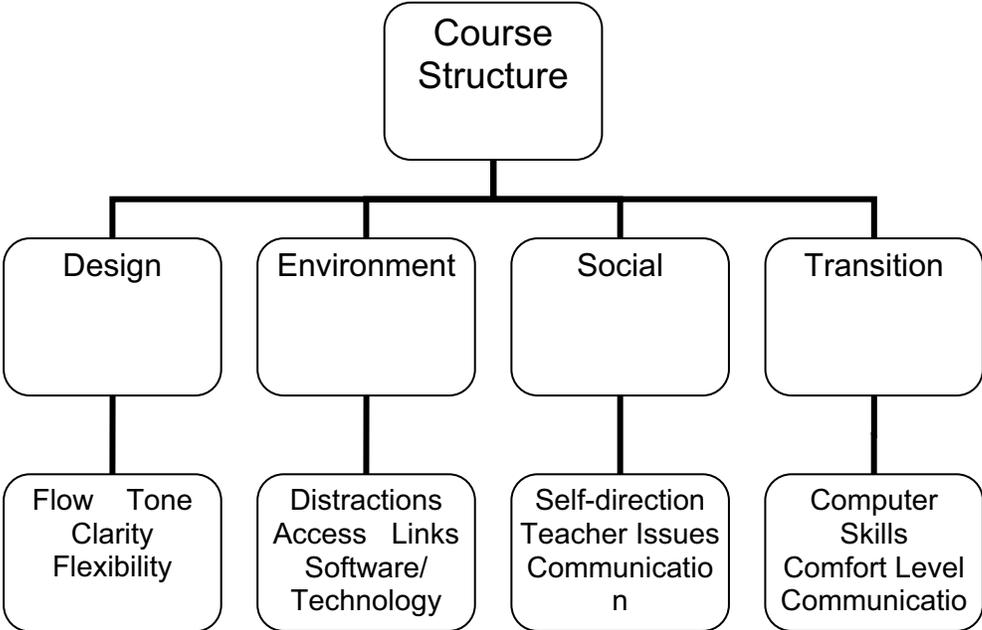


Figure 6: Themes and Sub Themes

In the next chapter, the findings of the study are discussed and each theme and their respective subthemes are discussed in detail. Conclusions and implications for teaching, and future research suggestions are included.

## CHAPTER 5

### CONCLUSIONS AND IMPLICATIONS

The purpose of this study was to discover if the components of online course structure increased, decreased or had no effect on transactional distance. This phenomenological study looked at the experiences of twenty Radiologic Science students enrolled in an online baccalaureate program who were within 9 semester hours of graduation. The stories and recollection of these students were explored to find out if the components of course structure, (syllabus, instructions, assignments, interactions, evaluation, and technology components) increased or decreased transactional distance.

This chapter was developed to give a brief overview of the findings of this study and the discussion of the themes and subthemes. The conclusions associated with the relevant literature were included as were implications for online teaching, a discussion of Moore's theory and its relevance, and suggestions for future research.

This qualitative, phenomenological study was designed to answer the following research questions:

1. How did the organization of course elements such as the placement of the syllabus, instructions, navigation of the course, etc, define students' perceptions of transactional distance (their feelings of closeness/nearness to the course and/or the instructor)?
2. How did the syllabus contribute to students' feelings of connectedness to the course/instructor?
3. How did the units of course instruction (assignments or modules) shape students' perceptions of transactional distance?
4. How did course technology components (system of delivery, video, and audio components influence students' perceptions of transactional distance?
5. How did evaluation components (exams, quizzes) change students' perceptions of transactional distance?

Through telephone interviews, field notes, and follow-up sessions, the unique perspectives of twenty Radiologic Sciences students in a fully online baccalaureate degree program were coded and analyzed for emergent themes. The resultant themes were design, environment, social, and transition.

### **Findings**

The twenty participants related their individual experiences that resulted in detailed information concerning their feelings about online course structure. All of the participants had at least nine hours of online coursework completed with the majority having completed 24 or more online courses upon which to reflect. Each participant reflected upon his or her unique experience with the components of course structure that led to rich, thick descriptions about how those components increased, decreased, or had no impact on their feelings of transactional distance. Some of the participants' reflections categorized easily while others were less obvious. The major themes developed from the review and analysis of the interviews, field notes, and follow-up information. The themes reflect the four types of experiences that encompassed their feelings about transactional distance.

In Chapter 1, a model of transactional distance was shown and described as the theoretical framework for this study:

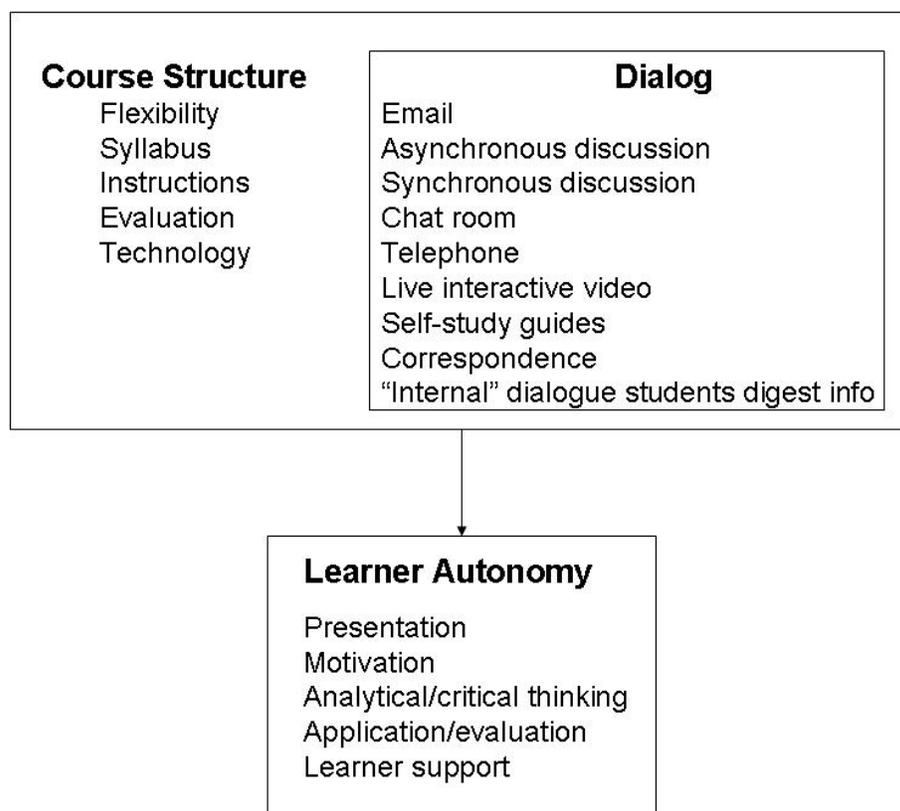


Figure 7: Vealé and Watts (2006). Model of Transactional Distance based on Moore's Theory of Transactional Distance. Note that dialog was situated within course structure and learner autonomy was affected by both course structure and dialog.

After review of this model, following the participant interview analysis, it seems that the model is appropriate and supported by the data. Dialog was a central thread throughout all of the data and fit very comfortably within course structure. Learner autonomy can certainly be affected by course structure but should be considered separately as intrinsic factors exist that structure cannot address such as internal motivation.

The analysis of the data revealed four major themes: *design, environment, social, and transition*. Each of these themes is explored in detail.

The first theme, *Design*, arose from the participants' experiences with the layout and features of online courses. Most of their reflections centered on the WebCT®/Blackboard® hybrid course delivery platform offered by Midwestern State University. There were some participants who had experience with other course delivery platforms and their comments about design provided unique perspectives.

The second theme, *Environment*, emerged from a variety of experiences of the participants' that related to the physical spaces in which they accessed the Internet, studied for classes, took tests, or otherwise dealt with their courses. The participants revealed specific life experiences such as distractions, computer or Internet access, links, software that arose from family, financial, employment, and personal issues. All agreed that these experiences contributed to their feelings of connectedness which they spoke about synonymously with transactional distance.

The third theme, *Social*, came from the distillation of many responses that referred to experiences with self-direction, teacher issues, communication issues, and personal issues. The participants provided rich, descriptive examples about such things as procrastination, time management, interactions, and a desire to belong. The participants were the most interactive during the interviews when talking about these issues and how they related to course structure and their feelings of connectedness.

The final theme, *Transition*, considered all of the participants' experiences that came from going from face-to-face courses to courses offered entirely online. Participants' computer skills, level of comfort with technology, and their comparisons to face-to-face courses provided another look into how the structure of courses delivered online influence feelings of connectedness.

## Discussion

This section of this chapter centers on the four major themes and their subthemes.

The major themes are *Design*, *Environmental*, *Social*, and *Transition*.

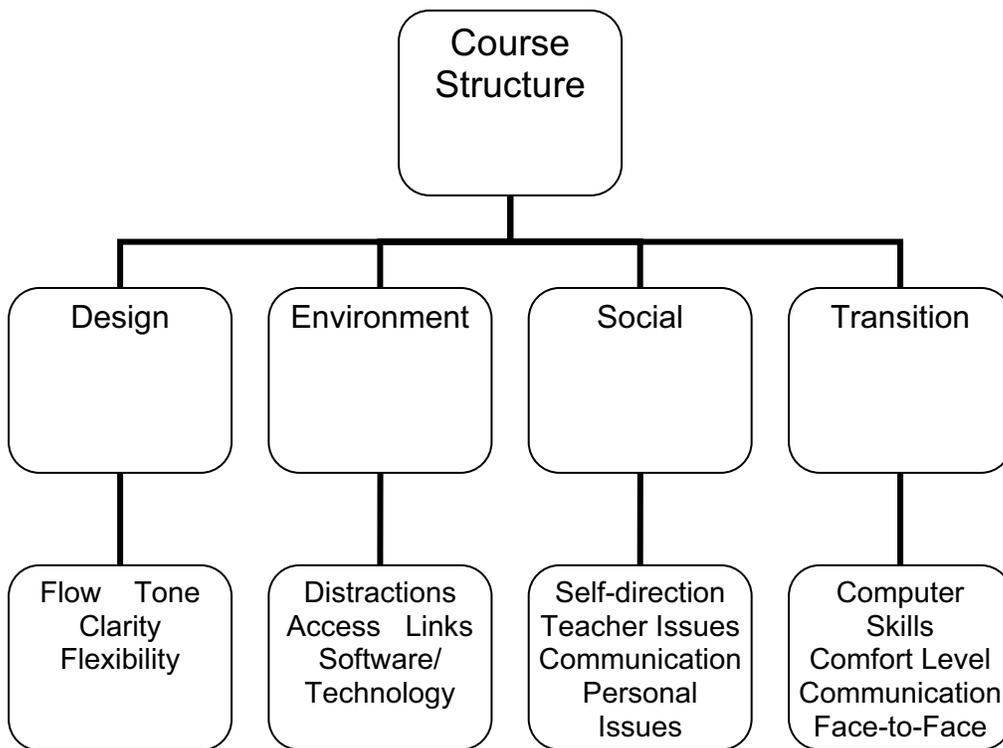


Figure 8: Themes and Sub Themes

### Design

The major theme titled *Design*, had four sub themes: flow, clarity, tone, and flexibility. Each of the sub themes arose from participants' comments about how an online course was constructed and whether or not the construction made them feel more or less connected to the course or instructor. Bills (1997) talked about increased successful learning outcomes when instructional material was well organized. Huang's (2002) study looked specifically at the effects of course organization on transactional distance and he found that transactional distance decreased as course organization

increased. This was the feeling among the participants using such words as “consistency”, “placement”, “organized”, and “location” to describe the desirable features of course elements.

### *Organization*

Some of the participants talked about the design of a course in terms of its organization. Their comments support the work of Gerson (2000) who believed that students could become lost and confused if the flow of the course did not serve as a constant reminder of what was required. Participants’ used words such as “misunderstood”, “easy to navigate”, “lost” to describe problems with the way a course was laid out. In many of the interviews, it seemed to become more important as participants described their frustrations and dissatisfaction with the way course elements were organized.

### *Tone*

Tone referred to attributes or characteristics of the instructor that showed in their writing style such as humor, warmth, caring, sternness, cold or clinical personality or a dismissive attitude. No literature specifically addressed the tone in the instructor’s writing either in response to online learners’ requests for information or in course elements such as the syllabus, instructions, or units of instruction. Several of the participants seemed to feel that the tone of the instructor could significantly influence their feelings of connectedness. They describe situations in which the tone was “cold”, “clinical”, or “formal” as contributing to decreased feelings of connectedness. One participant described the tone of an instructor as “hard ass” and feeling like the instructor would be

insensitive to this participant's scheduling problems. Others described experiences with the tone as "laid back", "comfortable", or "approachable" and felt as if they were more connected to the course and the instructor. They did not equate a more comfortable or approachable tone with the course being less challenging.

### *Clarity*

The degree to which instructions, course materials, or requirements were understandable was another important factor to participants. In line with Desharnais and Limson's (2007) findings that detailed activities and learning materials were guiding principles for developing Web-based learning, the participants also felt more connected if they knew what the expectations were. They used words like "vague", "didn't realize", and "no clear outline" to describe what they struggled with instructions or materials that weren't clear. Chin and Williams (2006) said that clearly defined instructions in an online course decreased transactional distance and the participants' comments supported this.

### *Flexibility*

Moore (1993) stated the flexibility referred to the ability of a course to meet the needs of the student. Many of the participants related experiences that support this notion. They used words and phrases such as "flexibility in deadlines", less "rigid" deadlines, and the ability to "attend classes anytime" as important aspects to their feelings of connectedness. This would fit in with Lemak, Shin, Reed, and Montgomery (2003) who wrote that the flexibility of course structure was defined as the degree of responsiveness of a course in meeting the needs of an individual student. Several

participants emphasized the need for an online course to allow flexibility with testing schedules and assignment deadlines. The more flexibility in these areas, the more participants' felt connected to the course.

### **Environment**

The major theme environment encompassed the participants' reflections about their surroundings while studying and in term of the course delivery platform and technology as surroundings. Blass and Davis (2003) pointed out that interaction, belonging, applicability, and usability as major concerns when developing online course mechanisms. Under environment, the following sub themes of distractions, access, links, and software/technology are discussed in detail

#### *Distractions*

Participants often referred to distractions as a barrier to connectedness in online courses. Of the distractions noted, familial and employment responsibilities were the major concerns. Participants talked about problems balancing time they wanted to spend with their families versus the time they needed to spend studying. One participant talked about using computers at work to complete assignments because she did not own her own computer. While these issues may be external to course construction and out of the control of the course instructor, it was important to the participants that these distractions decreased their feelings of connectedness and that they felt the instructors should at least acknowledge these issues. One participant talked about a test offered only one time on a certain date and time of day. She said, "...I did have one online course that we had to take the tests Sunday nights at 7 p.m., which is the worst time for me to have to sit down

and take a test, so I really did not enjoy that class at all...I felt further away...I didn't want to be in the class, and I just wanted to get it over with". The issue for this participant was that she was working in a hospital at test times, and often was called away to take care of a patient. For her, the distraction of interrupting the test made her feel less connected. In this case, the participant had no control over her testing environment. Most of the participants felt that the majority of distractions could be reduced by allowing them to choose when they took their tests.

### *Access*

Access was another environment issue that arose from the participants' experiences. Because so many had to access their courses from their workplace, situations occurred in which the participants' had limited access to course delivery platforms, course materials, email, and downloadable elements of the course. Although most of these issues were resolved, participants expressed feelings of frustration and irritation when course materials were not readily available. One participant related her experience of decreased or limited Internet access because of her geographic location. Living in a rural area in the Midwest seemed to be the major reason she had limited and sketchy access.

### *Links*

Participants related multiple course experiences in which embedded links either did not work, were difficult to find, or led them to external sites that were difficult to navigate. Grigorovici, Nam, and Russill (2002) found that too many hyperlinks resulted in a negative first impression of the instructor. Rather than the number of hyperlinks,

participants were concerned with the purpose and the navigation of those links, and few expressed negative feelings towards the instructor. Most recognized that links inherent to WebCT®/Blackboard® were not the responsibility of the instructor and were able to navigate through them by the end of the course or during the next course. The participants seemed to feel that links should be necessary, appropriate, and easily found. Searching for links to course materials or supplements, especially external to the course, seemed to decrease their feelings of connectedness. One participant expressed the desire to have a direct link to the library within every course stating that the link made her feel much more connected and she missed it if it were absent from other courses.

### *Software/Technology*

Vamosi, Pierce, and Slotkin (2004) found that technology had a profound effect on student satisfaction. Participants complained that inability to use elements within a course was frustrating and led to feelings of disconnectedness. Their experiences with course elements that seemed to cause increased transactional distance included slow loading times with PowerPoint® supplements or choppy, interrupted streaming video.

Blass and Davis (2003) suggested that development of online learning platforms needed to be appropriate for the material taught and should address the needs of the learners. The participants in this study had very few problems associated with the WebCT®/Blackboard® delivery system at Midwestern State University, but did complain about other course delivery platforms. It was obvious that sending students to a platform outside the one to which they were accustomed caused increased feelings of disconnectedness. Some participants felt they performed better in a single platform that was consistent for all courses. Their feelings support the findings of Vonderwell and

Zachariah (2005) who found that technology influenced students' participation and interaction. Overall, the participants responded that the delivery platform had no influence over their feelings of connectedness, as long as it was working.

### **Social**

Social issues played a large part in the participants' descriptions of online course experiences. Through their comments, the sub themes self-direction, teacher issues, communication, and personal issues took shape. One participant, who consistently spoke about his need for reassurance from the instructor and a need to feel like he belonged, made these profound statements:

...this popped in my head a minute ago and we got past it before I had a chance to mention it, but this is something that I hadn't thought of before that. As we were talking, it just kind of occurred to me that it, the relationship for me in these online courses becomes not with the professor anymore, so much, as it is with the information and the assignment. Again, I hadn't thought of that before but it really is. I feel very connected to the material that I'm trying to learn. Not so much to the person who's facilitating it, although that person is always there for me if I have a question or need something, but I just, I just kind of shift the connection and for me it is to the information and not to any person that's employed by the school.

#### *Self-direction*

Most of the participants, when describing their experiences in online courses, spoke about how motivated they were to start courses, keep up with assignments, and finish strongly. Because the Radiologic Science undergraduate courses are fairly rigid, with very little control in the hands of the learners, it seemed that this sub theme referred to intrinsic feelings of control over their learning. The participants spoke of autonomy as ways they could choose when they could test or turn in assignments. They talked of enjoying the ability to decide for themselves when to study or work on course

requirements. Little (1991) defined a part of learner autonomy as the learner's ability to take responsibility for his or her learning, and several participants talked about self-direction this way. Some described themselves as procrastinators, but readily admitted that this behavior did not reflect upon their feelings of connectedness to the course or the instructor. Most of the participants prided themselves on meeting deadlines and made sure they knew what was expected and when. Cotterall (1995) offered guidance concerning learner autonomy and felt that the more responsibility the learner accepted, the greater the autonomy and the greater the learning.

### *Teacher Issues*

Bischoff (2009) in her video presentation about personalizing courses suggested that adding a welcome message with the instructor's picture and some personal information decreased transactional distance. Several participants remarked that knowing the instructor made them feel more comfortable and more connected. Of the twenty participants, five attended classes on the MSU campus for their associate degree work and knew the instructors personally and each of those stated that they thought they were at an advantage. They felt that they already knew the personalities of the instructors and consequently, knew what those instructors would expect in an online course.

Several of the participants noted that they enjoyed seeing a picture of the instructor, that it provided a connection to the teacher. Others expressed that it didn't matter either way; if they saw the instructor or not, they got what they needed through the written materials. Glisan (2008) studied 18 online graduate courses and through surveys found that the majority of students surveyed thought that classmate photos helped increase online community and connectedness. She concluded that photos should

become a part of most online courses. All of the participants related increased feelings of connectedness when the instructor provided information in a more casual, or informal way.

### *Communication*

Participants repeatedly talked about their need for the instructor or teacher to respond to them, giving them reassurance, feedback, instructions, and serve as a presence during the duration of the course. Chickering and Gamson (1987) emphasized the importance of encouraging student to faculty contact; they believed that the greater the contact, the more connected and engaged students were. Participant comments supported this with words and phrases such as “if present, the instructor cares” “willing to go the extra step” and citing affirmation and reassurance as behaviors that made them feel more connected. “Backtracking” and “wrong explanation” were used to describing increased feelings of disconnectedness. Participants revealed that it was important how the instructor viewed them and how they viewed the instructor.

Steinman (2007) found that as interaction increased between the student and the instructor, transactional distance decreased. Participants also spoke about feedback and many expressed the feeling that the more immediate the feedback, the more connected they felt and when feedback was delayed, their feelings of disconnectedness increased. Some expressed a desire for prompts to tell them to complete their assignments and appreciated the instructor as a facilitator.

### *Personal Issues*

All of the participants, in one way or another, expressed feelings about their personalities, habits, or weaknesses that decreased their feelings of connectedness.

Lynch (2003) pointed that poor relationship skills led to failure of both students and faculty efforts of effectiveness. Several of the participants expressed a lack of confidence or trust in themselves as critical to feeling disconnected from a course. Some also commented that they worried about being seen by the instructor as too needy because of the need for constant reassurance.

A lack of interest in or boredom with course components was cited as another factor that led to decreased feelings of connectedness; however, the participants who talked about this claimed it was not a function of the course content, or lack of effort of the instructor, but more about how they felt at any particular time about school in general.

### **Transition**

The final major theme, transition, refers to difficulties participants had when dealing with their computer skills, their level of comfort with the technology, and taking online courses versus face-to-face courses.

#### *Computer skills*

Four of the participants (20%) related experiences in which their lack of computer skills caused them to feel isolated or disconnected. Most of the issues related to activities that required more than basic computer skills such as drawing graphs, developing video presentations or data charts. One participant suggested that a weakness for others wishing to start the BSRS program was online testing. She felt that it was a serious adjustment from paper and pencil tests in a face-to-face course. This may be due to issues of clarity as suggested by Summers, Waigandt, and Whitaker (2005). This also supports the work of Beise and Wynecoop (2001) whose study found that students felt they learned more from practice and graded quizzes.

### *Comfort Level*

Most of the participants related examples of course activities or instructor action that left them feeling more or less connected. Lack of familiarity with the professor was mentioned several times as was a lack of familiarity with software programs. Most expressed a high level of comfort with the WebCT®/Blackboard® course delivery platform, but some said they were afraid to take courses with a different platform. Brown (2001) in her study of the steps leading to the development of an online community found that “participants had to get comfortable with the technology used to deliver the classes” (p. 31) and that they had to get used to “faceless” (p. 31) interactions. Tallent-Runnels, Lan Li, and Cooper (2006) in their review of research literature on online teaching found that students who had prior training in computers were more satisfied with online courses than novice were. Messineo and DeOllos (2005) found that faculty members assumed that their students were at the appropriate level in their computer skill and consequently put those students at risk for failure. They suggested that faculty remain aware that students have different experiences with computers and may need extra help.

### *Face-to-Face*

Six (30%) of the participants talked about aspects of the face-to-face environment that they either missed or were happy to leave behind in an online course. Two of the participants felt strongly that having the instructor’s picture and/or personal information was something that increased their feelings of connectedness. Nearly all of the participants talked about wanting a personal touch within the online course whether it were less formal writings or more personal contact with the instructor. One of the participants felt that it was critical that she know something about the instructors as they

played a very important role in her life. Although the average age of all the participants was 34 years, Shea, Sau Li, and Pickett (2006, July) suggested that future, younger students would be even less satisfied with online courses without increased instructor presence and decreased text-based materials.

Richardson and Swan (2003) did an extensive review of literature examining social presence in online courses. They concluded that “Instructors need to be aware of the impact that their immediacy behaviors and social presence or lack thereof may have on their students’ satisfaction, motivation, and learning” (p. 81). They also noted there was only a limited amount of empirical research on social presence in online courses and suggested that future research center on this area.

Not having to sit in a classroom or travel to attend classes was important to most of the participants. They may have missed the instructor contact, but their need for the convenience of scheduling time to take the courses overrode it. Another said he felt forced to take online courses because there were no face-to-face programs near where he lived. However, both of the participants stressed that they felt that online courses were more challenging than face-to-face courses and that it was mostly instructor contact that they missed. Garrison and Cleveland-Innes (2005) reported on a variety of literature that agreed on the issue of instructor presence in online courses. They said “...the greatest student adjustment to online learning was most directly associated with issues of interaction—both socially and cognitively” (p. 136). They concluded that consistent teaching presence that encouraged student centered participation was essential in online courses and with appropriate presence students would feel more connected to the course or their learning.

## Conclusions

Research of Moore's (1990) theory of transactional distance has largely been limited to two of the three clusters he suggested affecting students' feelings of connectedness in online courses: dialog and autonomy. The third cluster, course structure, represents a gap in the literature and had only been referred to in the context of flexibility or rigidity, rather than with specific reference to the elements of course structure. While supportive literature (Gokool-Ramdoe, 2008) existed, no studies to date were conducted with the intent of testing Moore's theory.

Garrison, Anderson, and Archer's (2000) community of inquiry (COI) framework seemed to have a connection to Moore's (1972) Theory of Transactional Distance course structure cluster. The COI Model included three facets which were social presence, teaching presence, and cognitive presence. The area of social presence dealt with communication, group cohesion and sense of belonging. The area of teaching presence dealt with design and organization of the course as well as feedback and focus. The area of cognitive presence dealt with motivation, interest, curiosity, problem exploration, reflections, and problem solving. The COI addressed most of the areas included in this study of Moore's course structure cluster and expands parts of the two other clusters of dialog and learner autonomy. While the COI does not refer to Moore's Theory of Transactional Distance, it certainly mirrored its intent.

This study sought to further explore and describe the theory through the real-life experiences of online Radiologic Science students enrolled in a fully online baccalaureate program. The collective experiences of these students were explored in an effort to determine ways that transactional distance could be decreased.

The analysis of the data led to conclusions for each research question presented in this section:

1. How did the organization of course elements such as the placement of the syllabus, instructions, navigation of the course, etc, define students' perceptions of transactional distance (their feelings of closeness/nearness to the course and/or the instructor)?

Participants agreed that the ability to locate all components of a course such as the syllabus, instructions, assignments, or any pertinent information was important to them. Most talked about how the consistency of using a single course delivery platform made them feel connected to the course and the instructor. Those that has experience with other platforms complained that the organization differed so much from their normal experiences with courses on WebCT ® that they were confused or lost and felt very distant from the course. The organization of an online course when designed to be easily navigatable and intuitive as to where items are located, decreases transactional distance and makes students feel more connected.

2. How did the syllabus contribute to students' feelings of connectedness to the course/instructor?

Participants contributed many experiences about the syllabus and its role in increasing or decreasing feelings of connectedness. Most preferred some kind of personal touch from the instructor such as phone numbers, photographs, or other information that allowed the participants to gain insight into the instructor's personality. All participants wanted a syllabus that had clearly outlined expectations and assignments with specific information about deadlines and grades. From their experiences, it was concluded that the syllabus is

many times the first glimpse students have into the course and the manner in which it is written sets the tone for the course period. The syllabus should contain accurate information that informs students about deadlines and the flexibility of those deadlines. The syllabus is the primary source of guidance for students and should reflect specific expectations of the course.

3. How did the units of course instruction (assignments or modules) shape students' perceptions of transactional distance?

Participants' reflections about course units or assignments were much like their comments about the syllabus. Clear expectations, instructions, and procedures were most important.

4. How did course technology components (system of delivery, video, and audio components) influence students' perceptions of transactional distance?

The experiences of the participants were varied as to the type and amount of technology components they had used. However, it was clear that they preferred audio and video components if they played smoothly and were directly related to the course materials. The delivery platform was not an issue unless it existed outside the university's version of WebCT®/Blackboard®. From the participants' point of view, it was concluded that consistency in course delivery platform is essential in reducing transactional distance and that supplemental audio and video components must be of a quality that students do not suffer from slow download time or in playback that is choppy or pixilated. Because these issues can be out of the instructor's control, it is recommended that students be informed of system requirements and that instructors be mindful that these issues decrease connectedness.

5. How did evaluation components (exams, quizzes) change students' perceptions of transactional distance?

Participants expressed expectations that exams, quizzes, papers, and other evaluation methods would be present in any online course; however, several complained that tests often did not match reading or study requirements. When tests to materials incongruence occurred, the participants were frustrated and angry that led to feelings of disconnectedness or increased transactional distance. Participants also consistently remarked that it was not a matter of how hard the test was; in fact, they welcomed the challenge of a well-written test. For students to remain connected to the course and the instructor, evaluation materials should be constructed so that there is a good match between the materials taught.

#### *Central Question*

How did transactional distance relate to elements of online course structure?

(Transactional distance refers to the psychological distance a student may feel rather than geographic distance. Psychological distance refers to perceptions about an online course that make a student feel more or less connected to the instruction or the instructor).

Course structure, when reduced to specific elements had a definite impact on the participants' feelings of connectedness. Moore (1990) focused on the rigidity or flexibility of the course structure; however, this study acknowledged the fairly rigid nature of undergraduate online Radiologic Sciences courses and was still able to determine whether the specified course elements increased, decreased, or had no affect at all on transactional distance.

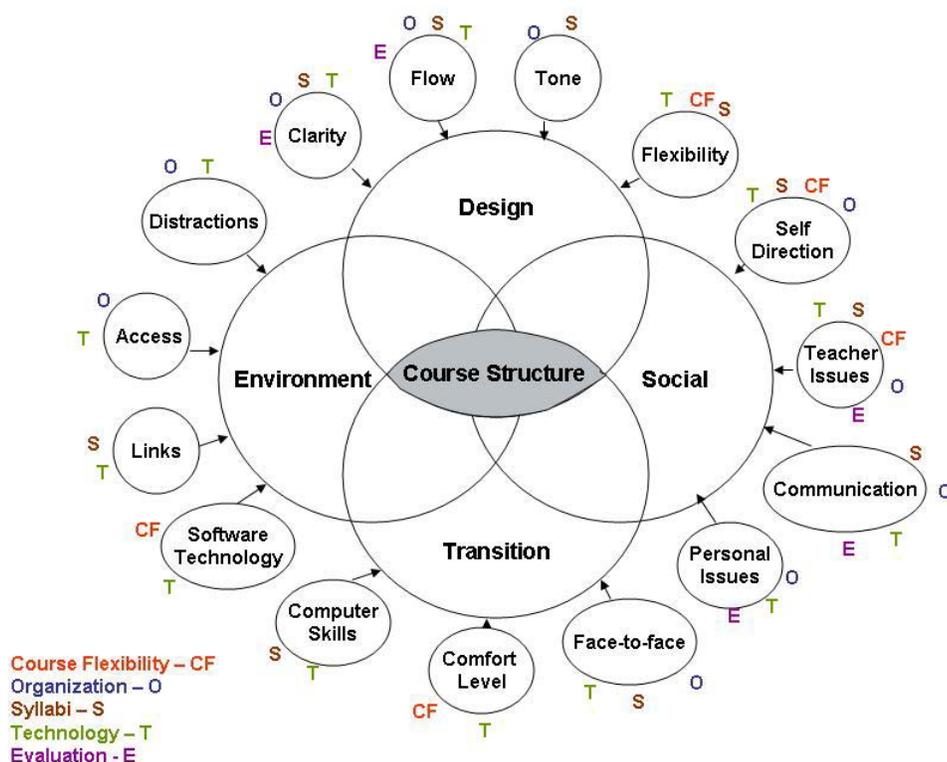


Figure 9: Model of Course Structure

The elements of course structure as determined by this study were interconnected and while one single factor may not seem significant on a superficial level, when each were examined separately, it became obvious that all the elements of this system were connected. As connections were discovered, more connections were established. Consideration of each should be included in any online course design. In figure 9, the four major themes were depicted with the subthemes attached. The original elements of course design were given codes and those codes were placed around sub themes that included those elements.

### **Implications for Online Teaching**

Anyone thinking of developing or revising online courses should pay attention to the effects of course structure on transactional distance. Courses should be designed so that there is a smooth flow from one activity to another or connections are easily made from materials to testing; transactional distance decreases and students feel more connected. The extrinsic course environment should include easy and consistent access for students with clear and detailed explanations about course software downloads, and video and audio view requirements. The fewer problems students encounter and the more quickly these issues are resolved help to increase their sense of connectedness and likewise decrease transactional distance.

Social considerations such as teacher presence, manner of presentation of materials in terms of tone and clarity, personal communication from teacher to student, and encouragement of students to participate played a large role in the participants' feelings of connectedness. Teachers should think deeply about how their messages are viewed by students and limit the possibility of misinterpretation. Adding a personal description, photograph, or other information that gives the students an idea of the teacher's personality makes the teacher seem more real to them and also helps the students' sense of connectedness, thereby decreasing transactional distance.

Teachers should also consider students' ability to use the computer and establish the level of competence required for a course. Requiring students to be prepared increases their level of comfort with both the computer and the technology, decreasing transactional distance. Teachers should also work to incorporate their presence into

online courses so that the advantages of face-to-face courses (one-on-one contact, immediate feedback, etc.) are seen as online course advantages as well.

### **Suggestions for Moore's Theory of Transactional Distance**

It appears that the analysis of data gathered for this study, coupled with the review of relevant literature, Moore's theory of transactional distance should be considered when designing or revising course structure. Clear and specific instructions and syllabi, material to test congruence, technology functionality, personal touches from the instructor, and appropriate assessment of student comfort with computer skills leads to a decrease in transactional distance and increases students' feelings of connectedness. As previously mentioned, a deeper look at Moore's Theory and the COI model may provide an even more detailed examination of course structure that could more fully inform course designers and instructors.

### **Suggestions for Further Research**

This study has attempted to make a connected between course structure and transactional distance as framed by Moore (1972; 1991; 1997). The nature of a qualitative study limits the number of participants so that a reasonable amount of data can be analyzed and conclusions drawn from the participant's real-life experiences. Further research into course structure should include a larger number of participants over a larger geographic area so that results could be more generalized. A quantitative study using a survey could be useful in reaching a greater number of participants and could serve to further provide an in-depth description of the Moore's theory. An instrument could be developed using the themes this study to gather more comprehensive information about

the influence of course structure on transactional distance, learning and student satisfaction.

Undergraduate students in Radiologic Sciences represent a small number of students compared to other academic programs across the United States. The inclusion of other content areas might result in information about transactional distance and course structure that could be generalized to a larger population. For these findings to be generalized to a larger population, geographic representation would need to be greatly expanded, a wider variety of educational programs included, and other institutions such as community colleges, private institutions, and other institutions of higher education should be included. Additionally, it would be interesting to include other populations such as graduate students whose experience would differ both in academic challenge and autonomy.

With the addition of new questions, it would be interesting to know if decreasing transactional distance results in greater learning and increased student satisfaction. Moore's Theory of Transactional Distance included three clusters of variables: dialog, course structure, and learner autonomy. Only the cluster of course structure was addressed in this study. While the variables of dialog and learner autonomy were touched on, no attempt was made to fully address these areas. In addition, no attempt was made to determine instructor motivation or actual intent related to course structure components. The addition of information from the other two clusters, dialog and learner autonomy should serve to inform Moore's (1972) theory.

Because only courses delivered entirely online were addressed, and there was no attempt to include hybrid course structures or supplemental online course content, research in these areas would broaden this area of research.

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**Appendix A**

University of Nebraska-Lincoln

IRB Approval of Research

Change of Protocol

Midwestern State University

Human Subjects in Research Committee Approval



Your project has been approved by the IRB.

Approvers Comments:

Beth and Dr. King,

It has been approved to change the title of your project and to change the research and interview questions.

The approved informed consent form has been uploaded to NUgrant. The file name includes -Approved.pdf. Please use this form to distribute to participants.

Your official approval letter will be emailed to you and uploaded to NUgrant in the next week.

Good luck with your research!

Becky Freeman  
472-8127  
bfreeman2@unl.edu

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August 10, 2009

Beth Veale  
Teaching, Learning and Teacher Education  
5111 Sunnybrook Ln Wichita Falls, TX 76310

James King  
Agricultural Leadership, Education and Communication  
300 AGH UNL 68583-0709

IRB Number:  
Project ID: 9778  
Project Title: A Qualitative Study: Transactional Distance and Course Structure.

Dear Beth:

The Institutional Review Board for the Protection of Human Subjects has completed its review of the Request for Change in Protocol submitted to the IRB.

1. It has been approved to change the title of your project and to change the research and interview questions.
2. The approved informed consent form has been uploaded to NUgrant. The file name includes -Approved.pdf. Please use this form to distribute to participants.

We wish to remind you that the principal investigator is responsible for reporting to this Board any of the following events within 48 hours of the event:

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

This letter constitutes official notification of the approval of the protocol change. You are

therefore authorized to implement this change accordingly.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Mario J. Scalora". The signature is fluid and cursive, written in a professional style.

Mario Scalora, Ph.D.  
Chair for the IRB





## Human Subjects In Research Committee

Institutional Review Board in  
Compliance with 45 CFR 46

MSU Policy 2.37

### MEMORANDUM

TO: Beth Vealè

RE: HSRC Application, Title: A Qualitative Study: the Effects of Course Structure on Transactional Distance and Student Learning  
Principal Investigator(s): Beth Vealè

DATE: February 4, 2009

Please be advised that your application for research utilizing human subjects has been reviewed and approved by the above named committee. The number assigned this project is:

File Number 09020402

Please include this number in any presentation or publication arising from this research. You may be required to place a copy of this letter within the thesis or other class, department, or college documentation. This approval is valid for one calendar year following granting of approval status. You may request an extension by submitting a letter requesting such to the HSRC committee chair.

Respectfully,

*Gayle Mullen*

Chair, Human Subjects in Research Committee

## Appendix B

### *Invitation to Participate in Research*

Dear \_\_\_\_\_,

I am writing you to invite you to participate in a telephone interview to gather information for my doctoral dissertation. The purpose of this study is to discover if your perception of specific course structure elements change your perceptions of learning, and if course structure influences how close or far away you feel from the instruction or instructor. You must be a student in the Radiologic Sciences program at Midwestern State University and must have completed at least nine hours of course work. You must not be enrolled in any courses taught by this researcher.

Participation in this study will require approximately 60 minutes of your time, and will not be considered as part of any course in the Radiologic Sciences programs at Midwestern State University. First, I will interview you by telephone for approximately 30 minutes using about eight (8) questions I have developed for this project. This interview will be audio taped with your permission.

Towards the end of the semester I will contact you by telephone for a follow-up interview, also audio taped, to see if any of your feelings have changed.

If you are interested in participating, please respond to this email. Once I receive your email, I will send you an informed consent form that will let you know how I intend to use the information gathered from you. Your identity will be protected and will not be revealed to anyone other than me.

Thank you so much! I look forward to hearing from you. Let me know if you have any questions.

Beth L. Veale', M.Ed., RT(R)(QM)

## Appendix C

## Informed Consent Form



INSTITUTE OF AGRICULTURE AND NATURAL RESOURCES  
DEPARTMENT OF AGRICULTURAL LEADERSHIP,  
EDUCATION AND COMMUNICATION

## INFORMED CONSENT FORM



IRB# 2009059778 EX  
Date Approved: 08/10/2009  
Valid Until: 05/10/2010

**Identification of Project:**

A Qualitative Study: Transactional Distance and Course Structure

**Purpose of the Research:**

The purpose of this phenomenological study is to discover if your perception of specific course structure elements change your perceptions of learning, and if course structure influences how close or far away you feel from the instruction or instructor. You must be a student in the Radiologic Sciences program at Midwestern State University and must have completed at least 6 hours of course work. You must not be enrolled in any courses taught by this researcher.

**Procedures:**

Participation in this study will require approximately 60 minutes of your time, and will not be considered as part of any course in the Radiologic Sciences programs at Midwestern State University. First, I will interview you by telephone for approximately 30 minutes using about eight (8) questions I have developed for this project. This interview will be audio taped with your permission.

Towards the end of the semester I will contact you by telephone for a follow-up interview, also audio taped, to see if any of your feelings have changed.

**Risks and/or Discomforts:**

There are no known risks or discomforts associated with this research

**Benefits:**

The expected benefits associated with your participation are the information about perceived learning with regard to course structure, the opportunity to participate in a qualitative research study, and information related to increases or decreases in transactional distance due to course structure.

**Confidentiality:**

Your name will not be associated in any way with the findings of this study and only I will know your identity.

Any information obtained during this study that could identify you will be kept strictly confidential. The data will be stored in a locked cabinet in the investigator's office and seen only by the investigator during the study and for three years after the study is complete. The information obtained in this study may be published in scientific journals or presented at scientific meetings but the data will be reported as aggregated data. The audiotapes will be erased after transcription.

**Compensation:**

Participation in this study is strictly voluntary and you will not receive any compensation or academic credit.

**Opportunity to Ask Questions:**

You may ask any questions concerning this research and have those questions answered before agreeing to participate in or during the study. You may call the investigator at any time, office phone, (940) 397-4611, or after hours (940) 882-5002. Please contact the investigator:

- if you want to voice concerns or complaints about the research
- in the event of a research related injury.

Please contact the University of Nebraska-Lincoln Institutional Review Board at (402) 472-6965 for the following reasons:

- you wish to talk to someone other than the research staff to obtain answers to questions about your rights as a research participant

- to voice concerns or complaints about the research
- to provide input concerning the research process
- in the event the study staff could not be reached,



IRB# 2009059778 EX  
Date Approved: 08/10/2009  
Valid Until: 05/10/2010

**Freedom to Withdraw:**

Participation in this study is voluntary. You can refuse to participate or withdraw at any time without harming your relationship with the researchers, Midwestern State University, or the University of Nebraska-Lincoln, or in any other way receive a penalty or loss of benefits to which you are otherwise entitled.

**Consent, Right to Receive a Copy:**

You are voluntarily making a decision whether or not to participate in this research study. Your signature certifies that you have decided to participate having read and understood the information presented. You will be given a copy of this consent form to keep.

\_\_\_\_\_ Check if you agree to be audiotaped during the interview.

**Signature of Participant:**

\_\_\_\_\_  
Signature of Research Participant

\_\_\_\_\_  
Date

**Name and Phone number of investigator(s)**

Beth L. Veal, M.Ed., Principal Investigator  
James King, PhD, Supervisory PI Graduate Student

Office: (940) 397-4611  
Office (402) 472-4202

**Appendix D**  
**Interview Protocol**

## Interview Protocol

### Introduction

In 1972, an educational researcher named Michael G. Moore developed a theory that he termed “transactional distance”. Moore said that the distance between the student and the instruction and/or the instructor was not a matter of geography or the actual physical distance, but a psychological distance; in other words, Moore said that the distance was formed by how a student felt about the course and/or the instructor. I have chosen one of the areas that Moore described as having an influence on transactional distance – course structure. I will be asking you questions to determine if certain elements in a course determine how close or far away you feel from the instruction and/or the instructor. For example, having an instructor in person may make you feel closer to that instructor or instruction, or weekly in-class quizzes may or may not make you feel a strong connection. Perhaps in an online course, seeing pictures of fellow students may or may not make you feel a stronger connection. In other words, the questions I will ask you are designed to help me find out what makes you feel more connected to the instructor/instruction and what makes you feel less connected or more isolated. Please feel free to stop me at anytime to ask questions and take as much time as you need to answer. We can always come back to a question if you need more time.

I see that you have signed the Letter of Consent. Do you have any questions before we get started?

The first thing I would like to do is to ask you some general questions:

1. Age: \_\_\_\_
2. Gender \_\_\_\_
3. # online course hours \_\_\_\_
4. # BSRS courses
5. Geographic location \_\_\_\_
6. GPA (RADS \_\_\_\_ and Cumulative \_\_\_\_)
7. # of different online instructors
8. Current employment in a clinical environment? \_\_\_\_ If no, then where? \_\_\_\_\_
9. Describe how successful you feel you are as an online student.

Probe: Tell me what your strengths and weakness as an online student are.

Interview questions: (Space will be included on the interview form for me to take notes. The interviews were recorded).

10. Think about an online course and its organization, that is, where different pieces of the course are located, the ease of navigation, where the syllabi, units of instruction, exams, etc. are. How does the placement of these items influence how connected you feel to the course and/or instructor?

Probe: Are there any examples you can give me that mad you feel disconnected to the instructor or instruction based on where the course elements were located, ease of navigation, etc.?

11. Most courses contain a syllabus. How does the syllabus influence how connected you feel to the course?  
Probe: What part(s) of the syllabus influence how connected you feel and why?
12. Once you are into a course, how do the units of instruction influence your feelings of connectedness?  
Probe: Can you think of any examples where the units of instruction made you feel disconnected from the instructor/course?
13. Online courses often are often offered through a course delivery platform such as WebCT. How does this influence your feelings of connectedness?  
Probe: Can you think of any examples of times when you felt disconnected from the course due to the delivery platform?
14. Some online courses may contain video and audio components. Can you think of any in courses you have taken? How did they influence your feelings of connectedness?  
Probe: Has the quality of video and/or audio components left you feeling disconnected from the instructor/instruction?
15. Think about evaluation components such as quizzes, exams, etc. in online courses you have taken. How do these influence your feelings of connectedness to the course or instructor?  
Probe: Can you describe any specific instances that made you feel disconnected from the instruction/instructor?
16. Take a minute and think about online courses you have taken. Is there anything else that you think influences how connected you feel to the course/instructor?

**Appendix E**

**Participant Demographic Information Questions Summary**

Name	Age	Gender	Geographic Location	# Online Course Hours	# BRSRS Courses	# Online Instructors	Cumulative GPA	BRSRS GPA	Current Employer
Albert	24	M	Texas	24	8	5	3.548	3.25	Hospital
Ashley	31	F	Mississippi	15	5	5	4.0	4.0	Clinic
Bill	33	M	Texas	30	8	9	3.33	3.33	Hospital
Buffy	42	F	North Carolina	24	8	6	4.0	4.0	Hospital
Connan	36	M	Indiana	21	7	6	3.714	4.0	Hospital
George	51	M	Texas	33	11	5/6	3.273	3.273	Unemployed
Janelle	47	F	Texas	15	4	4	3.8	3.8	Clinic
Jessica	35	F	Texas	30	7	6	2.714	2.714	Hospital
Joe	41	M	California	30	10	9	3.3	3.3	Hospital
Katie	30	F	Kentucky	42	10	12	3.429	3.5	Teaching
Kristen	34	F	Texas	18	4	4	2.3	2.6	Hospital
Lindsey	33	F	Arizona	33	9	7	3.364	3.625	Clinic
Marie	24	F	Texas	24	8	6	3.522	3.875	Hospital/clinic
Michael	48	M	Georgia	36	8	7	2.667	2.8	Teaching
Rachel	40	F	North Carolina	24	6	7+	3.33	3.55	Hospital/clinic
Sally	30	F	Kentucky	36	10	5+	2.357	2.6	Hospital
Samantha	22	F	Texas	33	11	8	3.476	3.4	Hospital
Sammy	33	F	Texas	24	8	7	3.73	3.875	Hospital
Trinity	36	F	Texas	30	10	9	3.4	3.4	Hospital
Victoria	34	F	North Carolina	42	10	12	3.5	3.5	Hospital

## Appendix F

### Interview Information

Name	Date of Interview	Length of Interview	Transcript Length
Albert	9/2/2009	29:36	7 pages
Ashley	9/12/2009	21:22	6 pages
Bill	8/31/2009	17:08	5 pages
Buffy	9/3/2009	33:43	13 pages
Conman	8/28/2009	23:57	7 pages
George	8/31/2009	35:13	11 pages
Janelle	9/2/2009	16:21	5 pages
Jessica	9/2/2009	21:04	6 pages
Joe	9/1/2009	27:16	7 pages
Katie	9/3/2009	18:07	5 pages
Kristen	9/16/2009	34:08	12 pages
Lindsey	9/3/2009	23:27	5 pages
Marie	8/30/2009	18:14	6 pages
Michael	9/1/2009	21:24	9 pages
Rachel	8/20/2009	29:45	7 pages
Sally	8/13/2009	33:26	10 pages
Samantha	8/29/2009	18:13	5 pages
Sammy	8/27/2009	22:26	6 pages
Trinity	8/12/2009	24:50	7 pages
Victoria	8/31/2009	17:30	6 pages

## Appendix G

### Keywords by Question

Question	Response Keywords
9. Describe how successful you feel you are as an online student.	self-discipline, distractions, time management, organization, motivation, focus, computer skills, communication, reassurance
10. Think about an online course and its organization, that is, where different pieces of the course are located, the ease of navigation, where the syllabi, units of instruction, exams, etc. are. How does the placement of these items influence how connected you feel to the course and/or instructor?	consistency, flow, ease of navigation, links, belonging, instructor involvement, security, Missing face-to-face
11. Most courses contain a syllabus. How does the syllabus influence how connected you feel to the course?	Depth, clear expectations, redundancy, tone, flexibility, library link, calendar, grading scheme, personal touch, teacher/student interaction
12. Once you are into a course, how do the units of instruction influence your feelings of connectedness?	structure, depth, connection to text, feedback, software issues, flexibility
13. Online courses often are often offered through a course delivery platform such as WebCT. How does this influence your feelings of connectedness?	tone, instructor as facilitator, relations with course information, prompts to complete assignments
14. Some online courses may contain video and audio components. Can you think of any in courses you have taken? How did they influence your feelings of connectedness?	downtime/quirks, instructor-built vs. standard platform, comfort level, reassurance, updates, tutorials, relevance to other courses
15. Think about evaluation components such as quizzes, exams, etc. in online courses you have taken. How do these influence your feelings of connectedness to the course or instructor?	testing format, graded discussion, short paper, fairness, anytime anywhere vs. time limits, challenge level, teacher effort, feedback, clarity, test to material congruence

16. Take a minute and think about online courses you have taken. Is there anything else that you think influences how connected you feel to the course/instructor?
- discussion boards, instructor participation, autonomy, tone, proctored tests, forced to think, slow grading turnaround, boring material

## Appendix H

### Codes by Keywords

Theme	Codes
Design	D1 – Flow D2 – Structure D3 - Tone D4 - Clarity D5 - Flexibility
Environment	E1 – Distractions E2 – Access E3 – Links E-4 –Technology
Social Issues	S1 – Self Direction S2 – Teacher issues S3 - Communication S4 – Personal issues
Transitional Issues	T1 – Computer Skills T2 – Comfort levels T3 – Face – to-face