DISSERTATION

PRE-SERVICE TEACHERS' PERCEPTIONS OF THE EFFECTIVENESS OF EDUCATION COURSES AND PROGRAMS DELIVERED AT A DISTANCE

Submitted by

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WE HEREBY RECOMMEND THAT THE DISSERTATION PREPARED UNDER OUR SUPERVISION BY *ALLAN EVEROL YOUNG ENTITLED PRE-SERVICE TEACHERS' PERCEPTIONS OF THE EFFECTIVENESS OF EDUCATION COURSES AND PROGRAMS DELIVERED AT A DISTANCE* BE ACCEPTED AS FULFILLING IN PART REQUIREMENTS FOR THE DEGREE OF *DOCTOR OF PHILOSOPHY.*

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ABSTRACT OF DISSERTATION

PRE-SERVICE TEACHERS' PERCEPTIONS OF THE EFFECTIVENESS OF COURSES AND PROGRAMS DELIVERED AT A DISTANCE

The purpose of this study was to examine the perceptions of pre-service teachers regarding the effectiveness of courses and programs delivered at a distance. This study utilized a purposive sampling method, and only selected universities that volunteered were surveyed. A quantitative design was used for the study with the inclusion of two open-ended questions geared at validating the findings.

A total of 92 pre-service teachers responded to mailed and electronic surveys. Of the surveys returned, 77% of the respondents were female and 23% were male. The independent variables for the study were gender, age, number of courses taken, and progression in course of study. The dependent variables were effectiveness of course structure, adequacy of student/teacher interaction, overall enjoyment and satisfaction, and adequacy of peer-to-peer interactions.

Results of the study showed that students were generally satisfied with the adequacy of student/teacher interaction. However, the results indicated some concern about the adequacy of peer-to-peer interaction. Female students were found to have somewhat higher means scores than males on all 18 items and on the means of the four clusters; significance was detected for specific statements dealing with comfort in contacting the instructor and the presentation and organization of distance courses. Age and the number of courses taken at a distance did not seem to be factors in determining satisfaction among teacher candidates.

The study also revealed that pre-service teachers at the beginning stage of their program were significantly more satisfied overall with distance courses and programs than those at the end of their program. Students near the beginning and middle of their program rated grading and timely return of assignments, a sense of accomplishment, and willingness to take additional distance courses significantly higher than those who were at the end of their program. However, the opportunity to know others in the distance class, although rated low, was higher for students at the end of their program. Open-ended questions revealed that pre-service teachers considered success characteristics as either internal factors such as self-motivation, self-starter, technological savvy, time management, management of stress and independent learning, or external factors such as grades, resources, costs, expectations, schedule fit, and interaction with others.

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Finally, it was my plan in the journey of life to have completed this phase several years ago. It has just been completed and although there is a standard deviation of 3 from the plan, nevertheless, it was completed. Now the other phases of the journey can begin.

Every day is an opportunity to be the very best

that you can be.

opportunities are entranceways

into greatness.

to not seize each opportunity

is to remain poor for the rest of your

life.

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CHAPTER ONE

INTRODUCTION

The education process is in a state of rapid change. This change is paralleled by developments in technology. The development of technology is advantageous in that it aids in making education at a distance more accessible to those who would otherwise not be able to take regular classes because of work demands, family pressures, and physical distance. Given these developments, distance education seems to be the obvious educational choice for non-traditional students, that is, "those over twenty-five, part-time, working, residing off campus" (Eastmond, 1998, p. 33). Eastmond stated that these individuals are responding to the changing society and work environment needs and are doing this for one of the following reasons: "career development, job security, upward mobility, re-careering, or other professional and personal reasons" (p. 33).

Universities are looking at ways to increase their enrollment and provide quality instruction to individuals who fit the mold of being distance students, that is, people who are older and constrained by time and space. Distance education makes education available to those individuals who are best suited for this purpose. Several universities have used distance education as a major delivery method for their curriculum offerings. In some situations, universities have become exclusive providers of distance education in a variety of subject areas (Blumenstyk, 1998).

The National Center for Education Statistics (NCES) (2002) reported that about 6% of all instructional faculty have taught at least one distance education class. The

report further stated that there is a trend in recruiting instructors (i.e., part-timers and temporary instructors) to teach these courses. What is not clear is what percentage of these teachers are in the Schools, Colleges and Departments of Education (SCDE's), since this might have an effect on the students in these teacher training departments.

Distance learning as a teaching pedagogy has been around for some time. This methodology has been used to ease the shortage of student teachers in developing countries such as Kenya, Zambia, and the West Indies (Chivore, 1992; Jennings, 1990; Kinyanjui, 1992; Lalor, 1983; Lalor & Marrett, 1986). These developing countries utilized relatively unsophisticated means to accomplish the goal of education. Correspondence courses, television, and satellite delivery marked this era in distance education. Teachers who lived in remote areas or islands were taught using correspondence courses, television, and satellites.

The development of sophisticated computers and technology in general has changed the essence of distance learning delivery. The programs mentioned in the developing countries were intended to ease the shortage of teachers. These programs have been around for more than 20 years. One of these programs is the University of the West Indies Distance Initiative for Teacher Education (UWIDITE), a unique program delivered in the West Indies to ease the shortage of teachers and make education in general more accessible by using telephone links among several countries in the region (Jennings, 1990).

A second initiative was done in Africa. Kenya and Zimbabwe were the countries involved with this initiative that was partially funded by the World Bank (Chivore, 1992; Kinyanjui, 1992). Research conducted in these countries was based on relatively

unsophisticated technology. These projects resulted in eliminating, to some extent, the problem of teacher shortage. Potential teachers did not have to leave their families or their environment to be trained as teachers. The research carried out to evaluate the effectiveness of these programs focused on more historical approaches to distance education and did not offer any easy answers regarding the effectiveness of distance education. The effectiveness of distance education in its present form has not been thoroughly investigated as it relates to teachers in pre-service teacher education programs. Fisher (2000) indicated that although there has been an increase in the access and use of technology, not enough has been done by way of research to fully integrate technology into the curricula for pre-service teachers.

Downs (1998) saw as priority the essence of "informing educators and learners about systematic course instruction in distance education" (p. 133), and strongly recommended that developing the curriculum in teacher licensure programs will aid in the accomplishment of such goals. Despite the preponderance of research in distance education, little research has been done in this area. Research thus far has tested the effectiveness of distance using video conferencing equipment and comparing it with the traditional method (Thomerson, 1995). A recent meta-analysis of distance education research carried out between the 1991 and 1999 indicated that the research covered areas of interest in distance education other than the proposed area of perception of teacher candidates (Allen, Bourhis, Burrell, & Mabry, 2002). Further, the study looked at levels of satisfaction of all research done utilizing various media in the distance learning environment. Of the 21 works listed, only three indicated any reference to the computer as media of satisfaction. It is clear that research has not been conducted to determine the

effectiveness of present day distance technology on the perceptions of pre-service teachers.

Studies have looked at the effectiveness of distance education using various media, the effectiveness of video conferencing, and perceptions of students, administrators, and faculty on distance programs in various departments of universities (Duhaney, 1996; Obermier, 1991; Thomerson, 1995). Not surprisingly, the area of pre-service teacher satisfaction has not been thoroughly investigated. This area provides a basis for the addition of knowledge in this context as well as studying an area that is germane to the educational system. Those who are engaged in disseminating information should be exposed to the tools that they will use to instruct in the next 20 or so years. Clearly, research on the effectiveness of distance learning in its present form is limited although the more traditional forms of distance education have been researched.

Studies in the US and other countries have focused on broad areas such as the characteristics of distance learners, groups of students that might be attracted to distance learning, student satisfaction of perceived learning in online courses, and the type of technology used in the delivery of courses (AFT, 2001; Duhaney, 1996; Fredericksen, Pickett, Shea, Pelz, & Swan, 2002;Giltrow, 1989; NCES,2000; Tsay, 1999).

The use of technology as a means of conveying content to those separated by time and space is of utmost importance in situations where students cannot physically be present and have other issues that prevent them from physically being present on campus. Like those pre-service teachers in developing countries who were trained via correspondence and radio broadcast, the opportunities are available in light of

documented teacher shortages to use the technology to deliver education courses at a distance.

Once pre-service or in-service teachers are exposed to distance courses, they will become familiar with the technology and nuances of distance education and will be more prone to use it as delivery pedagogy in their classrooms. Willis and Raines (2001) concluded that technology is an important aspect of pre-service teacher education and a powerful impetus for change. Willis and Raines also pointed out the dangers of those teachers who do not embrace technology and suggest that they will be unable to reach the present generation of students due to obsolescence.

Boettcher (2001) made seven predictions regarding higher education in the 21st century. Two such predictions were that higher educational institutions will have teaching and learning software that will be linked to back offices and learning tools will become "portable and ubiquitous as paper and books" (Boettcher, 2001, pp.58-60). Already we are seeing the latter being fulfilled. Several universities, for example the University of Phoenix and the University of Maryland, have made portability a reality. These institutions of higher learning have espoused the distance learning pedagogy successfully. Other institutions have resisted the change and are still not utilizing distance to deliver courses. Thus, Katz and Associates (1999) alluded to the fact that an increase in technology will represent a period of significant transformation" (p.1). According to Katz et al., universities that respond in a positive light will be able to thrive. Along the same lines, those in teacher training schools must seek to embrace technology and use it to offer distance courses to students who are not able to do their courses on campus or to those whose learning styles will accommodate the distance learning pedagogy.

Definition of Distance Education

For the purpose of this research, *distance education* will be defined in a broad sense. Distance education, therefore, includes a potpourri of learning methodology whether done via computer or other means. According to Moore and Kearsley (1996), this teaching pedagogy would be more appropriately viewed as a system. Descriptors such as e-learning, asynchronous technology, distributed learning, video-conferencing, synchronous technology, open learning, correspondence courses, and Internet web-based online learning have been used to describe distance education. The definition is all-inclusive and reflects to a large extent the separation of the learner from the facilitator (Edwards, 1995; Evans, 1995; Garrison and Shale, 1987; Keegan, 1996; Lau, 2001). The definition of distance education is all-inclusive and becomes relatively sophisticated as the technology develops.

Experts on distance learning have pointed out that distance education comes in a variety of forms and depends on those who are using it; their philosophical orientation will to a large extent determine the delivery methodology used (Young, 2000). The research and papers so far, in the context of pre- or in-service teacher education, focus on how these teacher candidates will use distance education to deliver their classes on graduation. Therefore, the focus is on using distance after college graduation rather than using distance in their own programs to complete their teaching degrees (Crowson, 1999; Sherry, 1996).

Distance learning in its present form, the use of computers and other technology to bridge the gap between learner and teacher, has been found to be just as effective as traditional delivery methodology (AFT, 2001; Merisotis, 1999). Exposing pre-service

teachers to distance education in their coursework will likely influence their decision to use this delivery style in their own classrooms.

Research is abundant in the area of teacher education and distance education as separate entities; however, research is limited on pre-service teacher education students' perceptions of distance education (Hallinan & Khmelkov, 2001; Jegede, Taplin & Chan, 2000; Yelland, Grieshaber & Stokes, 2000; Yildirim, 2000). Therefore, the primary purpose of this research is to uncover the perceptions of teacher candidates exposed to distance education courses in teacher education departments of selected teacher education institutions.

Purpose of the Study

The primary purpose of this study was to examine the perceptions of teacher candidates regarding the effectiveness of courses offered at a distance in the teacher education departments of specific Preparing Teachers for Tomorrow's Technology (PT3), National Business Education Association (NBEA), and Carnegie ranked schools. The sample is limited to these institutions because the researcher believes that these institutions would provide relevant results that can be generalizable to other teacher training institutions. PT3 institutions are those institutions that have received federal funding from the government to infuse technology in the teacher training departments of major universities. From these findings it is hoped that distance programs in teacher training departments will be improved and generalizations will be made to plan future distance programs in education.

Research Questions

The following research questions were used to guide this study:

1. What are the perceptions of teacher education candidates of selected teacher training institutions toward adequacy of student/teacher interaction, overall course satisfaction and enjoyment, effectiveness of course structure, and adequacy of peer-to-peer interaction?

2. How do perceptions differ between male and female teacher candidates/students of selected teacher training institutions towards effective course structure, adequacy of student/teacher interaction, overall enjoyment and satisfaction, and adequacy of peer-to-peer interaction?

3. How do perceptions differ between older and younger students (i.e., those 25 and over and those under 25 years) enrolled in distance courses at selected teacher training institutions toward effective course structure, adequacy of student/teacher interaction, overall enjoyment and satisfaction, and adequacy of peer-to-peer interaction?

4. How do perceptions differ among teacher candidates, based on the number of courses taken at a distance, with regard to overall satisfaction with distance courses?

5. What are the criteria for success that teacher candidates feel have helped them to be successful as distance learners?

Supplemental Question

1. How do perceptions of teacher candidates differ based on their progression in their course of study with regard to effectiveness of course structure, adequacy of student/teacher interaction, overall enjoyment and satisfaction, and adequacy of peer-to-peer interaction?

Significance of the Study

The exponential growth of distance learning programs provides alternative delivery methods in teacher education programs. This growth in distance education has lead to virtual universities. Much has been written on distance education, some research-based and other based on conjecture. Despite the research on specific areas such as student characteristics in distance learning programs, perceptions on student services, and comparison between distance and traditional delivery, not much time has been devoted to determining the perceptions of teacher education students on distance education. Teacher candidates' perception is germane to teacher education programs. First, teacher candidates' perceptions are important because the perspective comes from the students who have taken the courses. Second, constructive criticism aids in developing the teacher education program for subsequent students. Knowledge about the students' perceptions of teacher education programs can be used to improve the delivery of teacher education programs.

The study will add to previous research on distance education in the pre- and in-service teacher education field. Specifically, the findings will extend the knowledge in this area of teacher education and distance. As a result of the information provided by this study, students and instructors in institutions that have teacher licensure programs will be able to change the curriculum to embrace distance education as a legitimate delivery method. It is hoped that teacher education programs and processes will improve as a result of the findings of this study.

Teacher education programs will benefit from this research since the research will look at success factors of those teacher candidates as well as recommendations for

improving distance education courses and programs engaged in distance courses. The perception of these teacher candidates will provide valuable insight into areas that will help these programs to be changed and incorporate the wishes of those who have been consumers of distance education in their departments.

The results of the study will be analyzed to provide a basis for designing distance courses in teacher licensure programs. The findings will be beneficial to those programs that have undergone re-engineering to accept individuals who already have a degree and have changed their profession to teaching. Findings in this research will provide a basis for evaluation of distance education in a limited sense; future delivery is hoped to be impacted in a positive sense in that the programs will be improved to meet the needs of the distance education clientele in teacher licensure programs.

Definition of Terms

For the purposes of this study, the following terms will be defined in order to present a consistent and standardized approach for interpretation of terms used in this study:

Distance learning, distance education, e-learning, self-directed learning, online learning, collaborative learning, digital learning and *mobile learning:* These are synonymous terms that reflect the teaching/learning paradigm that use relatively unsophisticated to sophisticated technology to disseminate knowledge. The key elements are the "separation of the learner and the teacher by time and space" (Moore & Kearsley, 1996, p. 1) and "spatially separated" (Eastmond, 1995, p. 9).

Distance Student: Individual involved in taking courses via the Internet, video conferencing equipment, and other media forms that highlight the separation of the teacher and students.

Face-to-face Instructions: Known as FTF; traditional instruction methodology in which teachers and students are present in a classroom setting.

In-Service Teachers: Those who have undergone training already but are completing additional courses or add-on certification. These teachers are still working in teaching positions while undergoing additional coursework in their selected area of expertise.

NABTE: National Association of Business Teacher Educators.

Pre-Service Teachers: Individuals preparing for certification in licensure programs that will become teachers after a given program of study.

PT3 (stands for Preparing Tomorrow's Teachers for Technology): These are institutions of higher learning that were awarded federal U.S. Department of Education grants to raise the standard of technology used in teacher preparation programs.

Teacher candidates: Pre-service individuals being trained to become teachers.

Teacher Licensure Programs (TLP): Programs that engage in the preparation of new teachers.

Assumptions of this Study

A study of this nature calls for certain assumptions. Therefore, the researcher made the following assumptions in investigating the problems of teacher perception of distance education.

1. Responses of pre-service teachers are deemed to be true and reflective of their experiences.

2. The instrument used to measure the pre-service students perceptions accurately measures what it purports to measure.

3. The researcher has used an objective approach for analysis in order to eliminate the effects of the researcher's biases.

Delimitations

The researcher limited the population of the study to teacher candidate students in PT3 schools offering distance education courses in teacher education programs. This population was further reduced by the fact that not all teacher education schools could have been sampled. Not all PT3 teacher licensure programs have a distance education program; some receive these grants and concentrate on the infusion of technology rather than on distance as a delivery methodology.

Limitation

The researcher was unable to control the fact that not all pre-service students were actual participants in distance courses in the teacher licensure programs. Consequently, the generalizability of the findings may be compromised somewhat. Gliner and Morgan (2000) regarded lack of generalizability as a potential threat to the external validity of a study.

There seems to be a gap in the research on pre-service teachers' perceptions on distance courses. Thomerson (1995) made a comparison of teacher education students at a given state university in regards to the students' perceptions of the affective experiences encountered in distance learning courses. The research compared the perceptions of remote site distance students and host-site distance learning students to traditional students. Thomerson's research focused on only one school and one distance

education medium. This research and others did not consider distance in general, that is, other forms of distance like web-based distance and more Internet-based platforms. There is little research on pre-service teachers' perceptions on distance courses that are web-based or Internet based. It is on this basis that research will be conducted to find out how these individuals feel about distance education delivery. The discovery of new knowledge will lead to an understanding of the advantages of distance in education and how effective it may be. It is hoped that the findings will lead to curriculum revisions and more effective distance courses in teacher licensure programs.

CHAPTER 2

REVIEW OF LITERATURE

This chapter presents a review of literature in the field of distance education and teacher licensure programs. This chapter will develop the overall framework for the study and will cover the following areas: history of distance education; trends, effectiveness and research in distance education; future directions; and teacher licensure programs.

The purpose of this study was to learn about the effectiveness of distance courses delivered at a distance in teacher licensure programs. The review of literature was a pivotal aspect of findings regarding distance education and how teacher licensure students perceive it. The literature review involved a thorough investigation of relevant dissertations, research articles, books, journals, and periodicals in the area of distance education.

Distance Education

Definition

The development of distance education and the confusion that it presents to those with little understanding suggests that the literature review would be incomplete without defining distance education, examining at trends, and discussing the consumers of distance education. Distance education has undergone a metamorphosis over the last 20 years. Several words have been used interchangeably to refer to this phenomenon. The sophistication of definition reflects the development in technology over the last ten years.

Distance learning, distance education, e-learning, self directed learning, online learning, collaborative learning, digital learning, and *mobile learning* are just a few of the terms used to define the same concept. The terms *distance learning* and *distance education* have been synonymous (Mantlya & Woods, 2001; Moore & Kearsley, 1996; Rosenberg, 2001; Sherry, 1996). The learning environment has become much more sophisticated than it was in the 1960's and 1970's (Gibson, 1998). As technology developed, the definition of distance education became more sophisticated and in a sense reflected the technological development. This technological development today reflects the practices of distance education. Spooner, Spooner, Algozzine, and Jordan (1988) indicated that "university-level distance learning revolves around two basic approaches: asynchronous and synchronous communication" (p. 123). Clearly, these two current practices broaden the scope of distance learning. Asynchronous technologies include but are not limited to the following: e-mail, Asynchronous Learning Network (ALN), and USENET. Synchronous technologies include the following: two-way audio/video in real time, two way audio/one-way video in real time, internet phone, and IRC chat.

In the early days, distance learning was limited to correspondence courses and home study courses (Keegan, 1996). The definition was not as comprehensive, and later other individuals developed a framework for defining distance education. Dan Coldeway of Canada's Athabasca University provided a framework for distance education in its purest form as occurring "at different times and at different places" (Hanson, Maushak, Schlosser, Anderson, Sorenson, & Simonson, 1997, p. 25). Schwitzer, Ancis, and Brown (2001) shared this sentiment of distance education being at different times but substituted

the word *geography* for *places*. Nevertheless, the theme of student and teacher being separated by time and space is a potent part of the definition.

Keegan (1996), an authority on distance learning, posited six basic elements that could be used to define distance learning: (a) the separation of teacher and learner; (b) the influence of an educational organization; (c) the use of technical media, usually print, to unite teacher and learner and carry the educational content; (d) the provision of two-way communication so that the student may benefit from or even initiate dialogue; (e) the possibility of occasional meetings for both didactic and socialization purposes; and (f) the participation in an industrialized form of education which, if accepted, contains the genus of radical separation of distance education from other forms within the educational spectrum (p. 44).

Keegan's (1996) six basic elements have some characteristics similar to Coldeway's framework (Hanson et.al., 1997). The similarity of definition of distance learning rests in the separation of the learner from the presenter by time and space.

In an effort to define distance education, Garrison and Shale (1987) developed their own definition which they considered to be much broader than that presented by Keegan (1996). They offered three criteria by which distance education might be viewed: (a) a majority of educational communication between (among) teacher and student that occurs non-contiguously, (b) two-way communication between teacher and student for the purpose of facilitating and supporting the educational process, and (c) the use of technology to mediate the necessary two way communication.

The development of sophisticated technology and increased globalization changed the way contemporary thinkers define distance education (Evans, 1995). The definition of

distance education reflects the improvement in satellite television. This technological advancement has revolutionized the way we see distance education; according to Edwards (1995), a more appropriate term would be *open learning*. Edwards' view of open learning is different from the traditional distance education definition in that Edwards shifted the focus from mass produced markets and courseware to more individual needs and requirements.

Peyton introduced another contemporary view on distance education known as *distributed learning* (Lau, 2001). Distributed learning is the vehicle by which education is delivered via technology to students who do not actually interface directly with classmates or instructors. Distributed education seems to be the wave of the future; nevertheless, it is just one aspect of the broad expansive nature of distance learning.

Having looked at all these definitions, the question that looms is whether there is variance among contributors in defining distance education. When the above discourse is scrutinized, it seems that most definitions of distance education have a main theme running through them. The separation of the learner from the person doing the teaching has been espoused by the following researchers: Edwards (1995), Evans (1995), Garrison and Shale (1987), Keegan (1996), and Moore and Kearsley (1996). As technology has developed, the definition has changed, and the characteristics have become more related to the technological platform. The goal of having the learner achieve success without physically being in the same room was an essential element of distance learning.

The definitions presented had that element, that is, the separation of the learner from the teacher. Students are in different locations or situations while the facilitator communicates or instructs via the computer or other media. In effect, the teacher and

student are separated by distance. Learning takes place and the instruction takes place, but the two occur at different times. There is no need for the individuals to be physically in one location at the same time.

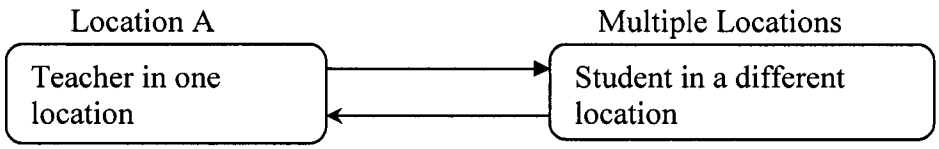

Figure 1. Student and teacher separated by time and space.

The collaborative and distributed learning concepts of distance learning articulate the technological sophistication but essentially represent the definition of what distance learning is when considering the use of more sophisticated technology. The definition of distance education seems to focus on the separation of the participants and facilitator. While this concept of distance education is readily acceptable in academia, other groups have a slightly different conception aimed at describing the same phenomenon. Garrison and Shale (1987) and Keegan (1996) asserted a definition that espouses a noncontiguous communication between the learner and the instructor that usually is mediated by the presence of print or some form of technology.

In summary, the definition of *distance education* appears to revolve around the separation of student and teacher, whether by time or space (Garrison & Shale, 1987; Keegan, 1996; Moore and Kearsley, 1996). Garrison and Shale (1987) and Keegan (1996) asserted a definition that espouses a noncontiguous communication between the learner and the instructor, usually mediated by the presence of print or some form of technology.

The evolution of this definition moves on a continuum from a narrow conception to a more contemporary all-embracing one that revolves around the separation of the participants and instructors by geographic location no matter what the medium used. This all-embracing definition is consistent with the definition espoused by Moore and Kearsley (1996), and concurs with the concept of separation of time and space; however, distance education is more of a system and involves special techniques, methods of communication, and organizational and administrative arrangements.

History of Distance Education

History is a way to track development, given some starting point. Distance education as teaching pedagogy has evolved over time. The evolution is paralleled by significant developments in technology. The era over which distance education has evolved may be divided into time periods of importance and in a sense has certain defining moments. Some have divided the evolution of distance education into three distinct periods (Moore & Kearsley, 1996); others have created more lengthy time periods (Paulson, 2002). Although scholars do not agree on the number of time periods into which distance education should be divided, they do agree on the elements of distance education and the type of technology that drives distance education within these time periods.

For the purposes of this literature review, distance education history may be classified into three main periods. The first time period is marked by correspondence courses. The second time period is identified by the development of radio and other relatively unsophisticated devices. The third time period can be seen as having two distinct phases related to a great extent to the development of the computers and

telecommunications. The third time period is characterized by high-speed computers and real-time communication. Although these three time periods are different with respect to how distance education was actually executed, they maintain the essence of what has been defined as distance education: the separation of the learner from the teacher (Keegan, 1996).

Prior to 1970

The early period of distance education was marked by correspondence courses. This era began around the late 1800's and was characterized by relatively unsophisticated technology. This phase in the distance learning historical calendar ranged from the 1800's to the late 1960's. Moore and Kearsley (1996) summarized this early form of distance education and referred to it as *first generation distance education*. This form of distance education used the postal system to the fullest extent. There was little or no interactivity between the student and the teacher. Learning and teaching were based on one-way communication, where the teacher communicated to the students by way of the lessons sent to the student. The student wrote notes and, depending on the situation, waited some time before there was a response.

Correspondence courses as an early form of distance education were for the most part a good way of receiving an education in the USA. Other countries had their own forms as well. In England, the Pitman Shorthand Institute offered correspondence courses. Similar forms of correspondence courses existed in other European countries. The premise surrounding this form of distance learning was the use of the postal service as a vehicle to transmit the content of the course.

1970's to 1980's

This period in distance history runs from the early 1970's to the 1980's and was marked by the technological developments of radio and television. This period broadened the delivery mechanism from the use of just the print media to the broadcast media and teleconferencing equipment (Moore & Kearsley, 1996). The advent of radio and television changed the way that distance education was delivered. Several developing countries used the radio and television as a means of disseminating information. In fact, the use of radio as an educational tool was deemed to be successful in developing countries (Chivore, 1992; Kinyanjui, 1992). The television as a medium for distance education was developed in the early 1930's. Several successful partnerships between universities and television stations popularized distance education. Partnerships were established between NBC and Johns Hopkins University (Moore & Kearsely, 1996). This era marked a very important one in the annals of distance learning. The development of cable television (CATV) led to more courses being offered at a distance using that platform.

This era in the history of distance education was also characterized by the development of audio conferencing equipment. This development marked a period of simultaneous teaching and learning. The interactivity was much better than in previous forms of distance education. The audio-conferencing form of distance education lead to two-way video conferencing, a development that in turn led to more interactivity. Interactivity was maximized by the use of two-way video conferencing equipment; the instructor could interact and reach several groups at one time, whereas communication was limited to the asynchronous format in original distance education modality. The

ready feedback was a marked improvement over other distance learning media in the previous period.

This period marked the beginning of synchronous communication at a distance. The two-way video proved to be an improvement over the one-way video in terms of its simultaneous interactivity. However, it was not without it's own unique problems. Equipment breakdowns as well as the inability to transmit signals from host to remote sites were only some of the problems and challenges that the technology in the era brought with it.

1990 to Present

Distance education during this time-period runs from the late 1980's to present day. This period in distance education has seen more development in technology and the sophistication in the delivery of distance. As the technology developed, the internet became the prime vehicle for the delivery of distance education.

Moore and Kearsley (1996) referred to this era as the *third generation historical period.* This period, according to Moore and Kearsley, is characterized by networks and sophisticated multimedia. In this era of distance education, the objective is based on speed and bandwidth. Distance education in its present form utilizes a combination of computers and high-level telecommunications devices. The use of computer conferencing, audiographic conferencing, and two-way videoconferencing are only a few ways in which distance learning is being utilized in this time period. Johnson (1999) said that the most profound development in this era has been the improvement in synchronous communication. More frequently, the synchronous methodology is being used by most

distance education programs, since it provides simultaneous interaction on the part of the learner and the teacher.

Although distance learning has been around for more than 150 years, distance learning in its present form and its development as a pedagogical approach has increased in popularity over the last five years. As indicated previously, this methodology is primarily appealing to those who have the time to sit in regular university classes. These individuals are older students, mostly female (IHEP, 1999; Thomerson, 1995; Tsay, 1999). Several studies conducted indicated rising enrollment in distance programs; not only is the enrollment increasing, but universities are in place that deliver courses exclusively by distance (American Federation of Teachers [AFT], 2001). There seems to be an increase in the adoption of distance education as a teaching method. Not all teachers are using distance education, but it is encouraging to see the adoption of this teaching pedagogy by mainstream universities and colleges. There are some mainstream universities that believe that this methodology is in keeping with technological development and have even put their resources into distance learning. The University of Maryland, the University of Pennsylvania, and Nova Southeastern University are some schools that are using the technology to drive the delivery of distance education. Although these schools are seen as major players in the distance education market, there are others that have capitalized on this delivery mechanism as well. DeVry University and the University of Phoenix are major players in the private distance market and significant players in the use of distance technologies to deliver courses.

Sherry (1996) concluded that this expansion is primarily attributable to three causes: the increase in technology, the ease of obtaining the technology, and the ease of

using this technology. No longer are teachers engaged in the traditional "chalk and talk"; teachers are using technology to enhance their teaching (Pierson, 2001; Wentz & Wentz, 1995; Yelland, Grieshaber & Stokes, 2000). Nyiri (1997) pointed out that the distinction between the traditional university studies and distance learning are blurring; this phenomenon is termed *convergence.*

Correspondence courses date back to the early 19th century and mark the earliest forms of distance education (Keegan, 1996). Correspondence courses were built on the same philosophical concept as is present day distance education, wherein the learner was separated from the person facilitating the instruction. In other words, learner and teacher are separated by space (Keegan, 1996).

A proliferation of distance learning courses are being offered in higher education (Marchese, 1998). Not only are the courses increasing, but also the number of students enrolled in distance courses has increased (Keegan, 1996). Distance learning as a potent force in education calls for a clarification as to what it is and what may be considered variance in the delivery methodology. Such delivery methodology can have implications for students who are enrolled in these courses.

Summary

Distance education can be divided historically into three main time periods: before the 1970's, the 1970's to the 1980's, and the 1990's to the present (Moore & Kearsley, 1996). The first era was marked by correspondence courses as the major type of distance education. Technology at the time was relatively unsophisticated, and the postal service was the main medium for communication between the learner and the teacher. The second period was marked by the advent of the radio and television, and

distance education was primarily carried out via these two major technological developments. It was at this time that the open university of London and others developed their delivery format (Moore & Kearsley, 1996). The last period is characterized by more sophisticated technological developments and marked the advent of synchronous communications which improved interactivity. This period is marked by continual improvement in all delivery facets.

Trends in Distance Learning

As the focus on distance learning shifts with the development of technology, so do the trends. Schwitzer, Ancis, and Brown (2001) alluded to the fact that several factors contribute to the emergence of online instruction: "broadcast television and tele-classes, interactive electronic classrooms, and the use of new technologies on campus, as alternative methods of delivering American Higher Education" (p. 4). Barbules and Callister (2000) concluded that the overarching conditions of globalization and communication technology are transforming the structure and practice of higher education. Barbules and Callister further stated that technologies and increased globalization affects the direction in which distance learning moves.

Barbules and Callister (2000) stated that there could be as many as seven basic trends relating to online distance education. Presenting one point of view, they summarized the trends as follows:

1. First, "[there] will be an increase in online courses and programs from a variety of sources, some approved by public institutions and accrediting agencies, others not" (p. 281).

2. Second, "in this environment colleges and universities will need to find new ways to articulate the advantages of coming to campus"; in other words, "there must be better arguments for their spending tuition and housing expenses than for proximity to the football stadium and the weekend social scene" (pp. 282-283).
3. Third, other trends "will begin to encourage both higher education-business "alliances" and more coordination and even consolidation across college and university systems" (p. 283).
4. Fourth, "Moving and working within this conflicted educational space will require more strategically savvy attitudes than many academics have previously wanted to adopt" (p. 284).
5. Fifth, "entrepreneurial models that have been more or less accepted as commonplace in college and university research are beginning to be applied to teaching activities as well"(p. 285).
6. Sixth, "the analysis and critique of these new online pedagogies needs to go further than the alternatives of boosterism or rejectionsism, or simple-minded questions like "which way of teaching is better?""(p. 286).
7. Seventh, the trends "entail a reorientation of the kinds of legitimacy the contemporary college or university seeks for itself" (page 288).

AFT (2001) described four basic trends leading to the growth of distance education. The first trend is the development of existing higher educational institutions that have or are developing distance education. Some well known universities involved in this process are the University of Illinois, New York University, Cornell University, and the University of Maryland. This by no means exhausts the list of universities and

colleges that are embarking on distance education. The second trend is corporate/university joint ventures. These institutions provide course management systems such as WebCt, Blackboard, eCollege, and Pipeline, to name a few. There are also organizations that package and distribute courses and content from existing institutions. The tendency is for this trend to increase and create a way to not reinvent the wheel.

The third trend in higher education includes full virtual universities. These institutions exist primarily for disseminating information via distance education. Such universities include, for example, University of Phoenix, Devry University, Capella University, University of Maryland, and Jones International University. The fourth and final trend in higher education is the corporate university or training institution, in which Corporate University and Click2learn are the dominant forces (AFT, 2001).

Ludlow and Brannan (1999) also isolated three main trends in distance education. The emerging trends isolated were (a) collaborative efforts, (b) evolving technologies, and (c) technology combinations. These trends are in line with those discussed previously and reflect the way in which distance education is moving in higher education.

Collaborative efforts, evolving technologies, and technology combinations are not totally unique to the United States distance education market. Guri-Rozenblit (1991) pointed out that these trends were to be found in other countries. Similar trends were evident in the United Kingdom. These trends are known as open learning. Open learning was in line with some of the trends mentioned by Barbules and Callister (2000) and Ludlow and Brannan (1999). Such trends indicate that distance education is more global in its outlook than 10 years ago.

In summary, distance learning in higher education responds to the element of globalization and the issue of openness. There has been a change from the way in which distance learning was viewed initially; this change was a direct response to the technological advancement as well as change in delivery systems of higher education instructors. Nyiri (1997) stated that there was an element of convergence between the traditional delivery methodology and distance education. Sooner, rather than later, there will be no distinction between the two.

The literature proposes that three trends have emerged from distance education. These trends include (a) adoption of distance education by mainline universities as part of their teaching strategies, (b) partnership between universities and companies (Corporate University Joint-Ventures), and (c) development and increase in virtual universities. AFT (2001), Barbules and Callister (2000), and Nyiri (1997) are in agreement about the trends in distance education. What they seem to do is to express their beliefs in a slightly different manner.

Effectiveness of Distance Education

Does distance education work for some types of learners? An assessment of the research presented indicates that distance education should work especially well for a clientele that is female and over 25 years of age (IHEP, 1999; Thomerson, 1995; Tsay, 1999). The profile of distance students tends to be in line with earlier discoveries. In this light, an early study at the Open University of the United Kingdom (OUUK) confirmed that more than 75% of these students were over the age of 30 (Field, 1982).

Bunn (2001) cautioned about the misconception of efficiency and effectiveness of distance education. Having cost-efficient methods does not lead to effectiveness. Serving

and meeting the students' needs in the given population as well as making the education be relevant to the job market would be an essence of effectiveness.

Knowlton (2000) made a subtle argument about how distance education might be effective. Knowlton's suggestions stated that distance education must be student-centered in respect to *things*, *people*, and *processes*. In the student-centered environment, the use of constructivism is key. Knowlton defined *things* as "sources that provide a new perspective on course material and thus better help students master the course content" (p. 6.). In looking at the context in which things are introduced, the suggestion is that both professors and students introduce things and both offer interpretations and implications. In terms of the pedagogical orientation of *people*, the "roles of professor and student are dynamic: The professor and students are a community of learners. Professors serve as coach and mentors while students become active participants in the learning process" (p.6). With regards to the pedagogical orientation of *processes*, "the professor serves as facilitator while students collaborate with each other and the professor to develop personal understanding of content" (p.7). Knowlton argued strongly for this approach and hinted that this could be a factor that determines the effectiveness of distance education or online courses in general. Further, Hacker and Niederhauser (2000) said that for distance to be seen as legitimate, it must provide the opportunity for deep and durable learning that can be done through the constructivist approach.

A number of early distance education studies indicated that the group of people who seem to take distance courses were people who were time-constrained and older than 25 (IHEP, 1999; Thomerson, 1995; Tsay, 1999). These studies found that distance learning worked for this clientele since it fulfilled several of the group's needs. The

findings of these studies are in line with those of the other experts in the field. Johnson (1999) suggested several kinds of students who would find distance more practical than traditional methodology: adults interested in completing school, people with scheduling conflicts, graduates who need to upgrade their certification, and employees who want to upgrade their job related skills. More recently, the research is focusing on a different group of consumers of distance education: school age children, especially those in high school. The change in focus is due to funding by government agencies for distance programs that will benefit high school age students.

The legitimacy of distance education as a learning pedagogy presents certain relevant questions related to effectiveness. Some questions to be answered include the following: Is distance education effective? Are the findings valid? Are there gaps in the research? According to IHEP (1999), three basic areas needed to be addressed: (a) student outcomes from distance learning, (b) student attitudes about learning through distance education, and (c) overall student satisfaction toward distance learning. The research compared student grades and attitudes in a two-way interactive video course. Students at the receiving site attained lower grades than those at the sending site. Other studies have documented a class that used a live broadcast; students were then given take home essays. Students in the distance learning course tended to perform better than students in the traditional class. Homework assignments indicated that distance learning students performed at a higher level in this course. A question is whether there are other intervening variables that were not measured.

Another study compared three groups of teachers participating in an in-service microcomputer applications training course. One group was taught by computer mediated

instruction, another was taught on campus, and another learned by correspondence course. The score on variables such as time on task, student attitudes, and drop-out rates indicated that those who were instructed by correspondence course had the highest achievement test scores. Computer mediated and correspondence student spent more time on tasks, and no significant difference was found in the attitudes of the students (IHEP, 1999). Although more experimental research needs to be done in the area of distance learning and traditional teaching methodology, research findings are consistent and indicate that students in distance learning courses perform as well as their traditional counterparts regardless of the technology used. One particular report was cautious to state that the effectiveness of distance education as indicated relates to courses taken by distance education students rather than to overall academic programs (IHEP, 1999).

There are expressions of skepticism about the effectiveness of distance education. Bowman (1997) suggested that there is a movement to replace traditional teaching strategies with distance education because of the ineffectiveness of the traditional methodology. In essence, the observation made by Bowman is that education personnel are using this methodology to replace the traditional methodology. However, distance instructors are doing so by mimicking the inefficiencies in the traditional classroom.

In summary, the effectiveness of distance learning may be considered a very important aspect of any study on distance education. There are those who oppose this modality and feel that it will never work. In a way the effectiveness of distance focuses on three basic areas: (a) student outcomes, (b) student attitudes, and (c) overall student satisfaction (IHEP, 1999). Knowlton (2000) agreed with the fact that in order to be effective distance learning must be student centered. Although more research is

necessary, it has been found that distance education is as effective as traditional face-to-face (IHEP, 1999).

Research on Distance Education

Although a potent force and possibly the teaching pedagogy of the future, distance education is not without its criticisms. There are barriers and resistance to this form of delivery method. Some have advocated that distance quite possibly will die (Kinnaman, 1999). Such conjecture is based primarily on the frustration students experienced under first generation distance education.

Certain issues need to be considered in terms of the effectiveness of distance education. Bunn (2001) suggested that these issues could be summarized under three main headings: (a) organizational issues, (b) instructional issues, and (c) student-related issues. Bunn's summarization in effect indicates only two major issues, because the organizational issues are student-related and instructional in nature. The in-depth consideration of these two issues will somehow contribute to the effectiveness of distance as a teaching method. Effectiveness of distance as a pedagogy relates to a great extent to instructional or student-related issues. The essence of effectiveness of this kind of instruction to some degree depends a great deal on interactivity (Roberson & Klotz, 2003). Interactivity is as much a student-related as it is a pedagogical technique; hence the concurrence with Bunn's initial observation.

Thomerson and Smith's study (1996) indicated several issues that fall into the following clusters: (a) student/teacher interaction, (b) physical learning environment, (c) overall course enjoyment, and (d) course structure. In comparing Bunn's suggestions (2001) to issues presented by Thomerson and Smith, it appears that the issues that

surround distance education perception fall under the organizational, teacher/student, enjoyment-satisfaction, and course structure categories. For the purposes of this research, Thomerson's classifications are more in line with the study being undertaken.

Student Characteristics

Gibson (1998) presented a profile of distance learners as those who were beyond the traditional age. According to Gibson, these individuals in most cases are returning to education for many reasons, ranging from job promotion to wanting to finish school. Gibson also stated that these students maintain busy lives and their education competes with other factors.

The IHEP (1999) report identified several student characteristics for those distance education learners (consumers). These characteristics include the following: (a) students who rated themselves highly on persistence related to taking on new projects; (b) married students; (c) students who rated the consequences of not passing as serious; (d) students who did not need support from others to complete difficult tasks and did not find it important to discuss course work with other students; (e) students with high literacy levels; (f) students who rated themselves as well organized in terms of time management skills and said they generally had the time to do what they intended to do; and (g) students who rated their formal and informal learning as high in terms of preparing them for universities studies, and (h) female students.

Ross and Powell (1990) concurred with the fact that in terms of gender, women were found to be higher completers of distance education courses. In a study by Dille and Mezack (1991), a profile was given of those individuals that might fit the learner attribute of distance education. The attributes presented in the Dille and Mezack study included

the following: people who are over 25 years old, who are divorced, who have completed fewer than 30 hours of college, who have a higher than average locus of control, who are abstract learners, and people who have a GPA of a little less than 3.0 (Dille & Mezack, 1991). This study did not indicate the gender of those individuals involved as participants. Hill (1997) suggested that older students are more likely to take distance courses. Hill's view supports the study done by Dille and Mezack (1991); however, what was not clear was how old these students were. Hill said that these consumers (older students) were likely to be more satisfied than younger students with the distance courses. Hill suggested that this correlation might be due to distance rather than maturity. Boehler (1999) found that nearly 69% of those engaged in distance/online classes were female and 42% were in the 30 to 49 age bracket. Roughly 64% of those involved in the class were white.

Aljarrah's (2000) study on community college students' perspectives and attitudes toward online courses revealed that 69% of individuals enrolled in online courses were female, 85% were white, and most of the students were over 25 years old. Aljarrah's research concurred with that of Hill (1999), Dille and Mezack (1991), and Ross and Powell (1990).

Tsay (1999) found that the characteristics of distance learners in his research were in concurrence with other studies. Tsay's report was based on a study done in Taiwan. It was found that 78% of the respondents in this study were between the ages of 26 and 45, and 66.6% of the student population was female. Another characteristic presented in Tsay's study indicated that approximately 87% of the subjects studied had more than six years full-time work experience. Although this study was concentrated in

Taiwan, the findings were in line with other studies: Those who participate in distance learning courses were found to be older students, students with full-time jobs and mostly female (Kemp, 2002).

Student Satisfaction with Distance Learning

Student satisfaction with distance learning is important and in some instances linked to success in courses. What makes distance learning more successful and students more satisfied?

Boehler's study (1999) addressed the issue of student satisfaction relating to various aspects of distance. The data indicate that 94% of those who took distance education courses were satisfied. In another study, Bisciglia and Monk-Turner (2002) found that distance students tended to be satisfied with their classes and expressed more overall satisfaction than those who participated in face-to-face courses. Lim (2001) found that satisfaction in web based distance education courses depended on computer self-efficacy; in other words, the level of satisfaction among these adult students depends on how confident they are with the use of technology. Navarro and Shoemaker (2000) found that traditional students scored 3.8 on a scale of 1 to 5, where 1 was "poor" and 5 was "excellent," and the distance learners, on the other hand, had a mean score of 4.09. Since the results were not statistically significant, it could not be concluded that distance learners had a higher degree of satisfaction. Approximately 90% of distance learners in this study would take more web based courses if given the opportunity.

Allen et al. (2002) found in their meta-analysis that satisfaction on the part of distance education was not a reality; rather, the findings were that students indicated a

slightly higher level of satisfaction with live courses than with distance education formats.

Perceptions of Pre-service Students

The research on pre-service students' perception tends to address areas other than distance learning; for example, much research has been done about how the students feel about technology use (Jegede, Taplin & Chan, 2000; Lin, Taylor, Gorrell, Hazareesingh, Carlson & Asche, 1999; Mowrer-Popiel & Pollard, 1994; Williams & Alawiye, 2001; Wong, 1990; Yildirim, 2000). A later study looked at using technology in pre-service teacher supervision, (Sharpe & Byra, 1997). The focus on these studies was not how the students perceived distance education but rather how they related to technology.

Perception of Pre-service Teachers toward Technology

A starting point for the discussion about perceptions of pre-service students toward distance education is predicated on how they feel about the technology. Mowrer-Propiel and Pollard (1994) indicated that 75 out of 96 students had positive attitudes toward the use of computers. These same students indicated that they needed more instruction in the ways in which to integrate the computer into their classes. In an investigation that looked at video-based pedagogy in a math method class, Friel and Carboni (2002) found that students who participated in the study moved to a more student centered approach. The video provided a common form of reflection.

One study that came particularly close to the present study was done by Thomerson (1995). However, Thomerson looked at only one distance medium: videoconferencing. The study looked at traditional face-to-face methodology and compared it with distance education. Pre-service students compared the two

methodologies. Those involved in this study ranged in age from 19 to 58. Remote site average age was 35.6. The study found that traditional groups had higher ratings than host and remote sites for clusters of questions regarding student teacher interaction, overall enjoyment satisfaction, and physical learning environment. Remote and host site distance learning groups differed significantly from traditional groups in perceptions of the physical environment. In terms of overall course satisfaction and enjoyment of course, there was a statistically significant difference between the remote site, host site, and traditional students in respect to the satisfaction and enjoyment of distance courses. Thomerson's (1995) research was appropriate at the time it was written; however, it now seems outdated since the focus was on the perception of pre-service teacher education students that used teleconferencing video equipment. The study did not include information about present day distance education.

A later study at Kent State University supported the findings of Thomerson (1995) and others (Tiene, 2002). The study experimentation used online learning and video-conferencing as a major driver of distance education. The technology used was LearnLinc, "that integrated desktop videoconferencing, online chat, a digital whiteboard feature, polling software, Web access, screen-captures and the ability to transmit any commercial computer application across the network" (Tiene, p. 18). Using this sophisticated multimedia video-conferencing equipment and the concept of distributed learning, it was found that overall the students believed that the video-conferencing was important and helpful, especially at the remote sites. The study also provided some insight as to issues that may be considered in the future. One such issue was that of class discussions. It was agreed that this form of distance learning tended to be less

spontaneous than the traditional classroom setting. The use of e-mail was an important aspect of this form of distance education because it leads to efficient submission of assignments and evaluation. It was discovered throughout this study that students at the remote site rated the delivery higher than those at the host site (Tiene, 2002).

Another study which reflected on attitudes of distance education students and traditional students found that those at the distance site were more likely to be motivated and take another course offered at a distance (Bisciglia & Monk-Turner, 2002, p.46). This seems to conflict with the results of other studies since traditionally there were issues relating to breakdown of equipment and clarity of transmission to the remote site in earlier studies. Missing from the Thomerson study (1995) is the perception of teacher education students regarding distance education in its present form. Teacher educators' perception is important since they will be teaching the students of tomorrow. In a study by Anderson and Kent (2002), the focus on student satisfaction presented an interesting twist. The research about student satisfaction levels with interactive televised courses concluded that students had difficulty in making the separation between the effectiveness of the delivery method and the technology. Another interesting finding was that students actually rated professors lower when interactive televised courses were used. This seems to conflict with results of some of the previous studies.

Paneitz (1997) conducted a study of community college students' perceptions of student services provided when students were enrolled in tele-courses. The major finding of the study was that 80% of the students were working at least part-time with family obligations and a desire to minimize travel from campus. The study also found that there was not a significant relationship between the types of delivery system used in academic

advising. It was found that there was no significant relationship between age of students and level of satisfaction of advising, counseling, and library/media services. This study, like others, focused on only a single area pertaining to distance education, that is, the perception of student services.

Student Teacher Interaction

An important aspect of the teaching and learning process is the interaction between the facilitator and the students in a distance learning course. Interaction in distance education takes two forms that parallel the technology. The interaction may be simultaneous or synchronous, or it maybe asynchronous. For the former type of interaction, the students and teacher are at different locations but can communicate with each other immediately. Video-conferencing is a good example of how synchronous communication can take place. More and more, the web-based courses are employing this method of interactivity. Asynchronous communication seems to be the model for interaction in most distance education courses. In the first place, the students taking these classes did not intend to be confined to one time period but participated in distance learning classes because they could do their coursework around their own schedules rather than the instructor's or a class.

The issue of interactivity is of importance whether it is done synchronously or asynchronously. Some have argued that more interaction between the facilitator and the students leads to higher student satisfaction and ultimately success. Traditional forms of distance were deemed to be non-interactive. With the advent of tele-video equipment and other more sophisticated equipment, the non-interactivity has changed. Some distance courses call for mandatory contribution to what is called a *threaded discussion*. This

inevitably increases the interactivity between the facilitator of distance education and the student. In a meta-analysis comparing student satisfaction with distance versus traditional courses, it was found that there was little decline with the quality of the educational experience given the absence or presence of interaction (Allen, et al., 2002, Lara, Howell, Dominguez & Navarro, 2001).

In a study that indicated the importance of interaction, Taylor (2002) divided the individuals into three categories: *workers*, *lurkers*, and *shirkers*. The definition of the three categories was based on the number of hits and average message posted. Those with the most hits and postings were termed *workers*; those with intermediate hits were called *lurkers*, and finally the last group with the lowest hits and postings were know as *shirkers*. It was found that the more the interaction on the part of the students, the more successful they would be at distance learning courses. The *workers* ended up with an average grade point above the other two groups, essentially conveying the fact that interaction is important in a distance environment.

Effectiveness of Course Structure

The sequence of topics covered in an online environment seems to be an issue that might likely determine the effectiveness of the online course. Neuhauser (2002) found that students were generally positive about the overall course structure, although there were complaints about the volume of work given in the online classes. A high percentage (88%) considered the discussions to be very effective. In this same study, 75% considered the lectures to be meaningful. Students were asked whether, given the amount of work that is done in an online course, some of the activities should be terminated; the answer was *no* (Neuhauser, 2002).

Enjoyment and Satisfaction

General satisfaction is probably one of the most important aspects of the questions about traditional and distance delivery. Several angles were viewed with overall satisfaction. Bisciglia and Monk-Turner (2002) found that the grading process was a factor in predicting overall enjoyment of distance learning when compared to face-to-face courses; off campus students tend to be highly motivated in this respect, and grading determines the level of satisfaction. Those who considered the grading process to be fair were generally satisfied with the distance course that was taken. In this same study, it was reported that although the fairness as it relates to grading was an essential element of the general satisfaction on the part of the students , the gender of the instructor also helped to shape their feelings about fairness.

Peer-to Peer Interaction

Once students are engaged in the learning process and take responsibility for their own learning, then interactivity among peers will be an essential component. Smith and Winking-Diaz (2004) called this type of interactivity *peer engagement.* Engagement, according to Smith and Winking-Diaz, is much deeper than a discussion board; rather, this type of interactivity among students must foster deep and durable learning. In addition to making the interactivity deep and durable, Smith and Winking-Diaz said that the richness of the environment that fosters interactivity among students would more than likely contribute to success in the distance environment.

Aljarrah (2000) asserted that interaction among peers will be beneficial since this will increase the power and value of learning. In this study, significance was detected with regard to the interaction among peers, implying that peer-to-peer interaction was a

factor in distance courses in the community college setting. Although interaction might have a positive effect on distance courses, Shulte (2004) noted that interactivity among students might be an issue in this environment. The specific dilemma suggested by Shulte was the issue of convenience as relates to the structure of interactivity. To a lesser extent, grading and monitoring of discussions were seen as minor problems. Gabriel (2004) did suggest that there is more than perceived value to be had when students interact with each other in a distance environment. Learning does take place based on the student's perspectives and varying experiences. In this same study, it was found that some students liked the diversity of viewpoints that leads to enriched learning opportunities which ultimately develops an appreciation for diversity of thoughts and perspectives. Moore & Kearsley (1996) called peer-to-peer interaction *learner to learner interaction* and suggested that this form of interaction was "somewhat desirable for pedagogical reasons" (p. 131). The enjoyment of peer-to-peer interaction to a great extent depends on the basic learner characteristics.

In summary, peer-to-peer interactions seems to be an important aspect of the teaching pedagogy, and although there might be some problems, students feel that the diversity of opinion and the ability to gain new and fresh perspectives from other learners is very important and adds to their satisfaction.

Physical Learning Environment

Physical learning environment sometimes influenced how the students felt about distance education courses. Bisciglia and Monk-Turner (2002) stated that distance site students tended to be more positive about their learning experiences. This finding is supported by others who believe that this might be an issue that is associated with how

these students perceive themselves to be connected to the learning environment (Wong, 1990).

A number of early distance education studies indicated that the group of people who seem to take distance courses were people who had time constraints and were older than 25 (IHEP, 1999; Thomerson, 1995; Tsay, 1999). These studies found that distance education worked for this clientele since it fulfilled several of the students' needs. More recently, the research is focusing on a different group of consumers of distance education: school age children, especially those in high school. The change in focus is due to funding by government agencies for distance education programs that will benefit high school age students.

Rural pre-service teachers had positive responses to distance education based on the use of distance technology to supervise their student teaching (Gruenhagen, McCracken, & True, 1999). The instructors were particularly pleased since the technology saved time in travel and wear and tear on their vehicles. Gruenhagen et al. found that students were able to use time to prepare lesson plans and do other teaching assignments since they did not have to travel long distances to their campuses.

Harnar, Brown, and Mayall (2000) measured the effect of distance education on the learning experience in the area of accounting delivered by picture-tel; the researchers indicated some skepticism regarding distance learning. This is a view not shared by many who are proponents of distance education. The findings of the Harner et al. study indicated that students felt isolated from those students at the host site. This was further compounded by technical problems.

Irani (1999) found that direct experience with the technology of distance education had a positive effect on the students' attitudes. In Irani's repeated measures study (1999), undergraduate students were found to exhibit a more positive attitude based on the initial exposure to the distance technology.

Hara and Kling (2002) found that although distance education was being utilized at a high rate (NCES, 1998), students who took courses via the web tended to be frustrated with the experience; the frustration came as a result of students feeling isolated, lacking feedback, and experiencing technological problems. The case study also pointed out some fundamental issues that made the experience more rewarding. Hara and Kling suggested that ways to improve distance education were to make it more student-centered and to encourage the design of research that promoted the proper use of technology and pedagogy related to distance education.

In summary, Thomerson's study (1995) comes the closest to the present study when dealing with the perception of teacher candidates on distance education. The study isolated four areas of satisfaction on the part of teacher candidates: physical learning environment, student teacher interaction, overall course enjoyment/satisfaction, and course structure. Thomerson's findings were based primarily on a video conferencing distance type technology. Although distance education as defined earlier suggests the separation of learner and teacher, the more sophisticated internet technology and other forms of distance were missing from Thomerson's study.

Future Directions of Distance Education

Distance education has been around for a long time. The development of distance education has been greater in the last 12 years than in the last 150 years. Such

development is poised to make distance education a formidable force with which to reckon. Ludlow & Brannan (1999) said that single studies cannot provide a "crystal ball with a vision of the future, it is possible to make some general predictions" (p. 12). Spooner et al. (1988) stated that an advantage of distance education will be its ability to reach a large number of students with a small amount of teachers. Amidst the promise of a good future for distance education, Spooner et al. were somewhat skeptical that distance education would work without a problem and echoed the sentiment that this innovation will have its own problems, for example, comparability and acceptability of the instruction.

Kinnaman (1999) purported that two models of distance education will emerge over time. Because of the ability to merge traditional instructions that is based on the just-in-time concept, he posited the ability to use teachable moments anytime and anywhere. There will be a shift from the old paradigm of distance education; it will cease to a "separate component of schooling" (p. 48). Already we are seeing the essence of this, where a number of schools are marrying the traditional class with the distance model; hence the use of Webct, Blackboard, E-college, and other distance platforms to supplement the regular classroom.

Uhlig (2002) presented a picture of distance education that suggests that online delivery is experiencing major growth, and the future for schools like the University of Phoenix looks bright since they can deliver anywhere/anytime learning. Uhlig further stated that other issues are emerging, for example, quality, cheating, and the cost effectiveness of distance learning. The question of quality has been revisited by Cassel (2002), who said that accrediting agencies must take steps to deal with this problem. Bork

(2002) suggested that quality is possible in the distance learning arena and points to Open University and similar institutes that provide a quality education at a lower cost than possible in traditional universities. Bork expressed the fact that the classes are highly interactive.

No one knows what the future holds for distance learning. The technological changes during the last 10 years have propelled distance education into a new generation of learning. Several schools are using the technology to supplement their face-to-face delivery in an effort to attract a different type of clientele: those who are working and cannot afford to sit in the classroom for all their instruction. Devry University, Colorado State University and several other schools are using the technology to supplement their face-to-face instructions.

In summary, distance education as a teaching paradigm has developed more over the last 12 years than during its first 150 years. The development is paralleled by developments in technology. For the foreseeable future there will be a market for distance education students. This methodology holds promise for reaching a large number of students with a small number of teachers (Spooner et al., 1988). Distance education will continue to emerge over time as well as shift to embrace the new paradigm (Kinnaman, 1999). Finally, the future of distance education seems bright because online delivery will experience major growth (Uhlig, 2002). While there are questions about the quality of distance education (Cassel, 2002), Bork (2002) suggested that maintaining high quality in distance education is possible.

CHAPTER THREE

METHODOLOGY

Purpose of the Research

The primary purpose of this research was to explore pre-service teachers' perceptions of the effectiveness of courses or programs delivered at a distance. This chapter discusses the overall methodological plan used in this study.

The main methodological approach used in this research is the quantitative paradigm. Gliner and Morgan (2000) suggested that when attitudes and opinions are being measured, Likert scales should be used because they are more amenable to the quantitative paradigm. Further, the purpose of this chapter is to present the procedures used by the researcher to conduct the present study. The chapter will explain details describing the population, sample, sampling design, variable description, instrumentation, data collection procedures, statistical analysis, and Human Research Committee approval.

Population

The theoretical population for the present study included all teacher licensing students in distance programs at all teacher preparation institutions in the United States. These individuals were seeking licensure as teachers and were engaged in a program of study to be licensed. The accessible population for the study included all distance students at teacher licensure institutions that agreed to participate in this study.

There were three distinct ways by which the population for the present study was obtained. The first method, the starting point, was the isolation of colleges and universities available to a key participant in a federally funded program known as Preparing Teachers for Tomorrow's Technology (PT3). This avenue of study was suggested to the researcher by his advisor. Contact was initially made with the researcher designee who, along with the researcher, sent out a mass e-mail to approximately 40 different universities and colleges involved in the PT3 program. It was from the initial responses that the researcher compiled a list of possible institutions that offered distance courses in teacher licensure programs. If the response was positive, those individuals' information was placed in an e-mail folder labeled *Positive PT3* so that further contact would be made with this group. The responses of those who indicated that they did not have distance programs were placed into a folder marked *Negative PT3*; the intention was to keep the list so that no further communication would be made with these schools. Four PT3 grant schools that indicated their willingness to participate were Valdosta State University, New Mexico State University, North Carolina Agricultural and Technical University, and California State University. New Mexico State and California State University later decided not to participate in the study.

The list of schools that offered distance courses at the PT3 schools did not appear to be sufficient, so another source was used to find additional schools that offered distance courses in the teacher licensure programs. The researcher is a member of the National Business Education Association (NBEA); therefore, it was decided on the recommendation of a fellow NBEA member to check a comprehensive list of National Association of Business Teacher Educators. *The Business Education Forum* is a peer-

reviewed journal published by NBEA. A comprehensive list of schools with key contacts was taken from the forum. The list derived from the forum constituted schools to which a second mass e-mail was sent to ask their participation in the study. Care was taken not to send e-mails to schools previously contacted. Only schools that appeared not to be on the previous PT3 list were contacted when the second e-mail was sent out. For the most part, schools did not offer a distance course or program. Those that offered a course or program were subsequently asked to participate in the study. Schools that indicated their willingness to participate from this e-mail list were State University of West Georgia, North Georgia College and State University, Armstrong Atlantic State University, Savannah State University, and Utah State University. Savannah State University and Utah State ultimately did not participate in the research.

The third method for getting to the desired population utilized several approaches, including a request from a major book representative for a list of schools that had teacher education programs, a list of colleges and universities in the state of Georgia (Georgia Student Finance Commission, 2002), and a list of major public universities sorted by Carnegie Rank (Pershing, 2001).

A comprehensive list of schools that were not in the previous two lists was compiled. E-mails were sent to those schools not already covered in the two previous e-mails. From this e-mailing, the following three schools indicated their willingness to participate in the study: Middle Tennessee State University, East Carolina State University, and State University of New York-New Paltz. At a later date, Middle Tennessee decided not to participate in the study.

Further e-mails were sent and telephone calls were made to the schools that indicated their willingness to participate in the study. After all the conditions for student participation were explained, the following seven schools had programs that were aligned with the purpose of the research being undertaken: East Carolina State University, State University of West Georgia, North Georgia College and State University, Armstrong Atlantic State University, North Carolina Agricultural and Technical College, Valdosta State University, and New York State University–New Paltz.

Intended Sample

The selected or intended sample included all students that were enrolled in teacher licensure programs. Two-hundred fifty students were identified as enrolled in teacher licensure programs and had taken one or more distance courses in teacher licensure programs (TLP) from the seven schools that indicated their willingness to participate in the research.

Originally a number of schools other than the seven indicated their willingness to participate in the study, but on closer investigation these schools did not have pure distance courses; rather, they had courses delivered using hybrid methodology, that is, a mixture of face-to-face and online learning. These schools were not used as a part of the seven listed previously.

Sampling Design

A non-probability sampling technique was used in this study. The specific approach was convenience sampling. However, the approach may be considered representative of teacher licensure students who took a distance course. All students in teacher licensure programs that agreed to cooperate were given the opportunity to

participate in the study once they completed a course in the department at a distance. Courses that used distance technology as an augmentative measure were not considered to be a part of the study.

Once the participating representatives were identified, a follow-up e-mail or telephone call was made reminding them of the procedures to be used in the study as well as requesting a letter of commitment; the letter was used as a part of the human subjects application. Since the survey was handled as an evaluation tool in the class of the instructor, it was necessary to give guidelines to the designated representatives. The guidelines were given to these representatives orally over the telephone, via e-mail, and at the top of the survey. Prior to the administration of the survey on the individual campuses, the representatives were asked to read a statement regarding the qualifications of those students participating in the research (see Appendix F).

Variable description

Several dependent and independent variables were identified in this study. The independent variables were gender, age, and number of courses taken at a distance. The dependent variables were the effectiveness of course structure, adequacy of student teacher interaction, overall enjoyment and satisfaction, and adequacy of peer-to-peer interaction.

Instrumentation

A review of literature yielded a survey instrument that was available to collect the data. Survey instruments were used in similar research projects (Duhaney, 1996; Harroff, 2002; Paneitz, 1997; Thomerson, 1995; Tsay, 1999). Of the instruments reviewed, Thomerson's study provided the most appropriate instrument. The study contained a

questionnaire with 21 statements based on clusters or categories that were found to have been used by other researchers. Several clusters were formed: (a) physical learning environment, (b) student/teacher interaction, (c) course structure, and (d) overall course satisfaction. Thomerson checked the survey for content validity using four groups: research methodologists, distance education instructors, distance education students, and distance education professionals or technicians. The process led to rewording and omissions of questions that were irrelevant. The questionnaire was pilot tested, and a statistical test, the Cronbach coefficient alpha, demonstrated that the questionnaire had an internal reliability of .89, thereby indicating a high level of internal consistency. Finally, a factor analysis was conducted that indicated that 62% of variance was accounted for by four factors, suggesting that the variability of scores in the dependent variable was accounted for by the factors. Thirty-two percent of the variability was left unexplained.

On the face it seemed as if the Thomerson factor analysis and the high Cronbach alpha would have been sufficient, but the original Likert scale was modified from a 4-point to a 7-point Likert scale. The students were able to select a rating from 1 to 7, where 1 indicated strong disagreement and 7 indicated strong agreement (see Appendix C). In addition, a few questions were added to make up for some elements that were missing from Thomerson's work.

In light of the slight modifications and additions of four questions, a new factor analysis was run. The principal component analysis (PCA) did not present a clear picture that confirmed the four clusters used by Thomerson, but instead three major components were identified with two of the Thomerson clusters loading on the first cluster. Questions 11, 13 and 26 (reversed questions) did not load with the other questions indicating that

either the respondents did not respond to them appropriately or the question did not belong in any of the clusters. Minor reorganization of these clusters lead to the following: The PCA along with a conceptual analysis of the content of the questions indicated that most of the questions on the effectiveness of course structure and student teacher interaction loaded under one component. On closer analysis the questions were placed into two clusters based on content analysis. A third component indicated the questions relevant to the overall enjoyment and satisfaction. A fourth component indicated peer-to-peer interaction (adequacy of peer-peer interaction).

Based on the conceptual framework and the factor loadings, the following four clusters were used in the current study. First, effectiveness of course structure was measured by questions Q12, Q16, Q18, Q19, Q23, and Q29. Second, the adequacy of student teacher interaction was measured by questions Q9, Q15, Q20, Q24 and Q31. Third, the overall enjoyment and satisfaction was measured by questions Q17, Q21, Q28, Q30 and Q33. Fourth, the adequacy of peer-to-peer-interaction was measured by questions Q14 and Q32. Other questions that did not fall into the above categories were questions Q10, Q11, Q13, Q22, Q25, Q26 and Q27, which were analyzed separately. The clusters were supported by the PCA, and those questions that could not be grouped were placed in the *Other* category and were analyzed separately from the main clusters.

Reliability of the Questionnaire

Cronbach's alpha statistics were computed to determine the internal consistency of the four clusters. This method of determining internal consistency is the most appropriate since each item on the questionnaire was presented in a Likert scale and the items in each cluster were summed to make a summated scale or composite score.

Cronbach's alpha was used to determine the inter-item reliability (Morgan, Griego, Gloeckner & Leech, 2001).

The reliability measures for the most part determine the consistency and predictability of the instrument. The reliability coefficients for each of the major clusters yielded alphas between .80 and .93 (See Table 1).

Table 1

Reliability Coefficients by Clusters

Clusters by factor analysis	Number of Cases	Number of Items	Alphas
Effectiveness of course Structure	92	6	.92
Adequacy of Student Teacher Interaction	92	5	.80
Overall Enjoyment and Satisfaction	90	5	.93
Adequacy of peer-to-peer Interaction	91	2	.86

All the scales had high reliability. One would expect adequacy of peer-to-peer interaction to have a lower alpha than the others since only two items were measured in this cluster. Effectiveness of course structure and overall enjoyment and satisfaction indicated the highest reliability. An alpha of .9 is considered very good.

Data Collection Procedures

Two basic modes were used in the collection of the data. First, surveys were mailed to the researcher designees (all were university faculty members teaching distance courses) at each institution, and second, an electronic form survey was e-mailed to contacts who disseminated and collected surveys according to prescribed conditions. The following schools opted to complete the survey via e-mailed forms: East Carolina University, Armstrong Atlantic State University, North Carolina Agricultural and Technical University, State University of New York-New Paltz, and one group from the State University of West Georgia. Pertinent information was included in the e-mail and students were asked to read the information before responding to the questionnaire. The surveys were submitted directly to the researcher in an anonymous manner for this e-mail group. North Georgia College and State University, Valdosta State University, and a second group at the State University of West Georgia opted to administer the surveys in a seminar. The researcher designee was given a package that included a script that stated the purpose of the research and read the prescribed script found in Appendix F. At the end of 20 minutes, the researcher collected the surveys and thanked the participants.

The data collection process closely followed a model suggested by Rea and Parker (1997). The researcher also collected data by means of a self-completion survey. The model recommends three mailings. The research was done in phases; the first two modes were initiated at the same time (the mailed survey and the e-mailed surveys were sent the same day).

In September 2003, cover letters (see Appendix A & B), the survey instrument (see Appendix C), and a self-addressed envelope were mailed to the instructors as well as

the students whose names were given by the contact persons. The students were teacher candidates in the licensure programs who completed at least one distance course or were somehow involved in a program of distance in their teacher education experience.

Each respondent who was sent the survey instrument received an identification number. For those individuals who were contacted at their university and offered to administer the survey in their class, a letter of identification was given to those surveys to track the number of surveys received from those institutions. After the first mailing and administration, (61) surveys were returned.

Three weeks after the first mailing of the survey, a second mailing was sent to those persons who had not yet returned the survey. The mailing included a follow-up letter. A survey and self-addressed envelope were included. This second mailing as well as e-mail to the contacts at those institutions that administered the survey in class yielded a total of (92) usable surveys. All individuals and contacts were sent a card thanking them for their participation in the research.

The surveys that were sent by e-mail to the researcher designee were administered during a 3-week period. Frequent contacts were made by telephone and e-mail to find out the status of the survey administration. After the administration, a thank you e-mail was sent to the research designee.

It was ascertained that the researcher could survey approximately 250 students spread out among the institutions that initially indicated their willingness to participate in the study. The following numbers of students were identified as being distance students from the institutions that indicated their willingness to take part in the study: 27 students from North Carolina Agricultural and Technical College, 50 from State University of

West Georgia, 25 from North Georgia College and State University, 40 from Armstrong Atlantic State University, 35 from East Carolina University, and the rest from other institutions that did not participate because they were unable to at the time.

Data Analysis

All questions on the survey were coded after the sampling process was completed. Appendix D contains a list of the codes used in the research. The demographic information as well as the 25 questions was entered in SPSS 10.

The demographic portion of the survey described the sample and elements such as gender, age, and classification, which were independent variables.

Questions 9 thru 33 were coded and listed as Q9, Q10, and so on. The researcher then analyzed the 25 questions, and mean responses were computed for all 25 questions. Means and standard deviations were tabulated to provide answers to research question number 1. Means and standard deviation were tabulated for the clusters: effectiveness of course structure, adequacy of student teacher interaction, overall enjoyment and satisfaction, adequacy of peer-to-peer-interaction and the Other category.

The researcher then computed independent *t*-tests for research questions 2 and 3 and correlations were run for question number 4. The analysis was conducted using the clusters previously mentioned. The independent variables of gender, age, and number of courses taken were explored to find out whether differences or relationships existed.

Survey questions 34 and 35 were represented by open-ended questions; these questions were evaluated to look for themes relating to teacher candidates' perceptions of what constitutes success in distance courses as well as recommendations for improving distance courses.

The significance level selected for this study was .05. This selection was based on the fact that perception was being measured, and the study hoped to identify any differences that might be statistically different in the responses given by the students.

Statistical Analysis

The researcher collected, coded, and analyzed data using an EXCEL spreadsheet and SPSS 10. Data were first entered in EXCEL, then the data were exported to SPSS where minimal recoding took place and then subsequently statistically analyzed. Descriptive statistics (means and standard deviations), and *t* tests were run to answer research questions numbers 2 and 3. Correlations were used to answer research question number 4. Research question 5 was analyzed using NVIVO a qualitative software. NVIVO was helpful in provided thematic responses to research question number 5.

Human Research Approval

Since human subjects were used in this research, the researcher sought and received clearance from the Colorado State University Human Research Committee (HRC). Only Valdosta State University and State University of West Georgia required a separate human subjects clearance. All remaining schools were content to use the human subjects approval provided by the researcher's university.

Summary

The study was descriptive and used a 7-point Likert scale survey to collect data about pre-service students' perception of distance education in teacher licensure programs. Descriptive statistics, means, standard deviations, *t* tests, and correlations were computed for the first 25 questions that related to the first four research questions. The researcher selected an alpha level of .05 to determine the significance to the first five

research questions. Open-ended questions were coded to address two pertinent issues: (a) what constitutes success in distance programs? and (b) what recommendations did teacher licensure students make for improvement? Several themes were isolated in order to determine the answer to research question number 5.

CHAPTER 4

RESULTS

The purpose of this study was to examine the perceptions of teacher candidates regarding the effectiveness of courses and programs offered at a distance in the teacher education departments of selected universities. An analysis was conducted to determine how pre-service teachers perceive the delivery of distance courses or programs in relation to the following variables: effectiveness of course structure, adequacy of student/teacher interaction, overall satisfaction and enjoyment, and adequacy of peer-to-peer interaction.

Presentation of the results of the study is divided into four basic sections. The first section describes the demographic characteristics of the sample; the second section reviews the survey instrument; the third section provides an analysis of the five research questions; and, finally, a look at other issues, such as, recommendations students made concerning how to improve distance education in education programs.

Perceptions about the four cluster variables were measured to determine whether male students differ from female students in their perception of the delivery of distance courses or programs in the schools of education studied. The study also looked at the perception of non-traditional versus traditional college-aged students enrolled in distance course or programs in relation to the four variables: student/teacher interaction, course satisfaction, course structure, and peer-to-peer interaction. The relationships between teacher/candidate overall satisfaction and the number of courses taken were also analyzed.

In an attempt to explore the perceptions of the respondents, the study used open-ended questions to determine what respondents considered to be success factors for students enrolled in distance courses. Participants were expected to relate their experience of what aided them during the distance course in being successful. Participating respondents also provided recommendations regarding how distance courses could be improved in their college. The recommendations were analyzed to determine the dominant themes so that it would be clear how teacher education programs might adjust their programs to deliver quality distance programs that will foster maximum learning and satisfaction.

A supplemental question was also analyzed. Its purpose was to establish whether teacher candidates' progression in their course of study would predict their perception of the effectiveness of distance courses or programs in relation to course structure, student/teacher interaction, overall enjoyment and satisfaction, and peer-to-peer interaction.

The study included students who were pre-service teachers drawn from seven universities in the eastern U.S. Other schools in the continental U.S. were asked to participate in the study but were unable to because of time constraints and other mitigating circumstances. The participating students were at various stages of their pre-service programs. A profile of each university is presented below as well as in Table 2.

University Profiles

Table 2 presents an overview of seven institutions that took part in the study and highlights the approximate enrollment, geographical location, and other descriptive information such as university type and the degrees granted by these institutions.

The enrollment in these institutions ranged from a low of 4,100 to a high of 21,000. Five of the institutions offered doctoral degrees; at the other two, the master's degree was the highest level offered.

University #1

Armstrong Atlantic State University is a public regional university located in southeast Georgia; this institution offers associates', bachelors', and masters' degrees. Armstrong Atlantic State University (AASU) is a part of the network of colleges and universities that is a part of the university system of Georgia. The AASU student population is primarily African American.

University #2

North Georgia College and State University (NGCSU) is a public regional university located in north Georgia. NGCSU offers a variety of degree programs up to the master's degree. NGCSU has one of the highest retention levels of freshmen of all colleges in Georgia.

University #3

East Carolina University (ECU) is a regional institution located in North Carolina and offers degrees to the doctoral level. One of the largest universities in North Carolina, ECU was originally a teacher training college.

University #4

State University of West Georgia (SUWG) is a public regional university located in west Georgia. This institution offers all degrees up to the doctoral level. SUWG is a pioneer in the area of distance education and uses the technology to enhance the teaching learning process.

University #5

North Carolina Agricultural and Mechanical University (NCAT) is a public land grant university that offers bachelors' to doctoral degrees. This school caters primarily to African American and other minority groups.

University #6

Valdosta State University is a medium-sized regional public university located in south central Georgia that offers bachelors', masters', educational specialists', and doctoral degrees.

University #7

State University of New York-New Paltz is a regional university located in southern New York and offers bachelors' to doctoral degrees. SUNY-New Paltz is one of many schools that are a part of one of the largest university systems in the U.S. A summary profile of each university is presented in Table 2.

Sample Information

The study utilized a convenience sample and was intended to query possible students enrolled in distance education courses. An estimated total of 250 students were identified as part of the potential sample based on the information received from researcher designees; however, a total of 189 were distributed since some of the schools that gave permission to do the survey withdrew or were not available at the time they were to be distributed, and some students at participating colleges were not available. Of the 189 surveys that were distributed, 92 were returned, which represented a 49% response rate. Of the 92 surveys returned, 21 (23%) were from males and 71 (77%) were from females.

Table 2

Participating Schools Summary Information and Characteristics

University	Enrollment Fall 03	Specific Characteristics[a]
AASU	6,100	Public Regional University located in South Georgia A, B, M
NGCSU	4,178	Public Regional University located in North Georgia A, B, M
ECU	21,000	Regional University located in North Carolina B, M, D
SUWG	9,700	Public Regional University located in West Georgia B, M, ES, D
NCAT	10,050	Land Grant Public University located in North Carolina B, M, D
VSU	9,900	Regional Public University Located South Georgia B, M, ES, D
SUNY-NP	8,000	Regional University Located in Southern N.Y. B, M, D

[a] *Includes B, M, ES, D degrees granted by institution, where B=Bachelors degree; M=Masters degree; ES= Educational Specialist degree; and D=Doctoral degrees*

Demographics

The demographic data collected from all participants included their age, gender, classification, number of online courses taken, and the number of education courses taken. Frequencies were tabulated for gender and courses taken. The respondent's ages ranged from 18 to 60. Forty-one percent of the respondents were under 25, and 59% were over 25. The respondents were classified into seven categories (see Table 3). Roughly 63% of the respondents were undergraduates while approximately 37% were pre-service teachers in the categories *Post-baccalaureate*, *Masters*, and *Other.* Classifications and gender information are depicted in Table 3.

About half the respondents were at the beginning or middle of their program. Another 53% were at the end of their program (see Table 4).

Research Question 1

Research Question 1 addressed the perceptions of teacher candidates toward distance education in respect to the following clusters: effectiveness of course structure, adequacy of student/teacher interaction, overall enjoyment and satisfaction, and adequacy of peer-to-peer interaction. Specifically, the instrument measured the perceptions of teacher candidates regarding the above-mentioned variables. Overall, the mean score results showed that students were satisfied with courses offered at a distance. Although there were a few extreme results indicating that there was very high or low satisfaction, the results showed that students were generally satisfied with courses delivered at a distance.

Table 3

Demographics and Related Characteristics of Pre-service Students Enrolled in Distance Course (N= 92)

Gender	Number/Percent	Classification	Number/Percent
Male	21 (22.8%)	Freshman	1 (1.1%)
Female	71 (7.2%)	Sophomore	3 (3.3%)
		Junior	6 (6.5%)
		Senior	48 (52.2%)
		Post-Bacc.	16 (17.4%)
		Masters	13 (14.1%)
		Other	5 (5.4%)

Table 4

Number and Percentage of Respondents by Progression (N=92)

Progression	Number	Percentage
Beginning	28	30.4
Middle	15	16.3
End	49	53.3

Effectiveness of Course Structure

Questions 12, 16, 18, 19, 23, and 29 measured the perception of students with regard to course structure (see Table 5). The overall means showed a positive response in terms of course structure. The mean scores for almost all questions in this cluster ranged

Table 5

Means, Standard Deviations, and Overall Cluster Means: Effectiveness of Course Structure

Question	Mean	Standard Deviation
12. The instructor used the time effectively to meet the objectives of the course.	5.26	1.56
16. Examples, guidelines, and illustrations were effectively used by the instructor.	5.15	1.67
18. Examples the instructor gave were appropriate and clear.	4.99	1.75
19. The amount of material covered in each session was appropriate.	5.25	1.71
23. The course content was presented in an organized manner and reflected the terminal course objectives.	5.58	1.41
29. The grading of assignments was fair.	5.64	1.28
Overall cluster	5.31	1.33

from *moderately agree*(5) to *agree(6)*. The mean score ranged from 4.99 to 5.64 out of 7 with an overall cluster mean of 5.31. Standard deviations ranged from 1.28 to 1.75 with the cluster standard deviation of 1.33. The question about fair grading of assignments had the highest overall score in this cluster: 5.64.

Student/teacher Interaction

The data revealed that mean scores for student/teacher interaction (see Table 6) ranged from 4.65 to 5.90 and a standard deviation of 1.25 to 2.20. Student/teachers expressed their comfort in contacting their instructor as the area with highest satisfaction. The overall cluster mean and standard deviation for student/teacher interaction were 5.31 and 1.21 respectively, which suggests that they were a little more than moderately satisfied with the interaction between themselves and the instructor.

Enjoyment and Satisfaction

The data in Table 7 revealed that respondents' mean scores for overall enjoyment and satisfaction ranged from 4.27 to 5.32. The standard deviation for overall enjoyment and satisfaction ranged from 1.76 to 2.17. Cluster's mean and standard deviation were 5.04 and 1.73, which suggests that respondents were moderately satisfied with their experience with

distance courses.

Peer-to-Peer Interaction

Table 8 depicts mean and standard deviation for peer-to-peer interaction. Peer-to-peer interaction scores revealed that pre-service teachers bordered on neutrality

of perception for peer-to-peer interaction. Peer-to-peer interaction scores indicated some concern by the teacher candidates about the adequacy of interaction with each other. The mean scores for questions 14 and 32 were 3.71 and 4.24 respectively. Standard deviation

Table 6

Individual Item and Overall Cluster Mean and Standard Deviations: Adequacy of Student/Teacher Interactions

Student/teacher Interaction Cluster	Mean	Standard Deviation
9. I felt comfortable contacting my instructor.	5.90	1.26
15. The instructor was responsive to student needs.	5.18	1.70
20. Assignments were graded and returned in a timely manner.	4.65	2.21
24. The instructor encouraged participation.	5.59	1.25
31. My contact with the instructor was adequate.	5.23	1.57
Overall Cluster Scores	5.31	1.22

Table 7

Individual Item and Overall Cluster Means and Standard Deviations: Enjoyment and Satisfaction

Question	Mean	Standard Deviation
17. I enjoyed my distance more than the traditional classes.	4.27	2.17
21. I felt a sense of accomplishment after completing the course.	5.13	1.76
28. I would recommend that other teacher candidates take similar course from the department.	5.20	1.86
30. I feel I am a self-directed learner and this type of course works best for me.	5.24	1.89
33. I would take more online courses if they were available to me.	5.32	2.11
Overall Cluster	5.04	1.73

Table 8

Means and Standard Deviation: Peer-to-Peer Interaction

Question	Mean	SD
Q14. I was able to get to know others in my distance class.	3.71	1.97
Q32. Student contact was adequate, and I was able to learn from my peers.	4.24	2.08
Overall Cluster	3.99	1.90

were 1.97 and 2.08. The overall cluster mean and standard deviation were 3.99 and 1.90. Peer-to-peer interaction received less than average ratings and the means indicated that there might not be enough opportunities for such interaction.

Other Research Questions

Descriptive statistics were run for questions that were not part of the clusters. These questions were 10, 11, 13, 22, 25, 26, and 27. The mean scores for these seven questions ranged from 3.30 to 5.13. Standard deviations ranged from 1.51 to 2.10.

Summary of Research Question 1

Research Question 1 addressed the issue of the perception of pre-service teachers in terms of the following clusters: effective course structure, adequacy of student/teacher interaction, overall enjoyment and satisfaction and peer-to-peer interaction. There were more or less positive responses with regard to teacher/student interaction, overall course satisfaction, and course structure.

Results tabulated showed that students were satisfied with the student/teacher interaction. The tabulated means ranged from 4.65 to 5.90 (see table 6). One individual question showed that students expressed concerns about assignments not being graded and returned promptly. While all students did not rate this question low it was evident that this question had the highest standard deviation for questions in the cluster. Indicating a wide range of opinions about this specific area.

Overall peer-to-peer interaction received the lowest overall scores of all the clusters, indicating that teacher candidates had concerns about the adequacy of peer-to-peer interaction. Perceptions about the effectiveness of the course structure and student/teacher interaction were rated higher than peer-to-peer interaction. The overall mean cluster scores were (a) effectiveness of course structure: 5.31, (b) student/teacher interaction: 5.31, (c) enjoyment and satisfaction: 5.04, and (d) peer-to-peer interaction: 3.99.

Research Question 2

Research Question 2 asked, "How do perceptions differ between male and female teacher candidates of selected institutions towards effective course structure, adequacy of student/teacher interaction, overall enjoyment and satisfaction, and peer-to-peer interaction?"

An independent *t* test was applied to compare the mean differences of male and female teacher candidates' perception of distance learning courses with regard to course structure, student/teacher interaction, overall enjoyment, and peer-to-peer interaction (see Table 9). The descriptive statistics indicated that female students' overall means were

Table 9

Individual Questions and Cluster Means and Standard Deviations for Male and Female Students with Regard to Course Structure (N: Female = 71, Male = 21)

Question		Mean	SD	*t*	*p*
12. The instructor used the time effectively to meet the objectives of the course.	Male	4.90	1.70	1.20	.23
	Female	5.37	1.50		
16. Examples, guidelines, illustrations were effectively used by the instructor.	Male	4.62	1.60	1.69	.10
	Female	5.31	1.67		
18. Examples the instructor gave were appropriate and clear.	Male	4.38	1.80	1.84	.07
	Female	5.34	1.71		
19. The amount of material covered in each session was appropriate.	Male	4.95	1.66	.91	.37
	Female	5.34	1.73		
23. The course content was presented in an organized manner and reflected the terminal course objectives.	Male	5.00 .	1.58	2.18*	.03
	Female	5.75	1.32		
29. The grading of assignments was fair.	Male	5.29	1.10	1.46	.15
	Female	5.75	1.32		
Overall cluster	Male	4.86	1.34	1.80[a]	.08
	Female	5.45	1.31		

*$p<.05$, $df = 90$, [a] Degrees of freedom was reduced because equal variances not assumed using Levene's test of equity for variances.

somewhat but not significantly higher than those of their male counterparts with respect to the effectiveness of course structure. The female scores ranged from 5.31 to 5.75, indicating that female students felt that course structure was an essential ingredient of their distance experience. Male respondents had a score range of 4.38 to 5.29. The independent sample *t* test was applied to compare the mean differences between male and female respondents with respect to course structure. While the overall effectiveness did not prove to be significant, the results indicated that the results of Q23 were statistically significant ($t= 2.18$, $df= 90$, $p<.05$), indicating that female students rated the organization of content more favorably than did their male counterparts.

Means, standard deviations, and a *t* test were run with regard to differences in perception between male and female respondents about student/teacher interaction. The mean scores showed that in all categories, female students had a somewhat higher score on all items than their male counterparts. The scores for the female respondents ranged from 4.76 to 6.11, while male respondents had scores ranging from 4.29 to 5.19. The standard deviations for females were 1.09 to 2.23, and for males they were 1.42 to 2.15 (see Table 10).

The independent sample *t* test was applied to compare the mean differences between male and female students in relation to student/teacher interaction. The results indicated that Q9 tested statistically significant ($t=3.10$, $df=90$, $p<.01$). The results indicate that female students felt more comfortable about keeping in contact with the instructor as germane to good student/teacher interaction. Their male counterparts felt less comfortable.

Table 10

Individual Questions and Cluster Means and Standard Deviations for Male and Female Students with Regards to Student/Teacher Interaction (N: Female = 71, Male = 21)

Question		Mean	SD	*t*	*p*
9. I felt comfortable contacting my instructor.	Male	5.19	1.54	3.09	.00*
	Female	6.11	1.09		
15. The instructor was responsive to to student needs.	Male	5.14	1.71	.13	.90
	Female	5.20	1.71		
20. Assignments were graded and returned in a timely manner.	Male	4.29	2.15	.87	.39
	Female	4.76	2.23		
24. The instructor encouraged participation.	Male	5.14	1.42	1.88	.06
	Female	5.72	1.17		
31. My contact with the instructor was adequate.	Male	4.71	1.74	1.73	.09
	Female	5.38	1.50		
Overall cluster	Male	4.90	1.32	1.80	.08
	Female	5.43	1.17		

*$p<.05$, $df = 90$.

Table 11 shows the results of the comparison of the differences between male and female students with respect to overall satisfaction. The mean scores presented in the table indicate an overall mean score of 5.13 for female students and 4.72 for male students. The scores indicate moderate agreement by female students, while the male respondents indicated a more neutral stance about overall enjoyment and satisfaction with distance courses or programs.

The mean scores for the respondents indicated that females were somewhat more likely to enjoy distance learning than their male counterparts. However, the *t* test comparing males and females on their perception of overall enjoyment and satisfaction with distance courses or programs did not indicate any significant differences.

As depicted in Table 12, peer-to-peer interaction was not rated highly by participants of either gender. The mean scores were lower for this cluster than for the other three clusters. The overall mean scores for male and female respondents were 3.69 and 4.08 respectively. The scores indicated that perceptions of peer-to-peer interaction were rated near neutral by the respondents in a distance environment.

Overall, the means of the female teacher candidates were somewhat higher than those of the males in all the clusters. However, there was no significant gender differences found on peer-to-peer interaction.

In summary, female students scored somewhat higher on the average for all four clusters with regard to course structure, student/teacher interaction, overall enjoyment and satisfaction, and peer-to-peer interaction. The test results for questions 9 and 23 were statistically significant. Female respondents were more likely than their male counterparts to feel positive about teacher/student contact and the presentation of the content in relation to the given course objectives.

Research Question 3

Research Question 3 addressed the issue of how perceptions differ between older and younger students (i.e., those over 25 and those under 25) who were enrolled in distance courses toward course structure, student/teacher interaction, overall enjoyment and satisfaction, and peer-to-peer interaction.

Table 11

Individual Questions and Cluster Means and Standard Deviations for Male and Female Students with Regards to Overall Satisfaction and Enjoyment (N: Female = 71, Male = 21)

Question		Mean	SD	*t*	*p*
17. I enjoyed my distance class more than the traditional class.	Male	3.76	2.26	1.23	.22
	Female	4.42	2.14		
21. I felt a sense of accomplishment after completing the course.	Male	4.95	1.57	.53	.60
	Female	5.20	1.81		
28. I would recommend that other teacher candidates take similar courses from the department.	Male	4.81	1.86	1.08	.28
	Female	5.31	1.86		
30. I feel I am a self-directed learner and this type of course works best for me.	Male	4.86	1.98	1.06	.29
	Female	5.35	1.86		
33.I would take more online courses if they were available to me.	Male	5.14	1.98	.43	.67
	Female	5.37	2.15		
Overall cluster	Male	4.73	1.67	.95	.35
	Female	5.13	176		

*$p<.05$, $df = 90$.

Table 13 presents the findings regarding how older and younger teacher candidates view distance education in terms of the effectiveness of the distance course structure. The mean scores indicated a somewhat, but not significantly, higher average for those in the over 25 group than the under 25 group. Mean scores ranged from 5.07 to 5.69 in the over 25 group and 4.83 to 5.65 in the under 25 group. The independent *t* test did not reveal any statistically significant differences.

Table 12

Individual Questions and Cluster Means and Standard Deviations for Male and Female Students with Regards to Peer-to-Peer Interaction (N: Female = 71, Male = 21)

Question		Mean	SD	*t*	*p*
Q14. I was able to get to know others in my distance class.	Male.	3.29	1.76	1.08	.29
	Female	3.84	2.16		
Q32. Student contact was adequate, and I was able to learn from my peers.	Male	4.10	1.79	.39	.71
	Female	4.28	2.04		
Overall Cluster	Male	3.69	1.58	.82	.42
	Female	4.08	2.00		

The question regarding whether grading of assignments was fair received the highest mean and average in terms of the other question scores. Students seem to be content with this area of course structure. The average cluster scores for course structure were greater than 5, which suggests that in either group student teachers exhibited positive responses regarding course structure in a distance-learning environment.

In terms of student/teacher interaction (see Table 14), students under 25 had a slightly higher mean score on the overall cluster means. Those under 25 had an overall cluster mean of 5.33 and their counterparts in the over 25 group had one of 5.31. Both groups indicated that there they felt comfortable contacting the instructor as evidenced by high mean scores on that item (>25 =5.87; <25=5.98). The *t* test did not reveal any statistical significance for any of the items in this cluster.

Table 15 presents information regarding overall enjoyment and satisfaction and shows that teacher candidates in the over 25 group had higher mean scores for all but one question in this cluster. The range was 4.15 to 5.58. There was no real indication that students were not satisfied with distance courses but a mean of 4.15 does suggest an element of neutrality in terms of getting to know each other.

Peer-to Peer Interaction

Peer-to-peer interaction had the lowest means of all clusters. Respondents who were under 25 thought almost identically to those over 25. Those over 25 had a cluster mean of 3.92, while those under 25 had cluster mean of 4.01. The standard deviations were 1.85 and 2.00 respectively. No significance was detected regarding peer-to-peer interaction and age. Table 16 depicts the information relating to peer-to-peer interaction.

Summary of Research Question 3

Significance was not detected in the comparison. Age did not seem to be a factor in determining differences in perception.

Research Question 4

Research Question 4 asked, "How do perceptions of teacher candidates differ based on the number of courses taken at a distance with regard to overall enjoyment and satisfaction of distance courses?" The correlation between the number of courses taken and enjoyment and satisfaction were calculated and listed in Table 17.

None of the questions related to enjoyment and satisfaction was statistically significant; however, Q30 seemed to be the one closest to being a significant item. It

would seem that the number of courses taken at a distance was not a factor in determining the overall enjoyment and satisfaction.

Table 13

Means and Standard Deviations of Respondents Over and Under 25 years (Effectiveness Course Structure)

Question	Age	N	Mean	Std. Dev.	*t*	*p*
12. The instructor used the time effectively to meet the objectives of the course.	>25	45	5.22	1.55	-.32	.75
	<25	46	5.33	1.56		
16. Examples, guidelines, illustrations were effectively used by the instructor	>25	45	5.07	2.22	-.55	.58
	<25	46	5.26	2.24		
18. Examples the instructor gave were appropriate and clear.	>25	45	5.20	1.66	.95	.34
	<25	46	5.20	1.77		
19. The amount of material covered in each session was appropriate.	>25	45	5.18	2.30	1.37	.18
	<25	46	4.83	2.15		
23. The course content was presented in an organized manner and reflected the terminal objectives	>25	45	5.69	1.30	.64	.53
	<25	46	5.50	1.20		
29. The grading of assignments was fair.	>25	45	5.67	1.66	.05	.96
	<25	46	5.65	1.50		
Overall Cluster	>25	45	5.39	1.30	.44	.66
	<25	46	5.26	1.38		

Table 14

Mean and Standard Deviation of Respondents over and under 25 years (Student/Teacher Interaction)

Question	Age	N	Mean	Std. Dev.	*t*	*p*
9. I felt comfortable contacting my instructor.	>25	45	5.87	1.38	-.42	.67
	<25	46	5.98	1.13		
15. The instructor was responsive to the student needs.	>25	45	5.20	1.66	.01	.99
	<25	46	5.20	1.77		
20. Assignments were graded and returned in a timely manner.	>25	45	4.58	2.30	-.35	.73
	<25	46	4.74	2.15		
24. The instructor encouraged participation.	>25	45	5.62	1.30	.13	.89
	<25	46	5.59	1.20		
31. My contact with the the instructor was adequate.	>25	45	5.31	1.66	.41	.68
	<25	46	5.17	1.50		
Overall Cluster	>25	45	5.31	1.33	-.08	.94
	<25	46	5.33	1.11		

Research Question 5

Research Question 5 asked, "What are personal and other factors that pre-service teachers feel helped them to be successful distance-learning students?" In order to probe the students to find out these success factors, an open-ended question was placed on the survey that allowed the students to communicate three factors that contributed to their success as distant learners. NVivo qualitative software was used to code the responses presented by the students. Preliminary and secondary coding was done to find the most popular themes presented by the respondents.

Table 15

Individual Questions and Cluster Means and Standard Deviations for Respondents Over and Under 25 years (Enjoyment and Satisfaction) N >25 =45; <25=46)

Question		Mean	SD	*t*	*p*
17. I enjoyed my distance class more than the traditional class.	>25	4.40	2.12	.54	.59
	<25	4.15	2.26		
21. I felt a sense of accomplishment after completing the course.	>25	5.30	1.68	.81	.42
	<25	5.00	1.84		
28. I would recommend that other other teacher candidates take similar course from the department.	>25	5.47	1.71	1.31	.19
	<25	4.96	2.00		
30. I feel I am a self-directed learner and this type of course works best for me.	>25	5.36	1.91	.51	.61
	<25	5.15	1.90		
33.I would take more online courses if they were available to me...	>25	5.58	2.04	1.11	.27
	<25	5.09	2.18		
Overall cluster	>25	5.24	1.66	1.001	.32
	<25	4.87	1.82		

*$p<.05$, $df = 90$.

In summary, correlations indicated that number of courses taken at a distance did not show any relations with the enjoyment and satisfaction variables. The factors did not show any significance.

After coding and recoding it was necessary to break down the codes into two major categories: internal and external factors. Factors that contributed to the students' success and over which the students had control were labeled *internal factors*. The

Table 16

Means, Standard Deviations, and t tests: Peer-to-peer Interaction

Peer-to-peer Interaction	Age	N	Mean	SD	t	p
Q14. I was able to get to know others in my distance class.	> 25	45	3.58	2.02	-.60	.55
	<25	46	3.84	2.18		
Q32. Student contact was adequate, and I was able to learn from my peers.	>25	45	4.27	2.00	.55	.96
	<25	46	4.18	1.99		
Overall Cluster						
	>25	45	3.92	1.85	-.33	.74
	<25	46	4.01	2.00		

Table 17

Correlations of Number of Distance Courses Taken and Overall Satisfaction and Enjoyment (N= 92)

Variables	Correlation	*p*
17. I loved my distance class	.098	.351
21. I felt a sense of accomplishment after completing the course.	.147	.168
28. I would recommend that other teacher candidates take similar course from the department.	.089	.398
30. I feel I am self-directed learner and this type of course works best for me.	.190	.070
33. I would take more online courses if they were available to me.	.112	.289
Overall Cluster Score	.142	.177

following factors were labeled as internal factors: *self-motivation, self-starter, technology savvy, time management, management of stress,* and *independent learning*. External factors were factors over which the respondents had no control but were present and contributed to their success. The following were isolated as external factors: *grades, resources, cost, expectations, fits schedules,* and *interaction with others*.

Internal Factors

Although six themes were identified as factors that contributed to the respondents' success as distance learners, it would seem that the dominant themes that were mentioned by the students were that of being self-motivated, self-starter, technology savvy, and independent learner. These four factors were mentioned by most of the participants as contributing to their success.

An overarching theme found in teacher candidates' responses was that the ability to do work on their own contributed to their success in a distance format. A sampling of the responses is presented below; detailed responses of all students for this question are in Appendix G.

"I am a self-directed learner."

"I am a self-starter."

"Self-directed."

"I am very self-motivated and strongly supported by my employer, I always complete tasks."

"Self-discipline."

"Self-motivation."

"My determination is to be successful."

"I took the initiative to contact the professor when I felt lost and insecure. I am good at taking my own learning into my own hands. I am good at getting things done on time such as participation on discussion boards."

"Work at my own pace."

Students suggested that being independent learners contributed to their success as distance learners. The ability to work on their own to solve problems using their own initiative was mentioned several times. This theme is supported by the following excerpts from their responses.

"Do the class at my own pace, being able to see where others were in the class, being able to ask questions without being seen or feeling self-conscious."

"I am a self-directed learner."

"Independent learner. Being able to complete the assignments on my own time."

The other theme that figured prominently in internal factors was coded as *technical savvy*, or the ease of use of technology and the ability to manipulate the technology so that students can use it to their advantage. Several respondents alluded to this being reason why they were successful in their distance course. The following is a sampling of their responses.

"Technology literate"; "computer skills"; "computer knowledge"; "computer Skills"; "access to a computer with Word."

External Factors

Several themes emerged from the responses to the open-ended questions, the most dominant having to do with interaction with others, learning from them, and being able to assimilate the material. On analysis, interaction was with peers, the instructor, or with

the resources provided by the course designer. The following responses indicated interaction as an essential element of student success.

"Material taught is straightforward out of the book and it is a better challenge to get to know the rest of the people that are in class with you."

"Questions were answered in a timely manner."

"Learned through discussions. Peer feedback was part of the course."

Another prominent theme found in the responses was that of resources. Respondents indicated that this contributed to their success.

"My teacher responded to my e-mails and calls."

"Wrote the teacher every time I had a problem."

"Questions were answered in a timely manner; research skills."

A very important reason for student success was that of "proper fit" in the schedule. The student's busy schedule is able to accommodate instruction at a distance. Hence, teacher candidates view the ability to fit instruction within their schedule as something that contributes to their success. The following were statements made by teacher candidates that indicated that "proper fit" was a consideration for them being successful as a distance learner.

"It was convenient at time."

"Fit into schedule."

"I don't have to drive 50 miles to class after working all day."

"Flexible scheduling. "

"I could do it when I was able."

" I was able to work late at night."

"As a distance learner I was able to complete the class at home."

"The professor required a quiz (online) every week that was timed which kept me on track with the material. The only time we were required to go to a classroom was for tests. Very convenient."

Another theme that was mentioned and coded as external was that the participants' motivation to complete their course and get a good grade helped them to be focused and consequently be successful. If expectations were set before the course began, this was also a motivating factor. Respondents suggested that this helped them to be successful. Although cost was mentioned, many students did not list this as an overriding factor.

Summary of Research Question 5

Research Question 5 asked respondents, "What were the personal and other factors that contributed to your success as distance learners?" Two themes emanated from the students' responses: internal factors, which included *self-motivation, self-starter, technology savvy, time management, management of stress,* and *independent learning;* and external factors such as *grades, resources, cost, expectations, fits schedules,* and *interaction with others.*

Other Issues/Recommendations

Included in the survey was a question that was geared at finding out whether students had a positive experience in distance courses taken that would lead them to promote distance as a learning option. Again, NVivo was used to analyze the responses. The following themes emerged: *interaction, feedback, technical support, disappointment, expectations,* and *good examples.* The more dominant themes were interaction, better

feedback, and technical support. It appears from the responses from almost all schools that students felt that lack of interaction with other students and teachers was a prime concern and, in effect, this promoted one of the most dominant suggestions. Respondents were quite vocal about interaction as evidenced by the following quotes that support the recommendation:

> "Encourage that more students utilize the homepage feature for better interaction. Encourage communication between the instructor and the student."
>
> "Distance learning where you can interact with the teacher (if only via television) and other students is one thing. Online courses are something else entirely. I do not think there is a way to make them any better. Teachers teach. Online courses present information. The point of having a teacher is so that learning can occur through teacher/student interaction. It makes money for the college. It allows students to check off one more licensure course but it has nothing to do with teaching."
>
> "Better student participation."
>
> "I am disappointed in the amount of communications from the instructor and the length of time it takes to return grades on assignments."
>
> "Requiring more contact and interaction between students."
>
> "I guess if you have to improve anything it would be to get the teachers and students to have more contact if even by e-mail."

A second popular recommendation given by respondents was the timely return of grades, coded as timely feedback; in fact, this was very frequent. Students in one

particular school were very concerned about grades not returned. This recommendation seemed to be very popular.

Several suggestions are listed below to support it:

> "Make sure that all work gets graded in a timely manner and to have help on campus. I am disappointed in the amount of communications from the instructor and the length of time it takes to return grades and assignments."
>
> "I had no idea what my grade was until I received my final."
>
> "Timely reporting of grades and e-mail responses from teachers."

The final theme that emerged was that of proper technical support. Several students gave technical support as a key recommendation. The availability of individuals who might be able to help with technical problems seems to be important to students. One student's response was, "We need to have more help with the technical support. I am appalled that they did not have live help for problems that I encountered. Just plain sloppy." Another suggested, "Improve technical support."

In summary, three popular suggestions were made to improve the offering of distance courses. As with all course delivery, this is important for continuous improvement. First, students indicated that *interaction* was their number one concern. Second, the *timely return of grades* was a very popular recommendation. Third, *technical support* was the final recommendation made by the students.

Supplemental Question 1

Supplemental Research Question 1 asked, "How do perceptions of teacher candidates differ based on progression in their course of study with regard to effectiveness of course structure, adequacy of student/teacher interaction, overall

enjoyment and satisfaction, and adequacy of peer-to-peer interaction?" Means and standard deviations were computed for both groups; that is, those who where in the beginning and middle as Group 1 and those at the end of their program as Group 2. An independent *t* test was run to make the comparison between the two groups and determine the significance of the means for the four clusters: effectiveness of course structure, adequacy of student/teacher interactions, overall enjoyment and satisfaction, and adequacy of peer-to-peer interaction..

Effectiveness of Course Structure

Teacher candidates in Group 1 showed higher mean scores than those in Group 2 with regard to effectiveness of course structure. The information is summarized in Table 18. Students at the beginning and middle of their program had the highest means, 5.79 and 5.70, for questions 23 and 29. These statistics also had lower standard deviations, indicating that there was less variability for the questions in this cluster. The results indicated that those who were early in their program were somewhat more positive about the presentation of the content in an organized manner that reflected the terminal course objectives.

They were also quite positive about the grading of assignments. The overall cluster mean and standard deviation were 5.51 and 1.10 for Group 1 and 5.13 and 1.50 for Group 2. However, none of the *t* tests were statistically significant, indicating that the differences suggesting that teacher candidates in Group 1 had a more positive rating could well be due to chance.

Table 18

Comparison for Teacher Candidates who Were Early and at the end of their Course of Study on Effectiveness of Course Structure

Question	Mean	SD	*t*	*p*
Q12. The instructor used the time effectively to meet the objectives of the course.	(Early) 5.51 (End) 5.04	1.22 1.77	-1.50	.14
Q16. Examples, guidelines, and illustrations were effectively used by the instructor.	(Early) 5.39 (End) 4.98	1.40 1.88	-1.08	.28
Q18. Examples the instructor gave were appropriate and clear.	(Early) 5.33 (End) 4.69	1.41 1.97	-1.78	.08
Q19. The amount of material covered each session was appropriate.	(Early) 5.40 (End) 5.12	1.53 1.87	- .76	.45[a]
Q23. The course content was presented in an organized manner and reflected the terminal course objectives.	(Early) 5.79 End) 5.39	1.15 1.59	-1.41	.16
Q29. The Grading of assignments was fair.	(Early) 5.70 (End) 5.59	1.06 1.46	-.40	.69
Overall Cluster	(Early) 5.51 (End) 5.13	1.10 1.50	-1.38	.171

[a]:Degrees of freedom were not reduced because equal variances assumed. For all others, equal variances not assumed and *df* reduced.

Adequacy of Student/Teacher Interactions

Teacher candidates' perception of student-teacher interaction revealed that those who were at the beginning and middle of the program had somewhat higher mean scores on all questions except question 9. Group 2 posted the highest mean score (6.02) The overall cluster means showed a somewhat higher mean score in favor of Group 1 (5.53) versus 5.11 for those in Group 2. The standard deviations were 1.03 and 1.33 respectively. Table 19 shows the means, standard deviations, and *t* tests.

With regard to the overall effectiveness of student/teacher interaction, students in Group 1 did not show any significant difference in terms of overall cluster means. However, the results of question 20 (Assignments were graded and returned in a timely manner) (t=2.77, df=89.80, p<.05) showed a statistically significant difference between those who were in Group 1and those in Group 2. Those at the end perceived the grading of assignments to be less timely. The effect size of the difference was typical or medium for the behavioral sciences.

Overall Enjoyment and Satisfaction

Overall cluster means suggest that students at the beginning and middle of their programs expressed more positive perceptions toward overall enjoyment and satisfaction than their counterparts at the end of their program (Table 20). The cluster means for the groups were 5.41 and 4.71 respectively. The standard deviations were 1.32 and 1.99. Student responses in this cluster indicated that respondents in Group 1 were somewhat more satisfied with distance learning courses for all questions on the instrument. The mean scores for Group 1 ranged from 4.42 to 5.91; those for Group 2 ranged from 4.14 to

Table 19

T Test for Teacher Candidates by Progression in Course of Study about Student/Teacher Interaction

Question	Mean	SD	*t*	*p*
Q9. I felt comfortable contacting my instructor.	(Early) 5.77 (End) 6.02	1.23 1.28	.96	.34
Q15. The instructor was responsive to students needs	(Early) 5.51 (End) 4.90	1.24 1.99	1.80	.08[a]
Q20. Assignments were graded And returned in a timely Manner.	(Early) 5.30 (End) 4.08	1.92 2.30	2.77*	.00[a]
Q24. The instructor encouraged Participation.	(Early) 5.63 (End)5.55	1.22 1.29	.29	.77
Q31. My contact with the Instructor was adequate.	(Early 5.47 (End) 5.02	1.30 1.76	1.36	.18
Overall Cluster	(Early) 5.54 (End) 5.11	1.03 1.34	-1.67	.10

[a]: Degree of freedom reduced because equal variances not assumed.
*p < .05

5.00. Standard deviation for Group 1 ranged from 1.38 to 1.99 and for Group 2, 1.96 to 2.44.

Based on the results of questions 21 and 33, "I felt a sense of accomplishment after completing the course" (t=2.23, df=85.63, p<.05) and "I would take more online courses if they were available to me" (t=2.53, df=80.64,p<.05), there was a statistically significant difference between those in Group 1 and those in Group 2. The results indicate that students at the beginning and middle of the program were more positive about distance courses than those at the end of the program. As students got to the end of their course of study, they were likely to be less satisfied with distance courses.

Adequacy of Peer-to-Peer Interaction

The *t* test was used to determine whether there was a difference between students at the beginning-middle of their program and those at the end of their program (Table 21). Student means from both groups indicated that there was a tendency to be neutral with the statements of perception in this cluster. However, question number 14, "I was able to get to know others in my distance class," showed a statistically significant difference between those at the beginning-middle of their programs and those at the end. The overall means for the cluster was very low (early= 3.21 end=4.17). In contrast to the findings above, students who were early in their program rated their opportunity to get to know peers very low and significantly lower than the students near the end of their program.

Cluster Means

In order to determine if there was significance among the clusters, *t* tests were run for the four cluster means, effectiveness of course structure, adequacy of student/teacher interaction, overall enjoyment and satisfaction, and adequacy of peer-to-peer interaction. Overall enjoyment and satisfaction (t=1.99, df=84.17, $p<.05$) showed a statistically significant difference between students in Group 1 and those in Group 2. The results indicate that students in the early stage of their course were more positive about their experience in a distance course than those who were at the end of their program.

Summary of Supplemental Question 1

Student's progression in their course of study was a factor in determining satisfaction with distance courses. Those students who were at the early stage of their

Table 20

Comparison for Teacher Candidates who Were Early and at the end of their Course of Study About Overall Enjoyment and Satisfaction

Question	Mean	SD	*t*	*p*
Q17. I enjoyed my distance course more than the traditional classes.	(Early) 4.42 (End) 4.14	1.99 2.33	.61	.55
Q21. I felt a sense of accomplishment after completing the course.	(Early) 5.56 (End) 4.78	1.38 1.96	2.12*	. 03[a]
Q28. I would recommend that other teacher candidates take similar course from the department.	(Early) 5.51 (End) 4.86	1.45 2.12	-1.88	.06
Q30. I feel I am a self-directed learner and this type of course works best for me.	(Early) 5.51 (End) 5.00	1.61 2.09	-1.30	.19
Q33. I would take more online courses if they were available to me.	(Early) 5.91 (End) 4.80	1.46 2.44	2.60*	.01
Overall Cluster	(Early) 5.41 (End) 4.71	1.32 1.99	-1.99	.05*

[a:] Equal variances not assumed;

*p < .05.

Table 21

Comparison for Teacher Candidates who Were Early and at the end of their Course of Study about Peer-to-Peer Interaction

Question		Mean	SD	*t*	*p*
Q14. I was able to get to know others in my distance class.	(Early)	3.21	1.91	2.24	.03*
	(End)	4.17	2.15		
Q32. Student contact was adequate, and I was able to learn from my peers.	(Early)	4.05	1.91	.88	.38
	(End)	4.41	2.03		
Overall Cluster	(Early)	3.63	1.75	1.72	.09
	(End)	4.31	2.00		

*$p < .05$.

course of study expressed overall satisfaction with distance courses and were more positive about their experience than were their counterparts who were at the end of their program.

Several statements proved significant. Assignments were graded and returned in a timely manner, sense of accomplishment, willingness to take more distance courses, and ability to get to know others in distance class were significant statements. Overall satisfaction and enjoyment was the only cluster that was significant, with those students at the end of their program being less satisfied.

Summary

In general, students in distance teacher programs/courses rated course satisfaction, course structure, and student/teacher interaction as positive aspects of a distance course.

The findings were corroborated by the open-ended questions which indicated interaction as a factor in distance course satisfaction. Female students scored somewhat higher than male students on all clusters. In particular, female students were more comfortable with student/teacher contact and felt that the presentation of course content was more organized in determining their satisfaction.

Age and the number of courses taken at a distance did not seem to be factors in determining satisfaction with distance courses or programs by teacher candidates. Those students who were in the early stages of their course of study were generally more satisfied with their experience as distance learners. In particular, the following were rated significantly higher by students at the beginning or middle or their program: assignments graded and returned in a timely manner, a sense of accomplishment, willingness to take more distance courses. On the other hand, ability to get to know others in their distance classes was not seen as important to these students. Progression in their course of study was a factor in overall enjoyment and satisfaction of distance courses, students who were in the early stage of their program tended to agree more about this component.

CHAPTER 5

DISCUSSION

The purpose of this study was to investigate the perceptions of teacher candidates regarding the effectiveness of courses and programs offered at a distance in the teacher education departments of a convenience sample of selected universities. Specifically, the study identified how teacher candidates perceived distance education in relation to the following variables: effectiveness of course structure, adequacy of student teacher interaction, overall enjoyment and satisfaction, and adequacy of peer-to-peer interaction. A questionnaire was used to collect the data. Using descriptive statistics (means and standard deviations), *t* tests and correlations, and coding (of the open-ended questions), the research questions were answered. A 49% response rate was established; thus, the conclusions should be generalized with caution.

The purpose of this chapter, therefore, is to present a summary of the research findings and conclusions of the study and to discuss the implications of pre-service teachers' perceptions of courses or programs delivered at a distance at selected colleges and universities for this type of delivery. In addition, recommendations for further study will be an essential component of this chapter.

Distance education as a teaching paradigm has been around for a long time; however, in its present form with sophisticated delivery mechanisms it has revolutionized the way in which students learn and teachers teach. One might expect the distance pedagogy to be accepted by everyone without reservation. However, this is not without

problems. There are still individuals who believe that distance education is not as effective as face-to-face delivery, and there are people who scorn distance and feel that it is not as effective as the traditional face-to-face delivery. Hence, distance education as a delivery mechanism is faced with resistance from some administrators and teachers who feel that face-to-face delivery is somewhat superior to distance delivery. In the initial telephone and e-mail inquiry, several professors who were asked to participate in the investigation expressed their dislike for distance education. Their reason for not liking this delivery pedagogy was that in a teacher education program there needs to be interaction between those who are doing the training and those being trained. At the graduate level, there is no shortage of distance programs for those returning to school for additional certification or those who have a bachelor's degree but are not trained as teachers.

Overall, distance education is gaining momentum, and several universities are using quasi-distance methodology to supplement traditional delivery even if they have not espoused fully the delivery method. Distance as a delivery pedagogy is focused on reaching a relatively larger and more sophisticated population (AFT, 2001; Spooner et al., 1998; Uhlig, 2002). Studies abound about distance education programs (AFT, 2001; Duhaney, 1996; Harnar, 2000; IHEP, 1999; NCES, 2002; Ross & Powell, 1990; Thomerson & Smith, 1996); however, very few have been done about pre-service teachers. Several studies have focused on the integration of technology rather than purist distance methodology (Sherry, 1996; Willis & Raines, 2001; Yelland et al., 2000).

Research Questions

For the purpose of the study, several research questions were explored:

1. What are the perceptions of teacher education candidates of selected teacher training institutions toward adequacy of student/teacher interaction, overall course satisfaction and enjoyment, effectiveness of course structure, and adequacy of peer-to-peer interaction?
2. How do perceptions differ between male and female teacher candidates/students of selected teacher training institutions towards effective course structure, adequacy of student/teacher interaction, overall enjoyment and satisfaction, and adequacy of peer-to-peer interaction?
3. How do perceptions differ between older and younger students (i.e., those 25 and over and those under 25 years) enrolled in distance courses at selected teacher training institutions toward effective course structure, adequacy of student/teacher interaction, overall enjoyment and satisfaction, and adequacy of peer-to-peer interaction?
4. How do perceptions differ among teacher candidates, based on the number of courses taken at a distance, with regard to overall satisfaction with distance courses?
5. What are the criteria for success that teacher candidates feel have helped them to be successful as distance learners?

Supplemental Question

1. How do perceptions of teacher candidates differ based on their progression in their course of study with regard to effectiveness of course structure, adequacy of student/teacher interaction, overall enjoyment and satisfaction, and adequacy of peer-to-peer interaction?

A survey instrument developed by Thomerson (1995) was used as the starting point to address the research questions in this study. While other instruments were

viewed (Duhaney, 1996; Harroff, 2002), the most appropriate was that of Thomerson; it seemed to reflect the essence of this study. The survey instrument used in this study gathered information from pre-service teachers regarding their perceptions on the effectiveness of education courses or programs delivered at a distance. The survey was further validated by the researcher's adviser and committee members to reflect the relevance of this study. Since minor changes were made to Thomerson's survey on the advice of dissertation advisers, it was necessary to run a new factor analysis. On doing so, clusters emerged that were similar to the ones used by Thomerson, but an additional cluster emerged (peer-to-peer interaction) which was used. The reliability coefficients yielded alphas between .80 and .93. The following clusters were used in this study: effectiveness of course structure, adequacy of student teacher interaction, overall enjoyment and satisfaction, and adequacy of peer-to-peer interaction.

The sample used for this study was a non-random convenience sample that was obtained by contacting PT3, NABTE, specific Carnegie and other schools from the state of Georgia who had distance programs. Of the 50 schools contacted, 11 indicated that they would participate in the survey. Three of the 11 indicated that their programs did not quite match the purpose of the research being carried out and subsequently declined to have their students surveyed. One of the three indicated that although they would like to have their students surveyed, it was not possible at the time since they were a for-profit school and findings from this research might be detrimental to them if they were negative. Most schools did not have distance courses at the undergraduate level. The non-random sample of 189 was conveniently selected from those schools that indicated

that they had distance courses and programs at the pre-service level. There were 92 usable responses from the sample, which represented a 49% response rate.

The 92 usable survey instruments were returned electronically or by mail and the data entered into an SPSS database for purposes of statistical analysis. The means and standard deviations were computed for each objective question and the cluster scores. The last two questions were open-ended and were coded using NVIVO, and relevant themes were extracted to respond to the research questions asked. Correlations and *t* tests were computed to answer research questions 2-4.

Discussion of Findings

General Characteristics of Teacher Candidates

The general characteristics of teacher candidates in the study, obtained from the first eight questions, revealed that the students were between 18 and 60 years of age with 59% over the age of 25. The findings are consistent with current studies and support the findings that older students are more likely to take distance courses (Aljarrah, 2000; IHEP, 1999; NCES, 2001). Roughly three fourths of the respondents were female, indicating that a higher percentage of females than males participated in distance education courses. The findings support other research in the area of distance education where there is a higher percentage of female students participating in distance education courses (Aljarrah, 2000; Thomerson, 1995; Tsay, 1999).

Research Question 1

Research Question 1 examined the perceptions of teacher candidates of selected institutions toward effective course structure, adequacy of student/teacher interaction, overall enjoyment and satisfaction, and adequacy of peer-to-peer interactions. The

findings for this question suggest that teacher candidates gave more or less positive responses with regard to teacher/student interaction, overall course satisfaction, and course structure. The respondents indicated a little less than positive responses in terms of the peer-to-peer interaction. These findings are consistent with those of Thomerson (1995) and Tsay (1999).

Research Question 2

Research Question 2 examined differing perceptions between males and females toward student/teacher interaction, course structure, and overall enjoyment and satisfaction and peer-to-peer interaction. Female students scored somewhat but not significantly higher on the average for all four clusters with regard to course structure, student/teacher interaction, overall course satisfaction, and peer interaction. Of note is the fact that female students had relatively high mean scores for the student/teacher interaction cluster. The issue of interactivity is critical in distance, and the results seem to go along with the findings of previous studies regarding interactivity (Roberson & Klotz, 2003; Shin & Chan, 2004, Gabriel, 2004).

Research Question 3

The results of Research Question 3 showed that for the most part students in the over-25 age category were slightly but not significantly more positive about student interaction, and overall enjoyment and satisfaction. The groups had essentially equal responses to the issue of course structure and peer-to-peer interaction. In contrast, in Aljarrah's (2000) study, there were statistically significant differences between older students and younger students toward online courses; those who were older reported significantly higher scores.

Research Question 4

The results showed that those students who had fewer distance courses had a higher mean score on all but one of the questions in the cluster, enjoyment and satisfaction. However, no significance was detected. The correlations indicated that number of courses taken at a distance was not a factor in determining overall satisfaction with distance courses.

Research Question 5

Research Question 5 addressed internal factors which included self-motivation, self-starter, technology savvy, time management, management of stress, and independent learning. The responses also indicated that success can be based on external factors such as grades, resources, cost, expectations, schedules, and interaction with others.

Supplemental Question

The supplemental research question examined whether teacher candidates' progression in their course of study would affect the way they think about distance courses or programs with relation to the four clusters in this research. The findings were that overall enjoyment and satisfaction was statistically significant, with students who were at the beginning and middle of their program more apt to enjoy distance courses or programs more than those at the end of the program. Specific statements tested to be statistically significant indicating that students at the beginning of their program felt more positive about certain issues than those at the end of their program, these statements were: assignments were graded and returned in a timely manner, sense of accomplishment, and willingness to take more distance courses. However, on the ability

to get to know others in the distance class, those at the beginning and middle of their program were less positive than those at the end of their program.

Conclusions

This study looked at the perceptions of pre-service teachers on courses and programs delivered at a distance. Analysis and review of the questions on the survey provided a basis for the conclusions. Judging from the initial response from various institutions surveyed, the emphasis on distance education in education courses or programs is limited and, to a large extent, confined to the graduate population; hence the small nature of the sample in the research. Most schools did not offer distance courses or programs at the undergraduate level (e-mail responses of NABTE, PT3, and other colleges). This concurs with the findings in Pershing's (2001) study, where it was found that 15% had few or no courses at a distance. This same study indicated an 8:1 ratio of graduate students to undergraduate students in general distance education programs. It would seem that the ratio would be even lower in education programs.

The following conclusions were drawn from the findings of the study, especially from the open-ended question about other issues and recommendations.

1. Teacher candidates have a more or less positive response to distance education in terms of overall satisfaction and enjoyment.
2. When asked to comment about concerns, interaction in the distance environment was of utmost importance to the students. It would seem that female students are somewhat more apt to rate interaction as a positive element in the distance class.
3. Course structure is important in a distance environment so strategies geared at improving the course structure may aid learning at a distance.

4. There were no significant differences between the older and younger students.
5. The number of courses taken at a distance doesn't seem to affect a student's perception of distance as an option for learning.
6. Success factors as defined by teacher candidates were being a self-starter, technologically savvy, good time management, management of stress, and being an independent learner.
7. Students were concerned about the return of grades in a timely manner and about technical support.
8. Those at the beginning and middle of their programs were more likely to enjoy and be satisfied with their experience as distance learners than those at the end of their program. However, those at the end were less negative about lack of opportunity to get to know other students.

Discussion

This study, although unique in its application, follows the pattern of a great deal of distance related research. It would seem that the findings are similar to those of a number of studies that were done; however, the form of distance learning where students are engaged in a pure distance education by using the Internet as the primary tool for the dissemination of information and communication does drive the uniqueness of the study. Thomerson (1995) and others have conducted similar studies, but a totally different technology, video conferencing equipment as well as a hybrid or quasi-distance delivery mode, was used. It is the writer's view that it is in this context that the present study has its unique characteristics. Although numerous studies have been conducted using pure internet technology, unlike this study, they did not focus on teacher candidates.

Student Characteristics

The results in this study regarding student characteristics seemed to be in line with those of numerous other studies in that the sample population had almost three times the number of females as males taking distance courses. The results of the study also yielded older students enrolled in distance courses or programs. The study further established or concretized information in previous studies (Dille & Mezack, 1991; Field, 1982; IHEP, 1999; Thomerson, 1995; Tsay, 1999; Kurtz, 1998).

Ideally, research of this nature should build upon the foundation laid by other researchers in the field. It is felt that the perception of pre-service teachers regarding the effectiveness of courses or programs delivered at a distance adds to the knowledge base in terms of its findings, and the results are similar to those of other studies in the area of distance education.

Although not as troubling as it seems, the study was able to unearth good things about distance and some poor things that were being encountered by teacher candidates in their courses or programs. This is not a reflection of all the schools that were surveyed but might have been unique to a particular campus. For example, in the open-ended responses of one school, with roughly 23% of the respondents it could be seen that papers being returned in a timely manner and communication between the instructor and students were major issues. While this particular school had grading issues, interaction was brought up by most of the responders from all schools. As flexibility with the technology and the various platforms used to deliver distance develops, the issue of testing and immediate feedback will improve and become less of an issue in distance education. Students will be able to see their grades instantaneously. There are certain

systems that are already in place to do this. As indicated before, not all students indicated that grading was a problem, suggesting that others schools have leveraged technology for their benefit. It certainly is an issue that must be looked into.

Judging from the researcher's involvement in the planning and delivery of distance courses for more than eight years, the observation has been made that schools involved in this process are making an effort to improve the distance delivery so that their clients (students) will be satisfied. Having undergone training in the use and delivery of various distance courses at a private institution, one could see that other institutions are spending time to evaluate distance courses while at the same time providing training for those who need it and responding to students concerns.

Since interactivity was a major concern for students, distance professors must listen to the "drumbeat"; that is, they must be sensitive to the needs of their students and use this as a means to reorient the delivery of their courses. In the literature review, it was pointed out that for distance to be effective it should be student-centered (Knowlton, 2000). Building distance courses and programs on the premise of interactivity will most certainly lead to increased satisfaction and higher success rates on the part of students.

Additional Findings

As indicated, research in distance learning is not sparse; however, the present study came up with some new findings related to teacher candidates' perceptions of distance learning. While other research focused on areas such as age, ethnicity, and other issues that might be considered germane to distance delivery, the focus on students' progression in their programs has not been thoroughly researched. The findings of this study are that those at the beginning and middle of their program of study were somewhat

more likely than those at the end to be positive about distance courses or programs, except in regard to the opportunity for peer interaction. Overall enjoyment and satisfaction tested to be statistically significant. While all questions on progression in the program as it relates to perception about distance learning have not been answered, the study provides a springboard for other research to be conducted in this area. One must be cautious that the suggestion does not by any means indicate that the results are generalizable, but they could be a step in the right direction toward exploring further how progression in an academic program affects the way in which respondents feel about distance learning.

Obstacles and the Way Forward

Distance education is here to stay. As a matter of fact, several publications have indicated that there are more students enrolled today in distance courses and programs than five years ago. There are even schools that pride their programs for using exclusive distance delivery. Although some schools have dabbled in distance programs and others are wholly involved, there are still obstacles to be overcome.

In conducting this research, it was evident that politics played a part in its execution. To substantiate this, one of the universities in this study had two teacher training departments within the university. Initially, both departments in the university agreed to allow their students to be surveyed given the human subjects approval from Colorado State University. One of the departments indicated that the number of available subjects was over 200, which would provide a substantial amount of respondents for the study. Political pressures in the departments prevented the researcher designee from administering the surveys. While this might be an isolated case, it would seem that there

are mounting political pressures in many institutions since numerous e-mails indicated that schools were unable to participate because of the bureaucracy and political problems in several of these departments. One e-mail was of particular importance; the researcher designee stated, "It would take maybe a year for human subjects to be approved." Given those constraints and the fact that these professors suggested that there were political problems, these schools were not asked to be a part of the sample.

It is important that research be carried out in all departments of mainline institutions. Therefore, it would be ideal that professors see themselves as assisting in the process and that the administration in these universities engage in dialogue as to how to handle research that is not initiated in their own schools.

Other Strategies for Data Collection

Research of this nature provides an opportunity for learning so that in the future, obstacles will be minimized. Although this research may not be generalized because of the nature of the sample studied, the results are nonetheless representative of the sample that was studied and provide the basis for further research. So as to provide a basis for future studies and to avoid the pitfalls of future research of this nature, the following are being set forth as suggestions for future studies conducted about distance education in teacher training programs.

The first suggestion is that if this research were to be replicated, the deans or heads of schools should be involved in the decision to survey the students in their departments. Not only should the researcher obtain clearance on human subjects; it is also necessary to have the blessings of the dean and other officials in the hierarchy for the

project. Once the political obstacle is removed, it would be necessary to have the researcher designee provide an incentive to the students to respond to the survey. It is also necessary for the study's initial mailing to be done by the second week of the term so that there will be adequate time for follow-up.

Implications for Practice

Characteristics of a Distance Learner

Several issues emerged that in the light of this and other completed work have implications for practice, especially in the field of education. First, the findings of this research and that of others (AFT, 2001; Aljarrah, 2000; Thomerson, 1995; Tsay, 1999) indicate similar characteristics of distance learners: they are older and mostly female. This study confirmed that fact, and to an extent it must be seen as an issue that is important and should be considered when designing distance/online programs. Those who plan the delivery of distance must bear these characteristics in mind so that delivery of distance courses will incorporate most of the suggestions given by these students, such as the ability to interact with the instructor on a regular basis and good course structure implementation. Male students were not as keen as on such issues, and it was not a serious factor; however, this seemed to be an issue to female students. Several students indicated that timely return of grades would be one way to foster some measure of interaction.

Progression In Distance Class

The study indicated that distance students who were at the beginning of their program were more likely to feel more positive about distance courses than those who were at the end of their program. Effectiveness of a program depends to a great extent on

satisfaction of all students, not only those who are at the beginning of their program. This suggests that those who plan distance programs might want to shift their focus to those students who are at the end of their program. It would be important to explore what were the critical issues that caused those students at the beginning of the program to be satisfied and plan the delivery around those elements so that those at the end of the program could be as positive as their counterparts who were earlier in their course of study. While it is not necessary to treat all distance course takers as one large group, it is necessary to be sensitive and incorporate their ideas in the program, thereby responding to their needs.

Model: Interaction and Design

In a proposal about effective blended learning, Morrison and Khan (2003) indicated that an optimal blend of learning approaches must include eight elements: pedagogical, technological, interface design, evaluation, management, resource support, ethical, and institutional. Planners must pay attention to how courses are organized at a distance. All eight elements of blended learning must be given some amount of attention so that continuous improvement will be the rule rather than the exception. Figure 2, a diagrammatic model of distance learning, is a suggestion that may be viewed in the light of interactivity in distance courses or programs.

The model's simplistic focus is on the interactivity of students and instructors. Interactivity for this model could take the form of threaded discussions, response to student questions, e-mails, timely response to homework assignments, and telephone calls. The model assumes that the teacher is in charge of the design pedagogy; such design is related to efficient course structure, delivery, and management. Overall, the

model focuses on design and interaction as a means of fostering overall enjoyment and satisfaction within the distance field.

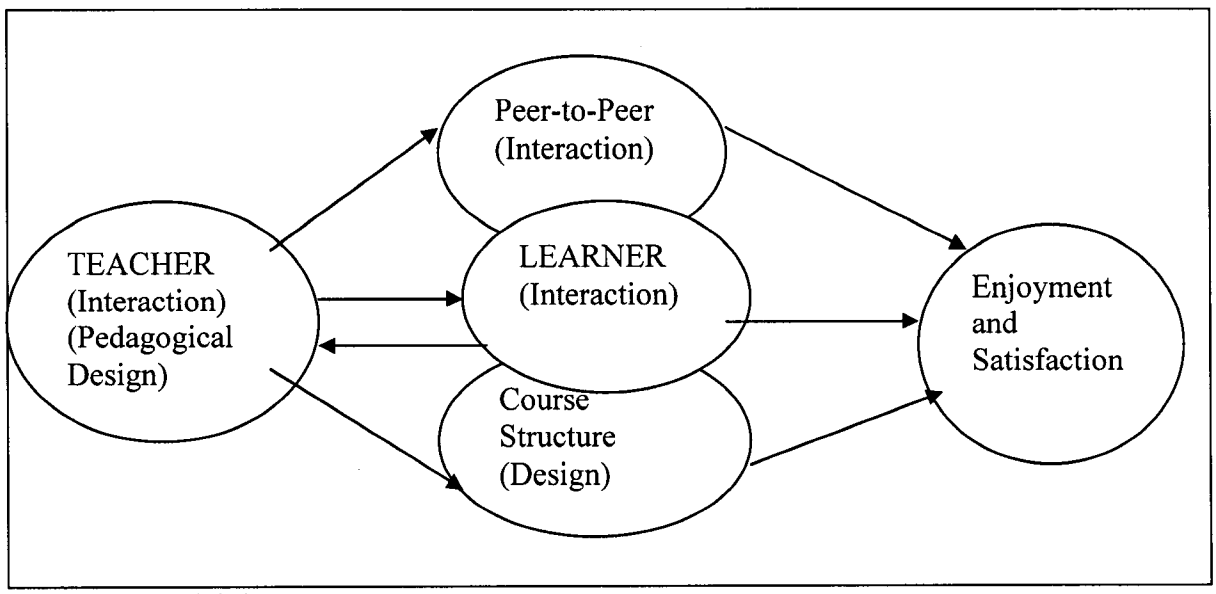

Figure 2. *Model distance program.*

Course Structure

Finally, successful course structure implementation must be given priority in the planning of distance courses/programs. Since this is one area that was found to be connected to successful delivery and satisfaction of distance courses, it should be given some attention. As in traditional delivery, course structure is important in the delivery of distance.

Recommendations for Future Research

Although distance education has been around for more than 150 years, there is still an element of resistance and timidity when we approach the subject. It is in the light of the experiences of two years of interaction with major universities and numerous instructors in these universities that the researcher recommends that:

1. A longitudinal study be conducted to explore the success factors regarding distance education in teacher education programs. The ability to make comparisons over an extended period of time might in some way provide more generalizable results, thereby substantiating the results of this study.
2. Similar research be conducted using the same questions and increasing the number of subjects.
3. Additional research be conducted using experimental approaches to find out whether there are distinct differences in the way teacher education students view distance as opposed to students in other disciplines.
4. Research be conducted that will compare the responses of pre-service teachers in public and private schools since the focus of each type of institution might be different.
5. Research of this nature be replicated using the same research questions but with a qualitative paradigm, taking care to select students from the schools where this research was conducted.
6. A study be conducted to determine the effects of university politics on the delivery of distance courses and programs. This area will be important since during the administration of surveys, as it was clear that politics caused a number of schools not to participate.
7. Research be conducted to find out how instructors in distance courses or programs view their students in the distance learning environment and what are the success factors and obstacles that block success in these programs.

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APPENDIXES

APPENDIX A

COVER LETTER

(University Letter Head)

School of Education
1588 Campus Delivery
Fort Collins, Colorado 80523-1588

Dear Professor:

This letter requests the participation of you and your students in a research study concerning distance education. The students in your department are uniquely qualified to take part in this study. We contacted several of you by e-mail a couple of months ago, and some of you indicated your willingness to participate. The results of this study will be beneficial to schools of education that currently use distance delivery or plan to do so in the future.

The focus of this study, which is a major part of a doctoral dissertation, concerns pre-service teachers' perception of distance education. We are surveying students who have had one or more courses at a distance in your department. Participants are expected to fill out the survey; responses should take no more than 15 minutes. Data will be reported in aggregate form. Your students will not be asked to identify themselves, their response will be anonymous.

We believe that the study will provided important information about the perceptions of teacher candidates regarding overall course satisfaction, student/teacher interaction, physical learning environment, technical support, and overall general enjoyment. Teacher education departments will be able to make changes in their programs to respond to the perceptions of teacher candidates.

The number of students taking courses via distance is limited in most schools of education. Therefore, your participation is critical for the success of this research. Please ask your students to complete the survey. We have provided you with a self-addressed return envelope. As soon as the students have completed the surveys, please return them to Allan Young at 20 Bunnie Trail, Ellenwood, GA 30294. Additional questions about the study or its methodology may be directed to Allan Young as well at (770) 593-8602; email address, ayoung@faculty.atl.devry.edu, aey@mindspring.com. Thank you.

Sincerely,

Dr. Leonard Albright
Professor, School of Education
Colorado State University
Fort Collins, Colorado

Allan E. Young
Professor of Accounting
DeVry University
DeVry, Georgia

APPENDIX B

PARTICIPANTS LETTER

(University Letter Head)

School of Education
1588 Campus Delivery
Fort Collins, Colorado 80523-1588

October 7, 2003

Dear Participants:

Research is currently being undertaken on the perceptions of the effectiveness of education course or programs delivered at a distance. You are uniquely qualified to be a participant in the study, since not all teacher training programs espouse distance as a delivery format.

PURPOSE OF THE RESEARCH:
The purpose of the research is to provide information about pre-service teachers' perceptions on distance education in teacher licensure programs. Outcomes associated with the project are improvement in teacher licensure programs in the area of distance education and provision of additional information about distance education. Pre-service teachers in teacher licensure programs drawn from several states.

PROCEDURES/METHODS TO BE USED:
The initial contact was made with Preparing Teachers for Tomorrow's Technology (PT3), National Association of Business Teacher Educators(NABTE)Schools, selected Carnegie Schools and a list of schools found in the Georgia Student finance commission handbook.. Contacts were made with other institutions that were not a part of those groups listed to ensure that the sample size would be adequate. All Students in the sample met two criteria, 1) Pre-service teachers and 2) Completed at least one distance course prior to the administration of the survey.

Participants will be asked to complete a survey instrument which consists of 25 questions that indicate their perception about distance education in teacher licensure programs. The survey will have two open-ended questions that is geared at finding out what the student feels are success factors and possible recommendation to improve the quality of distance courses on the whole. The survey will take 15 minutes to complete.
The research survey instrument will be administered using three modalities based on the spread of the sample and the willingness of the designee or university to provide information on subjects; the three modalities are 1) mailed survey coded forms to a designee who will read the conditions for participation 2) The researcher administered survey, researcher will travel to several universities and administer the survey in class, the same conditions will be read to the students. 3) Students will have access to survey on WeBCT or an appropriate platform bearing in mind these students would have been identified and told the nature of the research, the designee at the university will indicate the criteria for participation, completed survey will be sent to the researcher designee who will then return completed survey to the researcher. All names or identifying

elements will be removed from the completed survey by the researcher designee prior to mailing the completed survey to the CO-PI. Only University Codes will constitute identifying characteristics on the completed survey.

RISKS INHERENT IN THE PROCEDURES:

It is not possible to identify all potential risks in research procedures, but the researcher(s) have taken reasonable safeguards to minimize any known and potential, but unknown, risks. Participants responses will be kept in strict confidence.

BENEFITS:

Although no direct benefits will accrue to the participants the education community especially teacher licensure programs will benefit in that the results will provide information about what are success factors so that teacher licensure programs can adjust and meet the needs of potential students in the area of distance.

The results will lead to overall improvement in distance courses and programs in teacher licensure programs.

CONFIDENTIALITY:

Your name will not be placed on the survey. Information will be coded by university, location, gender and student characteristics. All data will be kept in a secure location at PI's place of employment. After analyses is done all survey instrument will be kept for a period of one year then shredded and destroyed.

LIABILITY:

The Colorado Governmental Immunity Act determines and may limit Colorado State University's legal responsibility if an injury happens because of this study. Claims against the University must be filed within 180 days of the injury.

Questions about participants' rights may be directed to Celia S. Walker at (970) 491-1563.

PARTICIPATION:

Your participation in this research is voluntary. If you decide to participate in the study, you may withdraw your consent and stop participating at any time without penalty or loss of benefits to which you are otherwise entitled.

Sincerely,

PI: Leonard Albright
Professor, School of Education
Colorado State University
Fort Collins, Colorado

Co-PI: Allan Young
Professor of Accounting
DeVry University
Decatur, Georgia

APPENDIX C

STUDENT QUESTIONNAIRE

(University Letter Head)

Confidential

Pre Service Teachers Perceptions of Distance Learning

UC_____State___ No._____

Introduction and Privacy Statement
The purpose of this research is to assess pre-service teachers' perception of the effectiveness of education course or programs delivered at a distance. **All individual data collected will be kept strictly confidential.** Only summarized results and analyses will be made public. The survey should take 10 –15 minutes to complete.

SECTION 1: DESCRIPTIVE/PERSONAL DATA
Please place a check mark(√) in the box which best represents your response.

1. **Gender:** Male ____ Female ____

2. **Age** as of September 1, 2003: _____

3. **Classification**: Freshman __ Sophomore __ Junior___ Other___
Senior ___ Post Baccalaureate___ Masters____

Please provide the following information by checking and marking where appropriate.

4. How far along are you in the teacher licensure program? Beginning___
Middle___
End___

5. How many licensure courses have you taken ? ____

6. How many distance courses have you taken? ____

7. What was the distance course taken? _____

8. Indicate in what areas(s) you did these course(s):

Education____ Non-education____

Licensure ____ Non-Licensure____

SECTION 2: PERCEPTIONS OF DISTANCE EDUCATION

Directions: For each of the following indicate your level of agreement with the statement where 1 suggests strong disagreement and 7 strong agreement. Your response should be based on your experience of course(s) taken in the school of education/college of education. Response should be based on your overall perception. **Please do not skip any questions or circle more than one response.**

1----------2----------3----------4----------5----------6----------7

Strong **Disagreement**							*Strong* **Agreement**
9. I felt comfortable contacting my instructor	1	2	3	4	5	6	7
10. The distance learning class environment was conducive to learning.	1	2	3	4	5	6	7
11. The online environment made it difficult to be attentive while doing class work.	1	2	3	4	5	6	7
12. The instructor used the time effectively to meet the objectives of the course.	1	2	3	4	5	6	7
13. I felt uncomfortable expressing myself online.	1	2	3	4	5	6	7
14. I was able to get to know others in my distance class.	1	2	3	4	5	6	7
15. The instructor was responsive to students' needs.	1	2	3	4	5	6	7
16. Examples, guidelines, illustrations were effectively used by the instructor.	1	2	3	4	5	6	7
17. I enjoyed my distance class more than traditional classes.	1	2	3	4	5	6	7
18. Examples the instructor gave were appropriate and clear.	1	2	3	4	5	6	7
19. The amount of material covered in each session was appropriate.	1	2	3	4	5	6	7
20. Assignments were graded and returned in a timely manner.	1	2	3	4	5	6	7

1----------2----------3----------4----------5----------6----------7

Strong **Disagreement** *Strong* **Agreement**

21. I felt a sense of accomplishment after completing the course.
1 2 3 4 5 6 7

22. I had few distractions while doing my work during the distance format.
1 2 3 4 5 6 7

23. The course content was presented in an organized manner and reflected the terminal course objective. 1 2 3 4 5 6 7

24. The instructor encouraged participation. 1 2 3 4 5 6 7

25. A variety of activities was used to help present the course content.
1 2 3 4 5 6 7

26. I had difficulty understanding what was expected of me in the course.
1 2 3 4 5 6 7

27. The way in which the course was organized and presented kept me interested.
1 2 3 4 5 6 7

28. I would recommend that other teacher students take similar course from the department. 1 2 3 4 5 6 7

29. The grading of assignments seemed fair. 1 2 3 4 5 6 7

30. I feel I am a self-directed learner and this type of course works best for me.
1 2 3 4 5 6 7

31. My contact with the instructor was adequate.
1 2 3 4 5 6 7

32. Student contact was adequate, and I was able to learn from my peers as well.
1 2 3 4 5 6 7

33. I would take more online courses if they were available to me.
1 2 3 4 5 6 7

Please respond to the following questions, taking care to express your opinion about distance courses in general.

34. Identify three top factors that made you successful as a distance learner.

35. In your opinion, what are the three most important recommendations for improving the distance education process and courses?

APPENDIX D

QUESTION GROUPS (CLUSTERS)

Clusters and Specific Questions

The following are groups of questions that the researcher has formulated based on the literature review. The groups are similar to those used in the Thomerson (1995) study.

	Clusters	Survey Questions
1	Effectiveness of Course Structure	12, 16, 18, 19, 23, 29
2	Adequacy of Student teacher Interaction	9, 15, 20, 24, 31
3	Overall course Satisfaction/Enjoyment	17, 21, 28, 30, 33
4	Adequacy of Peer-to-Peer Interaction	14, 32
5	Other questions	10, 11, 13, 22, 25, 26, 27

Question 11, " The online environment made it difficult to be attentive while doing classwork," tested significant when comparing those who were under 25 with those who were over 25. (t = -2.209, p=.030). Those over 25 did not feel that the online environment made it difficult for them to learn. In addition, question 11 also tested significant when student progression was a factor. Those at the beginning of their program were apt to believe that the online environment did not make it difficult to be attentive in class while doing class work (t =2.319; p=.023).

APPENDIX E

STUDY SURVEY INSTRUMENT CODING GUIDE

EXCEL AND SPSS CODING GUIDE

Variable name		Description/Code
GEN	Gender	1 = Female, 2=Male
ClassFN		1 = Freshman 2 = Sophomore 3 = Junior 4 = Senior 5 = Post Bac. 6 = Masters 7 = Other
HFLP	How Far Long in Program	1 = Beginning 2 = Middle 3 = End
HMLT	Number of Licensure courses taken.	
HMDT	Number of Distance Courses taken	
ADCT	Area Distance Courses Taken	1 = Education 2 = Non-education 3 = Licensure 4 = Non-Licensure
Q9-Q33	Perception Indicator Items, Likert, 1-7 (1 = Strongly disagree to 7 = Strongly Agree)	

APPENDIX F

MATERIALS FOR RESEARCH DESIGNEE

Script to be read to potential participants:

You have been asked to participate in this study. Your participation in this study is contingent on you meeting the following two criteria: (1) You must be a pre-service teacher and (2) You should have completed at least one distance education course prior to Fall of 2003. If you have not met both requirements, thank you for your time.

Your participation in this study is voluntary and you do not have to answer any question you feel uncomfortable with or don't want to answer.

If you have not met both requirements, thank you for your time.

Steps in administering survey:

1. Please give a survey to each student who meets the above criteria and ask the student to complete fully and not omit any questions. Ask students to complete the questions to the best of their knowledge. Ask students not to put their names on the survey instrument. Please remind students that their responses will be held in strict confidence.
2. Once the student completes the survey, please place survey instruments in the self-addressed stamped envelope and mail to: Allan Young, 20 Bunnie Trail, Ellenwood, GA. 30294.

Thank you.

APPENDIX G

RESPONSES TO OPEN-ENDED QUESTIONS

RESPONSES TO OPEN-ENDED QUESTIONS

Research Question # 5 – What are the criteria for success that pre-service teachers feel helped them to be successful as a distance learner?

School # 1

1. The assignments were thought provoking and information was readily accessible. Instructor provided adequate information. Course assignments were easy to accomplish.
2. Do the class at my own pace, being able to see where others were in the class, being able to ask questions without being seen or feeling self-conscious.
3. Good time management. Good participation. I am a self-directed learner.
4. I am a person that will work hard at anything, therefore distance will not be a problem. I am a self-directed worker. I am a hardworker.

School # 4

1. I am disciplined, I did not procrastinate, I am a self-starter.
2. I am a very busy end year teacher and mother to two very active children. Although the stress of taking a class is still there, taking an online course allows me to be in class when I can and to some degree lessens the stress.
3. Self-motivated, organized, technology literate.
4. Self- discipline- Willing to reach out and ask others for help-Genuine goal to complete the program.
5. I had to be responsible in remembering I had assignment due every week. I had the flexibility to work on assignment. It allowed me to learn on my time, not a specific time or day.
6. Time management; Flexibility; Patience.
7. It was convenient at time. It was what I needed to complete my licensure requirements at this time. I learned something.
31. Discipline, Time-Management, Patience.
30. Beginning assignments early, soon after they are assigned.
27. The three top factors that made me successful as distant learner are the way you can finish the work around the rest of your classes with ease. Material taught is straight forward out of the book and it is a better challenge to get to know the rest of the people that are in class with you.
24. I feel I was successful because I managed my time, kept a calendar, and I stayed in contact with the teacher.
23. time management, freedom of time, and assignments posted in advance.
22. ability to do things in my own time
21. Flexible time; and context and content of work.
20. Time management, Self-directed, Determined for high achievement.
19. Independent working, no stress of classroom environment, more freedom.
18. Ability to meet deadlines, being self motivated, understanding course materials.
17. Discipline, willingness to learn, and patience.
16. Motivated, self-disciplined, older.
15. Fear of failure, determination, and a great instructor.

14. Time management, Perseverance, High level of communication. These factors are needed in order to take assessments in the time allotted, obtain adequate understanding of assignments, and the drive to complete the course giving 100% of the entire time.
13. Independent learner, time management, ability to understand concepts.
12. Organization, Independent, Time management.
11. Parent, computer skills, time management skills.
10.. I had all the resources needed. My teacher responded to my e-mails and calls. My time management has improved.
9. I wrote in my calendar every assignment due date. I wrote the teacher every time I had a problem. I read all the reading assignments ahead of time.
32. Having the book. Doing the work. Reading the chapters.

School # 3

1. i) Needing to complete requirements. Ii) ease of staying at home for the coursework. Iii) less expensive.
2. I am organized, I am self-starter, I like working ahead.
3. Self-disciplie, time organization and computer skills.
4. Self-motivation- completion of requirements for license- Ability to work at my pace/time.
5. I like distance learning ironically because I tend to be a procrastinator and have difficulty keeping up with assignments. Distance learning helps me to "polish" those skills because I am in essence, the manager of myself and don't have the "class" to motivate me. I have to motivate myself and keep my own schedules and keep myself on tasks. That's a good skill to learn in addition to the info I am learning in the class.
6. I am very self-motivated and strongly supported by my employer, I always complete tasks. I don't have time to travel to and attend traditional classes.
7. I need to learn the material in order to be a more effective teacher. I have taken correspondence courses in the military and as an undergraduate student. I am willing to do what I have to do regardless of my personal feelings about on-line courses
8. Determination to complete the material. Organizational skills. Computer knowledge.
9. Interest in topic. Appreciation of time saved. Enjoyment of learning through research assignments.
10. Fit into schedule. Able to access anytime. Worked best for me.
11. The top three factors making me successful as a distance learner are discipline to doing and staying on top of the weekly assignments, dedication to success in the course and communication, both with classmates and the instructors. All of these factors combine to create a successful distance learner.
12. .This is my first distance learning class. I feel, I can not adequately give a fair recommendation as I have not yet completed the course. However, I believe what would make me successful is being able to work at my own pace. The ability to get other students thoughts on the subject. They may see something differently than me and this can be a learning experience . I wish I had a list of everything that was to be covered or could easily pull them up so that I could mark them off once I completed section. (12)***

14. Determination to complete the material. Orgnaizational skills. Computer Knowledge.(14)
15. Not their yet.
16. Attention to detail. Organization skills. Working ahead rather than from behind.
17. Self-motivation. Computer Skills. Research skills.
18. I love interactive modules. Those that let you read/discover/give a short response. I like several shorter activities and interactive chats.
19. Self-discipline. Interest in the content. DSL.
20. I can work on the assignments when I want to work on them. I don not have to drive 50 miles to class after working all day.. I love my computer.
21 Self-directed attitude; thorough background; determination.(82)
22 My determination to be successful. I do not think I would be successful in these online classes if I had not put so much pressure on myself to make good grade because there is no interaction with others when you take on-line courses.(0)
23.. Learned at my own pace. Questions were answered in a timely manner. Learned through discussions.
24. More time to read than sitting in class. Flexible scheduling. Amount of work was sufficient.

School # 2
Time management

School #6

1. "I took the initiative to contact the professor when I felt lost and insecure. I am good at taking my own learning into my own hands. I am good at getting things done on time such as participation on discussion boards."
2. I didn't have to spend four hours driving to the university. I did the work on my time. I didn't have to find a baby sitter.

School # 5

1. "I did not enjoy the two distance courses that I had to take. I felt it was only a review"
2. "Regular access to a computer", Organized format of course. Clear expectations.
3. "Computer. Self-Motivtion. Clear instruction on assignment.
10. Complete assignments on my own time. Time for individual research. Reading others ideas.
4. " I can do it on my own"
5. "Complete assignments at own pace". "Use ideas presented online in the classroom."
6. " I could do it when I was able".
7. " Complete work at my own rate/pace/time"
8. " I was able to take my time learning." " I was able to work at my own pace". "I was forced to reflect and insert my ideas into class discussions."
9. "I was able to work at my own pace". "I was able to talk to my peers"., "I was able to work late at night"
11. "I am self-motivated." "We have easy access to computers." "I am very verbal and express myself well in writing"

12. "The professor used a variety of teaching strategies.""I was a commuter and hours saved in driving time contributed to my having more time to devote to the course.".''Peer feedback was part of the course."
13. "I do not benefit from these type of classes."
14. "As a mother, the time I have to spend in a classroom is limited. As a distance learner I was able to complete the class at home.""The professor required a quiz(online) every week that was timed which kept me on track with the material." The only time wer were required to go to a classroom was for tests. Very convenient.
15. "Nothing"
16." All assignments given up front, allowed me to get ahead." Due dates posted up front. Provided related web links"
17. "being able to complete the assignments on my own time", "Easy to work on" "Easy to reflect on work"
19. "Being able to complete work on my own time".
20. " Work at my own pace.", Not confirmed to a classroom" "A change from the norm"
22. " Access to a computer w/ word." "Interesting topic." "Other means of learning than reading off the computer ".

School #8

1. Organized.
7. Intersting, covenient and fun.
8. Able to set time aside for class when I wanted to. Able to read over class notes and discussions more than once, as in a reg. classroom. You often hear what Prof and students say but can never go back and hear it again. I learn better teaching myself.

Other Issues: Important recommendations for improving distance courses;

School # 1

1. As a beginning distance education student, I don't have any recommendations at this time.
2. have more of them, get grades faster, have a time when all students go to the chat room at the same time.

3. Requiring more contact and interaction between students.
4. We need to have more help with the technical support. I am appalled that they do not have live help for problems that I encountered. Just plain sloppy.

School # 4

1. I think the instructors expect too much sometimes. There should be a more direct way to communicated with instructors, they can be very hard to reach, perhaps a set time each week that students know the instructor will be on-line to discuss any issues they may have.
2. This is my last class and my third distance learning class. My first distance class was not very effective in that the objectives were not clear, the instructor was not available to us-he never answered e-mails or phone calls, and I had no idea what my grade was until I received my final grade, consequently I got absolutely nothing from the class. On the

other had the last two have been just the opposite. The instructors have been wonderful and the course content very useful.

3. Honestly it is working great as it is.
4. Ouch.. I think that the number one thing that distance learning lacks is the classroom atmosphere. Discussion boards are great, but they have big shoes to fill. I believe that an on-line class should meet (and have two dates, in case oe "whatever") early on in the program and share philosophies and goals. There should be some face to face team building, because it is a team effort in a sense. I missed the classroom environment. I missed actually meeting the people. But the Professors were great, the discussion boards helpful. The classes should meet in the beginning so that throughout the course we already have a "face to go with a name"
5. Little things: 1. Computer (programming at University's end) was not always in sync. 2. Professor's cannot imagine how specific they have to be . and I am a "sleeper". If something is amiss from the get –go, it takes emails and respond emails etc. to work it out versus raising your hand in class and getting an immediate correction to a problem. 3. It's still a great teaching tool, I enjoyed it, and I learned from it.

7. Some courses don't need to be taught online; More detailed instructions; Fewer papers and more discussion with the instructor.
31. N/A
30. More time to complete assignments, more open communication between students, and more visuals and illustrations.
27. The three most important recommendations for improving distance education process and courses are to send out reminder e-mails for homework. Make sure that all work gets graded in a timely manner and to have on site help on campus with the class so that students can actually see the teachers if they need to.
24. I feel that the distance education process is effective. I guess if you have to improve on anything it would be to get the teachers and students to have more contact if even by e-mail.
23. Manage time, work ahead when possible, contact the instructor with ANY and All concerns.
22. No recommendations at this time.
21. Offering more courses online.
20. Self direction, time management, and adequate contact with the instructor and classmates.
19. Instructors should be sure to respond to students, instructor should provide better feedback on how students should correct online assignments .Instructor should always provide assignment examples.
18. In one of my distance learning course I had to meet on campus, more than normal for an online course. Also distance learning courses are not a good idea if the students have to do any type of field experience. Distance learning may not be a good idea for students who work full time during the day and have to complete field experience during their normal working hours.
17. School needs to offer top internet services so that distance learners will not encounter technical problems. Student should be very discipline an interested.

16. Faster response from instructors on assignments.
15. Do not time the essay portion of the test not everyone is a natural born typist. Grades should be curved, Give examples of what you are seeking as an instructor since we are unable to meet person to person.
14. In order to improve the distance learning experience the following may be helpful: Professors should utilize the interactive tool that allows them to chat with students, as a whole, on certain issues. Provide additional support material, Implement assignments that students have a choice in completing together.
13. More course offerings, staff that understands the nature of an e-learning environment, reliability of the university network.
12. N/A
11. Can't think of anything right now.
10. I recommend discussion boards to help students interact with each other and encourage participation. I recommend a help and hint section for historically more difficult assignments . I recommend that more students utilize the homepage feature for better interaction.
9. Encourage communication between the instructor and teacher. The instructor should give feedback on the student's progress. Encourage students to prepare ahead of time.
31. Give examples of the work the teachers wants turned in.

School # 3

1. Improve the links to other sites, Improve the access to research-eric, etc. weed out profs that do no enjoy this type of course.
2. Assignments need to be returned quickly with grades, Difficulty accessing some parts of the course, Problems accessing the test.
3. timely reporting of grades and e-mail responses from teachers.
4. The webct is very confusing, and sometimes contradictory, simplify. Provide a more specific course outline, the "shotgun" effect of reviewing materials is too much for a course like this.
5. More student interaction, that is really all for now.

6. Keep due dates as flexible as possible. Most of the online learners in my courses have careers and families with very little time to spare. Be sure to give feedback in a timely manner. The worst distance course I've had was one in which the instructor failed to give any grades during the course. I had no idea what my scores were until halfway through the second semester. Be sure all online videos, sound clips and sites needed for the course actually works.
7. Distance learning-where you can interact with the teacher(if only via television)-and other students is one thing. Online courses are something else entirely. I do not think there is a way to make them any better. Teachers teach. On line courses present information. The point of having a teacher is so that learning can occur through teacher/student interaction. It makes money for the college. It allows students to check off one more licensure course but it has nothing to do with teaching. Ask those who provide information for the course. Professors who like to teach hate these courses.

8. The way the information is presented and how well the instructor stays up with the material make a huge difference. I am presently taking my second online class and I am disappointed in the amount of communications from the instructor and the length of time it takes to return grades on assignments. My previous experience with an online class was wonderful. I felt that the instructor always made sure that the students knew what they should have accomplished by a certain point and I feel that I learned a great deal from the class.
9. Improve technical support. Have students meet instructor first when possible, rely less on discussion rooms, which are often artificial and feel like busywork.
10. Better student participation. Clearer guidelines on discussion requests. Grades returned in a more timely manner.
11. Three important areas I would recommend to improve distance learning involve more interaction with both the participants involved in the course, continuing to establish a fair system of grading and expectations for the students. A final area to improve involves integration of more resources into those courses
12. Provide clear instructions as to what is to be done. i.e. How many times you must visit a site each wee. What is required broken down by weeks or assignments in order. Also posting questions and letting them stay on the bulletin board.***
14. The way the information is presented and how well the instructor stays up with the material make a huge difference. I am presently taking my second on-line class and am disappointed in the amount of communications from the instructor and the length of time it takes to return grades on assignments.. My previous experience with an online class was wonderful. I felt that the instructor always made sure that the students knew what they should have accomplished by a certain point and I feel that I learned a great deal from the class.
15. Improve direct instruction. Clarify assignments. Use streaming features.
16. Better instructor contacts.
17. It is poor second-best to traditional courses. We will all loose much if it becomes the norm. There is no substitute for face-to-face interaction with a teacher.
18. If we are in graduate school the we can write papers...please quit tasking us the same way. The interactive modules are much more creative and allow for simple and direct responses.
19. Get the courses in sync with the professors. Have grades posted in a more timely fashion. More postings from the instructor.
20. In some courses there was too much busy work and this needs to be corrected. The website links to be kept up-to-date so time is not wasted looking for the same information elsewhere. Papers turned into professors need to be graded and grades posted in a timely manner and not at the end of the course. This is fair as we have deadline for turning our assignments into the professors. One course had the tests on-line and they were graded by the computer and it was instantly graded. This was great even though I hate multiple guess questions.
21. Be able to meet once a while as a whole class with teaching staff.
22. There should be more interaction with the instructor, especially when clarification is needed. Grades need to be posted in a timely manner so you know what your progress you are making. It is not fair to have to wait until the end of the semester to know how

you did. It adds too much stress. Needs to be more structured so that participants have consequences for not completing assignments on time.(0)
23. None.
24. Variety of lessons. Courses offered more frequently.. Shorter term for courses.

School # 6

1.The timing of meetings and due dates should be in the class time scheduled or agreed upon by 100% of the class. Class goals should be made clear each. All materials should be made available to all students before assignments are due.
2. More examples of assignments that have been graded. Less work that counts more. More frequent class interaction.

School # 5

1. " Do not have distance courses"
2. "Clear and constant feedback from the instructor"
3. "Relative information", timely grading. More classes offered"
6 "Less busy work assignments". Have more examples to look at." Focus on presented material and not required for a particular look and format."
7. Less busy work"
8. "Make sure that this is an ok way of learning for you personally."
9. "Less paperwork-papers etc." More interactions with peers". Keep course from being deleted."
10. Assignments graded sooner. More info given from teacher. More feedback from teacher.
11. "A seminar in person with the teacher prior to the course." Realistic expectations on assignments often there is too much to accomplish. "Sometimes the expectations are too high perhaps because the time element is lost."
12. "Eliminate them"
14." No improvements"
15. " If you are going to take points off for a late assignment, don't be 5 weeks late in returning grades. Do not give webct classes during internship."
17. "Better grading procedures." "More contact with teacher"
18. "Get rid of them"
20. " There needs to be a more contact with the instructor."
22." Backup program"

School # 8

1. more examples, more contact with instructors.
7. more quick with results from test/quiz/reports etc.