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The purpose of this study was to identify perceived barriers to faculty participation in distance education courses in a 4-year university. The literature review was divided into four general areas, each of which may act as a barrier to faculty participation; training, administrators, rewards/compensation, and faculty characteristics/demographics. The research population consisted of 570 faculty and 59 administrators from the eight UNT schools/colleges. Dr. Kristin Betts developed the survey instrument in 1998 for similar research conducted at the George Washington University. Analysis of the collected data revealed that there was no statistically significant relationship found between faculty characteristics and faculty participation in distance education. Faculty participants and administrators disagreed on which factors, from a list of 34 items, had motivated faculty to participate in distance education. Nonparticipants and administrators disagreed on which of the factors, if not available, would be barriers to faculty participation in distance education. Participants and nonparticipants disagreed regarding the level to which selected rewards and compensations had motivated faculty to participate, and the lack of which would inhibit faculty participation in distance education. Finally, 71% of the participants had participated or planned to participate in distance education training compared to only 33% of the nonparticipants.

It is obvious that administrators and faculty do not place the same level of importance on motivational or inhibiting factors that may affect faculty participation in distance education. These results indicate that additional research should be accomplished to determine the basis for the disagreement among the three groups.

PERCEIVED BARRIERS TO FACULTY PARTICIPATION IN DISTANCE EDUCATION AT A 4-YEAR UNIVERSITY

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CHAPTER 1

INTRODUCTION

This study was intended to identify perceived barriers to faculty participation in distance education in a 4-year university. It was anticipated that responses to a questionnaire distributed to all full-time faculty, deans, and chairpersons at a 4-year Texas university would provide insight into the perceived barriers and the differences in the perceptions based on the responses of the three groups of respondents. It was also anticipated that the information would be generalizable to similar 4-year universities. The term *faculty* has been used throughout to identify full-time professors who teach in a 4-year university, with deans and chairpersons collectively referred to as *administrators*. Distance education is the culmination of distance teaching and distance learning by any method, and through the use of any media, in which the students are physically separated from the faculty.

Background

In an attempt to remain competitive in the rapidly changing business of higher education, universities are turning to new technologies for communicating information to meet the needs of an increasingly diverse student population (Chute, Thompson, & Hancock, 1999). By providing educational opportunities for students anywhere and anytime through innovative distance education programs, time and distance are no longer limiting factors.

Garrison (1989) considered distance education to be most appropriate for adults. Three characteristics to support this theory are (a) the roles and responsibilities of adults, (b) voluntary participation in education, and (c) a greater need for self-directed education. Many adults are drawn to distance education as a result of busy schedules that do not allow them physically to attend classes at predetermined times. Distance education allows adults to continue their

education around their other obligations, unlike previous traditional programs that were built around unemployed, single, young students. Adult students are also more inclined than traditional students to become involved in educational programs voluntarily and are more likely to be ready for an educational medium requiring advanced critical thinking skills (Garrison, 1989). According to Christ (1997), the nontraditional students who participate in distance education courses are less interested in grades and degrees than are traditional students, and they are more interested in developing new skills to perform their current job better or prepare themselves for future positions. This creates a shift in the roles of the student and faculty. The adult student assumes greater responsibility for learning, and faculty members provide the tools for that accomplishment. Faculty members act more as facilitators in a learner-centered educational approach. Christ wrote also that "the use of collaborative learning techniques, multimedia instructional packages, and a wide variety of new tools for gathering and sharing information will make students as important to one another's learning as the instructor" (p. 107). As technology changes the workplace, the voluntary dedication of adults to life-long learning is critical, and their demands for distance education are creating a new paradigm in universities.

Student achievement in distance education courses is generally as high as that of students in traditional classrooms (Knue, 1998; Moore & Kearsley, 1996; Webster & Hackley, 1997). However, faculty may be reluctant to participate in distance education due to a number of perceived barriers (Kagima, 1998; Olcott, 1994; Thompson, 2000; J. Willis, 1996).

Referencing his diffusion of innovation theory, Rogers (1995) pointed out that factors affecting the adoption or rejection of new ideas must be understood. Research by Betts (1998) revealed that perceived barriers "had a significantly negative effect on faculty participation in distance education" (p.195) and that faculty participation was greater in schools where deans

were more involved in and supportive of distance education. A number of administrators who have experienced setting up a telecommunications-based education program reported changes they would make if they were to set up another program. Major changes included rewarding faculty, getting faculty "buy-in," and ensuring that all the "key-players" had been identified and understood their roles in the new process before implementation (Duning, Kekerix, & Zaborowski, 1993). Westbrook (1998) cautioned that, although it is possible to convince faculty members to alter the teaching methods with which they are most comfortable, "it [will take] time, support, and a consistent message for the metamorphosis to occur" (p. 154).

With a greater understanding of the perceived barriers and attitudes toward distance education by both administrators and faculty, more realistic decisions can be made for planning intervention strategies and predicting the success or failure of distance education programs.

Significance of the Study

This study is being conducted to determine the perceived barriers to faculty participation in distance education. Kirk and Bartelstein (1999) stated that the percentage of traditional universities offering distance education courses had increased from 33% in 1995 to 85% in 1998. John Sperling, president of the parent group of Phoenix University, the largest private university in the country, added that the "'on-line program is growing twice as fast as the on-the-ground program'" (as cited in Blumenstyk, 2000, p. 1).

Research indicates that many faculty members are reluctant to teach distance education courses (Kagima, 1998; Olcott, 1994; Parer, Croker, & Shaw, 1988; Webster & Hackley, 1997; J. Willis, 1996). There is also some evidence that faculty members are more receptive to distance teaching if administrators genuinely support the program (Armstrong, 1998; Betts, 1998; Olcott, 1994).

Limited research has been conducted to determine the barriers that discourage faculty from participating in distance education (Armstrong, 1998; Betts, 1998; Kagima, 1998; Parer et al., 1988). If perceived barriers can be removed by convincing faculty members that information can be conveyed to students, as well if not better, using distance education communications technologies (Knox, 2000) and if they can be assured that they will be given additional credit and compensation for their participation, a university's distance education program is more likely to be successful.

Theoretical Framework

Increasing numbers of universities are soliciting faculty support in providing distance education for a remote student population (Armstrong, 1998; Hoskins, 1998; Kagima, 1998). This may be a new challenge for faculty members who may not willingly step outside the traditional classroom setting (Cyrs et al., 1997). They may resist or even become defensive when required to participate in distance education (Mantyla & Gividen, 1997). Latchem and Lockwood (1998) pointed out that resistance to change is normal. One or more perceived barriers may be embedded in the resistive attitude of faculty members when asked to participate in distance teaching. Hoskins (1998) contended that "the bridges and barriers to successful teaching in a distance learning environment are the same" (p. 111). For every barrier eliminated, a corresponding bridge of perceived equal importance may be built in favor of distance education adoption.

According to Rogers (1995), "An individual's decision about an innovation [such as distance education] is not an instantaneous act" (p.162). He has identified a five-stage decision process through which individuals progress in determining whether to adopt or reject new ideas (or innovations). Abdullah supported the theory that faculty go through a self-paced attitudinal

change process when an innovation such as distance education is introduced (as cited in Latchem & Lockwood, 1998). She pointed out that external factors such as encouragement from administrators, training, and incentives affect the change. To facilitate the change and overcome the barriers, Betts (1998) claimed that it is important that administrators understand how their own perceptions differ from those of the faculty. Kelsey, Mezack, and Cardot (1992) contended that "faculty and administrators differ on many variables; those differences are the result of differing perspectives and could be counter-productive" (p.4).

Therefore, by understanding the perceived barriers that may inhibit faculty participation in distance education and by understanding how administrator and faculty perceptions differ, intervention strategies may be implemented to eliminate major barriers and encourage faculty members to adopt distance education. This research study embraces these views in identifying perceived barriers to faculty participation in distance education.

Barrier Categories

Barriers to faculty adoption of innovations were consolidated into six categories in Ditzenberger's (1976) research on *Perceived Barriers to Implementing a Distributive Education Competency-based Learning System*. The following categories were identified:

1. Perceived attributes of the innovation: Faculty may be reluctant to participate in distance education because they are not comfortable using innovative educational communications equipment. They may feel intimidated by the fact that their instruction can be monitored without their consent or knowledge. If one- or two-way visual communications are used, an additional burden may be imposed on faculty members who are less outgoing.

2. Perceived need for additional resources: Administrators may focus on the need for additional equipment, whereas faculty may be more interested in the need for additional time for course development and preparation.

3. Perceived value of the innovation: Faculty may not only view distance education as a less effective means of educating students, but may actually believe it to be dehumanizing and harmful to the educational process.

4. Consumer rating report: This deals with support for the innovation at all levels. Individual faculty members may be reluctant to try innovative instructional communications technologies such as those used in distance education without the approval of peers and administrators. This approval is sometimes difficult to find because new ideas generally run a course, with "buy-in" being slow in the beginning.

5. Perceived credibility of the innovation: The law of primacy becomes an important issue in this barrier category. Distance education communications technologies must be presented to faculty and administrators in a way that will make them appealing. If there are problems with a new instructional communications technology during demonstration or during initial use by faculty, the credibility of the innovation may be damaged irreparably. Inservice training for faculty prior to the implementation of an innovative distance education program may alleviate many problems, which could, if left unresolved, result in rejection of the technology.

6. Perceived need for organizational change: It is generally easier for administrators and faculty to embark on a new program if it affects only a portion of the system. If the program fails, the impact is not as great as it would be if the change encompassed the entire system. If, however, the program is adopted, it could easily be incorporated into the remaining portions of the system (Ditzenberger, 1976).

Purpose of the Study

The purpose of the study was to identify perceived barriers to faculty participation in distance education courses in a 4-year university. This will aid administrators in planning intervention strategies when implementing distance education programs.

Statement of the Problem

The problem of this study was to survey all full-time faculty, department chairpersons, and deans at a single 4-year Texas university to identify (a) perceived barriers that may discourage faculty from participating in distance education and (b) the difference between what faculty perceive to be barriers to participation in distance education and what administrators (deans and department chairpersons) perceive to be barriers to faculty participation in distance education.

Research Hypotheses

H_o1: There is no significant relationship between faculty demographics and faculty participation in distance education.

The five demographic variables pertaining to research hypothesis 1 are (a) gender, (b) age (<30, 30-44, 45+), (c) position in the university (i.e., regents professor, full professor, associate professor, or assistant professor), (d) tenure status (tenured, nontenured), and (e) number of years faculty member has taught in postsecondary education.

H_o2: There is no significant difference between factors that faculty participants identified as motivators and factors that administrators believed motivated faculty to participate in distance education.

H_o3: There is no significant difference between factors that faculty nonparticipants identified as barriers and factors that administrators believed that faculty perceived as barriers to participation in distance education.

H_o4: There is no significant difference between rewards and compensation that participants identified as motivators and the lack of rewards and compensation that nonparticipants perceived as barriers to participation in distance education.

H_o5: There is no significant relationship between faculty participation in distance education and whether they have participated or plan to participate in distance education training.

Delimitations

This study involved using all full-time faculty members, deans, and chairs at a single 4-year Texas university.

Limitations

This study was conducted on the premise that the demands of a changing student population are requiring universities to offer off-campus courses via technologically advanced electronic communications methods and media. Previous research has found that a number of perceived barriers inhibit faculty participation in this form of distance teaching. Although numerous barriers have been identified previously, this study was limited to faculty training, administrators, rewards and compensations, and faculty characteristics/demographics.

Summary

Technology is not only creating the need for adults to continue to upgrade their skills and knowledge in the workplace, but it is also offering the means for that accomplishment through distance education programs. More students than ever are requesting distance education courses (Young, 2000). Due to a number of perceived barriers, however, faculty members are reluctant to participate in distance teaching (Kagima, 1998). Some believe that, if the perceived barriers are identified, intervention strategies could be implemented to encourage faculty participation in distance teaching (Duning et al., 1993; Westbrook, 1998).

The significance of this study was to identify the perceived barriers to faculty participation in distance education. It was theorized that when these perceived barriers are identified, university administrators could remove the barriers where possible and offer encouragement to the faculty members as they go through the process of adopting or rejecting distance teaching.

Ditzenberger (1979) has categorized perceived barriers. This categorization is intended to create better understanding of faculty resistance and may be used as a tool by administrators to eliminate or decrease that resistance.

All full-time faculty members, deans, and chairs were given questionnaires to determine (a) perceived barriers that may discourage faculty from participating in distance education (b) and the difference between what faculty members perceive to be barriers and what administrators perceive to be barriers to faculty participating in distance education. Results of the questionnaire answered five basic research hypotheses related to faculty resistance to participating in distance education.

This chapter provided a background, significance, and theoretical framework of the study. It also listed barrier categories, purpose of the study, statement of the problem, research hypotheses, and delimitations and limitations of the study. Chapter 2 is a discussion of the review of literature relating to this research project, and chapter 3 presents the population, instrumentation, data collection, and treatment of the data. Chapter 4 is a discussion of the results of the statistical analysis of data collected from responses to the research questionnaire, and chapter 5 presents the findings and a summary of the study.

CHAPTER 2

LITERATURE REVIEW

This chapter reviews the literature encompassing organizational change, common factors contributing to change within organizations such as universities, resistance to change in general, and more specifically, perceived barriers identified by faculty members to implementing distance education in their universities. The chapter also illustrates the importance of utilizing a process such as Rogers's five-step innovation process to facilitate intervention procedures aimed at alleviating resistance to change.

The literature review is divided into the following sections: organizational change; change in student population; distance education; importance of faculty; barriers; stages of the innovation-decision process; and a summary.

Organizational Change

According to Daft (1995), " Most organizational decisions, activities, and outcomes can be traced to stimuli in the external environment" (p. 107). The organizational change currently taking place in many universities is in direct response to the demands of an increasingly diverse student population. Daft described a relationship between environment and organizational change, observing that new organizational "forms may be conceived to cope with need in the external environment" (p. 105). Organizational forms are described as "an organization's specific technology, structure, products, goals, and personnel which can be selected or rejected by the environment" (p.104).

In the search for avenues to boost enrollment to compensate for shrinking budgets and declining endowments, universities are changing their organizational forms. Many are using innovative communications technologies to offer courses via distance education media,

increasing the number of existing distance education courses offered or offering distance education courses exclusively. The benefit of these decisions is supported by Daft's (1995) statement that "the environment is always changing, and, if the dominant organizational forms do not adapt to external changes, they will gradually diminish and be replaced by other organizations" (p. 105).

The four types of organizational changes that Daft (1995) lists—products and services, strategy and structures, people and culture, and technology—"are interdependent—a change in one often means a change in another" (p. 267). The introduction of modern communication technologies to accommodate a remote student population via distance education courses has created a chain reaction of changes within the university organization.

New communication technologies used in distance education require a complete organizational paradigm shift. Faculty members must develop new skills to effectively use the new technologies. They may also go through varying degrees of attitude adjustment to accept distance education as a viable teaching method. Administrators are responsible for altering the strategies and structure of the organization by revising policies, ensuring equality in reward systems for faculty participating in distance teaching and those not participating, and restructuring the current workload to allow time for development of distance education courses.

Change in Student Population

One of the primary considerations in instructional systems design is to know one's audience and to understand their needs (Chute et al., 1999; Gagne, Briggs, & Wager, 1992). The audience for this study is generally nontraditional adult (Cyrs et al., 1997; Garrison, 1989) postsecondary education students who are geographically dispersed (Mantyla & Gividen, 1997) and may have full-time jobs and family responsibilities (Cyrs et al., 1997; Parer et al., 1988).

With these characteristics, they require information and knowledge resources at times and places convenient to them (A. G. Chute, as cited in Christensen & Cowley-Durst, 1998). Many universities are meeting the students' educational requirements by offering distance education courses. Progressively, however, the definitions of traditional and nontraditional students have begun to blur as younger students are enrolling in both on-campus and online courses (Kirk & Bartelstein, 1999). For example, at New Jersey's Fairleigh Dickinson University, all undergraduate students will be required to take at least one online course annually (Carr, 2000). The university's president, J. Michael Adams, contended that the requirement prepared the students for the future by strengthening essential Internet skills.

Distance Education

The most primitive definition of distance education is education in which the student and instructor are geographically separated (Armstrong, 1998). This definition encompasses distance education methods that were first used in the 1800s. Courses included correspondence courses and, later, radio courses. The more contemporary distance education courses include at least one communication instrument, or increasingly, a combination of high technology communication instruments such as audiotapes, intranets, online training, and videoconferencing (Abernathy, 1998). The communications may be "synchronous (real time, with fixed meeting times equivalent to classroom instruction) or asynchronous (no fixed time or location and students not in communication with the instructor or each other at the same time)" (Charp, 1999, p.6). It is also possible for the communication to be a combination of synchronous and asynchronous offerings (Gasaway, 1998).

Moore and Kearsley (1996) described distance education as planned learning that normally occurs in a different place from teaching and as a result requires special

techniques of course design, special instructional techniques, special methods of communication by electronic and other technology, as well as special organizational and administrative arrangements. (p. 2)

According to Keegan (1996), "Distance education is a suitable term to bring together both the teaching and learning elements of this field of education"(p. 38).

In this study, the terms *distance teaching*, *distance learning*, and *distance education* are used. Distance teaching is the teacher-centered part of the distance education system (Keegan, 1996). It encompasses, first of all, a change in the mind-set of traditional teachers who are becoming involved in teaching students from whom they are geographically separated. This change in mind-set is necessary to allow faculty creatively to alter traditional student materials or develop new student materials as well as the entire curriculum to maximize student-centered learning. According to Keegan, it also allows faculty actively to pursue (a) adapting their current teaching methods and styles to present information to the students in more technologically advanced ways and (b) using a more varied array of communication methods and media.

Distance learning is the learner-centered portion of distance education (Keegan, 1996). Rather than attending traditional on-campus classes, distance learning requires students to take the responsibility for prioritizing their own schedules to meet the knowledge objectives of the course. Because students receive instruction via a myriad of communication methods and media, they must accept more responsibility for learning. This may include researching a particular topic and sharing that information with other students during online "chat" sessions. Keegan noted that student-centered learning requires students to contact their teachers via telephone or electronic mail to clarify course-related information. Students are responsible for taking a more active role in their success in the course.

Moore and Kearsley (1996) pointed out that there are different levels of distance education: program, unit, institution, and consortia. The distance education program may be nothing more than an individual faculty member in a traditional university who has "chosen to teach courses off-campus by means of audio- or videoconferencing" (p. 3). The distance education unit could be described as a section within a traditional university in which the focus is exclusively on distance education. A distance education institution offers classes through only a distance education medium. When two or more distance education institutions partner in some way, a distance education consortium is formed.

Moore and Kearlsey's (1996) research focused on a cross-level between program and unit: a traditional university with faculty teaching via an electronic communications medium that may or may not have a dedicated distance education unit.

Moore and Kearlsey (1996) cautioned against developing a distance education program without using a systems approach. This approach calls "for administrators to redistribute human and capital resources into a total system, and for teachers to be trained to work as specialists within such a system" (p. 8). The authors identified six main components of a distance education system: content or knowledge, course design, communications technologies, interaction, learning environment, and management. They also pointed out that each of these individual components is dependent upon the others. For example, the type of knowledge to be conveyed would dictate the way a course is designed. That, in turn, would determine the environment most suitable for the communication to take place, as well as the amount of interaction required between faculty and students and among students. Management must be involved throughout the process to ensure that the necessary resources are available or that alternatives have been identified. They are also responsible for policy changes, getting buy-in from all stakeholders,

"and bringing about the organizational culture change that is needed to accommodate this new form of education" (p. 12).

Still considered to be in its infancy, distance education is often not viewed by universities as requiring a systems approach. "Quite commonly, the communications technology receives the money and attention" (Moore & Kearsley, 1996, p. 14). The authors also pointed out that there may be conflicts within traditional universities when funding is shifted to distance education programs.

Importance of Faculty

The success or failure of a distance education program, however, is far less dependent on the technology used than on the attitude of the faculty involved in its implementation (Armstrong, 1998; Kagima, 1998; Olcott, 1994). B. Willis (1993) stated, "The interest, support and enthusiasm of the faculty is required if a distance education program is to be successful, regardless of its technological sophistication" (p. 39). Cyrs et al. (1997) added that "students do not learn from the technology. They learn from competent instructors who have been trained how to communicate through the technology" (p. 1).

According to Gagne et al. (1992), the instructional media should be chosen based upon prior design steps. The first step is to determine the expected learning outcome. In other words, what should the students know or be able to do as a result of the instruction? Secondly, the objective should be defined: Under what conditions must the student be required to perform a particular behavior and to what predetermined standard? The third design step prior to media selection is sequencing the units and blocks of instruction for the course.

Often this process is disregarded when new instructional technology is introduced at an educational institution. Even experienced educators may be influenced by well-trained sales

representatives offering the latest in instructional technology. Once funding has been approved, courses are developed around the technology. Bates (1995) summarized what many other authors have expressed: "The choice of technology should be driven by the needs of the learners and the context in which we are working, not by its novelty" (p. 21).

Even if the proper instructional systems design steps have been followed and an innovative instructional media selected, there must be buy-in from all stakeholders for the new program to be successful (Thompson, 2000). The new technology alone cannot guarantee success, because without the cooperation and dedication of the faculty the project will most likely fail. Many college and university faculty members have been successful in instructing their students in the way in which they themselves were instructed. It is thus not surprising that faculty members resist accepting a technologically advanced instructional media that may place an extra burden on them, with no additional benefits and no assurance of success (Westbrook, 1998). Administrators of educational institutions, however, must aggressively pursue means of maintaining or increasing student enrollment and offer quality education at the lowest possible cost. The technological advancement of a university or college is often the enticement that increases student enrollment as well as a contributing factor in lowering teaching costs. Administrators may successfully implement technologically advanced communications programs if they have prepared the faculty to adapt to the innovative teaching environment (Challis, 1998). The faculty adaptation rate may have a direct correlation with the number of perceived barriers identified and eliminated.

Barriers

A number of perceived barriers have been identified as possibly inhibiting faculty participation in distance education. The extent to which each of these barriers may contribute to

an individual's decision to reject distance education is unclear. A partial list of these barriers includes training, administrators, rewards/compensation, and faculty characteristics/demographics. This section further explains each of these four types of barriers.

Faculty Characteristics/Demographics

Armstrong (1998) stated the following:

> Many factors influence participants to begin and to continue learning how to teach at a distance. Broadly speaking, the factors that appear most frequently are: the institutional setting and personal factors that create some initiating stimulus to begin this learning project. (p. 93)

More specifically, Armstrong (1998) noted that the following factors were relevant: (a) experience, (b) gender, and (c) rank. She observed that, "there are distinct differences between men and women as to what influences them to begin learning to teach at a distance" (p. 108). Betts (1998) found that, "with regard to age and tenure status, faculty 45 years old and older and faculty in non-tenure accruing positions were found to be the most active in distance education" (p. 190). On the other hand, Kagima (1998) found no difference in the rank of faculty members who decided to integrate electronic communications into their courses and faculty members who decided against the integration.

Administrators

B. Willis (1993) contended that the administrator's "leadership and continuing interest and support are essential to the long-term nurturing and growth of distance education programs" (p. 34). Supporting this view, Thompson (2000) stated, "Institutional leaders need to clearly communicate their belief in the value of distance education. Unless all stakeholders are assured that distance education has the full support of the leadership, program success will be

jeopardized" (p. 1). Armstrong (1998) divided the faculty members who participated in her research study into three categories: beginners, novice, and experienced. All three categories listed encouragement from administrators as one of the main influences in their participation in distance education. The research also indicated that administrators' encouragement to participate in distance education was more prevalent in some institutions than it was in others. Olcott (1994) pointed out that deans and departmental chairpersons control factors that could become barriers or bridges in attracting faculty to participate in distance teaching. Among these factors are allocation of resources, promotion and tenure, release time, rewards, and faculty training.

It may be questioned why full support from administrators is not always available. Although administrators may encourage faculty to use technologically advanced communications media to accommodate geographically distanced students, the required equipment, technical support, faculty training, release time, and other incentives are not always provided for implementation of the innovative distance education program.

Moore and Kearsley (1996) listed what they termed "administrative barriers to adoption of distance education" (p. 192). These barriers span all levels of government: federal, regional, state, and institutional. They include "criteria used to determine what programs are eligible for federal funding" (p. 192); criteria governing "official accreditation to teach" (p. 192); "the typical funding formulae that states use to decide on allocation of resources" (p. 192); and the historic institutional policies that were written for on-campus, daytime, classroom instruction.

While it may be perceived that administrators are limited by bureaucratic financial problems, Moore and Kearlsey (1996) suggested some strategies for administrators to implement at the institutional level. The first step is to identify the innovators in the organization and support them in developing a high-quality distance education system demonstration project. The

project should encompass all the technologies available in the institution and be presented in a professional manner in order to sell the innovation to their peers. This not only would require dedication on the part of the faculty but also would require "a high level administrator with a vision of distance education and the courage to implement it" (p. 195).

Rewards/Compensations

The University of Maryland University College (UMUC) (1997) reported that, "traditional higher education institutions have few built-in incentives to encourage faculty to become involved in distance education activities" (p. 4). Initially, distance education preparation requires additional faculty time and effort (Knue, 1998; Parer et al., 1988). Moore and Kearsley (1996) went one step further, asserting that faculty interested in distance teaching are often "penalized in their workload" (p. 15). They claimed that, while entire design teams develop distance education courses in distance education institutions, faculty members in traditional universities must design their courses unassisted. Parer et al. also discussed career track issues: "Senior staff often do not recognize writing for external students to be equivalent to teaching and consequently it is not given weight for promotion and tenure" (p. 14). Respondents to a research project conducted by Parer et al. reported that, for the most part, they do not believe their careers were "linked with or arise from or are enhanced by participation in the distance education field" (p. 9). Of the few career benefits identified, it was determined that it was "difficult to distinguish between academic and institutional rewards" (p. 8). Rogers (1995) cited five types of incentives that may be used to accelerate the diffusion process:

1. Adopter versus diffuser incentives: University administrators may decide to compensate faculty members for participating in distance teaching (adopters) or compensate participants for persuading their peers to participate (diffuser).

2. Individual versus system incentives: A decision may be made to compensate the university for percentages of classes/courses using distance education methods instead of compensating individual faculty members. It is also possible that the decision would be made to compensate the individual participant or divide the compensation between the institution and the faculty members who adopt the program.

3. Positive versus negative incentives: To this point only positive incentives have been considered. Although positive incentives may be issues to those participating in distance teaching, an obvious disparity between those participating and those not participating could be considered negative incentives. Some examples might be that nonparticipants receive less preparation time, fewer points toward promotion, less money, and more classes to teach.

4. Monetary versus nonmonetary incentives: Those participating in distance teaching may be offered the option of a monetary bonus for each student in a class or nonmonetary time-off awards, choice course assignments, or special recognition before the other faculty members.

5. Immediate versus delayed incentives: Increased wages for participating is an example of an immediate incentive. A formal annual recognition ceremony illustrates a delayed incentive (Rogers, 1995).

Rogers (1995) observed that, "incentives increase the rate of adoption of an innovation" (p. 221). Although this may initially appear to be a solution to the problem of gaining rapid participation in distance teaching, it was also noted that, "if individuals adopt an innovation partly in order to obtain an incentive, there is relatively less motivation to continue using the innovation (if it can be discontinued)" (p. 221). For that reason, careful consideration should be given to offering incentives as a form of coercing participation in distance teaching. If a decision

is made to offer an incentive, an analysis should be conducted to determine which incentives would be most likely to produce the desired participation results.

Training

Cyrs et al. (1997) argued that budgetary constraints influence administrators' decisions to forego training for fledgling distance education instructors. The misconception that traditional classroom instructors can "just go in there and teach the way . . . [they] have always taught" contributes to faculty resistance (p.15). In a study conducted by Hoskins (1998) it was concluded that "most of the teacher training and learning occurred during the term" (p. 75). Teachers were self-trained in converting conventional lectures into electronic presentations used in their distance education classes. During the semester, students were routinely required to assist the teachers with the electronic communications equipment. This practice generated concern from both faculty and students. Inadequately trained teachers also experienced varying degrees of frustration throughout the semester. The highest level of frustration was reached approximately one third of the way through the semester. Hoskins recommended that "a comprehensive training program is essential to assist teachers in the transition from the traditional classroom to the distance learning classroom" (p.116). Kagima (1998) reported, however, that even though "15 formal campus-wide programs were developed for faculty education to use new technological innovations related to teaching and learning . . . a high number of faculty did not participate" (p. 87).

Educating the educator may not be as simple as one would expect. Some faculty members simply do not want to put forth the effort to learn how to use electronic communications technology (Challis, 1998). Teacher education colleges have been slow in including distance education methods and media in their curriculum (Westbrook, 1998). Although some of the

recently graduated teachers may have received varying levels of training in educational communications technologies, the training was not available for the majority of current university faculty members. In a study conducted by Parer et al. (1988), only 3 of 70 respondents said that they were interested in a diploma in distance education. Forty-five respondents said that they were not interested "because they felt they were too far advanced in their careers to undertake further formal study" (p. 3). The following are examples of reasons given for lack of interest: "I'm in the latter third of my teaching career and am not looking for specialist qualification"; "valuable for younger members of staff"; "had enough of formal study, but fruitful for people starting off on a career with external students"; "not now – perhaps 15-20 years ago would have considered it"; "too old to worry about that now"; [and] "not attractive to 'senior lecturer' perhaps more relevant/attractive to younger academic" (p. 31).

Rogers (1995) has conducted extensive research on innovativeness and adopter categories. The primary differences found between earlier and later adopters of innovations are in the areas of socioeconomic status, personality variables, and communication behavior.

Stages of the Innovation-Decision Process

Rogers (1995) listed five stages in the innovation-decision process that support the theory that it is important to identify perceived barriers early so that intervention strategies can be applied to facilitate the diffusion of distance education. The five stages are knowledge, persuasion, decision, implementation, and conformation. Rogers (1995) pointed out that, not only is it possible for stages to be omitted in the decision-making process, but that some stages may be reentered.

Stage 1 – Knowledge

Definition: "Knowledge occurs when an individual . . . is exposed to an innovation's existence and gains some understanding of how it functions" (Rogers, 1995, p.162).

Stage 1, as it relates to this research project: Faculty members are made aware of the possibilities of teaching remote students using one or more communication technologies (distance education). Faculty may need the assurance at this stage that administrators support the innovation before moving to the next stage (Armstrong, 1998; Olcott, 1994).

Stage 2 – Persuasion

Definition: "Persuasion occurs when an individual . . . forms a favorable or unfavorable attitude toward the innovation" (Rogers, 1995, p. 162).

Stage 2, as it relates to this research project: Faculty members may mentally apply distance education technologies to their courses. The fewer perceived barriers that exist at this point, the more likely that a favorable attitude will be formed about distance education. The persuasion stage is a critical one, because this is where an attitude, either negative or positive, is to be formed. It is expected then that a corresponding decision to adopt or reject the innovation will follow (Rogers, 1995).

Stage 3 – Decision

Definition: "Decision occurs when an individual . . . engages in activities that lead to a choice to adopt or reject the innovation" (Rogers, 1995, p. 162).

Stage 3, as it relates to this research project: When distance education is tried on a probationary basis, barriers such as equipment failure and low self-efficacy (due to lack of training) (Kagima, 1998) may discourage faculty, who may determine that distance education is

not useful in their situation. At this point they may reject distance education without progressing further.

Stage 4 – Implementation

Definition: "Implementation occurs when an individual puts an innovation into use" (Rogers, 1995, p. 162).

Stage 4, as it relates to this research project: If problems (barriers) such as not enough release time to accomplish the transition between traditional classroom and distance education courses (Knue, 1998; Parer et al., 1988) now surface, or if barriers that were identified in Stage 3 recur, the faculty members may reject the innovation, and discontinuance will occur. If, on the other hand, barriers that were previously encountered are resolved, faculty who had not fully made a decision during the decision stage may now accept distance education as a viable communication method.

Stage 5 – Confirmation

Definition: "Confirmation occurs when an individual . . . seeks reinforcement of an innovation-decision already made, or reverses a previous decision to adopt or reject the innovation if exposed to conflicting messages about the innovation" (Rogers, 1995, p. 162).

Stage 5, as it relates to this research project: By the confirmation stage individual faculty members have made a decision either to adopt or reject distance education. According to Rogers (1995), however, these decisions are not irreversible. For example, an evaluation survey produced by Chute et al. (1999) asked for student responses to statements such as "the presenter's voice was clear; the presenter had a voice quality that was easy to listen to; [and] I would participate in future distance learning courses" (p. 169). The type of technology used and the condition of the equipment may produce a negative student experience and subsequent

negative student feedback. Through no fault of the instructor, these hidden barriers may threaten the instructor's career advancement (Hoskins, 1998), dissonance may occur, and the decision to adopt distance education could be reversed. Rogers (1995) categorized this type of discontinuance as "disenchantment discontinuance" (p. 202). If the innovation were discontinued in favor of a perceived superior idea, the discontinuance would be categorized as "replacement discontinuance" (p. 202).

Summary

Universities have been challenged to maintain high-quality education even though faced with budget reductions due to inflation and funding cuts. In addition, an increasingly diverse student population is placing demands on educational institutions to provide more flexible learning opportunities at places and times that are convenient to the students. Increasing numbers of universities offer synchronous and/or asynchronous distance education courses to meet student demands as well as maintain or increase student enrollment.

Many faculty members are reluctant to participate in distance teaching due to numerous perceived barriers, such as lack of training, support from administrators, rewards and compensations, and other personal reasons. To support the importance of identifying and overcoming these perceived barriers, a relationship has been drawn between barriers and Rogers's (1995) five-stage innovation decision process.

This chapter has been a discussion of the review of literature relating to this research project. Chapter 3 presents the population, instrumentation, data collection, and treatment of the data.

CHAPTER 3

METHODOLOGY

This study analyzed barriers to faculty participation in distance education. This chapter includes the following sections: (a) population, (b) instrumentation, (c) data collection, and (d) treatment of the data. The chapter concludes with a summary.

Population

The research population for this study consists of just under 600 full-time faculty members and approximately 60 administrators (deans and chairs) at the University of North Texas (UNT), Denton. The student enrollment was approximately 25,500 in 1998-1999. According to the *University of North Texas (UNT) Graduate Catalog 1999-2000*, UNT "is recognized as a comprehensive teaching and research institution" (p. 3). In 1992, it "was elected to full membership in the National Association of State Universities and Land-Grant Colleges" (p. 3). According to UNT's Graduate Catelogue, UNT is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools . . . to award bachelor's, master's and doctoral degrees" (p. 9). The university is made up of eight schools and colleges.

The research includes all full-time faculty members (*N*=586), deans (*N*=8), and department chairs (*N*=51), in the following: the College of Arts & Sciences, the College of Business Administration, the College of Education, the College of Music, the School of Community Service, the School of Library and Information Sciences, the School of Merchandising and Hospitality Management, and the School of Visual Arts. The entire population was studied.

Instrumentation

Two self-reporting surveys constructed by Betts (1998) were used. One survey was developed for faculty, and the second survey was developed for deans and was also used for department chairpersons.

The four major sections on the faculty survey are: (a) demographics, (b) distance education background, (c) self-assessment, and (d) faculty response. The survey for the deans/department chairs is divided into four sections: (a) demographics, (b) distance education background, (c) faculty assessment, and (d) dean/department chair responses.

Except for the assessment section in the faculty and administrators' survey, a combination of open and closed forms of questions was used. The open form allowed respondents to add information to the survey, whereas the closed form made quantification and analysis of the results more manageable (Gall, Borg, & Gall, 1996). The demographics section consists of 17 items. In addition to personal information such as age, gender, university position held, and number of years the respondent has taught in postsecondary education, 4 items are directly related to distance education and the types of technologies used for distance teaching. The section regarding distance education background is a comprehensive 11-question survey to determine the number of years, type of involvement, and delivery systems used by faculty and administrators who teach courses via distance methods. There are four distinct assessment sections, two for faculty self-assessment and two for administrators' assessment of faculty. One of the two assessments lists 34 factors that may motivate participation in distance education, and the other lists 19 factors that may inhibit faculty participation. The respondents are asked to rate the factors on a Likert scale, with 5 indicating *strongly agree* and 1 indicating *strongly disagree*. Space is provided at the end of the assessment for listing additional factors that the respondents

feel would affect faculty participation in a distance education program. The final section of the survey instrument lists 11 questions regarding advantages, reward policy, and pressure from the university to participate in a distance education program. Space is provided at the end of the section for additional comments. This final section is for faculty members only and is not included in the administrators' survey.

The surveys were preceded by the appropriate cover letter addressed to either a UNT faculty member, a UNT chairperson, or a UNT dean. Each cover letter detailed instructions for completing and returning the survey. It also included a statement concerning confidentiality and explained the purpose of the survey.

In a previous study, the content of the surveys was validated in a five-stage process by survey panelists from George Washington University and George Mason University over a period of 4 months. The panel included 13 faculty members, one assistant vice president, three associate vice presidents, two vice presidents, one vice provost, nine deans, one associate dean, and one English professor. Based on the recommendations of the panel, changes were made to the questions as well as to the instructions for completing the surveys. The survey was pilot tested between the fourth and fifth review at George Mason University. The following results of the Cronbach alpha calculations were used to measure the reliability of the survey scores from the previous study (Betts, 1998): The pilot survey (33 returned surveys) showed motivating factors $\alpha = .8153$, with the inhibiting factors $\alpha = .7415$. Final survey (539 returned surveys) showed motivating factors $\alpha = .9303$, and inhibiting factors $\alpha = .9475$. The survey instrument was also tested against the Gall et al. (1996) 21-point guidelines for questionnaire design. Permission to use the published survey instruments was obtained before the distribution of the surveys.

Data Collection

The following items were distributed to all full-time faculty, deans, and department chairs: (a) a cover letter to explain the purpose of the survey and to outline the handling of survey results and confidentiality procedures that were in place; (b) the five/six-page survey instruments; (c) a self-addressed, stamped envelope for returning the completed survey; and (d) a pencil imprinted with a message thanking the participants for supporting a UNT graduate student's research project.

Two weeks after the requested return date, a follow-up letter was sent to those who had not yet responded. A second follow-up letter and a second survey were mailed to all faculty, deans, and department chairs who had not responded to the first follow-up letter within 2 weeks of its mailing.

Treatment of Data

Reliability estimates were computed using Cronbach's alpha. When appropriate, Pearson's chi-square test and/or independent samples *t* tests were computed for the data.

According to Huck and Cormier (1996):

> The H_o for the one-sample chi-square test is simply a specification of what proportion of the population being considered falls into each category. Next, the researchers determine what proportion of their sample falls into each category of the established categories. Finally, the hypothesis testing procedure is used to determine whether the discrepancy between the set of sample proportions and those established in H_o are large enough to permit H_o to be rejected. (p.519)

Independent samples *t* tests differ from the chi-square test in that the *t* test compares two means. The hypothesis testing procedure is the same. It is used to determine whether the discrepancy between the set of means and those established in H_o are large enough to permit H_o to be rejected. For all inferential testing in this study, a predetermined level of significance of 0.05 was used.

Summary

Advanced electronic communication technologies are being introduced by many universities in response to a changing student population with nontraditional educational needs. Students are generally receptive to innovative distance education programs that allow them to have greater control over the time and place they receive educational instruction. However, faculty members are resisting the changes that distance teaching imposes on them. The rate of their adoption of distance education is hampered by a personally unique set of perceived barriers. Intervention strategies implemented by administrators to hasten the rate of adoption of distance education by faculty members may be ineffective due to differences in perception. In order to facilitate a timely transition of on-campus lectures to distance teaching using advanced electronic communication technologies, it is important that the barriers to this transition are identified and eliminated when possible.

This chapter discussed the population, instrumentation, data collection, and treatment of the data. Chapter 4 discusses the results of the statistical analysis of data collected from responses to the research questionnaire.

CHAPTER 4

DATA ANALYSIS AND DISCUSSION OF RESULTS

Research Findings

The purpose of this study was to determine perceived barriers to faculty participation in distance education. This chapter presents the results of the statistical analysis of data collected from responses to research questionnaires sent to the faculty and administrators (deans and chairpersons) at the University of North Texas.

Six hundred forty-four surveys were initially sent; 8 were returned because the professors were no longer at UNT, and 7 responses to the surveys were deemed unusable. This brought the total possible responses to 570 for the faculty and 59 for administrators. Of the faculty surveys, 287 (50.4%) were completed, returned, and deemed useable. Of the administrators' surveys, 37 (62.7%) were completed, returned, and deemed useable.

Of the total 324 completed and returned surveys from the faculty and administrators, 10 (3.1%) were from the School of Merchandising and Hospitality Management; 32 (9.9%) were from the School of Community Service; 57 (17.6%) were from the College of Education; 10 (3.1%) were from the School of Library and Information Sciences; 30 (9.3%) were from the College of Music; 18 (5.6%) were from the School of Visual Arts; 129 (39.8%) were from the College of Arts and Sciences; and 38 (11.7%) were from the College of Business Administration (see Table 1).

All variations in counts in this study are due to unanswered questions. Terminology used on the survey instruments was modified to be university specific. Therefore, the terms "distance education", and "distance learning" are used interchangeably when referring to the surveys or responses to the surveys.

Table 1
Frequencies and Percentages of Respondents From Each School/College

College/School	Number sent	Number returned (Useable)	Percent returned from school/college	Percent of institution total returned
School of Merchandising & Hospitality Management	13	10	76.9%	3.1%
School of Community Service	56	32	57.1%	9.9%
College of Education	96	57	59.4%	17.6%
School of Library & Information Sciences	13	10	76.9%	3.1%
College of Music	75	30	40.0%	9.3%
School of Visual Arts	35	18	51.4%	5.6%
College of Arts and Sciences	275	129	46.9%	39.8%
College of Business Administration	81	38	46.9%	11.7%
Totals	644	324		100.1%*

Note. *Rounding error.

Reliability of Instrument Scores

Reliability of the survey instrument scores for the study resulted in the following: The final faculty survey (287 returned) revealed that motivating factors $\alpha = .9162$; and inhibiting factors $\alpha = .8991$. The results were slightly lower than those reported in a previous study by Betts (1998). Those results were as follows: The final survey (539 returned surveys) showed motivating factors $\alpha = .9303$, with the inhibiting factors $\alpha = .9475$.

Correlation of Survey Responses and Hypotheses

This section provides the correlation of each research hypothesis with the corresponding survey responses.

H_o1: There is no significant relationship between faculty demographics and faculty participation in distance education.

Information supporting H_o1 resulted from responses to the faculty survey, section I, Demographics, items 2, 3, 4, 5, and 8 (see Appendix B). The five demographic variables pertaining to research hypothesis 1 are (a) gender, (b) age (<30, 30-44, 45+), (c) position in the university (i.e., regents professor, full professor, associate professor, assistant professor), (d) tenure status (tenured, nontenured), and (e) number of years faculty member has taught in postsecondary education.

H_o2: There is no significant difference between factors that faculty participants identified as motivators and factors that administrators believed motivated faculty to participate in distance education.

H_o2 is supported by faculty survey items, section IIA (see Appendix B), and administrators' survey, section III, part 1, items 1, 14, 19, and 30 (see Appendix C).

H_o3: There is no significant difference between factors that faculty nonparticipants identified as barriers and factors that administrators believed that faculty perceived as barriers to participation in distance education.

Survey responses correlating to H_o3 were derived from the faculty survey, section IIB (see Appendix B) and the administrators' survey, section III, part 2, items 1, 5, 10, and 15 (see Appendix C).

H_o4: There is no significant difference between rewards and compensation that participants identified as motivators and the lack of rewards and compensation that nonparticipants perceived as barriers to participation in distance education.

Faculty self-assessment, section IIA, items 4, 9, 12, 16, 17, 22, 23, 25, 26, and 29, and section IIB items 1, 18, 15, 6, 9, 19, 5, 12, 14, and 17 provide information for H_o4 (see Appendix B).

H_o5: There is no significant relationship between faculty participation in distance education and whether they have participated or plan to participate in distance education training.

Survey responses correlating to H_o5 were derived from the faculty survey, section IV, item 4 (see Appendix B).

Analysis of Hypotheses

H_o1: There is no significant relationship between faculty demographics and faculty participation in distance education.

Table 2 shows the distribution of male and female participants and nonparticipants.

Table 2
Gender Distribution Between Participants and NonParticipants

	Nonparticipants	Participants
Gender		
Female	66	34
Male	128	59

Note. Chi-square = .078, p = .673.

A Pearson's chi-square test was used to determine whether there was a statistically significant relationship between gender and faculty participation in distance education. Using a 0.05 significance level, the null hypothesis failed to be rejected. Therefore, there is no significant statistical relationship between gender and faculty participation in distance education.

Table 4-3 shows the distribution of age between participants and nonparticipants.

Table 3
Age Distribution Between Participants and Nonparticipants

	Nonparticipants	Percent of nonparticipants	Participants	Percent of participants
Age				
30-44	66	34%	24	26%
45+	127	66%	69	74%

Note. Chi-square = 2.049, p = .152.

A Pearson's chi-square test was used to determine whether there was a significant relationship between age and faculty participation in distance education. Using a 0.05 significance level, the null hypothesis failed to be rejected. Therefore, there is no significant statistical relationship between age and faculty participation in distance education. The age category < 30 was not analyzed due to insufficient response (N=0).

Table 4 shows the distribution of position within the university between participants and non-participants.

Table 4
Position Within the University Distribution Between Participants and Nonparticipants

	Nonparticipants	Participants
Position		
Regents professor	17	8
Professor	66	20
Associate professor	56	31
Assistant professor	55	32

Note. Chi-square = 4.468, p = .215.

A Pearson's chi-square test was used to determine whether there was a statistically significant relationship between position within the university and faculty participation in distance education. Using a 0.05 significance level, the null hypothesis failed to be rejected. Therefore, there is no significant statistical relationship between position within the university and faculty participation in distance education.

Table 5 shows the distribution of tenure status between participants and nonparticipants.

Table 5
Tenure Status Distribution Between Participants and NonParticipants

	Nonparticipants	Participants
Tenure status		
Tenured	56	31
Nontenured	132	61

Note. Chi-square = .441, p = .507.

A Pearson's chi-square test was used to determine whether there was a statistically significant relationship between tenure status and faculty participation in distance education. Using a 0.05 significance level, the null hypothesis failed to be rejected. Therefore, there is no significant statistical relationship between tenure status and faculty participation in distance education.

Independent samples *t* tests were used to determine whether there was a significant statistical relationship between the means of the number of years faculty taught in postsecondary education and participation in distance education. The results were ($t = 1.339$, $df = 280$, $p = .182$). Using 0.05 significance level, results of the analysis failed to reject the null hypothesis. Therefore, it appears there is no statistically significant relationship between number of years faculty have taught in postsecondary education and participation in distance education.

H_o2: There is no significant difference between factors that faculty participants identified as motivators and factors that administrators believed motivated faculty to participate in distance education.

Table 6 shows the rank order of factors that faculty identified as having been the most motivational to their participation in distance education. It also shows the rank placement of the same factors by administrators.

Table 6
Top Four Motivational Factors Ranked by Faculty Compared to Corresponding Factors Ranked by Administrators

Rank by faculty	Item	Rank by administrators	*t*	df	p	*d*
1	Ability to reach new audiences that cannot attend classes on campus (#30)	22	1.648	127	.102	.302
2	Personal motivation to use technology (#1)	10	.286	128	.776	.286
3	Opportunity to develop new ideas (#14)	25	1.469	128	.144	.270
4	Intellectual challenge (#19)	18	.155	127	.877	.028

Note. Significance level 0.05.

Independent samples *t* tests were conducted to determine whether there was a statistically significant difference in the means of the top four ranked factors identified as motivational by faculty and the means of corresponding factors that administrators believed motivated faculty to participate in distance education. Using a 0.05 significance level, results of the analysis failed to reject all null individual *t* test hypotheses. Therefore, there appears to be no statistically significant difference between the mean values assigned to each item by faculty and administrators. It should be noted, however, that the relative rank of these items differed dramatically between faculty and administrators.

Table 7 shows the rank order of factors that administrators believe to be motivating factors to faculty participation in distance education. It also shows the rank order placement of the same factors by faculty.

Table 7
Top Four Motivational Factors Ranked by Administrators Compared to Corresponding Factors Ranked by Faculty

Rank by administrators	Item	Rank by faculty	*t*	df	p	*d*
1	Increase in salary (#9)	34	11.613	128	<.001*	2.228
2	Monetary support for participation (e.g., stipend and overload) (#12)	26	8.462	128	<.001*	1.543
3	Release time (#23)	32	9.410	125	<.001*	1.774
4	Credit toward promotion and tenure (#22)	27	8.304	127	<.001*	1.538

Note: *Significance level 0.05.

Independent samples *t* tests were conducted to determine whether there was a statistically significant difference in the means of the top four ranked factors that administrators believed would motivate faculty and the means of corresponding factors identified by faculty that would motivate them to participate in distance education. Using a 0.05 significance level, all differences were found to be statistically significant and all null individual *t* test hypotheses were rejected. Therefore, there appears to be a statistically significant difference between the top four ranked motivators identified by the administrators and the corresponding factors identified by faculty as motivational to their participation in distance education.

H_o3: There is no significant difference between factors that faculty nonparticipants identified as barriers and factors that administrators believed that faculty perceived as barriers to participation in distance education.

Table 8 shows the rank order of factors that faculty perceived as barriers to their participation in distance education. It also shows the rank placement of the same factors by administrators.

Table 8
Top Four Perceived Barriers Ranked by Faculty Compared to Corresponding Factors Ranked by Administrators

Rank by faculty	Item	Rank by administrators	*t*	df	p	*d*
1	Concern about quality of courses (#10)	6	1.575	220	.117	.0278
2	Concern about faculty workload (#1)	1	3.045	221	.003*	.519
3	Lack of release time (#5)	2	2.355	220	.019*	.405
4	Lack of monetary support for participation (e.g., stipend, overload) (#15)	4	2.175	220	.031*	.387

Note. *Significance level 0.05.

Independent samples *t* tests were conducted to determine whether there was a statistically significant difference in the means of the top four ranked items perceived as barriers by faculty and the means of corresponding items perceived by administrators as barriers to faculty participation in distance education. Using a 0.05 significance level, only one item, "concern about quality of courses," showed no statistically significant difference. There was a statistically significant difference in the remaining three items, and these null individual *t* test hypotheses were rejected. Therefore, there appears to be a statistically significant difference between 75% of the top four ranked barriers perceived by faculty and corresponding barriers that administrators perceive to be barriers to faculty participation in distance education.

Table 9 shows the rank order of factors that administrators perceive to be barriers to faculty participation in distance education. It also shows the rank order placement of the same factors by faculty. It should be pointed out, however, that although a statistically significant

difference was found for three or the four items, the relative rank between faculty and administrators showed a high level of congruence.

Table 9
Top Four Perceived Barriers Ranked by Administrators Compared to Corresponding Factors Ranked by Faculty

Rank by administrators	Item	Rank by faculty	*t*	df	p	*d*
1	Concern about faculty workload (#1)	2	3.045	221	.003*	.519
2	Lack of release time (#5)	3	2.355	220	.019*	.405
3	Lack of credit toward tenure and promotion (#19)	11	4.810	220	<.001*	.829
4	Lack of monetary support for participation (e.g., stipend, overload) (#15)	4	2.175	220	.031*	.387

Note. *Significance level 0.05.

Independent samples *t* tests were conducted to determine whether there was a statistically significant difference between the means of the top four ranked items perceived by administrators as barriers to faculty participation in distance education and the means of corresponding items perceived by faculty as barriers to their participation in distance education. Using a 0.05 significance level, statistically significant differences were found among all items, and all null individual *t* test *hypotheses* were rejected. Therefore, there seem to be statistically significant differences among the top four items that administrators perceive to be barriers to faculty participation in distance education and corresponding items that faculty perceive to be barriers to their participation in distance education. Once again, it should be pointed out that although a statistically significant difference was found for all four items, the relative rank between faculty and administrators showed a high level of congruence.

H_o4: There is no significant difference between rewards and compensation that participants identified as motivators and the lack of rewards and compensation that nonparticipants perceived as barriers to participation in distance education.

Table10 shows the relationship between rewards and compensation that participants identified as motivators and the lack of rewards and compensation that nonparticipants perceived as barriers to participation in distance education.

Table 10
Comparison of Rewards and Compensation Between Participants and NonParticipants

Item	*t*	df	p	*d*
Teaching load	15.636	276	<.001*	1.879
Salary	10.912	274	<.001*	1.396
Monetary support	9.963	276	<.001*	1.150
Professional prestige	3.754	277	<.001*	.480
Grants	5.187	154.544**	<.001*	.621
Tenure and promotion	7.138	276	<.001*	.851
Release time	13.031	275	<.001*	1.573
Merit pay	9.970	276	<.001*	1.270
Royalties	7.585	275	<.001*	.956
Recognition and awards	6.454	168.047**	<.001*	.794

Note. *Significance level 0.05.
Note. ** Degrees of freedom are adjusted to account for not meeting the homogeneity of variance assumption.

Independent samples *t* tests were conducted to determine whether there was a statistically significant difference between the means of rewards and compensation that participants identified as motivators and the means of corresponding lack of rewards and compensation that nonparticipants perceived to be barriers to participation in distance education. Using a 0.05 significance level, all differences were found to be statistically significant, and all null individual *t* test hypotheses were rejected. Therefore, there appears to be a statistically significant difference between the rewards and compensation that participants perceived as motivators and

the lack of corresponding rewards and compensation that nonparticipants perceived to be barriers to participation in distance education.

H_o5: There is no significant relationship between faculty participation in distance education and whether they have participated or plan to participate in distance education training.

Table 11 shows the relationship between participants and nonparticipants who have participated or plan to participate in distance education training and participants and nonparticipants who have not and do not plan to participate in distance education training.

Table 11
Have Participated or Plan to Participate in Distance Education Training Distribution Between Participants and Nonparticipants

		Nonparticipants	Participants
Have you or do you plan to participate in Distance Learning training provided by UNT?	Yes	60	65
	No	124	27

Note. Chi-square = 35.825, p = <.001.

A Pearson's chi-square test was used to determine whether there was a statistically significant relationship between faculty participation in distance education and whether they have participated or plan to participate in distance education training. Using a 0.05 significance level, the null hypothesis was rejected. Therefore, there appears to be a statistically significant relationship between faculty participation in distance education and whether they have participated or plan to participate in distance education training.

Summary

This chapter discussed the results of the statistical analysis of data collected from responses to the research questionnaire. Chapter 5 discusses the findings, conclusions, and recommendations, and provides a summary of the study.

CHAPTER 5

SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

This chapter summarizes the study and discusses the findings that provide insight into the perceived barriers to faculty participation in distance education. These findings also serve as a basis for conclusions and recommendations for future studies.

The purpose of this study was to identify perceived barriers to faculty participation in distance education courses in a 4-year university. Data resulting from faculty and administrators' survey responses were analyzed to determine relationships and differences of perceptions regarding barriers to faculty participation in distance education.

Two self-reporting surveys were used for this study. One survey was developed for the faculty, and the second survey was developed for deans and was also used for department chairpersons. The four major sections on the faculty survey were (a) demographics, (b) distance education background, (c) self-assessment, and (d) faculty response. The survey for the deans/department chairs was divided into (a) demographics, (b) distance education background, (c) faculty assessment, and (d) dean/department chair responses. The entire population of faculty and administrators at the University of North Texas was studied.

In October 2001, 644 initial surveys were distributed through UNT campus mail to all full-time faculty, deans, and chairpersons. In November 2001, follow-up letters were sent to all who had not responded to the initial surveys. In December 2001, a second follow-up letter and a copy of the original survey were sent through campus mail to each of those who had still not responded. Each time the surveys were distributed, they were accompanied by a cover letter and a stamped envelope addressed to the researcher and were to be returned by U.S. mail.

It is difficult to determine how the events occurring within the U.S. Postal System at that time may have impacted the number of completed and returned surveys. However, 324 (56.8%) useable surveys were completed and returned. Surveys from 50.4% of the faculty and 62% of the administrators were completed and returned. Those percentages were fairly evenly distributed across the eight colleges/schools that make up the University of North Texas. Percentages of completed survey questionnaires within each college/school ranged from 76.9% returned from the School of Merchandising and Hospitality and the School of Library and Information Sciences to 40.0% from the College of Music.

Discussion of Findings

The results of the study yielded neither statistically significant relationships nor differences for three of the five hypotheses. The hypotheses are discussed as follows:

H_o1: There is no significant relationship between faculty demographics and faculty participation in distance education.

The five demographic variables pertaining to research hypothesis 1 are (a) gender, (b) age (<30, 30-44, 45+), (c) position in the university (i.e., regents professor, full professor, associate professor, or assistant professor), (d) tenure status (tenured, nontenured), and (e) number of years faculty members had taught in postsecondary education. There were no statistically significant relationships identified among the five faculty demographics items and faculty participation in distance education. Approximately 37% of the participants and 34% of the nonparticipants were female. Approximately 63% of the participants and 66% of the nonparticipants were male. Although there appears to be no evidence that gender is a factor in faculty's decision to participate in distance education, research by Armstrong (1998) indicated that male and female participants select different strategies with regard to distance teaching.

Percentages of participants in each of the analyzed age categories were consistent with a previous research by Betts (1998), with the majority of participants being in the over-45 age category. Table 12 shows a comparison of the results of the two studies.

Table 12
Age Comparison Between Participants in Current and Previous Studies

	This study	Betts (1998)
Age		
<30	0	3 (3.5%)
30-44	24 (25.8%)	19 (21.1%)
45+	69 (74.2%)	64 (74.4%)

There were no statistically significant relationships between age categories and faculty participation in distance education. There were also no statistically significant relationships between position within the university and faculty participation in distance education. However, when cross-checking age categories and position within the university, the information shown in Tables 13 and 14 was disclosed.

Table 13
Comparison Between Age and Position Within the University for Participants

	30-44 years	45+ years
Position		
Regents professor	0	8
Professor	0	20
Associate professor	7	25
Assistant professor	17	15

Note. There were insufficient responses to include the <30 category (N=0).

Table 14
Comparison Between Age and Position Within the University for Nonparticipants

	30-44 years	45+ years
Position		
Regents professor	0	17
Professor	2	64
Associate professor	27	29
Assistant professor	37	18

Note. There were insufficient responses to include the <30 category (N=0).

Position within the university may be a barrier for those in the 30-44 age category to participate in distance education.

There was no statistically significant relationship between tenured/nontenured and faculty participation in distance education. The relationships between tenure status and distance education participation should not be taken lightly. As Olcott (1994) stated, "Promotion and tenure essentially define what activities are rewarded, [and] thereby indirectly determines the degree of support (i.e. monetary, release time, training, institutional and administrative resources)" (p. 126). Consequently, if participation in distance education does not count toward promotion and tenure, it may have a negative impact on faculty participation. Faculty members may instead expend their energy in programs required for promotion and tenure. Whereas many extrinsic rewards are temporary, promotion and tenure are long-term rewards with many of the temporary benefits embedded. Faculty who are helping to achieve the goals that are most important to the organization should be compensated in areas most important to their personal career growth. There was also no statistically significant relationship between years faculty taught in postsecondary education and participation in distance education.

H_o2: There is no significant difference between factors that faculty participants identified as motivators and factors that administrators believed motivated faculty to participate in distance education.

Interestingly, the top four motivational factors, as ranked by participants in this study, were the same top four as ranked by participants in a previous study by Betts (1998). The only difference was that the order of items 2 and 3, which were, respectively, personal motivation to use technology and opportunity to develop new ideas. These items were inversed in the results of the previous study. A comparison of the top four factors that the deans from the previous

study and the administrators from this study presumed to motivate their faculty yielded three of the same responses. The deans in the previous study identified "personal motivation to use technology" as the number 2-ranked motivator. That item was not identified in this research. Instead, administrators in this research identified "release time" as being a motivational factor for faculty participation in distance education. "Credit toward promotion and tenure" was ranked number 4 in both studies; however, the two remaining items were in a different sequence. The items were ranked from a list of 34 possible choices.

Table 16 (see Appendix G) illustrates that faculty and administrators disagree on what motivates faculty to participate in distance education. Administrators tend to rank extrinsic factors higher while faculty members who are currently participating in distance education tend to rank intrinsic items as being more motivational to their participation. Indications are that early adopters of distance education are self-motivated and innovative individuals who are willing to expend their own time and other resources to bring about change in the organization. On the other hand, administrators appear to focus on a means of distributing extrinsic rewards to get buy-in from the masses of late adopters to encourage them to participate in the innovative program. This disparity may eventually have a negative impact on the early adopters who may shift their energy and enthusiasm toward organizations where their intrinsic needs are met.

The difference in the mean range of both the participants and administrators is also noteworthy. The mean range for the participants for all 34 items was 3.74-1.66. For the administrators the mean range was 4.08-2.86.

H_o3: There is no significant difference between factors that faculty nonparticipants identified as barriers and factors that administrators believed that faculty perceived as barriers to participation in distance education.

A comparison of the data from this study and corresponding data from the previous study showed that both groups of nonparticipants identified three of the same barriers. Nonparticipants from the previous study identified "lack of technical support provided by the institution" as one of the top four barriers. That item was not ranked in the top four items in this research. Instead, the nonparticipants in this research identified "lack of monetary support for participation (e.g., stipend, overload)." The remaining three barriers were identified by both research groups; however, they were in dissimilar order. The top four barriers as ranked by deans in the previous study and administrators in this study shared only one commonality, "concern about faculty workload." Administrators for this study ranked that item as number 1, whereas deans from the previous study ranked it as number 3. The remaining items ranked as the top four barriers in the previous study were (a) "lack of technical support provided by the institution," (b) "lack of distance education training by the institution," and (d) "lack of support and encouragement by departmental colleagues." The items were ranked from a list of 19 possible choices.

Table 17 (see Appendix H) further supports the assumption that administrators are more attuned to the needs of late adopters. A comparison of barrier items ranked by faculty members not participating in distance education, and corresponding items ranked by administrators shows 17 of the total 19 items were ranked within five places of the corresponding ranking. The 2 items ranked with greater than a 5-place variation were, "Lack of distance learning training by the institution", and "Lack of credit toward tenure and promotion." Five items were ranked the same by both nonparticipants and administrators, 5 were ranked with a 1-place difference, 3 with a 2-place difference, 1 with a 3-place difference, and 3 with a 5-place difference.

H_o4: There is no significant difference between rewards and compensation that participants identified as motivators and the lack of rewards and compensation that nonparticipants perceived as barriers to participation in distance education.

When comparing items that had motivated participants and lack of corresponding items that would inhibit nonparticipants from participating in distance education, all differences were found to be statistically significant. The reason for this may be the result of the wording of the survey. Participants were asked to indicate the extent to which they agreed that factors had motivated them to participate in distance education. The assumption was made that the items listed were available to participants. Open-ended responses later in the survey indicated that the assumption was false, that not all items listed were available to participants. Therefore, participants would not have identified items as having motivated their participation in distance education if those items were not available to them. Nonparticipants could, however, identify the lack of corresponding items as being a barrier to their participation in distance education.

H_o5: There is no significant relationship between faculty participation in distance education and whether they have participated or plan to participate in distance education training.

The results of this study indicated a statistically significant relationship between faculty participation in distance education and whether they have participated or plan to participate in distance education training. A cross-comparison was made between participants and nonparticipants who have participated or plan to participate in distance education training and their attitude toward distance education. The results are in Table 15.

Table 15
Attitude Toward Distance Education of Participants and Nonparticipants

	Positive	Neutral	Negative	No response
Participants (Yes)*	44	16	6	
Nonparticipants (Yes)*	21	28	11	
Participants (No)**	13	5	5	3
Nonparticipants (No)**	19	53	47	5

**Yes* indicates have participated or plan to participate in distance education training.
***No* indicates have not participated or do not plan to participate in distance education training.

It is important to note the high percentage of both participants and nonparticipants who still maintain a neutral attitude toward distance education. According to Rogers's five stages of the innovation-decision process, those individuals may still be between the first and second stage. During the second stage the individual forms a positive or negative attitude toward distance education. With the right intervention strategies, both participants and nonparticipants can be persuaded to adopt a positive attitude toward distance education. In addition, individuals can regress through the stages and attitudes; both positive and negative can change (Rogers 1995).

In addition, qualitative responses to the survey indicated that many faculty who do not participate in distance education contend that distance education is inappropriate in their field (i.e., mathematics, psychology, art, music, science, or kinesiology). These concerns would indicate that potential benefits of distance education may not be fully appreciated by faculty. Many view distance education as one specific technology (i.e., Web-based training) rather than a customized selection from the wide array of available technologies. Administrators who are serious about maximizing the benefits of infusing distance education into their curricula should ensure that faculty understand the breadth of technologies available to them.

Recommendations

1. Understanding that UNT was in the beginning stages of infusing distance education into the curricula when this study was begun, it is recommended that this study be divided into several smaller, more manageable studies and new data gathered to gauge the shift in perceptions by the faculty as well as the administrators regarding distance education. Information could be used by administrators in determining the strengths and weakness of the current distance education program.

2. Further research could be accomplished to support the theory that male and female participants choose different strategies in distance teaching. Results of the future study could help administrators and distance education course developers to customize flexibility into courses based on individualized distance teaching strategies.

3. Further research could be accomplished to determine whether the distance teaching opportunities for associate and assistant professors are equal to the opportunities for regent professors and professors. This research may disclose that younger, less experienced faculty members would choose to participate in distance education if the opportunities were available to them.

4. A comparison should be made between what had motivated faculty and what would motivate faculty to participate in distance education.

5. A study could be conducted to determine if rewards and compensations are effective in motivating faculty to participate in distance teaching. Faculty from a particular department could be offered their choice of selected incentives for participating in distance teaching for three semesters. At the end of that time the incentives would be withdrawn. The results of this study

could be categorized into five areas: (a) demographics, (b) number of additional faculty members participating, (c) number of each incentive selected, (d) number of faculty who continue in distance education once the incentive is withdrawn, (e) type of distance education technologies used.

Summary

This research was conducted to identify barriers to faculty participation in distance education. There was no statistically significant relationship found between faculty characteristics such as gender, age, position in the university, tenure status, or number of years faculty members had taught in postsecondary education, when compared to faculty participation in distance education. Faculty participants and administrators disagreed on which factors, from a list of 34 items, had motivated faculty to participate in distance education. Faculty nonparticipants and administrators disagreed on which of the factors, if not available, would be barriers to faculty participation in distance education. Participants and nonparticipants disagreed regarding the level to which selected rewards and compensations had motivated faculty to participate, and the lack of which would inhibit faculty from participating in distance education. Finally,71% of the participants had participated or planned to participate in distance education training compared to only 33% of the nonparticipants.

It is obvious that administrators and faculty do not place the same level of importance on motivational or inhibiting factors that may affect faculty participation in distance education. These results indicate that additional research should be accomplished to determine the basis for the disagreement among the faculty participants, faculty nonparticipants, and administrators.

This chapter provided a summary of the findings, conclusions and recommendations.

APPENDIX A

SURVEY PERMISSION CORRESPONDENCE

From: Kristen S. Betts [kbetts@researchstrategies.com]
Sent: Monday, September 10, 2001 4:16 PM
To: jgh.jlm@gte.net
Subject: Permisson
Hello,

Thank you for your interest in my research. I grant you full permission to use the surveys. The only request that I have is that my work be cited in any publications that may result from your study. Since technology is constantly changing and each university offers different media for providing DE, I would suggest that you make any minor modifications to the survey instruments to best meet the needs of your institution. Moreover, in hindsight, I was asked to collect a lot of data that we never actually used about the faculty -- hence, you may want to delete any questions that may not add to your actual research since the instruments are quite long. Keep in mind "Nice to know vs. Need to know." :) The "Need to know" is what you really want to focus on.

As I mentioned, there are currently 11 universities that have used my surveys to assess why faculty choose to participate in distance education. Some of the institutions are using the entire surveys while others are using just sections of the surveys. The institutions include: Baylor University, Navy Postgraduate School (Monterey CA), Northern Virginia Community College, Nova Southeastern University, Temple University, Texas A&M University, The George Washington University, The Richard Stockton College of New Jersey, University of Arkansas at Little Rock (all Statewide Two-Year Colleges), University of Houston-Clearwater, and University of Iowa.

My publication is as follows:

Betts, K. S., (1998). *Factors Influencing Faculty Participation in Distance Education in Postsecondary Education in the United States: An Institutional Study***.** (*Doctoral dissertation, The George Washington University, 1998). ProQuest No. AA9900013.

If you have any further questions, you can contact me at 202-728-0240. Also, please send me an e-mail with the name of your institution so I can add it to my list.

Good luck,

Kris Betts

****

Dr. Kristen S. Betts
President
Research Strategies International
Phone: (202) 728-0240
Fax: (202) 728-0241
Internet: www.researchstrategies.com

APPENDIX B

SURVEY INSTRUMENT – FACULTY

THE UNIVERSITY OF NORTH TEXAS

2001 SELF-STUDY

I. DEMOGRAPHICS

Directions: Answer the following questions based on your current status at UNT for Fall 2001.

1. Which level of student(s) do you teach? *Check all that apply.*

   Undergraduate ( ) Graduate ( ) Certificate ( )

2. Please indicate your gender: Male ( ) Female ( )

3. What is your age? Under 30 years old ( ) 30-44 years old ( ) 45+ years old ( )

4. What is your position title at the University of North Texas?

   Regents professor ( ) Professor ( ) Associate professor ( ) Assistant professor ( )

5. Are you tenured? Yes ( ) No ( ) If not, are you in a tenure-accruing position? Yes ( ) No ( )

6. Where do you teach your courses? *Check all that apply.*

   Denton ( ) UNTSC ( ) General Metroplex ( ) Other Metro Sites ( )

   Other location(s)

7. How many years have you been teaching at the University of North Texas? _____

8. How many years have you been teaching in postsecondary education? _____

9. Have you taken any courses via distance learning? Yes ( ) No ( )

10. Have you taught a course via distance learning? Yes ( ) No ( )

Go to page 4 if you have never participated in distance learning.

11. Please identify the types of technologies you currently use to support your courses/to interact with students, administrators, and other faculty: *Check the box to the right of all that apply.*

E-mail	
Listservs	
Telephone	
Fax	
Two-way interactive videoconferencing	
Two-way online computer conferencing (e.g., CU-SeeMe, Net Meeting)	
Interactive CD-ROM programs	
Videotapes	
Audiotapes	
Computer-based technology (e.g., Internet – World Wide Web, Bulletin Board)	

Other _____

PLEASE GO TO PAGE 2

II. FACULTY SELF-ASSESSMENT SECTION A

For faculty who **currently are participating** or **previously have participated** in distance learning, rate 1-5 the extent to which you agree the factors listed below **have motivated** you to participate in distance learning (1 – strongly disagree to 5 – strongly agree).
Please circle your response.

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. Personal motivation to use technology	5	4	3	2	1
2. Prior technological background	5	4	3	2	1
3. Opportunity for scholarly pursuit	5	4	3	2	1
4. Reduced teaching load	5	4	3	2	1
5. Opportunity to use personal research as a teaching tool	5	4	3	2	1
6. Requirement by department	5	4	3	2	1
7. Support and encouragement from dean or chair	5	4	3	2	1
8. Working conditions (e.g., hours, location)	5	4	3	2	1
9. Increase in salary	5	4	3	2	1
10. Opportunity to influence social change	5	4	3	2	1
11. Job security	5	4	3	2	1
12. Monetary support for participation (e.g., stipend, overload)	5	4	3	2	1
13. Expectation by university that faculty participate	5	4	3	2	1
14. Opportunity to develop new ideas	5	4	3	2	1
15. Visibility for jobs at other institutions/organizations	5	4	3	2	1
16. Professional prestige and status	5	4	3	2	1
17. Grants for materials/expenses	5	4	3	2	1
18. Support and encouragement from departmental colleagues	5	4	3	2	1
19. Intellectual challenge	5	4	3	2	1
20. Overall job satisfaction	5	4	3	2	1
21. Technical support provided by the institution	5	4	3	2	1
22. Credit toward promotion and tenure	5	4	3	2	1
23. Release time	5	4	3	2	1
24. Distance learning training provided by the institution	5	4	3	2	1
25. Merit pay	5	4	3	2	1
26. Royalties on copyrighted materials	5	4	3	2	1
27. Greater course flexibility for students	5	4	3	2	1
28. Opportunity to diversify program offerings	5	4	3	2	1
29. Recognition and awards	5	4	3	2	1
30. Ability to reach new audiences that cannot attend classes on campus	5	4	3	2	1
31. Opportunity to improve my teaching	5	4	3	2	1
32. Support and encouragement from institution administrators	5	4	3	2	1
33. Enhanced quality of courses	5	4	3	2	1
34. Increased quality of students	5	4	3	2	1

Please list any additional motivating factors.
1._____
2._____
3._____

PLEASE GO TO PAGE 3

III. DISTANCE LEARNING BACKGROUND **SECTION A**

If you **currently are participating** or **previously have participated** in distance learning, ***please complete this section.***

1. How many years have you been involved in distance learning?
   Started this semester ( ) 1 year ( ) 2 - 5 years ( ) 6 - 9 years ( ) 10 + years ( )

2. What has your involvement in distance learning included? *Check all that apply.*
   Teaching courses ( ) Designing courses ( ) Providing consultation ( )

3. What delivery systems are you using or have you used while teaching distance education courses? *Check all that apply*

Two-way audio/visual interactive conferencing	
Two-way audio, one-way video conferencing	
One-way live video	
Cable TV	
One-way prerecorded video	
Audiographics	
Two-way audio (e.g., phone conferencing)	
Two-way online computer conferencing (e.g., CU-SeeMe, Net Meeting)	
Computer-based technology (e.g., Internet – World Wide Web, Bulletin Board)	

   Other _____

4. Do you teach distance learning courses while teaching traditional courses during the academic year?
   Yes ( ) No ( )

5. Are you currently teaching courses via distance learning for companies, organizations, or programs outside of the University of North Texas? Yes ( ) No ( ) If yes, what delivery systems are you using?_____
   _____

6. Would you be interested in participating in faculty development programs that focus on distance learning training? Yes ( ) No ( ) If yes, please specify topics of interest. *Check all that apply*

Two-way audio/visual interactive conferencing	
Two-way audio, one-way video conferencing	
One-way live video	
Cable TV	
One-way prerecorded video	
Audiographics	
Two-way audio (e.g., phone conferencing)	
Two-way online computer conferencing (e.g., CU-SeeMe, Net Meeting)	
Computer-based technology (e.g., Internet – World Wide Web, Bulletin Board)	

   Other _____

PLEASE CONTINUE ON PAGE 6

II. FACULTY SELF-ASSESSMENT SECTION B

For faculty who **never have participated** in distance learning, rate 1-5 the extent to which you agree the factors listed below **would inhibit** your decision to participate in distance learning (1 – strongly disagree to 5 – strongly agree).
Please circle your response.

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. Concern about faculty workload	5	4	3	2	1
2. Negative comments made by colleagues about distance learning teaching experiences	5	4	3	2	1
3. Lack of distance learning training provided by the institution	5	4	3	2	1
4. Lack of support and encouragement from departmental colleagues	5	4	3	2	1
5. Lack of release time	5	4	3	2	1
6. Lack of professional prestige	5	4	3	2	1
7. Lack of technological background	5	4	3	2	1
8. Lack of support and encouragement from dean or chair	5	4	3	2	1
9. Lack of grants for materials/expenses	5	4	3	2	1
10. Concern about quality of courses	5	4	3	2	1
11. Lack of technical support provided by the institution	5	4	3	2	1
12. Lack of merit pay	5	4	3	2	1
13. Lack of support and encouragement from institution's administrators	5	4	3	2	1
14. Lack of royalties on copyrighted materials	5	4	3	2	1
15. Lack of monetary support for participation (e.g., stipend, overload)	5	4	3	2	1
16. Concern about quality of students	5	4	3	2	1
17. Lack of recognition and awards	5	4	3	2	1
18. Lack of salary increase	5	4	3	2	1
19. Lack of credit toward tenure and promotion	5	4	3	2	1

Please list any additional inhibiting factors.
1._____
2._____
3._____

PLEASE GO TO PAGE 5

III. DISTANCE LEARNING BACKGROUND SECTION B

If you **never have taught a distance learning course**, ***please complete this section.***

1. Have you ever been asked to:
   (a) teach a distance learning course? Yes ( ) No ( )
   (b) design a distance learning course? Yes ( ) No ( )
   If you answered yes to either of the above, please specify why you did not get involved._____
   _____
   _____
   _____

2. In which area of distance learning would you be interested in participating? *Check all that apply.*
   None ( ) Teaching ( ) Co-teaching ( ) Designing courses ( )

3. Would you be interested in participating in faculty development programs that focus on distance learning training? Yes ( ) No ( ) If yes, please specify topics of interest. *Check all that apply.*

Two-way audio/visual interactive conferencing	
Two-way audio, one-way video conferencing	
One-way live video	
Cable TV	
One-way prerecorded video	
Audiographics	
Two-way audio (e.g., phone conferencing)	
Two-way online computer conferencing (e.g., CU-SeeMe, Net Meeting)	
Computer-based technology (e.g., Internet – World Wide Web, Bulletin Board)	

   Other _____

4. Please specify what the University of North Texas could do to encourage you to participate in distance learning in the future?
   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____

PLEASE CONTINUE ON PAGE 6.

IV. FACULTY RESPONSE

All faculty members, please answer the following questions.

1. What is your attitude toward distance learning instruction in postsecondary education?
   Positive ( ) Negative ( ) Neutral ( )

2. If you have taught, co-taught, or designed distance learning courses in the past and are no longer doing so, please specify why you are no longer using this method of instruction.
   _____
   _____
   _____

3. Do you know what the stated policy of the University of North Texas is on its involvement in distance learning? Yes ( ) No ( ) Not sure ( )

4. Have you, or do you plan on participating in seminars and workshops on distance learning provided by the University of North Texas? Yes ( ) No ( ) What opportunities for faculty development in distance learning, if any, should the University of North Texas offer?
   _____
   _____
   _____

5. Are there currently any career advantages for faculty involved in distance learning at the University of North Texas? Yes ( ) No ( ) Not sure ( ) If yes, describe the advantages?
   _____
   _____
   _____

6. Should the University of North Texas reward faculty differently for involvement with distance learning than for traditional teaching and research? Yes ( ) No ( ) If yes, how_____
   _____
   _____

7. Do you believe there is pressure to involve faculty in distance learning? Yes ( ) No ( )
   If yes, where do you believe this pressure comes from? _____
   _____
   _____

8. Is there anything else you would like to say about distance learning? _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____

Thank you!

6

APPENDIX C

SURVEY INSTRUMENT – DEANS/CHAIRPERSONS

THE UNIVERSITY OF NORTH TEXAS

2001 SELF-STUDY

I. DEMOGRAPHICS

Directions: Answer the following questions based on your current status at UNT for Fall 2001.

1. In which college/school are you Dean or Chairperson?

College of Arts & Sciences ( )
College of Business Administration ( )
Management ( )
School of Community Service ( )
College of Education ( )
School of Library & Information Sciences ( )
School of Merchandising and Hospitality
College of Music ( )
School of Visual Arts ( )
Other_____

2. What is your age? Under 30 years old ( ) 30-45 years old ( ) 45+ years old ( )

3. Please indicate your gender: Male ( ) Female ( )

4. Do you teach any courses at the University of North Texas? Yes ( ) No ( )
If yes, how many courses do you teach during the academic year? _____

5. How many years have you been working at the University of North Texas? _____

6. How many years have you been a dean/chairperson at the University of North Texas? _____

7. How many years have you been working in postsecondary education? _____

8. Have you taken any courses via distance learning? Yes ( ) No ( )

9. Have you taught a course via distance learning? Yes ( ) No ( )

10. Please identify the types of technologies you currently use to support your courses/to interact with students, administrators, and other faculty: *Check the box to the right of all that apply.*

E-mail	
Listservs	
Telephone	
Fax	
Two-way interactive videoconferencing	
Two-way online computer conferencing (e.g., CU-SeeMe, Net Meeting)	
Interactive CD-ROM programs	
Videotapes	
Audiotapes	
Computer-based technology (e.g., Internet – World Wide Web, Bulletin Board)	

Other _____

PLEASE CONTINUE ON PAGE 2

II. DISTANCE LEARNING BACKGROUND
Please complete this section.

1. How many distance learning courses are offered through your College/School/Department?
   None ( ) 1-5 courses ( ) 6-10 courses ( ) 11-19 courses ( ) 20+ courses ( ) Not sure ( )

2. How many professors design distance learning courses in your College/School/Department?
   None ( ) 1-5 professors ( ) 6-10 professors ( ) 11-19 professors ( ) 20+ professors ( )
   Not sure ( )

3. Do you know how many faculty members in your College/School/Department teach distance learning courses outside of the University of North Texas? Yes ( ) No ( ) Not sure ( ) If yes, how many?__

4. Does your College/School/Department offer formal training for distance learning instruction to faculty members? Yes ( ) No ( ) If yes, what kind of training?_____

5. Have you ever been asked to:
   (a) teach a distance learning course? Yes ( ) No ( ) Did you teach? Yes ( ) No ( )
   (b) co-teach a distance learning course? Yes ( ) No ( ) Did you co-teach? Yes ( ) No ( )
   (c) design a distance learning course? Yes ( ) No ( ) Did you design a course? Yes ( ) No ( )
   If you were asked to teach, co-teach or design distance learning courses and you did not get involved, please specify why you chose not to get involved._____
   _____

6. Have you ever contemplated teaching, co-teaching, or designing a distance learning course? Yes ( ) No ( )
   If yes, did you pursue this method of instruction? Yes ( ) No ( )._____
   If you <u>did not pursue</u> this method of instruction, please specify why. _____
   _____
   If you <u>did pursue</u> this method of instruction, please specify why. _____
   _____

7. In which area of distance learning would you be interested in participating ? *Check all that apply.*
   None ( ) Teaching ( ) Co-teaching ( ) Designing Courses ( )

8. Would you be interested in participating in faculty development programs that focus on distance learning training? Yes ( ) No ( ) If yes, please specify topics of interest. *Check all that apply.*

Two-way audio/visual interactive conferencing	
Two-way audio, one-way video conferencing	
One-way live video	
Cable TV	
One-way prerecorded video	
Audiographics	
Two-way audio (e.g., phone conferencing)	
Two-way online computer conferencing (e.g., CU-SeeMe, Net Meeting)	
Computer-based technology (e.g., Internet – World Wide Web, Bulletin Board)	

Other _____

PLEASE CONTINUE ON PAGE 3

III. FACULTY ASSESSMENT PART 1

Please rate 1-5 the extent to which you agree the factors listed below **would motivate** the faculty in your College/School/ Department to participate in distance learning (1 – strongly disagree to 5 – strongly agree). **Please circle your response.**

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. Personal motivation to use technology	5	4	3	2	1
2. Prior technological background	5	4	3	2	1
3. Opportunity for scholarly pursuit	5	4	3	2	1
4. Reduced teaching load	5	4	3	2	1
5. Opportunity to use personal research as a teaching tool	5	4	3	2	1
6. Requirement by department	5	4	3	2	1
7. Support and encouragement from dean or chair	5	4	3	2	1
8. Working conditions (e.g., hours, location)	5	4	3	2	1
9. Increase in salary	5	4	3	2	1
10. Opportunity to influence social change	5	4	3	2	1
11. Job security	5	4	3	2	1
12. Monetary support for participation (e.g., stipend, overload)	5	4	3	2	1
13. Expectation by university that faculty participate	5	4	3	2	1
14. Opportunity to develop new ideas	5	4	3	2	1
15. Visibility for jobs at other institutions/organizations	5	4	3	2	1
16. Professional prestige and status	5	4	3	2	1
17. Grants for materials/expenses	5	4	3	2	1
18. Support and encouragement from departmental colleagues	5	4	3	2	1
19. Intellectual challenge	5	4	3	2	1
20. Overall job satisfaction	5	4	3	2	1
21. Technical support provided by the institution	5	4	3	2	1
22. Credit toward promotion and tenure	5	4	3	2	1
23. Release time	5	4	3	2	1
24. Distance learning training provided by the institution	5	4	3	2	1
25. Merit pay	5	4	3	2	1
26. Royalties on copyrighted materials	5	4	3	2	1
27. Greater course flexibility for students	5	4	3	2	1
28. Opportunity to diversify program offerings	5	4	3	2	1
29. Recognition and awards	5	4	3	2	1
30. Ability to reach new audiences that cannot attend classes on campus	5	4	3	2	1
31. Opportunity to improve my teaching	5	4	3	2	1
32. Support and encouragement from institution administrators	5	4	3	2	1
33. Enhanced quality of courses	5	4	3	2	1
34. Increased quality of students	5	4	3	2	1

Please list any additional factors that would motivate your faculty to participate in distance learning.

1._____

2._____

3._____

PLEASE CONTINUE ON PAGE 4

III. FACULTY ASSESSMENT **PART 2**

Please rate 1-5 the extent to which you agree the factors listed below **would inhibit** the faculty in your College/School/ Department to participate in distance learning (1 – strongly disagree to 5 – strongly agree). **Please circle your response.**

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. Concern about faculty workload	5	4	3	2	1
2. Negative comments made by colleagues about distance learning teaching experiences	5	4	3	2	1
3. Lack of distance learning training provided by the institution	5	4	3	2	1
4. Lack of support and encouragement from departmental colleagues	5	4	3	2	1
5. Lack of release time	5	4	3	2	1
6. Lack of professional prestige	5	4	3	2	1
7. Lack of technological background	5	4	3	2	1
8. Lack of support and encouragement from dean or chair	5	4	3	2	1
9. Lack of grants for materials/expenses	5	4	3	2	1
10. Concern about quality of courses	5	4	3	2	1
11. Lack of technical support provided by the institution	5	4	3	2	1
12. Lack of merit pay	5	4	3	2	1
13. Lack of support and encouragement from institution's administrators	5	4	3	2	1
14. Lack of royalties on copyrighted materials	5	4	3	2	1
15. Lack of monetary support for participation (e.g., stipend, overload)	5	4	3	2	1
16. Concern about quality of students	5	4	3	2	1
17. Lack of recognition and awards	5	4	3	2	1
18. Lack of salary increase	5	4	3	2	1
19. Lack of credit toward tenure and promotion	5	4	3	2	1

Please list any additional factors that you believe would inhibit your faculty from participating in distance learning.

1._____

2._____

3._____

PLEASE CONTINUE ON PAGE 5

V. DEANS' AND CHAIRPERSONS' RESPONSE

Please answer the following questions.

1. What is your attitude toward distance learning instruction in postsecondary education?
   Positive ( ) Negative ( ) Neutral ( )

2. Do you know what the stated policy of the University of North Texas is on its involvement in distance learning?
   Yes ( ) No ( ) Not sure ( )

3. What do you think the University of North Texas' policy on distance learning should be? _____
   _____
   _____

4. Have you or do you plan on participating in seminars and workshops on distance learning provided by the University of North Texas? Yes ( ) No ( ) What opportunities for faculty development in distance learning, if any, should the University of North Texas offer?
   _____
   _____

5. If there were definite career advantages for becoming involved in distance learning, do you believe it would make any difference to you? Yes ( ) No ( )

6. Do you think faculty academic standing should be advantaged by extensive involvement in distance learning? Yes ( ) No ( ) If yes,
   how?_____
   _____

7. Are there currently any career advantages for faculty involved in distance learning at the University of North Texas? Yes ( ) No ( ) Not sure ( ) If yes, describe the advantages? _____
   _____
   _____

8. Should the University of North Texas reward faculty differently for involvement with distance learning than for traditional teaching and research? Yes ( ) No ( ) If yes, how?_____
   _____

9. What do you believe the University of North Texas could do to get faculty to participate in distance learning in the
   future?
   _____
   _____

10. Do you believe there is pressure to involve faculty in distance learning? Yes ( ) No ( )
    If yes, where do you believe this pressure comes from? _____
    _____

11. Is there anything else you would like to say about distance learning?_____
    _____
    _____

Thank you!

5

APPENDIX D

SAMPLE COVER LETTERS INCLUDED WITH INITIAL SURVEYS

October 2001

Dear UNT Faculty Member,

I am a doctoral student at the Department of Technology and Cognition at the University of North Texas. I am conducting a survey of all full time UNT faculty, chairpersons and deans to determine the perceived barriers to faculty participation in distance education.

I invite you to assist me with this research project by completing the enclosed survey.

Approximately **15 minutes** is required to complete the survey.

Please Remember:

- Your participation in this study is voluntary.
- All of your information will remain confidential.
- Please do not sign your name on the instrument.

Through the use of your input, a comparison will be made of the faculty's perception of barriers and that of administrators (which, for the purpose of this study, consists of deans and chairpersons). Results are expected to be used for feasibility studies and planning intervention strategies relating to distance education.

Instructions for completing the instrument (RETURN BY **October 19, 2001**):

1) Complete the questionnaire—Approximately 15 minutes
(Please answer ALL of the questions to the best of <u>your</u> knowledge.)

2) Place the questionnaire in the self-addressed, stamped envelope provided

3) Seal the envelope

4) Place the envelope in any U.S. mailbox

Please address any questions to me at (805) 736-9525 or email JGH.JLM@GTE.NET.

THANK YOU FOR YOUR TIME AND PARTICIPATION

Sincerely,

JANET G. HEBERT
P.O. Box 5232
Lompoc CA 93437-0232

This project has been reviewed and approved by the University of North Texas Committee for the Protection of Human Subjects (940) 565-3940

October 2001

Dear UNT Dean,

I am a doctoral student at the Department of Technology and Cognition at the University of North Texas. I am conducting a survey of all full time UNT faculty, chairpersons and deans to determine the perceived barriers to faculty participation in distance education.

I invite you to assist me with this research project by completing the enclosed survey.

Approximately **15 minutes** is required to complete the survey.

Please Remember:

- Your participation in this study is voluntary.
- All of your information will remain confidential.
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Through the use of your input, a comparison will be made of the faculty's perception of barriers and that of administrators (which, for the purpose of this study, consists of deans and chairpersons). Results are expected to be used for feasibility studies and planning intervention strategies relating to distance education.

Instructions for completing the instrument (RETURN BY **October 19, 2001**):

1) Complete the questionnaire—Approximately 15 minutes
(Please answer ALL of the questions to the best of <u>your</u> knowledge.)

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Please address any questions to me at (805) 736-9525 or email JGH.JLM@GTE.NET.

THANK YOU FOR YOUR TIME AND PARTICIPATION

Sincerely,

JANET G. HEBERT
P.O. Box 5232
Lompoc CA 93437-0232

This project has been reviewed and approved by the University of North Texas Committee for the Protection of Human Subjects (940) 565-3940

October 2001

Dear UNT Chairperson,

I am a doctoral student at the Department of Technology and Cognition at the University of North Texas. I am conducting a survey of all full time UNT faculty, chairpersons and deans to determine the perceived barriers to faculty participation in distance education.

I invite you to assist me with this research project by completing the enclosed survey.

Approximately **15 minutes** is required to complete the survey.

Please Remember:

- Your participation in this study is voluntary.
- All of your information will remain confidential.
- Please do not sign your name on the instrument.

Through the use of your input, a comparison will be made of the faculty's perception of barriers and that of administrators (which, for the purpose of this study, consists of deans and chairpersons). Results are expected to be used for feasibility studies and planning intervention strategies relating to distance education.

Instructions for completing the instrument (RETURN BY **October 19, 2001**):

1) Complete the questionnaire—Approximately 15 minutes
(Please answer ALL of the questions to the best of <u>your</u> knowledge.)

2) Place the questionnaire in the self-addressed, stamped envelope provided

3) Seal the envelope

4) Place the envelope in any U.S. mailbox

Please address any questions to me at (805) 736-9525 or email JGH.JLM@GTE.NET.

THANK YOU FOR YOUR TIME AND PARTICIPATION

Sincerely,

JANET G. HEBERT
P.O. Box 5232
Lompoc CA 93437-0232

This project has been reviewed and approved by the University of North Texas Committee for the Protection of Human Subjects (940) 565-3940

APPENDIX E

SAMPLE 1ST FOLLOW-UP LETTERS

November 3, 2001

Dear UNT Faculty,

If you have already completed the distance learning survey I sent in October, I appreciate your support. If you have not yet had a chance to complete the survey, I hope you will be able to do so soon. Your participation is valuable to my graduate studies, and will potentially influence the future design of faculty policies regarding distance learning.

Survey completion is approximately **15 minutes**. Your survey response will be confidential. Please return the survey in the self-addressed, stamped envelope that was provided with the survey. If you have any questions about the survey or need a new copy of the survey, please contact me at (805) 736-9525 or e-mail JGH.JLM@GTE.NET.

Thank you for your time and support.

Sincerely,

JANET G. HEBERT

November 3, 2001

Dear UNT Dean,

If you have already completed the distance learning survey I sent in October, I appreciate your support. If you have not yet had a chance to complete the survey, I hope you will be able to do so soon. Your participation is valuable to my graduate studies, and will potentially influence the future design of faculty policies regarding distance learning.

Survey completion is approximately **15 minutes**. Your survey response will be confidential. Please return the survey in the self-addressed, stamped envelope that was provided with the survey. If you have any questions about the survey or need a new copy of the survey, please contact me at (805) 736-9525 or e-mail JGH.JLM@GTE.NET.

Thank you for your time and support.

Sincerely,

JANET G. HEBERT

November 3, 2001

Dear UNT Chairperson,

If you have already completed the distance learning survey I sent in October, I appreciate your support. If you have not yet had a chance to complete the survey, I hope you will be able to do so soon. Your participation is valuable to my graduate studies, and will potentially influence the future design of faculty policies regarding distance learning.

Survey completion is approximately **15 minutes**. Your survey response will be confidential. Please return the survey in the self-addressed, stamped envelope that was provided with the survey. If you have any questions about the survey or need a new copy of the survey, please contact me at (805) 736-9525 or e-mail JGH.JLM@GTE.NET.

Thank you for your time and support.

Sincerely,

JANET G. HEBERT

APPENDIX F

SAMPLE 2ND FOLLOW-UP LETTERS

December 6, 2001

Dear UNT Faculty,

Enclosed in this packet is a copy of the survey that you received in October 2001, regarding distance learning. I am sending you a second copy of this survey because your response is very important. This survey provides faculty at the University of North Texas with an opportunity to communicate their opinions regarding faculty participation in distance learning and, potentially, have a role in the future design of faculty policies pertaining to distance learning. The intent of this survey **is not to advocate** for distance learning at the University of North Texas. Rather, the intent of this survey is **to better understand** why faculty choose to participate or choose not to participate in distance learning.

Survey completion is approximately **15 minutes**. The surveys are coded for follow-up purposes only. Your response will be confidential. Please return the completed survey in the enclosed self-addressed, stamped envelope by Monday,
January 28, 2002.

If you have any questions, please contact me at (805) 736-9525, or e-mail JGH.JLM@GTE.NET.

Thank you for your time and support!

Sincerely,

JANET G. HEBERT

December 6, 2001

Dear UNT Dean,

Enclosed in this packet is a copy of the survey that you received in October 2001, regarding distance learning. I am sending you a second copy of this survey because your response is very important. This survey provides the deans at the University of North Texas with an opportunity to communicate their opinions regarding faculty participation in distance learning and, potentially, have a role in the future design of faculty policies pertaining to distance learning. The intent of this survey **is not to advocate** for distance learning at the University of North Texas. Rather, the intent of this survey is **to better understand** why faculty choose to participate or choose not to participate in distance learning.

Survey completion is approximately **15 minutes**. The surveys are coded for follow-up purposes only. Your response will be confidential. Please return the completed survey in the enclosed self-addressed, stamped envelope by Monday,
January 28, 2002.

If you have any questions, please contact me at (805) 736-9525, or e-mail JGH.JLM@GTE.NET.

Thank you for your time and support!

Sincerely,

JANET G. HEBERT

December 6, 2001

Dear UNT Chairperson,

Enclosed in this packet is a copy of the survey that you received in October 2001, regarding distance learning. I am sending you a second copy of this survey because your response is very important. This survey provides chairpersons at the University of North Texas with an opportunity to communicate their opinions regarding faculty participation in distance learning and, potentially, have a role in the future design of faculty policies pertaining to distance learning. The intent of this survey **is not to advocate** for distance learning at the University of North Texas. Rather, the intent of this survey is **to better understand** why faculty choose to participate or choose not to participate in distance learning.

Survey completion is approximately **15 minutes**. The surveys are coded for follow-up purposes only. Your response will be confidential. Please return the completed survey in the enclosed self-addressed, stamped envelope by Monday,
January 28, 2002.

If you have any questions, please contact me at (805) 736-9525, or e-mail JGH.JLM@GTE.NET.

Thank you for your time and support!

Sincerely,

JANET G. HEBERT

APPENDIX G

TABLE 16

Table 16

Comparison of Complete List of Motivators as Ranked by Faculty and Administrators

Item	Ranked by faculty	Ranked by Administrators	Faculty mean	Administrator mean
30	1	22	3.74	3.36
1	2	10	3.60	3.67
14	3	25	3.57	3.24
19	4	19	3.48	3.44
27	5	15	3.48	3.47
28	6	26	3.39	3.22
20	7	23	3.20	3.31
31	8	24	3.05	3.28
13	9	31	3.02	3.05
21	10	5	2.99	3.89
2	11	9	2.97	3.76
3	12	20	2.96	3.41
7	13	14	2.87	3.54
33	14	18	2.76	3.44
18	15	17	2.68	3.44
32	16	21	2.67	3.39
24	17	13	2.63	3.56
8	18	11	2.53	3.67
5	19	32	2.49	3.00
17	20	12	2.48	3.58
34	21	16	2.46	3.44
16	22	33	2.44	3.00
10	23	34	2.40	2.86
6	24	29	2.38	3.08
15	25	30	2.15	3.08
12	26	2	2.02	4.08
22	27	4	1,99	3.97
11	28	27	1,96	3.16
26	29	7	1.95	3.83
29	30	28	1.90	3.14
25	31	6	1.87	3.86
23	32	3	1.84	4.06
4	33	8	1.67	3.78
9	34	1	1.66	4.08

APPENDIX H

TABLE 17

Table 17

Comparison of Complete List of Barriers as Ranked by Faculty and Administrators

Item	Ranked by faculty	Ranked by Administrators	Faculty mean	Administrator mean
10	1	6	4.20	3.92
1	2	1	3.83	4.38
5	3	2	3.81	4.27
15	4	4	3.56	4.00
16	5	10	3.56	3.67
9	6	9	3.32	3.68
12	7	7	3.32	3.86
3	8	14	3.23	3.41
7	9	8	3.17	3.80
18	10	5	3.17	3.97
11	11	11	3,09	3.62
19	12	3	3.09	4.05
14	13	15	3.03	3.40
4	14	12	3.01	3.46
6	15	13	3.00	3.43
2	16	16	2.86	3.35
8	17	17	2.85	3.35
17	18	19	2.83	3.11
13	19	18	2.80	3.22

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