AN INVESTIGATION OF COURSE PRESENTATION PREFERENCES OF TEACHERS DESIRING GRADUATE CREDIT

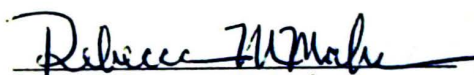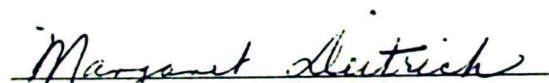## CAROL ANNE NADEAU

To the Graduate Council:

I am submitting herewith a field study written by Carol Anne Nadeau entitled "An Investigation of Course Presentation Preferences of Teachers Desiring Graduate Credit."

I have examined the final copy of this field study for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Education Specialist, with a major in Education and a concentration in Elementary Education.

Dr. Rebecca McMahan
Major Professor

We have read this field study
and recommend its acceptance:

Dr. Margaret Deitrich

Dr. Donald Luck

Accepted for the Council,

Dean of the Graduate School

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AN INVESTIGATION OF COURSE PRESENTATION PREFERENCES OF

TEACHERS DESIRING GRADUATE CREDIT

A Thesis

Presented to the

Graduate and Research Council of

Austin Peay State University

In Partial Fulfillment

Of the Requirements for the Degree of

Education Specialist

Carol Anne Nadeau

December 2002

DEDICATION

This thesis is dedicated to my granddaughter, Briley
Anne Kotler, born December 2002. May she grow in wisdom,
knowledge, and the understanding that education is the key
to success.

ACKNOWEDGEMENTS

I wish to express sincere appreciation to my major professor, Dr. Rebecca McMahan, as well as to Dr. Margaret Deitrich and Dr. Donald Luck for their professional guidance, encouragement, and expertise which made this endeavor possible.

To my family and friends, I am grateful for your patience and understanding during the times when I was unavailable to be with you.

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To my parents, John and Audrey Longhurst, I wish to thank you for instilling in me the value of education, and the determination to follow through with my aspirations.

I especially wish to thank my husband, Tom, for his steadfast love, support, and for his good humor, without which, the attainment of this degree would not have been possible.

ABSTRACT

This study was designed to determine if teachers
desiring graduate credit would prefer to take a course
presented on-line or face-to-face. Course presentation
choices progressed from Traditional, face-to-face meetings
on campus to Immersive on-line courses with no face-to-face
meetings. The sample was derived from one high school, one
middle school, and three elementary schools. One hundred
twenty-seven teachers responded to the survey stating that
they would like to attend graduate courses. The study
examined the degrees of computer comfort, attitudes towards
technology, and study styles.

A significant number of subjects chose a traditional
form of course presentation to all forms of on-line
learning. The results showed that this group of teachers
had positive attitudes toward technology, felt comfortable
with computer use, and were self-motivated, all of which
are elements found in students who successfully complete
distance learning.

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CHAPTER 1

Introduction

Since the Internet emerged, many uses have been found
for this dynamic medium. Its presence has influenced our
society in innumerable ways. People use the World Wide Web
to gather information on every subject imaginable, to shop,
to bank, and especially to communicate. Each day, new
websites are created for numerous intents. One innovative
use of the Internet has been to harness the World Wide Web
for instruction. Now institutions of higher learning across
the country are beginning to look to the Internet as a way
of delivering coursework to untapped segments of the
population.

Traditional thoughts of college evoke images of ivy-
covered buildings with young people converging on
classrooms receiving knowledge from erudite professors.
When one thinks of a traditional college student, one
thinks of an eighteen-year-old entering directly from high
school and attending for four years while parents pay the
bills. However, the demographics of student bodies at
institutions of higher learning are undergoing change.
"People are taking up their degrees later and often over
longer periods, assembling them out of one course here and
a few credit hours there, snatched between jobs and bank

loans, as time, money, interest, and opportunity arise" (Brown and Duquis, 1996). Though there is desire, the time needed to attend college classes on campus is scarce due to work and family commitments. Many people who need and pursue college credit have a difficult time acquiring it.

Teachers are another group of students whose educational needs may not be met by the traditional class meeting. "To meet rising expectations for students, teachers are being asked to deepen their content knowledge, learn new methods of teaching and integrate new technologies into classroom practice" (McMahon, 1997). They are required to maintain their teaching certificate through college courses, and the pay scale is higher for educators who possess a Masters Degree. However, teachers often work until late in the afternoon and have family responsibilities and other commitments that leave them little time for attending classes that typically meet in the evenings or on Saturdays.

Many institutions of higher learning are seeking opportunities to meet the needs of all learners, and are competing with other colleges and universities for enrollment of these students. This requires a change in paradigm from the traditional classroom to creative ways of serving this portion of the population. Appropriate use of

technology enhances a university's reputation and all want to be viewed as technologically savvy. This desire is best seen through the time and effort invested by colleges and universities in creating attractive home pages to advertise their mission and programs. Using technology, specifically the Internet, institutions of higher learning have a means of reaching this group of students through web-based instruction.

However, effectively delivering web-based instruction requires a significant commitment of time and resources. No institution can afford to invest great amounts of time and money without returns. Therefore, the question is asked: Are teachers who desire graduate credit more inclined to participate in on-line, web-based instruction or traditional class attendance at an institution of higher learning?

Statement of the Problem

Most people have a learning style preference and a comfort level with technology. Web-based courses are essentially visual through the transmission of text and graphics. These courses require expensive hardware and knowledge of use of specific software for participation. On-line courses delivered through the World Wide Web are initially costly to a college or university in terms of

time, training, and equipment. Before such a commitment is made, these institutions need to know if there is an audience for their efforts. Therefore, the problem to be investigated for this study is to determine the course presentation preferences of teachers desiring graduate credit.

Statement of the Research Purpose

The purpose of this study is to investigate the course presentation preferences of teachers desiring graduate credit. Institutions of higher learning can deliver on-line course work in varying degrees or levels. The study has been designed to determine which type of course would best meet the perceived needs and learning preferences of teachers seeking graduate coursework given the following choices:

1. Traditional (face-to-face meetings on campus)

2. Satellite (face-to-face meetings at a convenient location away from campus)

3. Supplemental on-line (some course content is placed on the web for student retrieval, but classes meet traditionally)

4. Essential on-line (students must access the web regularly to obtain important course content but classes meet traditionally)

5. Communal on-line (classes meet both face-to-face and on-line)

6. Immersive On-line (a completely web-based course)

Research in this area is limited due to the relative newness of on-line courses being offered by institutions of higher learning. Considering the purpose of this study, the following questions will be investigated:

To what extent does computer experience and attitude toward technology affect the enrollment choice of teachers desiring graduate credit in traditional or a form of on-line courses?

To what extent does individual study style preference affect the enrollment choice of teachers desiring graduate credit in traditional or a form of on-line courses?

Statement of the Hypothesis

There will be no significant difference in the selection of a form of course presentation chosen by teachers desiring graduate credit.

Limitations of the Study

1. The study is limited to responses from teachers in a single county school system.

2. The study is limited to teachers who desire graduate coursework.

3. The study is limited by perceived personal study style preferences.

4. The study is limited by the perceptual and subjective rating of competence and attitudes toward technology.

5. The study is limited by the omission of questions pertaining to previous on-line coursework experience.

<div align="center">Definition of Terms</div>

For the purpose of this study, the following definitions are applied to these terms. These definitions may not be consistent with universal terminology. .

1. Distance education - Teaching and learning that takes place when the teacher and the student are in different locations and a form of technology is used to bridge the gap.

2. Web-based instruction - Teaching that is delivered through the Internet, also known as on-line instruction.

3. On-line instruction - Teaching that is delivered through the Internet, also known as web-based instruction.

4. Traditional - Classes that meet face-to-face on a campus at an institution of higher learning.

5. <u>Satellite</u> - Classes that meet face-to-face at a convenient place away from campus.

6. <u>Supplemental on-line</u> - Some course content is placed on the web for student retrieval, but classes meet traditionally.

7. <u>Essential on-line</u> - Requires the student to access the web regularly to obtain important course content and/or other pertinent information, but classes meet traditionally.

8. <u>Communal on-line</u> - Classes meet both face-to-face and on-line. Course content may be provided in an on-line environment or in a traditional classroom environment (Harmon & Jones, 2000).

9. <u>Immersive On-line</u> - A completely web-based course with all content and interactions occurring on-line. (Harmon & Jones, 2000).

10. <u>Discussion boards</u> - Web sites where people can post questions and submit answers to questions or comments posted by other people asynchronously.

CHAPTER II

Review of Related Literature

History of Distance Education

Distance education is the term commonly used when time or space separates instructors from their students and some form of technology is used to bridge the gap. However, distance education is not a new concept. In the nineteenth century, commercial correspondence courses were used to provide opportunities for learning to students who could not attend a college or university. As new forms of communication, such as radio and television, were invented and gained prevalence, they were incorporated into these types of courses. However, a substandard stigma has often been attached to correspondence courses compared to courses taken in person at institutions of higher learning.

During the latter part of the 20th century, the Internet and especially the World Wide Web came into being. Uses for this dynamic medium include personal shopping, banking, communicating through e-mail, and education. In the decade of the nineties, use of the Internet through web-based instruction has gained impetus and profoundly changed the mind-set of conventional educational institutions. Many higher-education institutions have begun to see the potential of using this medium to deliver

information to students through on-line courses. "Web-based instruction, though very similar to the print-based correspondence study of the past, has not suffered from a perception of lower quality educational product" (Morse, Glover, and Travis, 1997). In fact, a great percentage of higher educational institutions have rushed to create some form of web-based instruction due to the demands of student populations who have been unable for one reason or another to take advantage of continuing post-secondary education.

Perceived Need for On-line Instruction

The primary reason for the major thrust amid institutions of higher learning to implement on-line educational opportunities is the consumer. In the past, college enrollments consisted primarily of traditional students who entered straight out of high school and attended for four years with parental support. The direction in enrollment has shifted to the non-traditional student: high school graduates who have not attended school for a number of years. Most non-traditional students have many responsibilities including jobs and families. "Students today have different needs than those in the past. They need to have flexible class times and access to instructors and research facilities. However, they need to have access to these learning opportunities where they work

and live" (Maxwell, 1995 as cited in Card and Horton, 2000). Since traditional college classes meet during the day on campus, institutions of higher learning have tried to serve this group of people by holding classes in the evenings and on Saturdays. However, after a long day of work and with responsibilities of home and children, many people cannot or do not desire to attend.

Business and industry want and need an educated work force; thus, the better educated often win the competition for the higher paying jobs. In the field of education, teachers who hold Masters degrees or higher receive more pay and are the ones with the opportunity to move into administrative positions. Teachers, however, work full time and usually have other adult responsibilities.

A portion of the population who is underserved are those who do not live in proximity to a college or university and for whom the distance is too great to be able to attend traditional classes. Another portion of this population could be people with disabilities for whom traveling any distance can be difficult. Institutions of higher learning, therefore, see the value of utilizing the power of the Internet to create on-line courses to reach out to these segments of the population who have been unserved and/or underserved by post-secondary institutions.

In fact, "it is not technology that will cause the changes in the way higher education degrees are offered, but rather technology will be very important in the accommodations of an already changing system" (Bi, 2000).

Development of Current Web-based Instruction

According to a report by the National Center for Education Statistics (NCES) published in December 1999 (the last published survey) there were an estimated 49,690 college level, credit-granting distance education courses offered in 1997-1998. Of these, 35,550 were at the undergraduate level and the remaining at the graduate level. Student enrollment doubled from 1995 to 1997-98 from 754,000 to 1.6 million. Forty-four percent of all institutions of higher learning were currently offering web-based courses with another 21% planning to offer such courses within the next three years. The report findings conclude that distance education appears to have become a common feature of many post-secondary education institutions and that it will become more common in the future. Although the preponderance of courses offered was at the undergraduate level, the exception was in the College of Education. The greater number of web-based courses in this field was in the graduate program. The reason could be given that teaching is a "hands-on" field

of methodology and therefore requires face-to-face interactions. Success in this field, more than likely, cannot be achieved through the isolation of distance education. However, in the Graduate College, education courses focus on issues, trends, and research. Learning of this type of information might successfully be achieved through on-line readings.

Numerous forms of distance education were included in the NCES survey results. For this review, the definition of distance education was limited to courses offered on-line delivered through the Internet, also known as web-based instruction. Harmon and Jones (1999) have suggested five levels of web use in instruction ranging from Informational to Immersive. The Informational level consists of placement items such as syllabi and contact information on-line and classes meet face-to-face. At level two, Supplemental, some course content is placed on the web for student retrieval, and classes meet face-to-face. Level three, Essential, requires the student to access the web regularly to obtain important course content and/or other pertinent information. Again, classes meet face-to-face. At level four, Communal, classes do meet face-to-face, but all course content is provided on-line. The fifth level,

Immersive, is completely web-based with all content and interactions occurring on-line.

Many people look to universities for instruction and dissemination of pedagogy relating to technology. Institutions of higher learning must keep up with innovations that are evolving rapidly in order to maintain reputations of being on the "cutting edge" of technology. Indeed, being technologically savvy could be considered an academic distinction. Through web-based instruction, students are not limited to attendance at their local institution, but can choose from institutions that offer the programs that best meet their needs and/or carry a distinction of prestige. Thus, colleges and universities are faced with the need to provide quality on-line courses for a new, diverse, and ever-changing clientele.

Advantages of Web-based Instruction

Numerous opportunities as well as challenges exist for institutions of higher learning, their faculty, and students using web-based instruction. For universities, "the primary benefit of distance education may be that it has the potential to provide access to post-secondary education where otherwise it might not have been available, due to such constraints as geography, time, job, and family responsibilities, or finances" (NCES, 1999). The hope is

that this would result in increased enrollments without needing to provide additional classrooms or parking facilities. In turn, revenues could increase, which in this day of reduced state budgets for education, is an attractive thought.

The web has importance to faculty in that it provides means of approaching pedagogy from a new paradigm. Most textbooks today include many references to technology integration as best practice. Professors demonstrate what they teach when they implement technology appropriately, effectively and creatively into their course content. When the lecture is on-line for students to access, "the instructor is freed from lecture duties and available for individual and small-group help during most class sessions" (Garson, 1998). The "class sessions" occur in numerous ways, including the use of e-mail and discussion boards. The instructor's role changes from inculcating to managing learning opportunities.

For the student, web-based instruction provides flexibility "to learn what they want, when they want, where they want. Students completing a post survey after a web-based course gave highest ratings to convenience factors: ability to work away from class; ability to work when it fits a time schedule; and having readings available

on-line instead of in the library" (Garson, 1998). In an asynchronous environment, on-line students log onto discussion boards, contemplate the questions and comments posted, and take the time to compose thoughtful responses. The quality of on-line discussion has been found to be superior to that occurring in face-to-face or synchronous environments. If needed, the student could return repeatedly to an on-line lesson whereas once a lecture is given, it is not retrievable. Students indicated that use of the World Wide Web in an economics class made the subject more interesting to students and increased their learning of economics (R. Summary and L. Summary, 1998).

In a study to evaluate a web-based instruction program (Schlough and Bhuripanyo, 1998), students were asked to rate the effectiveness of the course. The researchers summarized the results on a five point Likert scale and no statements received a below average score. Strengths reported included convenience for the students, learning at individual speeds, clarity of on-line content, and support of individual learning yet incorporating group-learning activities. However, 77% of the participants reported that if they were to take this course again, they would prefer the classroom.

Disadvantages of Web-based Instruction

Through a survey of 205 schools listed in The College Blue Book, Morse, Glover, and Travis (1997) concluded that lack of funding, lack of equipment, lack of administrative support, and lack of faculty support were the main reasons given for departments not considering distance education for their programs. They further concluded that the two main disadvantages of distance education were the extra time and effort for distance education preparation and the lack of personalization for distance education students.

Schlough and Bhuripanyo (1998) in their evaluative study, included the following in a list of weaknesses of distance education:

- It requires the learner to be self-disciplined.
- The delivery is not appropriate for all learning styles.
- Despite on-line discussion groups and contact from the instructor, some students feel isolated.
- The delivery has the potential to be impersonal.

S. B. Wegner, Holloway, and S. K. Wegner, (1999) state that contrary to popular opinion, using technology does not insure quality learning. They continue to point out that without special attention, technology can diminish the educational experience. Although one of the driving forces

of institutions of higher learning is financial efficiency, the view that electronic-based instruction could be more cost effective than print-based instruction is not held by all. According to Wegner et al. (1999), delivering content over the Internet is intense and time consuming for faculty. Due to the amount of effort and expertise required to deliver this type of instruction, it is difficult to assess accurately the true costs of distance education. Universities must be prepared for the costs of hardware, training, and technical support.

The National Center for Education Statistics (1999) asked institutions how tuition for distance education courses compared with tuition for traditional courses. The findings showed that about three-quarters of the institutions charged the same amount for both. The remaining percentage of institutions charged higher or lower tuition. This indicates that most postsecondary institutions do not pass on either the costs or the cost savings of distance education through tuition to students.

Despite all the good reasons for undertaking distance education, the success is dependent on a significant, long-term commitment concerning co-involvement of institutional units, resources and faculty reward structure (Carlson, Repman, Downs, and Clark, 1998). In a paper presented at

the Society for Information Technology & Teacher Education International Conference (SITE '98), Carlson et al. (1998) assert that the administration, from the President on down, must support this project. Without their support, the co-involvement of institutional units and resources may never develop. In a discussion of resources, technology problems including service volume, compatibility, training and technical support must be solved before successful development of web-based courses can be completed. They continue that courses must be developed in such a way that they can be delivered regardless of what system is available to the student. Intense graphics and video require many gigabytes to store and can take a very long time to download.

Role of the Faculty

Since 1996, the University of Central Florida has been focusing on distance learning with an intensive faculty development program. Their philosophy is that it is futile to try to get faculty to do anything new unless three conditions are present: incentives, resources, and rewards (Orwig, 1999). Faculty with little or no technical training must feel that the venture is valuable. The amount of time needed to put a course on-line oftentimes precludes the efforts of research and publishing, which in turn affects

issues of tenure and promotion. A solution might be that the development of on-line course material substitutes for some of the traditional expectations for the professorate.

Wegner et al. (1999) maintain that the largest obstacle to effective web-based instruction is matching the appropriate pedagogical model and strategies to the on-line environment. In the rush to create on-line courses, many instructors just place their lectures on-line with expectations that the students will read them and pass the test. It is understood that planning and preparation for on-line teaching is different from the planning and preparation for the traditional classroom. Faculty must learn new skills, and the process of designing and placing a course on-line is time consuming. "Putting materials on the web requires extra preparation time in terms of processing documents, creating graphics, and learning web-authoring tools. To fully move a course on-line might easily require full faculty release for one semester to develop" (Garson, 1998).

Wegner et al. (1999) report that some investigators have estimated that it takes 40 to 50 percent more preparation time for an on-line course. They discuss the changing role for the instructor, which becomes one of supporting rather than leading. This change in roles has

been extremely disconcerting to instructors, especially in the beginning.

Role of the Student

The role of the student changes also. Students who are successful in a web-based educational environment tend to be mature, highly motivated, and possess well-developed, self-directed, learning skills (Carlson et al., 1998). Students who lack motivation and who procrastinate are less successful. Some students need the incentive of face-to-face meetings to adhere to requirements for attendance and study. Because people have different learning preferences, web-based instruction may not be appropriate for everyone.

Web-based instruction provides few cost benefits to students. On-line readings may save the charge for a textbook. Not having to attend classes reduces some transportation expenses. However, the cost benefits are negligible.

Because of the nature of the course, on-line education requires technical skills that may be beyond a student's comfort level. The focus of the course may shift from the content to the technical aspects of making it work. There is also the problem of students having the needed hardware at their disposal. There are a multitude of systems and platforms, which may not support the on-line course

elements. Technical support must be available from the institution as well as the product supplier, and students must know how to and be able to access this support. Students with disabilities may have special problems accessing web-based instruction.

An empirical study conducted by Johnson, Aragon, Shaik, and Palma-Rivas, (1999) compared a graduate on-line course with an equivalent traditional format. No significant difference was determined in the amount of learning. However, students gave more positive ratings of traditional courses than the same course taught on-line. These results suggest that "on-line learning can be as effective as face-to-face learning in spite of the fact that students in on-line programs are less satisfied with their experience than students in more traditional learning environments" (Johnson et al., 1999). A possible explanation for the positive ratings is that "student ratings may be higher when there is a personal connection between the instructor and the student, something that may not occur in an on-line course" (Johnson et al.)

Effectiveness of Web-based Instruction

A review of literature tentatively concludes that web-based learning can be just as effective as traditional education in regards to learner outcomes. In a case study

comparing a web-based class to a traditional class, White (1999) found no significant difference between the two groups concerning test grades and overall grade point.

Shih, Ingebritsen, Pleasants, Flickinger, and Brown (1998), in their research study, concluded that "different types of students using different learning strategies and pattern of learning with different learning styles can learn equally well in web-based courses." Swan, Shea, Fredericksen, Picket, and Pelz (2000) conducted an empirical research study to determine factors that affected the success of distance learning. They found that three factors supported by social constructivist theory, consistency in course design, contact with course instructors, and real communication through discussion as having the greatest effect.

Wegner et al. (1999) contend that

> On-line coursework should be pursued when it enhances the learning experience or at the very least offers a learning opportunity comparable to that of the traditional classroom. To do other wise is to compromise the quality of education that students receive for the sake of financial gain, institutional or personal convenience, or marketplace competitiveness.

Harmon and Jones (2000) reporting the results of their research study, conclude:

The power of the technology is great. The allure of using it in university settings is intoxicating. But we must continue a careful and never ending study of Internet-based learning even as we move forward with it. The power of web-based instruction lay not in its ability to replicate what we do in traditional classrooms; it is in its ability to create what we cannot do in those classrooms.

The effectiveness of web-based education may be attributed to the fact that "successful distance learners tend to be abstract learners who are intrinsically motivated and possess internal locus of control" (NCES, 1999). Those qualities are thought to be typical of successful learners in general and would most likely predict success in any course. However, would students without these attributes be successful and what can be done to predict success in on-line learning?

Distance education, consisting of on-line, web-based courses, is a new area and insufficient research has been conducted due to the newness of the field. What research there is consists mainly of case studies and small samples. The conclusions from these studies may not generalize to

the larger population. More research is necessary in this area to better determine the effectiveness and the direction of distance education.

CHAPTER III

Methodology

Purpose of the Investigation

The study was designed to investigate the course presentation preferences of teachers desiring graduate credit. Institutions of higher learning can deliver on-line course work in varying degrees or levels. Given a choice of traditional, face-to-face class meetings at a university or satellite location; a mix of traditional face-to-face meetings with on-line materials; or total on-line courses with no face-to-face meetings, which type of course would best meet the perceived needs and learning preferences of teachers seeking graduate coursework.

Participants

The sample for this investigation was chosen from elementary, middle, and high school teachers from a county school system in northern Middle Tennessee in which a university is also located. Within this county school system are six high schools, six middle schools, and eighteen elementary schools. The sample is a cluster sample of schools whose principals gave permission to survey their faculty. The survey was administered to teachers at three elementary schools, one middle school, and one high school in order to obtain a representative sample. Every teacher

at each school was given the opportunity to complete the survey. The sample included teachers of different gender, age, and years of teaching experience.

Research Procedures

Permission was requested from the Institutional Review Board, from the appropriate department of the county school system, and from the principals of the participating schools. A cover letter was attached to the survey to introduce the researcher and the researcher's purpose, to explain the investigation procedures, and to insure the participants of the anonymity of their responses. Principals were requested to distribute the surveys to their faculties and to ask that completed surveys be placed in a box in the school offices for collection. After a week, the surveys were picked up from each school and the data was analyzed for results.

The Instrument

The survey was adapted from a questionnaire developed and field tested by the Open University in the United Kingdom (Carswell, Thomas, Petre, Price, and Richards, 1999). Survey questions were categorized into five sections:

1. Computer, e-mail, and network use
2. Attitudes toward using technology

3. Study styles

4. Course offerings

5. Demographics

Statistical Analysis

The results from the survey produced qualitative data of categories with only one variable. The Chi Square test was chosen as the most appropriate test. The decision rule was established to reject the null hypothesis at the 0.05 level of significance if Chi Square equals to or is more positive than the critical chi of 20.52 given 5 degrees of freedom. The expected values were determined by dividing the number of responses evenly to signify the expectation of no significant difference in choices among presentation types. The actual values were the responses given on the surveys by the participants.

Means, medians, and standard deviations for computer competence, attitude toward technology, and study style preferences were derived from responses to questions employing a 5-point Likert scale. Frequency distributions contributed to the analysis of demographics, computer experience, and feelings toward technology.

Potential Benefits and Anticipated Risks

Most people have a study and learning style preference, as well as a comfort level with technology.

Web-based courses are essentially visual through the transmission of text and graphics. They require expensive hardware and knowledge of use of specific software. On-line courses delivered through the World Wide Web are initially costly to an institution of higher learning in terms of time, training, and equipment. Before such a commitment is made, these institutions may need to know if there is an audience for their efforts. This study has been designed to determine which of six course presentation types, ranging from Traditional to Immersive on-line, teachers seeking graduate credit in education would choose for their graduate coursework.

The potential benefits will be to institutions of higher learning planning to create on-line classes using web-based instruction. Since it is a costly venture, an assessment of preferences could help determine the direction of a technology plan.

There are minimal anticipated risks involved in this investigation.

Chapter IV

Analysis of Data

The purpose of this study was to investigate the educational course preferences of teachers who desire graduate credit. Subjects were asked to complete a survey to identify which type of course would best meet their needs and learning preferences. Surveys were distributed to three elementary schools, one middle school, and one high school. Principals provided the number of members of their faculties and a total of 310 surveys were delivered to the schools. The principals distributed the surveys to the faculties. The total number of responses returned was 237 (76.45%), of which 127 identified they were desirous of obtaining graduate credit. Statistics were drawn from the 127 surveys with positive responses to the question: Are you interested in taking courses for graduate credit in the near future?

The survey questions were divided into five sections:

1. Computer, e-mail and network use

2. Attitudes towards technology

3. Style of studying

4. Course preferences

5. Demographics

Each section contained a series of four to seven items. Some items were rated using a five-point Likert scale. A mean of 3.00 was considered average or neutral. A mean of greater than 3.00 was considered positive and a mean of less than 3.00 was considered negative. Other items were evaluated using frequency tables of nominal data.

Demographics

The majority of subjects were female, aged 30 or less, with less than 5 years of teaching experience. For 66.14% of the subjects, the highest degree attained was a Bachelors degree. Twenty-five percent of the sample had received a Masters degree and 9% had achieved higher than a Masters. The following tables summarize the demographics of the sample.

Tables 1: Gender

Gender	Male	Female
n = 127	17	110
% of total	13.39%	86.61%

Table 2: Age

Age	30 or less	31-40	41-50	51 or more
n = 127	42	39	36	10
% of total	33.07%	30.71%	28.35%	7.87%

Table 3: Years of teaching

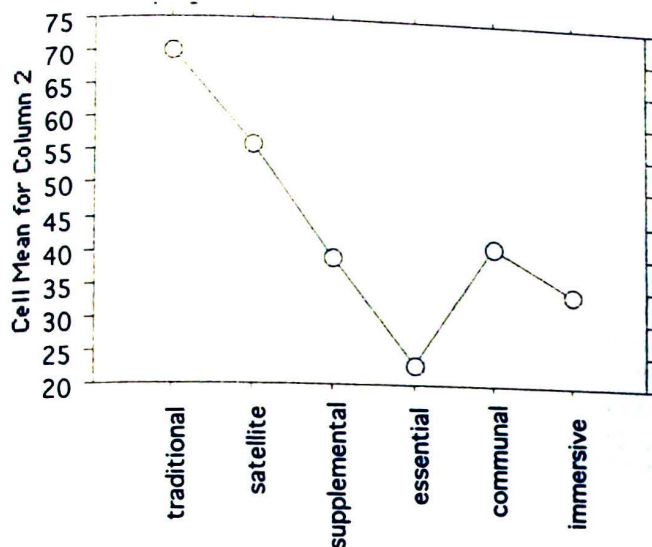| Years of teaching	Less than 5	5 to 10	11 to 15	More than 15
n = 127	54	37	15	21
% of total	42.52%	29.13%	11.18%	16.54%

<u>Choice of Course Offerings</u>

The survey asked subjects to select from a list of six types of course presentations, which ones would be the most appealing. Subjects were allowed to choose more than one type. The 127 respondents made a total of 263 selections. The selections progressed from Traditional on-campus meetings to Immersive on-line with no face-to-face meetings. The majority of the respondents chose a type of Tradition course presentation over a type of On-line presentation. The following table and figure summarize the choices of course presentations.

Table 4: Choice of Course Presentation Types

	Traditional	Satellite	Supplemental	Essential	Communal	Immersive
Male n=17	8 17.78%	12 26.67%	7 15.56%	6 13.33%	6 13.33%	6 13.33%
Female n=110	62 27.43%	44 19.47%	40 17.70%	17 7.52%	35 15.49%	28 12.39%
Total n=127	70 25.83%	56 20.66%	47 17.34%	23 8.49%	41 15.13%	34 12.55%

Figure 1: Graph of Course Presentation Choices

Note: Data for vertical axis represents the number of choices. Data for the horizontal axis represents the types of course presentation.

Research Hypothesis Test

The statement of the hypothesis stated that there will
be no significant difference in the selection of a form of
course presentation chosen by teachers desiring graduate
credit given six categories of course presentations. The
decision rule was to reject the null hypothesis at the 0.05
level of significance if the chi-square value equals to or
is more positive than the critical chi of 20.52 given five
degrees of freedom. The null hypothesis is rejected at the
0.05 level of significance because the value of chi-square
equals 31.82 which is more positive than 20.52. There is a
significant difference in the choice of course presentation
in that more teachers chose a form of traditional course
presentation over a form of on-line course presentation.

The actual responses, the expected responses, and the computed chi-square are reported in the following table.

Table 5: Chi-Square Values

Course Type	Actual responses	Expected responses	Chi Square
Traditional	70	43.833	31.822
Satellite	56	43.833	31.822
Supplemental	39	43.833	31.822
Essential	23	43.833	31.822
Communal	41	43.833	31.822
Immersive	34	43.833	31.822

Computer Experience

When asked for the number of years the subjects had used a computer, 76.38% stated they had used a computer for more than seven years. Less than one percent chose 0 to 3 years experience and all of those were male. When asked how often computers were used, the majority, 61.9%, said they used them all day. Once a day was chosen by 36.51% and every few days was chosen by 1.59%. The most selected level of experience was Layman/Amateur at 49.61%, followed by Very Experienced, 44.09%. Only 6.30% called themselves Expert.

Perceived Competence was scored using a 5-point Likert scale where 1 equaled a low or negative competence and 5 equaled a high or positive competence. The mean for Perceived Competence was 3.47. Since a score of 3.0 suggested a neutral or average competence, the subjects'

mean score indicated an above average perception of competence. The median score was 3.41 and when compared to the mean, a normal distribution is indicated. Though e-mail had been in use for fewer years than general computers had, subjects reported similar perceptions with e-mail for levels of experience.

The following tables summarize the response to the items in the section pertaining to Computer Use.

Table 6: Years of Computer Use

Years of use	0-3 years	4-7 years	More than 7 years
Male n=17	1	5	11
Female n=110	0	24	86
Total n=127	1	29	97

Table 7: How Often a Computer Is Used

How Often Used	All Day	Once a Day	Every Few Days	Once a Week
Male n=17	11	6	0	0
Female n=110	67	40	2	0
Total n=127	78	46	2	0

Table 8: Perceived Level of Computer Experience

Computer Experience	Expert	Very Experienced	Layman/ Amateur	Novice
Male n=17	3	6	8	0
Female n=110	5	50	55	0
Total n=127	8	56	63	0

Table 9: Perceived Competence

Competence n=127	Analysis
Mean	3.47
Median	3.41
Standard Deviation	0.1587

Attitude Toward Technology

Subjects were asked to rate their feelings toward technology. The majority, 33.33% chose Comfortable as their response. Confident garnered 28.57%, Curious, 21.42%, and Masterful, 3.97% of the responses. Two percent said they felt Intimidated and 11% described themselves as Technology-shy. When faced with technology problems, most subjects attempted to solve them themselves by figuring out a solution by trial. Tutorial use was evenly split with 43.31% reporting they used the tutorials and 42.52% reporting they did not. Fifty-two percent of respondents said they were the household member who usually programmed appliances and technical equipment. An overwhelming majority of subjects, 89.77% rated their enthusiasm toward technology as positive, yet less than half, 41.74%, ranked themselves as above average in being "good at technology." Again, the mean and the median scores indicate a normal distribution.

The following table summarizes the response to the section pertaining to Attitude toward Technology.

Table 10: Attitude Toward Computers

Perceived Attitude n=127	Analysis
Mean	4.13
Median	4.21
Standard Deviation	0.1415

Study Style Preference

This section of items asked subjects how often and how long they studied. Given the choices, Daily, A couple of times a week, Weekly, and When needed, the majority, 42.52% chose a couple of times a week followed by daily, 37.80%. Studying only when needed received 13.39% of the responses. The choices for length of study time ranked as follows: more than 60 minutes, 10.32%; thirty to sixty minutes, 66.67%; less than 30 minutes, 23.02%. When asked if they preferred to study alone or in a group, most chose study alone 72.44% to 27.56%. Other items asked if they considered themselves to be self-motivated and/or inclined toward procrastination. Responses were scored using a 5-point Likert scale. The question for self-motivation was scored using 5 = a high degree of self-motivation and 1 = a lack of self-motivation. To achieve a score for the level of procrastination, the scale listed 1 for a high tendency toward procrastination and 5 for a low tendency toward procrastination. A final item asked subjects to rate how important discussion of ideas and concepts is to learning. This item was again scored using a 5-point Likert scale where 5 = very important and 1 = not important. The following tables summarize the responses to the items in the section pertaining to Study Styles.

Table 11: Perceived Degree of Self-Motivation

Perceived self-motivation n=127	Mean of Responses
Male	4
Female	4.04
Total	4.02
Standard Deviation	0.021

Table 12: Perceived Degree of Procrastination

Perceived procrastination n=127	Mean of Responses
Male	3.29
Female	3.17
Total	3.21
Standard Deviation	0.64

Table 13: The Importance of Discussion to Learning

Importance of Discussion n=127	Mean of Responses
Male	4.24
Female	3.87
Total	4.04
Standard Deviation	0.201

Table 14: Perceived Study Style

Perceived Study Style n=127	Analysis
Mean	3.71
Median	3.92
Standard Deviation	0.4565

Chapter V

Summary, Conclusions and Recommendations

Summary of Findings

This study was conducted to investigate the course presentation preferences of teachers desiring graduate credit. The review of the literature suggested that web-based instruction would meet the needs of a great segment of students who are employed, have families, and find attending traditional college courses difficult due to time constraints or distance. Teachers are a potential segment of the population. Due to costs of developing courses to meet the needs of these students, a survey was presented to a sample group of teachers who identified that they were interested in receiving graduate credit to determine which type of course presentation they would be more inclined to choose given a range of presentation types from traditional to total on-line. The findings from this study rejected the null hypothesis. A significant number of subjects chose a traditional form of course presentation over web-based instruction.

Comfort with technology, as well as the cost of hardware and networking, can provide barriers to effective learning. The data indicated that the respondents had adequate computer experience and used computers on a daily

basis. Their responses also pointed to a high degree of enthusiasm for the use of computers. However, the perceived degree of competence was not as high, although above average. Despite the enthusiasm for computers, worries about being able to fix technical problems, and learning new programs may provide a disincentive to enrollment.

The distance learning convenience factor of being able to learn at home at a fitting time is an advantage for many potential students, but for some, there may be several disadvantages. Web-based instruction is not appropriate for all learning styles and may be felt to be impersonal. Many educators may possibly feel the interpersonal experience of the classroom outweighs the convenience factor.

According to limited research, on-line learning calls for students to be self-motivated and not prone to procrastination. The data received for perceived degree of self-motivation identifies this sample as being above average in ability to self-direct. A score of 5 indicates no procrastination, however, the mean for this group of subjects is 3.21, which does not represent an absence of tendency to procrastinate. Teachers usually have many deadlines and many responsibilities. The difficulty of meeting these deadlines may possibly be the cause of the score for perceived procrastination.

Although the majority of subjects preferred to study alone, the mean for the importance of discussion to learning was 3.92. Discussion boards and chat rooms may not meet the needs of this sample.

These responses for perceived competence and study style preferences could be pointed to as reasons for teachers to choose a more traditional form of course presentation.

Conclusions

Based on the analysis of the data, the following conclusion may be drawn for this sample.

Teachers prefer a form of traditional face-to-face course presentation to various forms of on-line learning.

In addition, the following conclusions may apply to this research study.

1. The attitudes of teachers toward the use of computers are positive.

2. The perceived computer competence of teachers is above average, but not greatly so.

3. Teachers prefer to study alone, but value discussion as integral to learning.

4. Teachers perceive themselves to be self-motivated, however, they also feel that they procrastinate.

Recommendations

The results of this study are limited and may not generalize beyond the sample. As technology permeates our society to a greater extent, the results of a similar study may differ from the results of this study. Therefore, it is recommended that institutions of higher learning pursue a means to investigate the effectiveness of web-based learning. After initial expenses, the cost of creating and delivering on-line courses could decrease making web-based learning a viable choice for a future group of students.

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APPENDICES

Austin Peay State University
Institutional Review Board

February 25, 2002

Carol Nadeau
c/o Rebecca McMahan
Education
APSU Box 4545

RE: Your application dated February 12, 2002 regarding study number 02-044: An Investigation of the Course Presentation Preferences of Teachers Desiring Graduate Credit (Austin Peay State University)

Dear Ms. Nadeau:

Thank you for your response to requests from a prior review of your application for the new study listed above.

Congratulations! This is to confirm that your application is now fully approved. The protocol is approved through revisions. The consent form submitted with your application is approved. You must obtain signed written consent from all subjects; however, signed written consent is not required. This approval is subject to APSU Policies and Procedures governing human subjects research. You may want to review this policy which can be viewed on the APSU website at: www2.apsu.edu/www/computer/policy/2002.htm

You are granted permission to conduct your study as most recently described effective immediately. The study is subject to continuing review on or before February 11, 2003, unless closed before that date. Enclosed please find the forms for reporting a closed study and for requesting approval of continuance.

Please note that any changes to the study as approved must be promptly reported and approved. Some changes may be approved by expedited review; others require full board review. If you have any questions at all do not hesitate to contact Lou Beasley (221-6380; fax 221-6382; email beasleyl@apsu.edu) or any member of the APIRB.

Again, thank you for your cooperation with the APIRB and the human research review process. Best wishes for a successful study!

Sincerely,

Dr. Lou M. Beasley
Chair, Austin Peay Institutional Review Board

enclosure

March 15, 2002

Ms. Carol Nadeau
2857 Lawry Lane
Clarksville, TN 37043

Dear Ms. Nadeau:

Your research project titled "An Investigation of the Course Presentation Preferences of Teachers Desiring Graduate Credit"has been approved by the research committee. The date of approval was March 12, 2002.

Now that you have approval from the research committee, you may contact the principal for approval. According to Board Policy File IFA, the principal has the final authority and responsibility for approving or disapproving research conducted in his/her building.

Please read the <u>Research Policy and Procedures Handbook</u> for all information concerning research in the Clarksville-Montgomery County Schools.

If you have questions, please call my office at (931) 920-7819.

Sincerely,

Sallie Keith
Curriculum and Instruction Supervisor

tr
cc: Research Committee

Instructions for Participating in a Research Study

Austin Peay State University

You are being asked to participate in a research study. This form is intended to provide you with information about this study. You may ask the researcher listed below about this study or you may call the Office of Grants and Sponsored Research , Box 4517, Austin Peay State University, Clarksville, TN 37044, (931) 221-7881 with questions about the rights of research participants.

The title of this research study is "An Investigation of the Course Presentation Preferences of Teachers Desiring Graduate Credit." My name is Carol Nadeau and I am a graduate student at Austin Peay State University in the Education Specialist (Ed.S.) program. I am currently conducting my thesis research under the supervision of Dr. Rebecca McMahan.

The purpose of this study is to determine how to best present graduate classes by investigating the preferences of teachers who would like to take graduate coursework. Course presentations range from traditional class meetings to online virtual classrooms.

As a participant in this study, you will be asked to complete a survey. The survey questions are about your level of comfort with computers and your learning preferences. As a participant, you do not have to answer any question you do not wish to answer. Please place the completed survey in a designated drop box in the school office. Completed surveys will be picked up after a few days. By participating, you are consenting to the use of your responses as part of this research project. Steps will be taken to insure your privacy and data will be kept confidential to the extent provided by law. Published data will be presented in a way that does not reveal the identity of any participants. Please do not sign or put your name on the survey.

If you have questions about this study, you may call Carol Nadeau (graduate student, Education Department) or Dr. Rebecca McMahan (faculty supervisor, Education Department) at 931-221-7513. Participants can obtain results from the researcher by e-mail or written request to the address below

Carol A. Nadeau
Austin Peay State University College of Education
P.O. Box 4545
Clarksville, TN 37044
Daytime phone: (931) 221-6195
E-mail: nadeauc@apsu.edu

AN INVESTIGATION OF COURSE PRESENTATION PREFERENCES

COMPUTER USE

Ho many years have you used a computer?

_____ 0 -3
_____ 4 -7
_____ more than 7

How often do you typically use a computer?

_____ all day
_____ briefly once a day
_____ every few days
_____ once a week

How would you characterize your own level of experience?

_____ Expert
_____ Very experienced
_____ Layman/amateur
_____ Total novice

Please rate your competence on a scale of 1 (low) to 5 (high).

(low) 1   2   3   4   5 (high)

Do you like using computers? Please rate your liking on a scale of 1 (not at all) to 5 (lots).

(not at all) 1   2   3   4   5 (lots)

E-MAIL AND NETWORK USE:

How many years have you used e-mail or a network?

_____ 0-2
_____ 3-4
_____ 5-6
_____ 7 or more

How often do you typically use e-mail?

_____ Daily
_____ Several times a week
_____ A few times a month
_____ Never

How would you characterize your own level of experience? Please rate your competence on a scale of 1 (low) to 5 (high).

    (low) 1   2   3   4   5 (high)

Do you like using electronic mail? Please rate your liking on a scale of 1 (not at all) to 5 (lots).

    (not at all) 1   2   3   4   5 (lots)

ATTITUDES

Which of the following best describes how you feel about using computers?

    _____ - intimidated
    _____ - technology-shy
    _____ - comfortable
    _____ - curious
    _____ - confident
    _____ - masterful

Overall, how enthusiastic do you feel about working with computers?

    _____ really enjoy it
    _____ like it
    _____ tolerate it
    _____ do it grudgingly
    _____ hate it

Are you 'good at computers'? Please rank how able you consider yourself on a scale of 1 (not very) through 5 (well above average).

    (not very)   1   2   3   4   5 (well above average)

What is the first practical thing you do when something goes wrong?

    _____ Gather information about what has gone wrong
    _____ Try to figure out a solution by trial
    _____ Read the manual
    _____ Get help

Do you tend to solve technical problems yourself or seek help? Please rank your actions on a scale of 1 (solve myself) through 5 (always seek help).

    (solve myself) 1   2   3   4   5 (always seek help)

If an on-line tutorial is offered, do you usually use it?

_____ Yes
_____ No

If someone in your household has to set the clock in the microwave, or program the VCR, or any similar job, how often is it you?

_____ Usually
_____ Often
_____ Sometimes
_____ Rarely
_____ Never

STYLE OF STUDYING

If you were to take a course or a workshop that requires out of class studying:

How often do you study?

_____ Daily
_____ A couple of times a week
_____ Weekly
_____ Only when needed

How long do you study per session?

_____ Less than 30 minutes
_____ 30—60 minutes
_____ More than 60 minutes

Please rank how self-motivated you consider yourself on a scale of 1 (not very) through 5 (well above average).

(not very)   1   2   3   4   5 (well above average)

Please rank how great a procrastinator you consider yourself on a scale of 1 (never) through 5 (always).

(never)   1   2   3   4   5 (always)

Do you prefer to study alone or in a group?

_____ Alone
_____ In a group

How important is discussing ideas and concepts to learning? Please rank how important discussions are to you on a scale of 1 (not important) through 5 (very important).

(not important)   1   2   3   4   5 (always)

LEARNING PREFERENCES

Which of the following types of course offerings would most appeal to you.

_____ **Traditional:** Classes meet on campus in the evenings or on Saturdays

_____ **Satellite:** Classes meet in a convenient place away from campus usually on Saturdays.

_____ **Supplemental Online:** Some course content is placed on the web for student retrieval, but classes meet regularly either on campus or at a satellite location.

_____ **Essential Online:** Requires the student to access the web regularly to obtain important course content and/or other pertinent information, but classes meet regularly either on campus or at a satellite location.

_____ **Communal Online:** Classes meet fewer times, either on campus or at a satellite location, for discussion and/or testing but all course content is delivered on the web.

_____ **Immersive Online:** A completely web-based course with all content and interactions occurring on-line.

ABOUT YOU

What is your gender?
_____Male _____Female

What is your age range?
_____30 or less _____31-40 _____41-50 _____51 and over

How many years have you been teaching?
_____less than 5 _____5-10 _____11-15 _____more than 15

What degrees and or steps have you attained?
_____Bachelors _____Masters _____Higher than Masters

Are you interested in taking courses for graduate credit in the near future?
_____ Yes
_____ No

Thank you for participating in my research study!
Please place completed surveys in the survey drop box in the school office.

Questionnaire adapted from a study by:

Carswell, L., Thomas, P., Petre, M., Price, B., Richards, M. (1999, May). Understanding the 'electronic student': Analysis of functional requirements for distributed education. JALN, 3. Retrieved November 8, 2001 from http://www.aln.org/alnweb/journal/jaln-vol3issue1.htm

Modified with permission. See attached e-mail.

> From: L.Carswell
> To: 'Nadeau, Carol '
> Cc: B.A.Price; 'Linda Carswell '; 'Marian Petre '; M.Richards; 'Pete
> Thomas
> '
> Sent: 30/01/02 11:57
> Subject: RE: JALN Research
>
> Dear Carol,
>
> please find attached the questionnaire that you requested. Good luck
> with your research.
>
> Linda
>
> -----Original Message-----
> From: Nadeau, Carol
> To: Blaine Price; Linda Carswell; Marian Petre; Mike Richards; Pete
> Thomas
> Sent: 29/01/02 21:20
> Subject: JALN Research
>
> Dear Esteemed Colleagues
>
> I am a student and faculty member at Austin Peay State University in
> Clarksville, Tennessee, USA. I am currently working on a thesis for the
> degree of Ed.S. Through my research, I found your article from JALN
> Volume
> 3, Issue 1 - May 1999
> (http://www.aln.org/alnweb/journal/jaln-vol3issue1.htm). The article is
> entitled, Understanding the 'Electronic' Student: Analysis of Functional
> Requirements for Distributed Education.
>
> My thesis is as follows:
>
> Statement of the Research Purpose
> The purpose of this study is to investigate the educational preferences
> of
> teachers desiring graduate credit. Universities can deliver online
> course
> work in varying degrees or levels. Given a choice of traditional,
> face-to-face class meetings at the university or satellite location; a
> mix
> of traditional with online materials; or total online courses with no
> meetings, which type of course would best meet the needs and learning
> preferences of teachers seeking graduate coursework.

> I found the explanation of your questionnaire very interesting and
> applicable to my study. I would like to use your questionnaire for the
> purpose of acquiring data for my study. I will, of course, credit your
> study properly, and send you the results of the study.
>
> Will you grant permission for me to use your questionnaire for this
> study?
> May I have a copy of the entire questionnaire?
>
> Please e-mail me at this address: nadeauc@apsu.edu
>
> Thank you for your kind consideration.
> Sincerely,
>
> Carol Nadeau
> Department of Education
> Austin Peay State University
> Claxton 223
> 931-221-6195

> <<combined questionnaire.doc>>

Subject: JALN Research
> From: L.Carswell@open.ac.uk
> Sent: Thursday, January 31, 2002 3:47 AM
> To: NadeauC@apsu.edu
> Subject: RE: JALN Research
>
> Dear Carol,

>
> I am happy for you to use the questionnaire that was used in the 'MZX'
> studies that examined teaching via the internet. Equally I am happy for
> you
> to modify this questionnaire and use it provided the source is referenced.
> Below is a list of some references that you might find useful.
>
> Good luck with your research!
>
> Linda
>
>
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> Thomas, P., G., Carswell, L., Price, B. A., & Petre, M. (1998). A holistic
> approach to supporting distance learning using the Internet:
> transformation,
> not translation. British Journal of Educational Technology, 29(2),
> 149-161.
>

>
> -----Original Message-----
> From: Nadeau, Carol
> To: 'L.Carswell@open.ac.uk'
> Sent: 30/01/02 19:31
> Subject: RE: JALN Research
>
> Linda,
> Thank you very much for your quick response. I received and opened the
> questionnaire. However, before I can use it, I must have written
> documentation that I have permission to use it. My professor says e-mail
> will be fine.
> I also may need to make some modifications to use it for my study.
> Would
> you please grant me permission to use and modify?
>
> Again, I will credit your work properly and send you the results of my
> study. I also will send you modifications if you so require.
>
> Thank you so much,
> Carol Nadeau
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>

VITA

Carol Anne Nadeau was born in Calcutta, India on July 5, 1951. She grew up in Nashville, Tennessee where she attended elementary school and graduated from Hillsboro High School in June 1969. She attended the University of Tennessee, Knoxville, from 1969 to 1971 where she began work on a degree in Education. She completed her Bachelor of Science in Education at Austin Peay State University in December 1987. She reentered Austin Peay State University where, in December 1999, she received a Masters of Arts in Education with an emphasis in Instructional Technology.

She has worked for the Clarksville, Montgomery County School System teaching third, fourth, and fifth grade. She is currently employed as an Assistant Professor in the School of Education at Austin Peay State University.