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# The Importance of Instructor-Student and Student-Student Interactions of the satisfaction of Graduate Students Taking Distance Learning Courses

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**THE IMPORTANCE OF INSTRUCTOR-STUDENT AND STUDENT-STUDENT  
INTERACTIONS ON THE SATISFACTION OF GRADUATE STUDENTS  
TAKING DISTANCE LEARNING COURSES**

A Research Paper Presented to the Graduate Faculty  
of the Department of Occupational and Technical Studies  
at Old Dominion University

In Partial Fulfillment of the Requirements for the  
Master of Science in Occupational and Technical Studies Degree

By

Donna J. Thompson

August 2001

APPROVAL PAGE

This research paper was prepared by Donna J. Thompson under the direction of Dr. John M. Ritz in OTED 636, Problems in Occupational and Technical Studies. It was submitted to the Graduate Program Director as partial fulfillment of the requirements for the Degree of Master of Science in Occupational and Technical Studies.

APPROVED BY: John M. Ritz 7-2-01  
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Advisor and Graduate Program Director

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## CHAPTER I

### INTRODUCTION

With the demands of work and family, most adults do not have the time or energy to devote to a standard classroom-based course of study. However, many adults need to pursue higher education to advance their careers. Distance education gives adults the opportunity to further their education on their own terms. According to a survey completed by the Distance Education and Training Council in 1998, the average age of students in distance education courses was determined to be 31 years old (Distance Education, 1998, p. 3).

Distance education is characterized by a physical separation of instructor and students and interaction between instructor and students that takes place through the use of one or more media (Ross & Schulz, 1999, p. 123). It can involve computer-based training, the Internet, satellites, an Intranet, virtual reality and audio or video teleconferencing. Old Dominion University's TELETECHNET program is an interactive distance education system that addresses the needs of adult learners. The program is designed for part-time attendance, catering to non-traditional students who are generally working full-time and taking care of a home and family.

One of the major issues when studying distance education programs is the relative isolation of the distance learning environment (Bullen, 1998). This social isolation, marked by a lack of face-to-face interaction between student and instructor and among students, is one of the predominate characteristics of



distance education. Students, particularly adults, need some degree of social exchange to facilitate learning. The challenge for the instructor is to overcome the distant learner's feelings of isolation (Rezabek & Weibel, 1995) by providing opportunities for interaction between the instructor and student and among classmates.

### **Statement of the Problem**

The problem of this study was to determine the importance of instructor-student and student-student interactions on the satisfaction of Old Dominion University graduate students taking TELETECHNET courses.

### **Research Goals**

The research goals of this study were to answer the following questions:

1. What level of interaction with the instructor do students need in order to be satisfied with their experience in the course?
2. What level of interaction with other students do students need in order to be satisfied with their experience in the course?
3. Can a student successfully complete a TELETECHNET course without being satisfied with their personal interactions in the course?

## **Background and Significance**

Traditionally, education involved gathering students and instructor in the same physical location. Distance learning allows for the separation of the participants by both time and space. Golani and Jones (1999, p. 27) argue that a large part of the benefit of going to school with other students is lost in a distant environment. However, the instructor can develop ways to encourage networking and the sharing of life experiences, which is an essential ingredient of adult education. TELETECHNET students have the opportunity to communicate with both the instructor and fellow students via voice mail, e-mail, and Internet access in addition to traditional mail and telephone.

Adult learning is a cooperative activity that respects and draws on the knowledge that each person brings to the learning setting. Although teachers have the overall responsibility for leading a learning activity, in adult learning settings each person has something to teach and to learn from the other (Draper, 1992, p. 75). According to Hiltz (1994, p. 23), collaborative learning means that both teachers and learners are active participants in the learning process. Knowledge is not delivered to students, but it emerges from active dialogue among those who seek to understand and apply concepts and techniques.

Michael G. Moore, distance education theorist, developed the theory of transactional distance. He defines transactional distance as it exists in distance education environments: "It is the physical distance that leads to a communications gap, a psychological space of potential misunderstandings between the behaviors of instructors and those of the learners, and this is the

transactional distance" (Moore and Kearsley, 1996, p. 200). It is not physical location that determines the effects of instruction, but the amount of transaction between learner and instructor. The distance is measured by the amount of dialog that occurs between learner and the instructor, and the amount of structure that exists in the design of the course (Moore and Kearsley, 1996, pp. 200-204). According to Moore and Kearsley, this theory is applicable to all educational relationships where there is a learner, a teacher and a means of communication (Moore and Kearsley, 1996, p. 200).

Eduard Lindeman, a philosopher of adult education, believed that adult education is a force for constructive social action. Lindeman's methods of adult education stress the importance of discussion. He wrote that learners should have a set of analytical skills that could be applied to understand a range of different situations. He saw education as a method for giving situations a setting for analyzing complex wholes into manageable, understandable parts (Lindeman, 1926, p. 115). These analytical skills would be developed through discussion groups. Lindeman believed that "experience is the adult learner's living textbook" (Lindeman, 1926, p. 7) and discussion should be the means for relaying and sharing the learners' knowledge.

While distance learning takes a wide variety of forms, all distance learning is characterized by the following:

- Separation of place and/or time between instructor and learner, among learners.
- Interaction between the learner and the instructor, among learners.

- Instruction conducted through one or more media; use of electronic media is not necessarily required.

It is the interaction between the learner and the instructor and among learners that is the focus of this study.

The Distance Education and Training Council determined that there are six ways that schools measure the outcomes of their distance education programs: course completion statistics, student evaluations, professional organization recognition, employer evaluations, passage of licensing/certification examinations, and employment or placement (Distance Education, 1998, p. 5). This study focused on student evaluations, through survey, to determine how much interaction between the learner and the instructor and interaction among learners is necessary in order for the TELETECHNET student to be satisfied with the learning experience.

### **Limitations**

Several limitations must be considered when reviewing this study. These limitations include:

1. Participation was limited to Old Dominion University graduate students currently enrolled in Occupational and Technical Education TELETECHNET courses.
2. The survey instrument was subjective and limited by the respondents' interpretation of the questions.

3. Biases may exist in the instructor-learner or learner-learner relationships based on previous interaction in other TELETECHNET or traditional courses.

### **Assumptions**

The assumptions of this study include:

1. Most TELETECHNET students are adult learners.
2. TELETECHNET students are willing to participate in research studies.
3. TELETECHNET courses are designed so that students have the ability to communicate with both the instructor and other students.
4. Some individuals require more interaction than others to be comfortable in a learning situation.

### **Procedures**

In this study, the researcher used a qualitative, descriptive methodology. The study is based on a closed-question electronic survey distributed to students currently enrolled in Old Dominion University TELETECHNET Occupational and Technical Education graduate courses. The results of the survey were tabulated, compared, interpreted, and presented in this study.

## Definition of Terms

The following terms and abbreviations are defined to assist the reader in understanding this study:

**Andragogy** – The art and science of teaching adults.

**Asynchronous** - A type of two-way communication that occurs with a time delay, allowing participants to respond at their own convenience. An example of an application of asynchronous communication is an electronic bulletin board.

**Chat** - Two or more individuals connected to the Internet have real-time, text-based conversations by typing messages into their computers. Groups gather to chat about various subjects. Everything typed by an individual is displayed to the other members of the chat group.

**Computer Conferencing** - An ongoing computer conversation via text with others in different locations. Conferencing can be done in "real time," so that messages appear as they are being keyed, or it can be "asynchronous," which means the complete message is keyed and then stored for later use by the receiver or sender.

**CMC** – Computer-mediated communication.

Distance Education (DE) - Distance education is any form of instructional delivery that does not require the student to be physically present in the same location as the instructor. Audio, video, and computer technologies are common DE delivery modes.

Electronic mail - Mail sent via computer, commonly called E-mail.

Electronic Bulletin Boards - Information services that can be reached via computers connected by modem and/or the Internet. With these services, users can gather information, place and read electronic messages from other users, and download available files.

Interaction – In distance education, interaction is defined as both verbal and data communication between the instructor and the learners and between learners at various distance education sites.

ListServ - Mailing list program for communicating with other people who have subscribed to the same list. When a message is submitted to the server it is relayed to all those on the listserv.

ODU - Old Dominion University.

One-Way Video/Two-Way Audio - An interactive conference, class, or meeting in which participants see and hear the speaker(s) at the originating site as well as hear participants at other receiving sites.

OTED - Occupational and Technical Education.

Receiving Sites - All sites, other than the originating site, participating in a course or meeting that is distributed with technology.

Satellite - An earth-orbiting device used for receiving and transmitting signals. Each satellite has a number of transponders which receive the signal and bounce it back to earth, where it is received by any of the dish-shaped earth stations, then transmitted via cable, phone lines, or microwave to its final receiver TV set.

Synchronous - A type of two-way communication that occurs with virtually no time delay, allowing participants to respond in real time.

TELETECHNET - Old Dominion University's interactive distance education program. Courses are delivered via one-way video/two-way audio.



## **Overview of Chapters**

Chapter I introduces the study and explains its focus on the importance of instructor-student and student-student interactions on the satisfaction of Old Dominion University graduate students taking TELETECHNET courses. It reviews some of the leading theories regarding the importance of communication in distance education for adult learners. Chapter I also listed the limitations and assumptions of this study, including the fact that the survey was specifically aimed at adult learners participating in the ODU TELETECHNET distance education program. This chapter explained that the procedure for gathering the study data was a closed-question survey. Chapter I included a list of terms and abbreviations often used when discussing distance education issues.

Chapter II will present an overview of the existing literature on the topic. Chapter III will explain the methods and procedures used in obtaining the data for this study. Chapter IV reports the findings of the study. Finally, Chapter V will address the summary, conclusions, and recommendations of the researcher based on the findings of this study.

## CHAPTER II

### REVIEW OF LITERATURE

The concept of interaction is not unique to the distance education setting. There is much literature that supports the value of learner-learner and learner-instructor interactions and the importance of these interactions to students in the *traditional* classroom (Brookfield, 1987; Knowles, 1984; Meyers & Jones, 1993; McGiven, 1994; Shale & Garrison, 1990; Wagner, 1993). This review of literature will summarize representative studies from the writings that deal with the satisfaction of adult learners with the amount of interaction that occurs in *distance* learning environments. The review examines the theory of transactional distance, which is the basis for much of the research on interaction. The researcher also reviewed literature dealing with the concept of interaction, the satisfaction of learners with interaction in distance learning, and why interaction is important to adult learners.

#### **Transactional Distance**

Much of the current research on interaction in distance education is based on the theory of transactional distance developed by Michael G. Moore (Anderson & Garrison, 1995; Fulford & Zhang, 1993; Moore and Kearsley, 1996; Saba & Shearer, 1994; Sutton, 2000; Vrasidas & Mclsaac, 1999; Wagner, 1994; Yarkin-Levin, 1983; Zhang and Fulford, 1994). Moore defines transactional

distance as the theoretical distance between teachers and students (Moore and Kearsley, 1996, p. 200). This distance is not necessarily physical, but rather psychological, made up of understandings and interpretations between an instructor and students. It can be exacerbated in distance educational settings where time and geography further separate students from their teacher, but it is not determined by geography. Transactional distance can be thought of as the continuum made up of the structure of the course and dialogue between the teacher and students (Moore and Kearsley, 1996, pp. 200-201).

In a 1994 study of the relationship between structure and dialogue in transactional distance, Saba and Shearer found that transactional distance decreases when dialogue increases and structure decreases; but when structure increases, transactional distance increases and dialogue decreases (Saba & Shearer, 1994, p. 54). The researchers created a model based on a mathematical formula that predicts the amount of transactional distance between the learner and the instructor using learner-control, teacher-control, dialogue and structure as the variables (Saba & Shearer, 1994, p. 53).

Moore, in his 1989 editorial in the *American Journal of Distance Education*, listed three types of interaction that occur in distance learning. These are instructor-learner interaction, learner-learner interaction, and learner-content (Moore, 1989, p. 1). With instructor-learner interaction, the learner has access to the teacher and is able to draw on the teacher's experience and professional knowledge in a manner that is most effective for that particular learner (Moore, 1989, p. 3). Moore defines learner-learner interaction as interaction between

one learner and other learners, alone or in groups, with or without the presence of the instructor (1989, p. 4). This review concentrates on those studies that look specifically at the interactions between the instructor and the learner and among learners.

### **Interaction**

In distance education, the term “interaction” has had many different definitions. Wagner defined interaction as “reciprocal events that require at least two objects and two actions. Interactions occur when these objects and events mutually influence one another.” (1994, p. 8). Dunning, Van Kekerix, and Zaborowski felt that any type of verbal, electronic or written communication that provided some form of two-way communication between distant sites was interaction (1993, p. 128). In a 1996 study, Mclsaac and Gunawardena defined interaction as, “the degree to which the technology permits two-way communication between the teacher and the students and among students” (p. 427). Sutton further explains that interaction also involves the way learners and instructors communicate their own ideas, perspectives, feelings, and knowledge and understand those of others (2000, p. 6). For the purpose of this study, interaction will be defined as both verbal and data communication between the instructor and the learner and among learners at various distance education sites.

The interaction that occurs between the learner and the instructor is regarded by most educators as essential and highly desirable by many learners (Moore, 1989, p. 2). Interaction between the instructor and the learner can take many different forms from a learner asking a question during a group presentation to an instructor offering the learner personal feedback on an assignment. According to Hackman and Walker, offering individual attention and encouragement to distance learners is the most important factor in promoting mediated learning (1990, p. 204).

Abrahamson found that in distance education courses, student access to the primary instruction is critical (1998, p. 38). Unfortunately, research has found that learner-instructor interaction occurs at a much lower rate in distance learning than in traditional classrooms (Freitas et. al., 1998, p. 367). However, as new technologies emerge, the options for interaction increase. In his research on the use of computer-mediated communications (CMC) in distance education, Kaye found that the use of CMC is helping to blur the distinctions between distance education and classroom-based learning (1989, p. 9).

Moore commented that learner-learner interaction would, “open a new dimension of distance education that would challenge researchers’ thinking and practice in the 1990’s” (Moore, 1989, p. 4). However, the effect of this type of interaction has not been studied much in the distance-learning environment (Anderson & Garrison, 1995, p. 29). Since new technology has made it increasingly possible for learners to interact with each other, learner-learner

interaction is now becoming more of a factor in distance education (Sutton, 2000, p. 8).

Isolation of the learner from his/her fellow learners has been the topic of several studies (Abrahamson, 1998; Hara & Kling, 2000; Haynes & Dillon, 1992; Holmberg, 1999; Lake, 1999). Holmberg found that courses that have a conversational communications process result in students who are more motivated and more successful than courses that are impersonal (1999, p. 59). Another study indicated that distance students are more likely than on-campus students to use peer-teaching strategies (Haynes & Dillon, 1992, p. 40).

### **Learner Satisfaction**

Many research studies have found that increased levels of interaction result in increased motivation, more positive attitudes towards learning, and a higher degree of satisfaction with the distance-learning experience (Garrison, 1990; Hackman and Walker, 1990; Ritchie & Newbury 1989; and Wagner 1994). Hackman and Walker measured students' perception of interaction and learning satisfaction in a distance-learning environment. The study found that the level of interaction greatly influenced the learners' satisfaction with their learning experiences (1990, p. 203).

Fulford and Zhang conducted a study to determine whether a learner's perception of personal interaction and his/her perception of overall interaction affected the learner's satisfaction with the course (1993, p. 8). The study,

consisting of 233 teachers taking distance learning courses, found that the critical predictor of satisfaction was the learner's perception of overall interaction, and his/her perception of his/her own personal interaction was only a moderate indication of satisfaction. The next year, the researchers did a follow-up study that looked at the relationships between learner perceptions of interaction and the actual amount of time spent interacting (Zhang & Fulford, 1994, p. 59). This study found no relationship between the amount of time allowed for interaction and the learner's satisfaction with the course.

### **Adult Learners in Distance Education**

According to Moore and Kearsley, most distance education students are adults between the ages of 25 and 50 (1996, p. 153). Therefore, understanding adult learners is necessary in order to develop effective distance education courses. Verduin and Clark state that, "Before any propositions or designs can be advanced for effective distance education, recent research on what is known about adults, their learning styles, their motivation, and other related qualities needs to be reviewed and analyzed." (1991, p. 21).

Much of what is known about adults and how they learn is based on the work of Malcolm Knowles and his theory of andragogy. Knowles determined that adults come into an educational setting with much more experience than children (1984, p. 57). Sharing this experience with other learners enriches the learning experience for all involved. Knowles also acknowledged that most adult

learners prefer self-directed learning (1984, p. 56). However, self-direction does not necessarily mean in isolation. Studies of self-directed learning indicate that self-directed projects involve an average of 10 other people as resources, guides, encouragers, etc. (Zemke & Zemke, 1984).

The need for recognition is another factor in teaching adults from a distance. Hara and Kling's study of adults enrolled in a master's program found that the students looked to one another for recognition and reassurance and complained that they did not receive enough recognition from the instructor (2000, pp. 5-22).

### **Summary**

The interaction between the learner and the instructor and among learners is an essential ingredient for the satisfaction of adult learners participating in a distance education course. Much of the research of interaction in distance education is based on the theory of transactional distance developed by Michael Moore. Moore also defined three types of interaction: instructor-learner interaction, learner-learner interaction, and learner-content (Moore, 1989, p. 1). This review of literature examined studies that focused on instruction-learner and learner-learner interaction (Anderson & Garrison, 1995; Garrison, 1990; Hackman and Walker, 1990; Ritchie & Newbury 1989; Wagner, 1994).

Researchers have examined the need for interaction in order for learners to be satisfied with the learning experience (Garrison, 1990; Hackman and Walker, 1990; Ritchie & Newbury 1989; Wagner, 1994). Interaction helps lessen



the feelings of isolation, which is a general problem in distance education and one that particularly affects adult learners. Adult learners make up a majority of distance learners (Moore & Kearsley, 1996, p. 153); therefore, the learning style of adults should be a major concern when developing distance education.

The literature reviewed by this researcher indicates two points that validate the purpose of this research study. First, an abundance of research indicates that interaction does indeed play an important role in the satisfaction of adult learners with the distance learning process. Second, there is an obvious lack of research looking at the level of interaction necessary to achieve learner satisfaction. It was the purpose of this study to determine what level of interaction ODU graduate students needed in order to be satisfied with their TELETECHNET experience.

## CHAPTER III

### METHODS AND PROCEDURES

The study of distance education shows that interaction plays an important role in the satisfaction of adult learners with the distance learning process. The problem of this study was to determine the importance of instructor-student and student-student interactions on the satisfaction of Old Dominion University graduate students taking Occupational and Technical Education TELETECHNET courses. A descriptive study was conducted in order to obtain pertinent data relevant to the population. This chapter describes the research methods and procedures used to collect and analyze data from OTED TELETECHNET graduate students. Included are the population, the instrument design, and methods of collecting and analyzing the data.

#### **Population**

The population targeted for this study was 66 graduate students in the Old Dominion University Occupational and Technical Education (OTED) TELETECHNET program. The students participating in the study had all completed OTED TELETECHNET courses in the spring of 2001. The participants were both degree seeking and non-degree seeking graduate students enrolled in the Occupational and Technical Studies concentration areas of community college teaching (occupational and technical), middle/secondary vocational education teaching, and business and industry training.

## **Instrument Design**

The instrument designed for use in this study was a survey developed using the Likert Scale. The survey consisted of several closed-formed questions in the following areas:

1. Level of interaction between the student and the instructor.
2. Level of interaction between the student and other students.
3. Level of satisfaction of the student based on the levels of interaction.

A copy of the survey is provided in Appendix A.

The data were compiled using a five-point Likert Scale to assign a value to each closed-ended question answered in the survey. Five points were assigned to the most positive response. The point values decreased for less positive responses, with the most negative response being assigned a value of one.

## **Methods of Data Collection**

Data used in this study were collected during the summer of 2001 using a survey. The survey was distributed to 66 Old Dominion University OTED TELETECHNET graduate students who completed Occupational and Technical Education classes during the 2001 spring semester. The survey was distributed via electronic mail. The students' email addresses were provided by the Occupational and Technical Studies department. A sample of the cover letter for the survey is provided in Appendix B. A follow-up letter was sent to all

students who had not responded to the survey approximately 11 days after the initial mailing.

### **Statistical Analysis**

The data were compiled manually to organize the survey results for analysis. Each participant's responses were tabulate using a spreadsheet. After tabulating the survey results, a mean value was calculated for each question. The tables presented in Chapter IV will further support the procedures and instruments used in analysis.

### **Summary**

This chapter described the population, instrument design, methods of data collection, and statistical analysis for this study. The research instrument used in this study, a survey, was described. Statistical data were collected and analyzed from this single research instrument. The results of the statistical analysis will be presented in Chapter IV.

## CHAPTER IV

### FINDINGS

The purpose of this study was to determine the importance of instructor-student and student-student interactions on the satisfaction of Old Dominion University graduate students taking OTED TELETECHNET courses during the spring semester of 2001. This chapter presents the survey results and concludes with a summary of these results.

The Interaction in Distance Education Survey was a closed-question electronic survey dealing with the level of interaction that took place between the respondent and the instructor and between the respondent and his/her classmates. The participants responded to the questions in relationship to their experience in one of the following classes:

OTED 635, Research Methods in Occupational and Technical Studies;

OTED 636, Problems in Occupational and Technical Studies;

OTED 761, Foundations of Adult Education and Training;

OTED 762, Administration and Management of Training Programs.

#### **Response to the Survey**

The survey was delivered via email to OTED graduate students who completed OTED TELETECHNET courses during the spring semester of 2001.

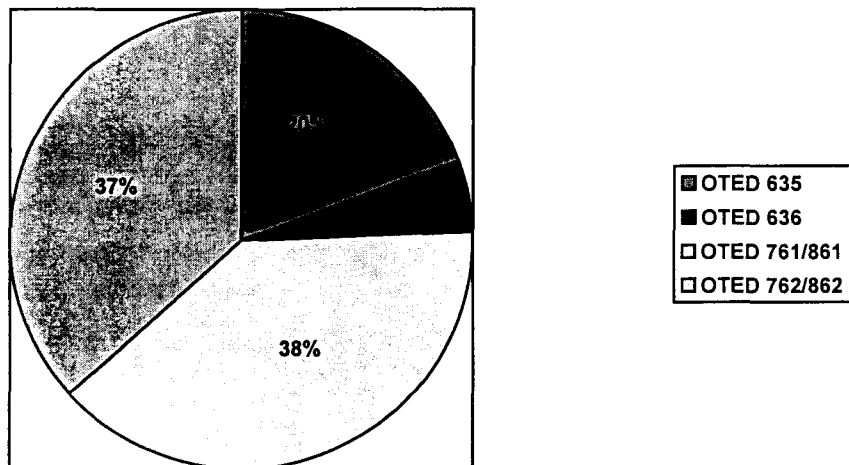
A total of 66 surveys were sent. Of this number, 41 students, or 62%, completed and returned the survey.

### Survey Results

Question 1 of the survey was designed to determine which of the four OTED classes offered during the spring 2001 semester the respondent completed. Of the 41 students who answered this question, eight were enrolled in OTED 635, two in OTED 636, 16 in OTED 761/861, and 15 in OTED 762/862. These results are shown in Figure 1.

**FIGURE 1**

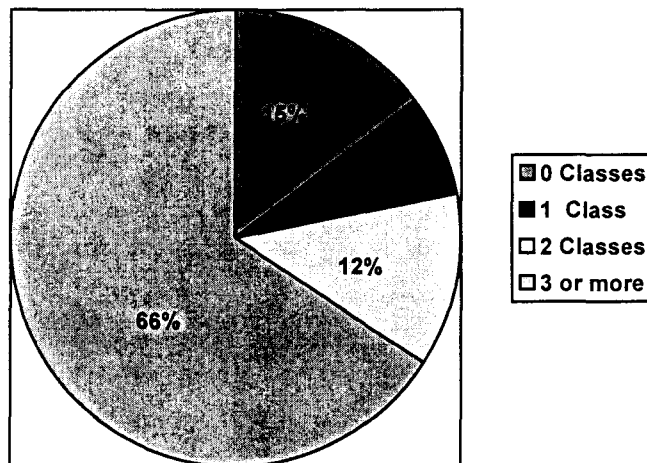
Question 1: Please select which of the following OTED TELETECHNET courses you were enrolled in during the spring 2001 semester.



Question 2 of the survey asked how many OTED classes the participant had previously taken. Six students responded that this was their first OTED TELETECHNET course. Three had previously taken one OTED TELETECHNET course, and five had taken two courses. The majority, 27 students, had taken three or more OTED TELETECHNET courses. Figure 2 illustrates these results.

**FIGURE 2**

Question 2: I have previously taken \_\_ OTED TELETECHNET courses.



Question 3 asked the student to agree or disagree with the following statement: *I attended every class session of this course.* Of the 41 students answering this question, 17 strongly agreed with the statement, 15 agreed, seven disagreed, and two were uncertain. The mean score for this question was 4.20, with 4 equating to “agree”. These results are shown in Table 1.

**TABLE 1**

Question 3: I attended every class session of this course.

Response	Number of students responding
Strongly Agree	17
Agree	15
Uncertain	2
Disagree	7
Strongly Disagree	0
Mean Score	4.20

Question 4 asked respondents to agree or disagree with this statement: *I corresponded with my instructor via email and other means*. Ten students agreed with this statement, and the remaining 31 strongly agreed. The mean score was 4.76. Table 2 illustrates these results.

**TABLE 2**

Question 4: I corresponded with my instructor via email and other means.

Response	Number of students responding
Strongly Agree	31
Agree	10
Uncertain	0
Disagree	0
Strongly Disagree	0
Mean Score	4.76

In Question 5, students were asked about online discussions. Twelve students strongly agreed with the statement: *My instructor facilitated online*



*discussions*. Eleven agreed with the statement, four were uncertain, eight disagreed, and six strongly disagreed. The mean score for Question 5 was 3.37, uncertain. These results are shown in Table 3.

**TABLE 3**

Question 5: My instructor facilitated online discussions.

Response	Number of students responding
Strongly Agree	12
Agree	11
Uncertain	4
Disagree	8
Strongly Disagree	6
Mean Score	3.37

Question 6 asked respondents to agree or disagree with the following statement: *I felt that my instructor knew me personally*. Of the 41 respondents, nine strongly agreed, 17 agreed, four were uncertain, seven disagreed, and four strongly disagreed with the statement. The mean score for this question was 3.49, indicating uncertain. Table 4 illustrates these results.

Question 7 again asked students to agree or disagree. This time the statement was: *There was no difference in the amount of interaction I had with the instructor in this course than in traditional classrooms courses I have taken in the past*. Eight students strongly agreed and nine agreed. Eight students responded that they were uncertain. Eleven said that they disagreed with the

statement, and 5 strongly disagreed. The mean score, 3.1 or uncertain, is shown in Table 5.

**TABLE 4**

Question 6: I felt that my instructor knew me personally.

Response	Number of students responding
Strongly Agree	9
Agree	17
Uncertain	4
Disagree	7
Strongly Disagree	4
Mean Score	3.49

**TABLE 5**

**Question 7:** There was no difference in the amount of interaction I had with the instructor in this course than in traditional classrooms courses I have taken in the past.

Response	Number of students responding
Strongly Agree	8
Agree	9
Uncertain	8
Disagree	11
Strongly Disagree	5
Mean Score	3.1

Next, Question 8 asked about interaction with other students. The statement with which respondents agreed or disagreed was: *I corresponded with my classmates via email and other means.* Eight strongly agreed, 13 agreed,

five were uncertain, 11 disagreed, and four strongly disagreed with the statement. The mean score for this question was 3.24, uncertain. Table 6 illustrates these results.

**TABLE 6**

**Question 8:** I corresponded with my classmates via email and other means.

Response	Number of students responding
Strongly Agree	8
Agree	13
Uncertain	5
Disagree	11
Strongly Disagree	4
Mean Score	3.24

Question 9 involved the statement: *I participated in on-line discussions with my classmates.* A total of six students strongly agreed, 13 agreed, three were uncertain, 10 disagreed, and nine strongly disagreed. These scores averaged to a mean of 3.24, indicating uncertain. These results are shown in Table 7.

In Question 10, respondents agreed or disagreed with the statement: *I was able to work on a project or study with one or more classmates.* While seven students strongly agreed and 10 agreed, four were uncertain and 16 disagreed and four strongly disagreed with the statement. The mean score was 3.0, uncertain. Table 8 shows these results.

**TABLE 7**

Question 9: I participated in on-line discussions with my classmates.

Response	Number of students responding
Strongly Agree	6
Agree	13
Uncertain	3
Disagree	10
Strongly Disagree	9
Mean Score	3.24

**TABLE 8**

**Question 10:** I was able to work on a project or study with one or more classmates.

Response	Number of students responding
Strongly Agree	7
Agree	10
Uncertain	4
Disagree	16
Strongly Disagree	4
Mean Score	3.0

Question 11 dealt with the students' participation in the class. Each was asked to agree or disagree with the statement: *I was an active participant in this course*. Eighteen students strongly agreed and 16 agreed with the statement. Four were uncertain, three disagreed, but none strongly disagreed. The mean score for the question was 4.2, agree. Table 9 illustrates these results.

**TABLE 9**

Question 11: I was an active participant in this course.

Response	Number of students responding
Strongly Agree	18
Agree	16
Uncertain	4
Disagree	3
Strongly Disagree	0
Mean Score	4.2

Question 12 asked students to agree or disagree with the statement:

*There was no difference in the amount of interaction I had with my classmates in this course than in traditional classrooms courses I have taken.* One student strongly agreed with the statement, 12 agreed, 10 were uncertain, 12 disagreed, and six strongly disagreed. A mean score of 2.76, uncertain, resulted and is shown in Table 10.

**TABLE 10**

Question 12: There was no difference in the amount of interaction I had with my classmates in this course than in traditional classrooms courses I have taken.

Response	Number of students responding
Strongly Agree	1
Agree	12
Uncertain	10
Disagree	12
Strongly Disagree	6
Mean Score	2.76

Question 13 asked if the students were satisfied with the level of interaction between the student and the instructor. Ten students strongly agreed with the statement: *I was satisfied with the level of interaction between the student and the instructor in this course.* Another 18 agreed with the statement while five were uncertain, four disagreed, and four strongly disagreed. The mean score for the question was 3.63, agree. These results appear in Table 11.

**TABLE 11**

Question 13: I was satisfied with the level of interaction between the student and the instructor in this course.

Response	Number of students responding
Strongly Agree	10
Agree	18
Uncertain	5
Disagree	4
Strongly Disagree	4
Mean Score	3.63

Finally, question 14 asked that students agree or disagree with the following statement: *I was satisfied with the level of interaction among the students in this course.* Of the 41 students responding, eight strongly agreed with the statement. Eleven agreed, 13 were uncertain, eight disagreed, and one strongly disagreed with this statement. This created a mean score of 3.41, uncertain, as shown in Table 12.

**TABLE 12**

Question 14: I was satisfied with the level of interaction among the students in this course.

Response	Number of students responding
Strongly Agree	8
Agree	11
Uncertain	13
Disagree	8
Strongly Disagree	1
Mean Score	3.41

### **Summary**

This chapter reviewed the results of the Interaction in Distance Education Survey. The 14-question survey was designed to determine the importance of instructor-student and student-student interactions on the satisfaction of Old Dominion University graduate students taking OTED TELETECHNET courses during the spring semester of 2001. Of the 66 students who received the survey, 41 responded. This is a response rate of 62%.

The first two questions were designed to determine which OTED course the student completed. The next 10 questions dealt with the students' interaction and participation in the class. The final two questions asked how satisfied the student was with the amount of interaction he or she had with both the instructor and with fellow students. Chapter V will summarize these results, present the conclusions drawn from the survey, and offer recommendations for future interaction in OTED TELETECHNET courses.

## CHAPTER V

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter presents a summary of the Interaction in Distance Education study. It analyzes, synthesizes, and draws conclusions based on the data presented and described in this study. Additionally, recommendations for future interaction in OTED graduate-level TELETECHNET courses will be offered.

#### **Summary**

The problem of this study was to determine the importance of instructor-student and student-student interactions on the satisfaction of Old Dominion University graduate students taking OTED TELETECHNET courses. The research goals of this study were to answer the following questions:

1. What level of interaction with the instructor do students need in order to be satisfied with their experience in the course?
2. What level of interaction with other students do students need in order to be satisfied with their experience in the course?
3. Can a student successfully complete a TELETECHNET course without being satisfied with their personal interactions in the course?

Traditionally, education required students and instructor to be in the same physical location. Distance learning allows for the separation of the participants



by both time and space. TELETECHNET students have the opportunity to communicate with both the instructor and fellow students via voice mail, e-mail, and Internet access in addition to traditional mail and telephone.

The concentration of this study was the interaction between the learner and the instructor and among learners. This study focused on student evaluations, through survey, to determine how much interaction between the learner and the instructor and interaction among learners is necessary in order for the student to be satisfied with the learning experience.

The study was limited to Old Dominion University graduate students enrolled in Occupational and Technical Education TELETECHNET courses. The study was based on the assumptions that most TELETECHNET students are adult learners who are willing to participate in research studies and that some individuals require more interaction than others to be comfortable in a learning situation.

Much of the research on interaction in distance education is based on the theory of transaction distance developed by Michael Moore. Moore also defined three types of interaction: instructor-learner interaction, learner-learner interaction, and learner-content (Moore, 1989, p. 1). The review of literature conducted for this study examined studies that focused on instruction-learner and learner-learner interaction.

Researchers have examined the need for interaction in order for learners to be satisfied with the learning experience (Garrison, 1990; Hackman and Walker, 1990; Ritchie & Newbury 1989; Wagner, 1994). Interaction helps lessen

the feelings of isolation, which is a general problem in distance education and one that particularly affects adult learners. Adult learners make up a majority of distance learners (Moore & Kearsley, 1996, p. 153); therefore, the learning style of adults should be a major concern when developing distance education. The literature reviewed by this researcher indicates that interaction does, indeed, play an important role in the satisfaction of adult learners with the distance learning process. However, there is an obvious lack of research looking at the level of interaction necessary to achieve learner satisfaction.

A descriptive study was conducted in order to obtain pertinent data relevant to the population. The population targeted for this study was 66 graduate students in the ODU Occupational and Technical Education (OTED) TELETECHNET program. The students participating in the study had all completed OTED TELETECHNET courses in the spring of 2001. The participants were both degree seeking and non-degree seeking graduate students enrolled in the Occupational and Technical Studies master program in the concentration areas of community college teaching (occupational and technical), middle/secondary vocational education teaching, and business and industry training.

The instrument designed for use in this study was a survey developed using the Likert Scale. The survey consisted of several closed-formed questions in the following areas:

1. Level of interaction between the student and the instructor.
2. Level of interaction between the student and other students.

3. Level of satisfaction of the student based on the levels of interaction.

The survey data were compiled using a five-point Likert Scale to assign a value to each question. Five points were assigned to the most positive response with the point values decreasing for less positive responses.

Data used in this study were collected during the summer of 2001 using a survey. The survey was distributed via electronic mail using students' email addresses provided by the Occupational and Technical Studies department.

The survey data were compiled manually to organize the survey results for analysis. Each participant's responses were tabulate using a spreadsheet. After tabulating the survey results, a mean value was calculated for each question.

The 14-question survey was designed to determine the importance of instructor-student and student-student interactions on the satisfaction of ODU graduate students taking OTED TELETECHNET courses. The first two questions were designed to determine which OTED course the student completed. The next 10 questions dealt with the students' interaction and participation in the class. The final two questions asked how satisfied the student was with the amount of interaction he or she had with both the instructor and with fellow students.

## **Conclusions**

Based on the data collected during this study, the following conclusions are made:

1. *What level of interaction with the instructor do students need in order to be satisfied with their experience in the course?*

Questions 4-7 and 13 of the survey were designed to measure the level of interaction students need with the instructor in order to be satisfied with their experience with the course. Overall, students expressed that they were relatively satisfied with the level of interaction between student and instructor. In response to the statement that, "I was satisfied with the level of interaction between the student and the instructor in this course", the mean score was 3.63, with a score of 4 being "agree".

Being a first-time TELETECHNET student seemed to be the biggest factor in dissatisfaction with the level of interaction between the student and the instructor. Students taking their first TELETECHNET course were much less satisfied overall with their interaction with the instructor (mean score 2.83, uncertain) than students who had taken at least one previous TELETECHNET course (mean score 3.77, agree).

It is important to note that more than one third of the students surveyed, 36%, were uncertain or did not agree that their instructor knew them personally. The number of courses previously taken by the respondent did not affect their perception. There was virtually no difference between the mean score of students who were enrolled in their first TELETECHNET course (mean score 3.5, uncertain) and those who had taken one or more previous courses (mean score 3.49, uncertain). Among those students who had taken more than three

TELETECHNET courses, 22% still did not feel that their instructor knew who they were.

Whether or not the instructor facilitated on-line discussions did not appear to be a major factor in the students' satisfaction level. Those students who stated that their instructor facilitated on-line discussions were only slightly more satisfied with the level of interaction with the instructor (mean score 3.83, agree) than those who said their instructor did not facilitate on-line discussions (mean score 3.29, uncertain).

The students' perception of the difference between the amount of interaction that occurred in the distance course compared to traditional classes had a minor effect on their level of satisfaction. Those students who did not feel that there was a difference in the amount of interaction they had with the instructor in this course than in traditional classrooms courses they had taken in the past were only somewhat more satisfied with the amount of interaction with the instructor (mean score 3.88, agree) than those who noticed a difference in the amount of interaction compared to traditional classes (mean score 3.31, uncertain).

The student's own participation in the course had an effect on how satisfied the student was with the level of interaction with the instructor. The students who rated themselves as active participants in the course tended to be more satisfied with their interaction with the instructor (mean score 3.76, agree) than those who were not active participants (mean score 3.0, uncertain). The 41% of the students who attend every class session were more satisfied with the

level of interaction with their instructor (mean score 3.88, agree) than students who did not attend class regularly (mean score 3.0, uncertain).

2. *What level of interaction with other students do students need in order to be satisfied with their experience in the course?*

Questions 8-12 and 14 of the survey were designed to measure the level of interaction students need with other students in order to be satisfied with their experience with the course. Overall, students expressed that they were fairly satisfied with the level of interaction among students. In response to the statement that, "I was satisfied with the level of interaction among the students in this course," the mean score was 3.41, with a score of 3 being "uncertain".

As with the level of satisfaction with interaction with the instructor, being a first-time TELETECHNET student seemed to be the biggest factor in dissatisfaction with the level of interaction among students. Students taking their first TELETECHNET course were much less satisfied overall with their interaction with their classmates (mean score 2.83, uncertain) than students who had taken at least one previous TELETECHNET course (mean score 3.51, uncertain). However, the first-time students were actually more likely to have agreed that they corresponded with their fellow students (66%) than students having taken more than one previous course (49%).

Overall, corresponding with fellow students slightly increased the students' level of satisfaction with their interaction with fellow students. Those students who said that they corresponded with fellow students via email and other means

had a mean score of 3.61 (agree) on the question dealing with their satisfaction with the level of interaction with other students, while those who did not correspond with classmates had a mean score of 3.27 (uncertain) for the same question.

Interacting with classmates using on-line discussions also seemed to increase the students' satisfaction level. Those students who participated in on-line discussions were at least somewhat more satisfied with the level of interaction they had with fellow students (mean score 3.63, agree) than those who did not participate in on-line discussions (mean score 3.26, uncertain). Students were equally likely to participate in on-line discussions regardless of the number of classes they had previously taken. Over 46% of students who had taken more than one class and 50% of first-time students stated that they used the on-line discussions.

Being able to work on a project or study with one or more classmates seemed to have very little effect on the students' satisfaction with the level of interaction. Those students who did participate in some sort of group work had a mean score of 3.47 (uncertain) when asked about their satisfaction with their interaction with classmates, while those who did not do any group work had a mean score of 3.2 (uncertain) for the same question.

The students' perception as to whether they had the same amount of interaction with their classmates in this course as in traditional classrooms courses resulted in no difference in their overall satisfaction with the level of interaction among students in this course. Those who stated that there was no

difference had a mean score of 3.23 (uncertain) for this question while those who noticed a difference had a mean score of 3.27 (uncertain) for the same question. Students who had taken more than one TELETECHNET course were nearly twice as likely to state that they saw no difference in the amount of interaction with classmates in this course than in traditional courses (35%) than first-time students (17%).

The student's own participation in the course had the greatest effect on how satisfied the student was with the level of interaction among students. Those who stated that they were active participants in the class showed a much higher level of satisfaction (mean score 3.47, uncertain) than those who were not active in the class (mean score 2.66, uncertain). Attending class also had an effect on the students' satisfaction. Those attending regularly were more satisfied with the level of interaction with their classmates (mean score 3.46, uncertain) than those who missed classes (mean score 3.14, uncertain).

3. *Can a student successfully complete a TELETECHNET course without being satisfied with their personal interactions in the course?*

All of the students participating in the study successfully completed the TELETECHNET course on which their answers are based. That is to say that all students completed the required course work and received credit for the course. However, of those students, eight (20%) responded that they were unsatisfied with the level of interaction with their instructor. Additionally, nine (22%) were not



satisfied with the level of interaction with their fellow students. This information seems to indicate that a student *can* successfully complete a TELETECHNET course without being satisfied with their personal interactions in the course.

### **Recommendations**

As a result of the conclusions drawn from this survey, the researcher makes the following recommendations:

1. Students enrolling in the OTED program should receive a fact sheet on TELETECHNET courses that includes information on using email, listservs, and discussion groups to interact with classmates. Instructors should provide classes with the email address of all students in the class. The mean scores for the question dealing with the level of student satisfaction with the level of interaction with fellow students was considerably lower for students taking their first TELETECHNET course than for students who had taken previous TELETECHNET courses. The mean for first time students for satisfaction with student-student interaction was 2.83 vice 3.49 for students who had taken previous TELETECHNET courses.
2. Instructors should make a concerted effort to connect personally with every student in a TELETECHNET course. Obviously the current methods of communication between student and instructor do not build enough of a relationship for students to feel connected to the instructor

since 100% of students agreed that they communicated with their instructor via email, yet more than one third still did not think the instructor knew him or her. The instructor should attempt to address the students by name both in class and when responding to student emails.

3. Regular attendance should be strongly recommended by course instructors. Attendance and participation in the class are the two biggest factors in determining how satisfied the students are with the level of interaction between themselves and the instructor and among classmates.
4. Future studies of the satisfaction of OTED graduate students with the levels of interaction between the student and instructor and among students are called for. This study was limited by the low response rate. Only 62% of the student population responded to the survey. Also, it would be of interest to look at the satisfaction of students based on which TELETECHNET site they attended.

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## **Appendix A**

### **Interaction in Distance Education Survey**



## **Importance Of Instructor-Student And Student-Student Interactions On The Satisfaction Of Old Dominion University Graduate Students Taking TELETECHNET Courses Survey**

The purpose of this survey is to determine the importance of instructor-student and student-student interactions on the satisfaction of Old Dominion University graduate students taking TELETECHNET courses.

In order to select a response, simply type the letter corresponding to your response in the blank following the question.

1. Please select which of the following OTED TELETECHNET courses you were enrolled in during the Spring 2001 semester. If you were enrolled in more than one course, please select only one. Your answers to the survey should reflect only the course selected. \_\_\_\_\_
  - a. OTED 635
  - b. OTED 761/861
  - c. OTED 762/862
  - d. OTED 636
  
2. I have previously taken \_\_\_\_\_ OTED TELETECHNET courses. \_\_\_\_\_
  - a. 0
  - b. 1
  - c. 2
  - d. 3 or more
  
3. I attended every class session of this course. \_\_\_\_\_
  - a. Strongly Agree
  - b. Agree
  - c. Uncertain
  - d. Disagree
  - e. Strongly disagree

4. I corresponded with my instructor via email and other means. \_\_\_\_\_
- a. Strongly Agree
  - b. Agree
  - c. Uncertain
  - d. Disagree
  - e. Strongly disagree
5. My instructor facilitated on-line discussions. \_\_\_\_\_
- a. Strongly Agree
  - b. Agree
  - c. Uncertain
  - d. Disagree
  - e. Strongly disagree
6. I felt that my instructor knew me personally. \_\_\_\_\_
- a. Strongly Agree
  - b. Agree
  - c. Uncertain
  - d. Disagree
  - e. Strongly disagree
7. There was no difference in the amount of interaction I had with the instructor in this course than in traditional classrooms courses I have taken in the past. \_\_\_\_\_
- a. Strongly Agree
  - b. Agree
  - c. Uncertain
  - d. Disagree
  - e. Strongly disagree
8. I corresponded with my classmates via email and other means. \_\_\_\_\_
- a. Strongly Agree
  - b. Agree
  - c. Uncertain
  - d. Disagree
  - e. Strongly disagree

9. I participated in on-line discussions with my classmates. \_\_\_\_\_
- a. Strongly Agree
  - b. Agree
  - c. Uncertain
  - d. Disagree
  - e. Strongly disagree
10. I was able to work on a project or study with one or more classmates. \_\_\_\_
- a. Strongly Agree
  - b. Agree
  - c. Uncertain
  - d. Disagree
  - e. Strongly disagree
11. I was an active participant in this course. \_\_\_\_\_
- a. Strongly Agree
  - b. Agree
  - c. Uncertain
  - d. Disagree
  - e. Strongly disagree
12. There was no difference in the amount of interaction I had with my classmates in this course than in traditional classrooms courses I have taken. \_\_\_\_\_
- a. Strongly Agree
  - b. Agree
  - c. Uncertain
  - d. Disagree
  - e. Strongly disagree
13. I was satisfied with the level of interaction between the student and the instructor in this course. \_\_\_\_\_
- a. Strongly Agree
  - b. Agree
  - c. Uncertain
  - d. Disagree
  - e. Strongly disagree

14. I was satisfied with the level of interaction among the students in this course. \_\_\_\_\_

- a. Strongly Agree
- b. Agree
- c. Uncertain
- d. Disagree
- e. Strongly disagree

## **Appendix B**

### **Sample Cover Letter**

Donna Thompson  
804 Crashaw Street  
Virginia Beach, VA 23462  
757-498-7274

May 10, 2001

Dear Fellow Graduate Student,

I need your assistance. I am conducting a study to determine the satisfaction of Old Dominion University graduate students who have taken Occupation and Technical Education TELETECHNET courses with the level of interaction between the student and the instructor and among students. This study is being conducted in part to fulfill the requirements for my master's degree in Occupational and Technical Studies. It is my hope that this information may also be used to determine how future TELETECHNET courses are facilitated.

Attached is a copy of my survey. It should take you approximately 10 minutes to complete. When you are finished, please return the survey to me as an email attachment **within 10 days**. The attachments will be separated from your email address to ensure anonymity. Your answers will be used only for the purpose of this study and will not be shared. Thank you in advance for your participation. If you have any problems with completing the survey or saving it as an attachment, please feel free to call me or send me an email. I will be glad to answer any questions.

Sincerely,

Donna Thompson  
thompson.dj@worldnet.att.net