ABSTRACT

DOOLE, KATHLEEN R. Comparison of Instructional Behaviors Between Campus Business Instructors and Online Business Instructors in the North Carolina Community College System. (Under the direction of John M. Pettitt and Ellen S. Vasu.)

This study compared instructional behaviors between campus business instructors and online business instructors in the North Carolina community college system. It also compared the relationship of eight factors to the instructional behaviors of campus and online business instructors in the North Carolina community college system. The study was conducted at 15 community colleges in North Carolina; five large-size enrollment colleges, five medium-sized enrollment colleges, and five small-sized enrollment colleges. A survey instrument was developed and validated by eight professionals with experience or expertise in online education.

A descriptive research design guided the investigation that yielded statistical descriptive data about how the variables were distributed between campus business instructors and online business instructors. Analysis of Variance and Chi-Square were used to compare the instructional behaviors of campus business instructors and online business instructors in the North Carolina community college system, as well as, to determine if there was a significant difference in the instructional behaviors used by both types of business instructors based on age, years of teaching, gender, educational level, training, online learning experience, specific types of technology used, and the use of specific types of instructional behaviors. This study concluded that significant differences were found between campus instructors and online instructors for the Pedagogical, Social, Managerial, and

Technical instructional behaviors. Campus instructors reported using certain instructional behaviors more often than online instructors.

COMPARISON OF INSTRUCTIONAL BEHAVIORS BETWEEN CAMPUS BUSINESS INSTRUCTORS AND ONLINE BUSINESS INSTRUCTORS IN THE NORTH CAROLINA COMMUNITY COLLEGE SYSTEM

by

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A dissertation submitted to the Graduate Faculty of
North Carolina State University
in partial fulfillment of the requirements for the degree of
Doctor of Education

ADULT AND COMMUNITY COLLEGE EDUCATION

Raleigh, North Carolina

2006

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BIOGRAPHY

Kathleen Ruth Doole was born in Montclair, New Jersey to Ruth Lavinia Moshier Doole and David Andrew Doole. She graduated in the top 10% of the 1971 high school graduating class of 200 students at Pompton Lakes High School in Pompton Lakes, New Jersey. After high school graduation, she enrolled at William Paterson College in Wayne, New Jersey, as an Elementary Education major. Upon graduation from college in 1975 with a Bachelor of Science Degree in Elementary Education, Kathleen substituted in various local school systems but decided to enter the business workforce.

While working at Reeves International located in Pequannock, New Jersey, she was able to learn about computers when the company changed from a manual system to a computerized system. She decided to move to Texas in 1980 where her cousins lived and look for a teaching position in that state. After moving back to New Jersey, Kathleen obtained a computer position with a company located in Fairfield, New Jersey, called T.A. & D. A. Troy. It was during her employment with this company that Kathleen realized she might want to change careers into the field of computers. Since she had a teaching degree and some computer experience, T.A. & D.A. Troy trained her on their new system first, and she was then sent to their Los Angeles, California, branch to train the employees.

After moving to Hendersonville, North Carolina, in 1984 with her family, she enrolled in the Electronic Data Processing Technology curriculum at Blue Ridge Community College, Flat Rock, North Carolina. While working at Seneca Foods located in Mountain Home, North Carolina, Kathleen completed her Associate in

Applied Science degree in 1987. Now with an AAS degree, she was employed by The Asheville School, Asheville, North Carolina, a private boarding and day high school, where she became the Office Manager for the Development Office (Alumni Office).

Kathleen continued her education and earned a master's degree in 1995 from Western Carolina University in Supervision: Educational Technology Specialist. During the time of working on her master's, Kathleen taught computer courses as an adjunct instructor at Blue Ridge Community College's Transylvania Center in Brevard, North Carolina, and Asheville-Buncombe Technical Community College in Asheville, North Carolina.

Kathleen was hired by the Henderson County Board of Education, Hendersonville, North Carolina, in 1989 for an interim teaching position at East Henderson High School, Flat Rock, North Carolina. During the 1989 – 1990 school year, she taught both beginning and advanced computer courses along with being the adviser to the school newspaper. At the end of that year, Kathleen accepted a position as an Administrative Assistant in the Development Office of Carolina Day School, Asheville, North Carolina. While working at Carolina Day School, she was able to continue her teaching skills by teaching computer courses during Carolina Day School's Summer Discovery program to both adults and children.

In December 1995 Kathleen was hired as a full-time computer instructor at Asheville-Buncombe Technical Community College. During the ten years as a full-time instructor, she was nominated as Teacher of the Year for three different school years, 1996 – 1997, 1998 – 1999, and 1999 – 2000. Kathleen has also been a Phi

Beta Lambda adviser for the past nine years, working to strengthen the confidence of students in themselves and in their work, and helping to ease the transition from college to the business community. She has served as a division representative for ABTCC's Faculty Association, ABTCC's Institutional Effectiveness Council, ABTCC's Tech Prep committee, ABTCC's Academic Affairs committee, and on both college and state distance learning committees. She is a member of the North Carolina Computer Instructors Association and the North Carolina Community College Faculty Association.

Since 2001 Kathleen has been a member of a Web development team to create courses for the North Carolina Virtual Learning Community. While working with two instructors from Martin Community College and Coastal Carolina Community College, she created online materials for the Introduction to Internet Programming course. Recently she worked on another course, Web Site Management, with another instructor from Caldwell Community College and Technical Institute. Currently she is editing two online classes for the North Carolina Virtual Learning Community. Kathleen has also been certified in Microsoft Office User Specialist – Word XP and Excel XP.

In 1997 Kathleen applied for and was accepted into the doctoral program in Adult and Community College Education at North Carolina State University located in Raleigh, North Carolina. Kathleen completed the course work and finals for the degree of Doctor of Education in the spring of 2006.

Kathleen currently donates time as a docent at the Historic Johnson Farm, Hendersonville, North Carolina. She also enjoys traveling, reading, and crafts.

ACKNOWLEDGEMENTS

I would like to express my appreciation to the members of my Advisory Committee, Dr. John Pettitt (Co-Chair), Dr. Paula Berardinelli, Dr. Ronald W. Shearon, and Dr. Ellen S. Vasu (Co-Chair). Special thanks go to Dr. John Pettitt and Dr. Ellen Vasu who have guided me with continued patience through the dissertation process and to Dr. Don Locke, who as Director of the Asheville Doctoral Program, provided guidance and support throughout the program. In addition, I would like to thank Dr. Robbie Pittman, faculty member of Western Carolina University, for assistance with the statistics of this study and for his excellent instruction in the statistics application course.

Special acknowledgement should be given to the members of the Panel of Professionals whose expertise and suggestions helped to make this study come together.

I would also like to recognize the faculty and staff at Asheville-Buncombe Technical Community College who continued to support me throughout the completion of my degree: Mr. K. Ray Bailey, President of A-B Tech; Dr. Joe Franklin, previous Dean of the Business and Hospitality Division; Dr. John Humphrey, a fellow instructor who convinced me to “go for it”; Dr. Phil Leftwich, current Dean of the Business and Hospitality Division and recent graduate of NCSU; Dr. Tom Dechant, Dean of the Arts and Sciences Division and a member of the first Asheville Cohort; Dr. Debbie Harmon, Director of Counseling and a member of the first Asheville Cohort; and all the instructors in the Business Computer Technology Department at

A-B Tech. I would also like to thank current and past computer students who always found time to ask about my dissertation and if I was “Dr. Doole” yet.

I will always be grateful for the friendship of each member of the NCSU Asheville Cohort II, who supported and encouraged me the last eight years. Without the expertise of each cohort member, my success in obtaining this degree would not have been possible, especially with our study group in the statistics course during the summer of 1999 in Raleigh. Two very special members of our cohort, Mrs. Jeanette Staley, who died November 18, 2001, was an inspiration to us all as a wife, mother, math instructor, student, and friend, and, Mr. Duane Crane, who died September 21, 2003, was an exceptional person as a friend, teacher, and student. They will be missed by all.

Lastly, and most importantly, the unwavering support and patience of my family and friends, particularly my parents who continued to be sources of encouragement, patience, and support in the completion of my degree. Their love will always be treasured. My Mother’s wish, although she died unexpectedly on August 8, 2003, as well as my Dad who died on September 7, 2005, was for me to finish and walk at graduation. I am glad to have finally given them their wish. My dear friends, Ann McAndrews and Nancy Miller, have also given me much support in my many endeavors. I will always treasure their patience with me during this process.

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CHAPTER ONE

INTRODUCTION

Today's academic institutions are in transition. Much of the change is due to economic pressures from mounting costs and demands by the business world for graduates with the ability to perform well in a knowledge-based economy; greater diversity among the students who are choosing to attend school is also a factor (Palloff & Pratt, 1999). Larger numbers of nontraditional students are returning to school to seek new skills or change to a totally different work environment than ever before. In recent years the interest in online courses through the Internet for the delivery of higher education has increased considerably. Adults are engaging in online education—that is, education in which teacher and learner are separate during a majority of instruction (Verduin & Clark, 1991).

Colleges and universities are feeling the pressure to control costs, improve quality, focus directly on customer needs, and respond to competitive pressures. Information technology has the potential to solve many of these problems. It can change the roles of students and faculty, facilitate learner-centered personalized education through improved business processes and online education, and expand the scope and content of the curriculum (Horgan, 1998).

As technology becomes more prevalent, faculty and students alike are struggling with the changes it brings to the educational environment. Virtual universities allow students to apply for admission, register for courses, purchase books, and attend classes without ever visiting a physical place called a campus (Palloff & Pratt, 1999). Several education programs have been developed that

involve students interacting with software, having no interaction with other students. Other programs are interactive, allowing students to post comments to a discussion area on the Internet.

Regardless of which instructional method is used, a transition must be made from the typical campus classroom to the online classroom. Instructors and students behave differently in the two types of classrooms and learning outcomes are different as well (Palloff & Pratt, 1999).

Palloff & Pratt (1999) declare that the use of online learning in higher education reveals the development of a new paradigm of education. In this paradigm, the instructor is no longer seen as the bearer of all knowledge; they are now considered to be a facilitator to students taking online courses. Students can now explore the course content collaboratively or they can pursue their own related interests. There is no longer a necessity for courses to take place at a specific time and location.

Institutions entering the online arena must be prepared to tackle new issues and concerns and to develop new approaches and new behaviors in order to create desired outcomes of online learning. Successful online education is seen by some as a process of taking our best practices in the classroom and bringing them into a new arena (Palloff & Pratt, 1999). But is this what is occurring in online learning? Are instructors using similar strategies in these environments or is this a paradigm where new and different strategies are used?

Statement of the Problem

The integration of new technologies in higher education is inevitable (Gilbert, 1995). To a great extent, the success or failure of online education rests on the enthusiasm with which these new technologies are embraced by the faculty (Willis, 1994). Faculty play an important role in the implementation of online education and technological change. However, despite the recent expansion of online education programs across the United States, research indicates that many faculty resist participation in online teaching (Olcott & Wright, 1995). In a study by Bankirer (1987) faculty attitudes toward the use of technology was reported as the reason for limited use of new technologies. Spotts and Bowman (1995) found that faculty at the university level relied more heavily on traditional methods of delivery rather than innovative technologies. Clark (1993), Dillon (1989), and Kendall and Oaks (1992) found online delivery methods resulted in a loss of satisfaction with the quality of student-teacher interactions.

Even though there are many negative feelings concerning the teaching of a class through online learning, there are still many instructors who are leaning toward teaching in an online environment. Instructors who have entered this new arena of teaching offer opportunities to understand if online technologies inhibit or enhance strategies used for classroom learning.

In order to explore this question, this study will examine the teaching behaviors of a particular set of instructors: community college business instructors in North Carolina. While also a sample of convenience, these instructors are active in online teaching; and their content encourages the use of multiple methods and

strategies to enhance competencies that range from “structured business content” to interpersonal skills. More specifically, this study will examine the following questions in relation to community college business instructors in North Carolina.

What instructional behaviors are being used by North Carolina community college business instructors when they teach a course online? Are those instructional behaviors the same as those used by business instructors who teach campus courses? This study is designed to find out how the instructional behaviors used by North Carolina community college business instructors who teach in a campus environment compare to those instructional behaviors used by North Carolina community college business instructors who currently teach in an online environment.

By comparing the instructional behaviors of North Carolina community college business instructors who teach either in a classroom or online, we may be able to see what instructional behaviors online business instructors bring with them from a classroom environment. These data will assist new business education instructors when they are planning to teach online.

Background of the Problem

Within the expanding field of online learning, the focus of most published scholarly articles has been on the technologies used in online education, their application to conventional classroom teaching, and the acceptance of the media used in online education by students involved in the learning process (Purdy & Wright, 1992). Further, there is a wealth of articles that deal with online education

theory, course design, and the implementation of specific forms of online instruction to targeted student groups. However, there has been little documentation of the role of the teacher involved in online learning as compared to classroom instruction.

Purdy & Wright (1992) ask if teaching students through any or all online methods is nothing more than adapting classroom approaches, techniques, or styles to situations where communication with the student is via written lessons or computer exchange in asynchronous time formats. Is online education more than a simple modification of the traditional classroom? Do instructors adopt new strategies as a result of teaching in online environments? Wedemeyer (1981) states that learning via technology is the scope of learning facilitated by technology, the altered role of teachers and learners, the changed environment for learning necessitated by technology, and the sophistication of the process used in developing instruction that will be communicated by technology.

Purposes and/or Objectives

The purpose of this study is to identify the following:

(1) Instructional behaviors that are being used by North Carolina community college campus business instructors when teaching a campus course;

(2) Instructional behaviors that are being used by North Carolina community college campus business instructors when teaching an online course; and,

(3) To determine if there are any significant differences between the comparison of instructional behaviors that are used by a campus business instructor

and the comparison of instructional behaviors that are used by an online business instructor.

Research Questions

This study provides data on the instructional behaviors of campus business instructors and online business instructors in the North Carolina community college system. Following the identification of instructional behaviors from a panel of professionals, the study will answer these principal research questions:

Research Question One:

- How do the instructional behaviors used by North Carolina community college campus business instructors compare to the instructional behaviors used by North Carolina community college online business instructors?

Based on this research question, the following null hypothesis was formulated:

H1: There is no significant difference in the frequency of instructional behaviors used by North Carolina community college business instructors who teach campus courses and the frequency of instructional behaviors used by North Carolina community college business instructors who teach online courses.

Research Question Two:

- Are there any differences in instructional behaviors used by North Carolina community college campus business instructors and North Carolina community college online business instructors based on age, years of

teaching, gender, educational level, training, and online learning experience, as well as differences in use of technology, and the use of specific types of instructional behaviors?

Based on this research question, the following null hypotheses were formulated:

H2: There is no significant difference in the comparison of instructional behaviors used by North Carolina community college campus business instructors and the comparison of instructional behaviors used by North Carolina community college online business instructors across all age groups.

A. 20 – 29 years of age
B. 30 – 39 years of age
C. 40 – 49 years of age
D. 50 – 59 years of age
E. 60 – 69 years of age

H3: There is no significant difference in the comparison of instructional behaviors used by North Carolina community college campus business instructors and the comparison of instructional behaviors used by North Carolina community college online business instructors across all years of teaching.

A. 0 – 10 years of teaching
B. 11 – 20 years of teaching
C. 21 – 30 years of teaching
D. 31 or more years of teaching

H4: There is no significant difference in the comparison of instructional behaviors used by North Carolina community college campus business instructors and the comparison of instructional behaviors used by North Carolina community college online business instructors for both genders.

H5: There is no significant difference in the comparison of instructional behaviors used by North Carolina community college campus business instructors and the comparison of instructional behaviors used by North Carolina community college online business instructors across all educational levels.

A. Some College/Associate Degree
B. Bachelor's Degree
C. Master's Degree
D. Educational Specialist Degree
E. Doctorate Degree

H6: There is no significant difference in the comparison of instructional behaviors used by North Carolina community college campus and online business instructors who have had staff development training in the area of online education and the comparison of instructional behaviors used by North Carolina community college campus and online business instructors who have not had staff development training in the area of online education.

H7: There is no significant difference in the comparison of instructional behaviors used by North Carolina community college campus and online

business instructors who have taken an online education course and the comparison of instructional behaviors used by North Carolina community college campus and online business instructors who have not taken an online education course.

H8: There is no significant difference between the frequency of specific types of technology used in a campus class and the frequency of specific types of technology used in an online class.

H9: There is no significant difference in the frequency of specific types of instructional behaviors used by North Carolina community college campus business instructors and the frequency of specific types of instructional behaviors used by North Carolina community college online business instructors.

During the course of this study, additional data was found that dealt with what classroom instructional behaviors were used by North Carolina community college business instructors when teaching an online course and what classroom instructional behaviors were not being used by North Carolina community college business instructors when teaching an online course. Based on the type of data found, no hypotheses were formulated and could not be generalized. This data is explained in Chapters Four and Five.

Significance of the Study

For community colleges to successfully use online education, instructors must do more than develop new technical skills. Some authors have argued that online

development and delivery requires new pedagogical approaches, challenging previous practices with regard to assessment, group interaction and student/teacher dialogue (Ellis & Phelps, 2000). This study has significance in the assessment of instructional behaviors that North Carolina community college business instructors use in classroom or online courses. If there are differences, the instructional behaviors that North Carolina community college business instructors have used within their online course could become the training that all North Carolina community college business instructors would need to teach online, and, perhaps become the training used by all new instructors in all curriculum areas.

Limitations of the Study

The following limitations apply to the proposed study:

1. The survey is limited to only those North Carolina community college business instructors who are currently teaching a campus course or who are currently teaching an online course.
2. The research instrument developed is limited to the opinions of one panel of experts on instructional behaviors, and the findings to the current level of knowledge about, perception of its importance, and perception of involvement in online education in North Carolina community colleges.
3. The time frame for this study limited the opportunity for more participants to be involved; only a random sample across the state was used.
4. The study was not longitudinal in scope.

5. The survey technique is used for collecting data. Mailed surveys depended on voluntary completion and return by potential respondents; therefore, there is no control over who completes the questionnaire or when or under what conditions it was completed.
6. The Likert scale uses forced-choice responses, which may have prevented some pertinent information from being collected.
7. When many statistical tests are conducted, you get a certain percentage that is significant by chance alone.

Assumptions of the Study

The following assumptions apply to the proposed study:

1. North Carolina community college business instructors will answer honestly to all survey questions.
2. North Carolina community college business instructors will complete their own survey and not assign them to another person to complete.
3. North Carolina community college business instructors have an interest in the study.

Definition of Terms

The following terms are used throughout this study and are defined in order to assure the understanding of their meaning.

1. *Asynchronous communication*– a term that is used in the context of computer communications to mean that the communication does not take place in

real time. Instead, one person posts a message, then others respond whenever they log on (Parsons & Oja, p. 444).

2. *Online education* – (1) the process of providing instruction when students and instructors are separated by physical distance and technology, often in tandem with face-to-face communication, is used to bridge the gap (Willis, 1994), (2) as defined for purposes of Southern Association of Colleges and Schools (SACS) accreditation review. Online education is defined, for the purposes of accreditation review, as a formal educational process in which the majority of the instruction occurs when student and instructor are not in the same place. Instruction may be synchronous or asynchronous. Online education may employ correspondence study or audio, video, or computer technologies (Southern Association of Colleges and Schools, 1999).

3. *Online Course* – typically refers to a type of online education/learning. An online education involves the use of the Internet to aid in teaching. The majority of the instruction occurs when student and instructor are not in the same place. Students typically use email, discussion forums, and/or chat rooms to communicate with the instructor (Todd, 2000).

4. *Synchronous communication* – an interaction between individuals or groups that occurs at the same time; that is, with no appreciable delay between the end of one message and the beginning of another. Face-to-face, telephone, and video teleconference conversations are synchronous (Chute, Thompson, & Hancock, 1999).

5. *Technology* – applying a systematic technique, method or approach to solve a problem. Much of today's technology uses computers. (http://www.techweb.com/encyclopedia/)

6. *Campus course* –course that meets in classrooms at regularly scheduled times without separation of student and instructor. (http://disted.lenoir.cc.nc.us/~disted/lcc.htm)

7. *Business instructor* – an instructor in the North Carolina Community College System who teaches any course designated to be in the Business discipline (e.g. Accounting, Business Law, Marketing and Retail, Information Systems, Programming, Networking, Economics, Office Systems Technology, and Finance).

8. *Curriculum total* – total number of students enrolled in a curriculum course.

CHAPTER TWO

LITERATURE REVIEW

Introduction

Understanding the history of online education is valuable in that it shows there was more than one historical path to online education and that the evolution of online education has not been easy. Many of the same problems facing implementation and acceptance of educational innovations today have been faced by online education throughout its history (Jeffries, 2000). Online education, where technology rather than a classroom connects student and teacher, is becoming a viable option to classroom teaching methods and is fast approaching major growth.

The purpose of this literature review was to (a) establish the historical relationship between traditional community college delivery and online education, (b) express the theoretical foundation of online education, (c) identify the challenges when dealing with online education, (d) describe the concerns that are encountered in online education, and (e) identify the instructional behaviors, styles, and methods that are currently suggested in the literature. The review of the literature contributed to the understanding of the overall scope and nature of online education. There is little research on the actual instructional behaviors that are currently being used in education today, particularly in the area of online business education. It is the intent of this study to identify the instructional behaviors instructors use when teaching an online business course and what behaviors are useed in classroom and online courses. As a result, the literature review contributed directly to the study of the

researchers' perceptions of the behaviors which affect both classroom and online business education courses.

Online Education in North Carolina Community Colleges

The number of higher education institutions offering online courses is growing dramatically. By 2002, 85 percent of two-year colleges offered online courses, up from 58 percent in 1998. Online education is thriving in North Carolina's community colleges. During the 1999-2000 school year, almost 34,000 students enrolled in curriculum and continuing education online courses at the 58 institutions in the North Carolina Community College System (NCCCS, 2001). The use of telecourses, broadcast on UNC-TV, cablecast or videocassettes, has grown exponentially over the years, now enrolling more than 18,000 students. Internet courses are growing more rapidly. Last academic year, North Carolina's community colleges offered more than 250 different titles from 68 different subject areas. The North Carolina Community College System has recently developed the Virtual Learning Community (VLC), which will expand access to additional courses across the state (NCCCS, 2001). Advancements in technology, for example a computerized teaching assistant that has been programmed to answer frequently asked questions, provide positive feedback and encouragement to students and initiate contact with inactive students (Reindl-Johnson, 2004), are breaking down barriers and changing the way teachers can interact with students. The Internet is the catalyst attracting schools and students to online education more than ever before.

The Historical Roots of Online Education

The history of online education is a kind of distance education which could be traced back to the early 1700s in the form of correspondence education, but technology-based online education might be best linked to the introduction of audiovisual devices into the schools in the early 1900s (Jeffries, 2000). The distance education movement is not a new phenomenon. The first “distance” course was Isaac Pitman’s of Great Britain who taught shorthand by a correspondence course (Moore & Kearsley, 1996).

It wasn’t until the late 1800s that online education was introduced into the United States. In 1883 New York State authorized the Chautauqua Institute to award degrees by correspondence courses. William Rainey Harper played a leading role in developing the still active New York Chautauqua Institute (Watkins, 1991). In 1892 Pennsylvania State College was one of the first postsecondary institutions to develop a program of correspondence study, especially in the field of agriculture. This course of study took advantage of Rural Free Delivery—the 19th century’s version of the information highway—to extend Penn State courses and agricultural knowledge to rural families. During this time, William Rainey Harper and The University of Chicago offered the first university courses by mail (Schlosser & Anderson, 1994).

The Start of the 20th Century

Soon after distance education was introduced, another form of outreach noticed little access in traditional four-year institutions. The roots of the community

college system in the United States actually began around the turn of the twentieth century (Cohen & Brawer, 1996). With the need of skilled workers throughout the country, many communities began to feel that further education was needed as the country's industrial expansion grew. New technology was developing as the country grew and people began to realize that schools could provide the training they required. Of course, most of the educational institutions that were already established were located in areas that were not readily available to large populations. With the passage of the Morrill Act in 1862, four-year land-grant institutions became available in every state. Even though many emphasized agriculture and teacher training, they did give people a choice between public and private institutions (Cohen & Brawer, 1996).

As the demand for further education grew, more providers of postsecondary training were necessary. Because of this need, the demands on the already established institutions became over-powering. Thus, development of local colleges had begun. The first junior college, Joliet Junior College, was established in 1901 under the influence of William Rainey Harper, president of the University of Chicago. Harper, along with others, suggested that the established universities be responsible for the higher-level curriculum and the lower schools would take care of the general and vocational education, a system used in the European universities and secondary schools (Cohen & Brawer, 1996).

During this time period, distance education became more and more prevalent. In 1901 the Moody Bible Institute started offering independent study courses. In 1906 The Calvert School of Baltimore became the first primary school in the United

States to offer correspondence courses, and The University of Wisconsin offered extension courses in engineering. During the years leading into World War I, distance education was a topic of interest to educational institutions.

With the advent of the radio, the federal government issued the first educational radio license to the Latter Day Saints' University of Salt Lake City in 1921. The University of Wisconsin and the University of Minnesota also received licenses to establish educational radio stations (Saettler, 1990). Levenson (1945) listed a series of evaluation studies conducted by Ohio State University and The University of Wisconsin as early as 1931 to demonstrate the use of radio in learning.

During the 1930s when American Philo Farnsworth was developing the first viable television technology, colleges and universities realized that now courses could be taught through a whole new medium. It wasn't until 1934 that the State University of Iowa began televised course broadcasts in subjects including oral hygiene and identifying star constellations. Iowa State University applied to the Federal Communication Commission (FCC) for an educational television (ETV) license in 1945 and became the first ETV broadcaster in the world as it commenced televising educational programs in 1950 (Saettler, 1990). This came at a time when an influx of students was felt in the college system. In 1944 the United States Congress passed the Servicemen's Readjustment Act, commonly known as the GI Bill. This act provided financial assistance for veterans of World War II who wanted to further their education and allowed millions of men and women to attend college who previously were not able to attend because of financial and social barriers

(Kiester, 1994). Distance education was being perceived as a means to reach adult audiences that needed a flexible means of accessing higher education.

After World War II

Supporters of the two-year college see the years following World War II as critical in its evolution from junior college to community college status. Many believed that for an institution to be a community college, that institution had to serve the community, subject itself to local control or control determined by the citizens of the community, and receive financial support that included state aid, local tax revenues, and equalization funds for poorer communities (Eaton, 1994).

During the next twenty-five years in the history of the community college, the mission of each institution was changed to meet the need of occupational and community-based education. Institutions started to add non-credit vocational training, community service programs, and developmental and remedial courses. High-tech programs such as computer technology, health care technologies and electronics were also added to the curriculum (Freed, 1998). While two-year and community colleges were expanding as an affordable, accessible, and effective provider to acquire education beyond high school, technology-driven education was too expensive for many.

The first true educational television program was Sunrise Semester, based in Chicago. From 1959 to the early sixties, Sunrise Semester featured a single broadcaster and a teacher standing before a class with a camera shooting over the heads of the students. Yet, the effort was not economical and the program soon

ended (Freed, 1998). According to Penn State history (1999), Penn State changed from courses offered on radio to an on-campus interactive television network that helped the University respond to the arrival of GI Bill students in the 1950s, to the use of public broadcasting and later to cable television.

While four-year institutions were reaching out through various forms of instruction, community colleges were becoming deeply imbedded and important parts of the community. Community colleges continue to give flexibility to meeting local needs by offering the community a full range of educational courses and training, constantly changing programs to keep up with the current trends and technology, allowing easy access and easy exit for any student who wishes to attend, provide remedial and developmental course work, and is a starting point for many individuals who cannot attend a four-year college or university. This imbedded nature of the community college system has paralleled philosophies of distance education in making education accessible and learner centered (Cohen & Brawer, 1996).

The End of the 20th Century

With the changing role of the community college, many felt that the area of distance education needed to become an integral part of a college education for students attending the community college. Distance education became more and more prevalent in the community college system throughout the United States. From 1970 to 1972, the state of California funded a two-year task force to design the television course or “telecourse” of the future. Authorized under Title I, community

service provision of the US Higher Education Act and led by Dr. Barnard Luskin, Coastline Community College's vice chancellor, the project involved all California community and state colleges along with the University of California (Freed, 1998). It was during 1972 that the task force predicted many of the technological innovations used today, including the development of the digital compact disk. Luskin's task force defined a telecourse as a complete course of study in a given subject. Students were separated from the teacher, standing or sitting before a camera in a classroom or studio at a remote location, in real-time or not. They also concluded that provisions must be made for answering student questions, giving and grading tests, and reporting student progress to the school, and all curricula must meet established academic standards (Freed, 1998).

About the same time that Coastline Community College offered telecourses, Dallas Community College produced pre-packaged telecourses on videotape to be used by other colleges. Dallas administrators believed that students could choose from a menu of instructional materials that they could view at any time, as opposed to only being able to see a program on a specific day and time. Coastline soon learned from Dallas and started producing and licensing pre-packaged telecourses for use by other colleges (Freed, 1998).

It was during the 1980s that technology-based distance education really began to be used more in higher education institutions. In 1982 the National University Teleconferencing Network, a consortium of 66 universities and the Smithsonian Institution, was established. With the advent of the computer, colleges now had another opportunity for instructional innovation (Cohen & Brawer, 1996).

During 1984 the National Technological University offered videotape and satellite graduate engineering courses; the Electronic University Network began to offer its first computer-based courses using proprietary software for DOS and Commodore 64 computers; and in 1989 the University of Phoenix started its online program.

In 1993 many developments in online education were implemented. Glenn Jones, already known for his Mind Extension University cable network, founded the International University College. This college would become a virtual university exclusively offering online courses and degrees (Withrow, 1997).

In 1996 Duke University began its Global Executive M.B.A. program that combined online technology and sessions on campus and at various locations throughout Europe, Asia, and Latin America. The governors of Arizona, Colorado, Idaho, Nebraska, New Mexico, North Dakota, Oregon, Utah, Washington, and Wyoming committed to the creation of an online institution called Western Governors University, and the New School for Social Research offered 90 online courses (Moore & Kearsley, 1996).

During 1998 Regent University School of Law, an ABA accredited program, announced the first online LL.M. program in International Taxation; the Western Governors University and the British Open University announced the creation of a online education consortium called the Governors Open University System; and the Western Governors University enrolled its first students. In 1999 the US Department of Education established the Distance Learning Education Demonstration Program that would serve as a pilot program of 15 postsecondary schools, systems and consortia permitted to offer federal financial aid for online programs (Moore &

Kearsley, 1996). John P. Witherspoon implemented a variety of initiatives helping online education move from correspondence courses to the online courses similar to what we know today. During 1999 Witherspoon was the principle on-site consultant in planning a statewide online program with the South Dakota Board of Regents and associated state universities (Witherspoon, 1998).

During the early part of the nineties, US universities gave students access to the Internet, the decentralized computer network developed during the Cold War that linked military and government offices with university research centers (Freed, 1998). Once the Internet became available, the use of email took precedent in relaying messages back and forth between student and instructor. With the explosion of the Internet, the delivery of online education changed.

The availability of online education to remote areas is now a reality. The term “online education” was created to describe the process that no longer relies on the television. The Internet has become the medium of choice for educators, since it provides all the elements vital for online learning; on-demand delivery of video, audio, text, and graphics; immediate online access to vast libraries of research materials; and real-time or near real-time interaction among instructors and students (Freed, 1998).

It seems reasonable, given its traditional role in the preparation of professionals, that the universities and community colleges would take the leadership role in online education. One of the major barriers to the expansion of online education technology at the postsecondary level is the reluctance of faculty to adopt new delivery methods. Acceptance of online technologies is growing among

the faculty; however, one of the barriers to a higher acceptance rate is that the use of instructional telecommunications requires changes in instructional practices and the giving up of some control over the teaching-learning process (Dillon & Walsh, 1992).

Community colleges everywhere are exploring ways to use technology to connect students with faculty, counselors, other students, and appropriate services and information resources. At many colleges, the number of courses offered through online technologies is expanding—particularly the number of courses that use the Internet and World Wide Web (International Data Corporation, 1999).

Brey's (1991) report of United States postsecondary online programs predicted that the decade of the 1990s would see such phenomenal growth in online programs that most people in the United States would be served by at least one program. Much of this growth is expected to take place in the community colleges. As of 1994, 80% of community colleges in the United States offered some form of online program, and that percentage and the extent of their involvement is expected to increase as we near 2005.

Distance and Online Education History Summary

The North Carolina Community College System is working with its 58 community colleges to make more online courses available. Currently 178 online courses are available from the Virtual Learning Community with 50 more to be created during 2004-2005 (North Carolina Community College System, 2004).

Based on the history, mission, and accessibility philosophy of the community college system, it might be inferred that community colleges need to develop many, if not all, of their campus courses as online courses. Students need to have online courses due to their local family and work situations just as they have in the past. Community colleges are committed to making education available for all students, no matter where they live or work.

According to the US Department of Education's National Center for Education Statistics, as of 1995, more than 25,000 courses were offered through online nationally, and it is estimated that 10,000 courses are now available on the Web. According to new research from International Data Corporation (IDC, 1999), the number of college students enrolled in online courses will reach 2.2 million in 2002, up from 710,000 in 1998.

Theoretical Foundations of Online Education

The development of new technologies has prompted an astounding growth in distance education, both in the number of students enrolling and in the number of universities adding education at a distance to their curriculum (Garrison, 1990). While the use of current technology may help online education, literature in the field reveals a conceptually fragmented framework lacking in both theoretical foundation and programmatic research. Theories in approaches to assessment, methods of instruction, effective online facilitation, instructor preparation/development, and online design are only some of the concepts that were found in the literature. Without a strong base in research and theory, distance education has struggled for

recognition by the traditional academic community. Distance education has been described by some (Garrison, 1990) as no more than a “hodgepodge” of ideas and practices taken from classroom settings and imposed on learners who just happen to be separated physically from an instructor. As distance education struggles to identify appropriate theoretical frameworks, implementation issues also become important.

Although there have been numerous attempts to formulate a theory base for the field, American online education remains chaotic and confusing. There is neither a national policy nor consensus among educators of the value, the methodology, or even the concept of distance education (Moore, 1993). In 1990 Shale called for theoreticians and practitioners to stop emphasizing points of difference between online and classroom education, but instead to identify common educational problems. For Shale, distance education is, after all, simply education at a distance with common frameworks, common conceptual concerns, and similar research questions relating to the social process of teaching and learning.

Jegede (1991) states that technological advances have already begun to blur the distinction between classroom and distance educational settings. Time and place are no longer unique. The need to test assumptions and hypotheses about how and under what conditions individuals learn best, leads to research questions about learning, teaching, course design, and the role of technology in the educational process. As education integrates the use of interactive, multimedia technologies to enhance individual learning, the role of the teacher can change from knowledge source to knowledge facilitator. As networks are now available in

schools and homes to encourage individuals to become their own teachers, the structure of education will change and the need for separate theories for online education will blend into the theoretical foundations for the mainstream of education (Jegede, 1991).

Emerging Instructional Models

A model of instruction, training, or education is a description or prescription of a learning environment (Berge, 1998b). There are dozens of models and approaches to teaching and learning. Depending upon the specific context (conditions and environment) of learning and teaching, various methods and strategies are selected by the instructor to teach or facilitate learners to certain outcomes (Berge, 1998b). Some of the methods used are more appropriate to be used in the classroom as opposed to the online environment.

Is teaching students through online methods really nothing more than adapting classroom behaviors to situations where communication with the student is via written lessons or computer exchange in asynchronous time formats? Is there nothing more to online instruction than putting a camera or microphone in front of instructors and allowing or encouraging them to replicate their classroom teaching style or technique? Or does true online education imply something much more than a simple modification of what is done in the “live” classroom? This is what this study is hoping to determine. Do instructors use different or modified behaviors when teaching an online course as opposed to teaching a campus course?

In 1981 Charles Wedemeyer recognized the need for a change and modification of faculty roles in teaching at a distance. He states,

> What is different about learning via technology today is the scope of learning facilitated by technology, the altered role of teachers and learners, the changed environment for learning necessitated by technology, and the sophistication of the process used in developing instruction that will be communicated by technology.

Researchers have conducted many studies comparing teaching from a distance with teaching face to face. Most of these studies are anecdotal in nature (Moore, 1993). However, from these studies, it appears that teachers have found the following to be true:

(a) Quality of learning is as good or better;

(b) Students are highly motivated;

(c) Instructors are better prepared and organized; and,

(d) It has not resulted in replacing instructors.

The research seems to say that teachers are finding that teaching from a distance is actually making them more aware of their instructional style, their presentation techniques, and their students' needs. Because of this new awareness, more teachers are getting better reviews and are feeling better about their teaching. Teachers are finding instructional methods that may have once been difficult to use are now not only possible but also easy to do (Williams, Paprock, & Covington, 1999).

As education moves into online learning, teachers recognize that planning requires attention to concerns that are as important in conventional classroom teaching. These include:

(1) Motivate expectations of students before instruction starts and offer support to them before, during, and after instruction takes place;

(2) Overcome the impersonal nature of online learning and the lack of direct human support students encounter by ensuring that adequate communication takes place between individual students and the instructor, and among groups of students;

(3) Help students self-discipline themselves to manage study time and fulfill responsibilities for participation, completing assignments, engaging in projects, and making contacts with other students through interactive media;

(4) Accommodate students who miss a session, or otherwise are unable to follow a preset schedule; and,

(5) Recognize the potential for technical problems at both the instructor's facility and at student sites and how to be prepared to overcome them or substitute with other media or activities (Kemp, 2000).

Theoretical Foundations Summary

The field of education is ready for changes that will affect almost every institution and individual within it. Online learning has shown to be a now permanent part of education, and it is up to the college and university systems to make sure that these courses are available for all students. The traditional means of teaching students will always continue, but we must find ways to use what we already know

while also using new technologies to meet new demands. Teachers recognize that teaching an online course requires as much, if not more, attention to the concerns that teachers recognize in a conventional classroom. Motivation, self-discipline, the lack of direct human support, and technical problems are only some of the concerns that a student taking an online course has to overcome. Once we take the differences between online teaching and classroom teaching out can we begin to see the similarities between the two and focus on the actual teaching and learning processes that take place?

The Challenges Behind Online Education

Online education may be the most rapidly growing form of postsecondary education around the globe. This paradigm shift is a fundamental change. Technologically delivered online courses are one of the most significant changes to occur recently in higher education. As advances in technology increase and various modes of online education become available, institutions of higher education are obliged to study the potential of online education to determine its applicability to, and compatibility with, their missions. In an era characterized by fiscal constraint, institutions are challenged to increase their efficiency. Producing the same quality of services at a lower cost may require the adoption of new approaches to delivery (Berge & Schrum, 1998).

The widespread implementation of online education, still a marginalized operation on many American campuses, has become a major challenge demanding attention and resources. At a time when the demand for online education programs

and courses is growing, most college campuses do not have the infrastructure or culture to change in ways that will meet the demand (Berge & Schrum, 1998). Many institutions are scrambling in the face of increased consumer demand and competition from other institutions.

Learning is a lifelong pursuit. With the advent of online education, institutions now have a greater number of potentially new students who reside outside the geographic area served by the college. Students have an enormous amount of resources now available at the click of a mouse. Even though the initial design and development time of an online course is usually increased, faculty find that online courses are often easier to update and easier for learners to participate. Faculty and students find that feedback and evaluation can be more immediate and accomplished more conveniently through email and online conferencing. Even with these benefits of online education, a bewildering number of policies and procedures form concerns to the efforts of educators who wish to implement a program at a distance. Along with the meager resources available on most college campuses, the implementation of certificate or credit programs is a formidable challenge. There are also issues of coordination and control for those on campus who are charged with standardizing educational efforts, reducing duplication of effort when it is cost effective to do so, and accounting to the college or other governing agencies (Berge & Schrum, 1998).

Organizational and Administrative Challenges

The challenges of planning and implementing online programs include pedagogical changes, institutional issues, and organizational structure. A committee is often formed by campus administrators to more systematically analyze campus needs. Many campus committees are charged with the following:

(a) Identify the purposes and goals of initiating and supporting an online program on its campus;

(b) Collect and summarize information on current online programs and the strategic plans of various academic units;

(c) Evaluate strategies and technologies for delivering online programs and reach agreement on which strategies and technologies will be proposed;

(d) Define what is needed to deliver technology-enhanced learning programs, including equipment and facilities, skills and training, and policy development and culture change;

(e) Investigate successful models at other institutions;

(f) Specify needs and incentives for faculty who become involved in developing and implementing technology-enhanced learning;

(g) Estimate costs and resource commitments;

(h) Identify potential concerns to successful implementation of the recommended strategies and technologies and suggest how to manage these;

(i) Establish a process for at least an annual review of new technologies and other aspects of the online programs to assess their potential for improving the delivery of online education and reducing associated costs; and,

(j) Report findings and recommendations to the institution's administration (Berge & Schrum, 1998).

Online education policies may need to be reviewed by the administration and faculty. These include the fees charged to out-of-state students; registration policies that might require each course to be filled at each site; the access to education resources such as the library, laboratories, or specialized technology by students at a distance; credit transfer acceptance from other institutions as part of a degree earned at a distance; procedures for revenue sharing generated by students at a distance; definitions of faculty workload for course design and development; and, state policies that do not recognize off-campus courses for institutional funding purposes or that treat students taking online courses differently from students enrolled in campus courses for purposes of financial aid (Berge & Schrum, 1998).

The success of an online program that is part of a traditional campus-based institution depends on the extent to which the institution views the program as an integral part of its activities (Chute et al., 1999). In the past, online programs, usually represented by correspondence units, were often viewed as marginal to the mission of the institution, and policies were more often designed to contain the program than to support it. However, institutions are realizing the potential of online education to help them fulfill their institutional mission both by reaching new audiences and by serving current audiences in new and flexible ways. Increasing acceptance and support of online education has resulted in policy development that recognizes the need to incorporate online programs, students, and faculty into the mainstream of the institution (Chute et al., 1999).

Some colleges have been able through strict management and good investments to benefit financially from online courses, primarily those taught as telecourses (Miller, 1991; Hyatt, 1992). However, not all programs have been equally successful. Start-up and production costs can be expensive. The strapped financial situation of most US community colleges does not lend itself to the major purchases of technology needed to deliver online programs and to develop and produce new courses—even if savings can be seen in the future (Parrott, 1999).

Faculty Challenges

Perceptions of these organizational and administrative issues can greatly affect faculty behavior. Currently, one of the greatest challenges to the implementation of widespread online programs on community college campuses has risen among the faculty who are uncomfortable with online education and reluctant to use its technologies. They are concerned about the impact of technology in their roles as faculty members. Faculty unions have been active on behalf of the faculty by dealing with intellectual property rights, fair compensation (residual earnings every time one's course is televised), the decline in quality due to canned courses, and preserving human contact (Monaghan, 1995).

The challenges faced by the online instructor are imposing. Few with online teaching experience would downplay the importance of adapting classroom delivered courses to the unique instructional environment confronted in online education. In many cases, the more comfortable the instructor is in teaching in a classroom setting, the more difficult it is to face the reality that significant rethinking

and adaptation may be required for online course delivery. The shift from the role of content provider to content facilitator is a problem for many instructors. Online instructors taking the facilitator approach need a proficiency that requires undisputed mastery of the subject being taught as well as an ability to draw on the varied backgrounds and hidden talents of the students (Willis, 1994).

Instructors need to learn to teach without the visual control provided by direct eye contact in the classroom. Online instructors have few, if any, visual cues. Even the visual cues that do exist are filtered through technological devices such as video monitors. The instructor never really knows if students are asleep, talking among themselves, or even in the room.

Advancements in telecommunication technologies have created opportunities for educators in higher education institutions to expand the educational process beyond the classroom and deliver instruction and training to geographically diverse audiences locally, nationally, and even internationally. While the educational model for delivering instruction broadens, technologies continue to advance, educational delivery methods continue to expand, and audiences become more diversified.

In this changing environment, faculty remain a key element in the teaching and learning process (Rockwell, Schauer, Fritz, and Marx, 1999a). Olcott and Wright (1995) indicate that the responsibility for instructional quality and control and the improvement of learning of online education still rests with the faculty. Ultimately it is the faculty who need to be aware of diverse technologies and delivery methods available for online education so they can incorporate them into their teaching and learning strategies. To use online strategies, faculty may need to alter instructional

styles used within the “traditional classroom” and develop new behaviors to reach the distant learner (Rockwell et al., 1999a). Dillon and Walsh (1992) and Clark (1993) observed that faculty using online education technology faced a variety of challenges when adapting their instructional styles to a framework compatible with the distance learning environment.

Faculty Development

In 1992 the Corporation for Public Broadcasting reported to Congress that faculty need to understand the relationship between learning, interactivity and technology, as well as how to operate the technology. Willis and Touchstone (1996) indicated that to be successful in online education, faculty should have training before their initial teaching experience. Therefore, the challenge is to prepare faculty for their online experience.

While opportunities exist for delivering online education, faculty often express concerns about teaching via online (Carl, 1991; Clark, 1993; Olcott, Jr. & Wright, 1995). Rockwell et al. (1999a) found that faculty felt a major obstacle to teaching via online was developing technology skills along with obtaining necessary assistance and support. Miller and Carr (1997) found the four highest faculty information and training needs in 1862 land-grant universities were:

(a) Instructional techniques for online education;

(b) Enhancing interaction in online education;

(c) Learner-centered instructional techniques;

(d) Designing instruction for credit courses and models of online teaching.

The critical role of the instructor in the online setting makes it imperative that instructors get adequate training not only in the technical aspects of the system, but also in the educational applications of the technology (Willis, 1994). Training is a critical component of any online program and should not be overlooked. Redesign of the course may be based on the type of technology to be used, the nature of the content to be presented, and the needs of the online learners (Willis, 1994). The biggest temptation for the new online instructor is to duplicate the tried and true formats used for instruction in a classroom while keeping in mind the needs of the students and the basic concerns of all online instructors: the lack of motivation, self-discipline, direct human support and technology.

Although advances in technology have allowed unique opportunities for the delivery of student-centered instruction to geographically diverse populations, online education ultimately rests with the faculty's endorsement of the new student-centered model of instruction (Parker, 1996). One point of view states that most instructors come to online education with classroom teaching experience and find that the theoretical-based assumptions that worked successfully in face-to-face instruction do not translate well into technologically mediated instruction (Schieman, Taire & McLaren, 1992). As a result, faculty retraining is essential not only to assist with the use of the technology, but to also help with the revision of the instructional design.

According to Parker (1996), the retraining should initially focus on moving the teacher from the podium to the sideline, from teacher-centered instruction to student-centered instruction. Once this objective is achieved, subsequent retraining

components can encompass items such as the redesign of the syllabus, use of the technologies being employed, and the integration of interaction in the course content.

For faculty to be successful in online teaching, higher education institutions must take into account the wants, needs, interests, and aspirations of the faculty so they can help faculty develop online educational models and techniques (Rockwell et al., 1999a). Dede (1990) states that once the prohibiting forces are confronted, distance education strategies can then empower both the students and faculty where there is active, student-constructed learning and adventurous, risk-taking teaching.

In a study done by Rockwell, Schauer, Fritz, & Marx (1999b), faculty also felt it was very important to obtain further education about, assistance with, or support for developing interaction, developing instructional materials, learning about newer web-based delivery strategies as well as using a mix of different technologies, and marketing a course. Faculty felt it was somewhat important to have help with developing the curriculum content, its design, and evaluating the delivery process as well as the student outcomes, have student or graduate assistant help, learn how to better use and integrate the “older technologies, (i.e., email, audio conferences, satellite, and videotape), and have peer support. Faculty who had been teaching for fewer than 10 years tended to feel a greater need for training, education, or support in these areas than did other faculty. Their study also found that faculty felt it was more important to understand logistical issues related to student services than the logistical issues related to overall policies. Faculty with administrative duties ranked

issues related to registration, tuition, and copyright higher in importance than those with no administrative duties. Peer support was found to be important to most faculty and, interestingly enough, workload compensation was split between faculty. A reduction in duties ranked high while an increase in pay ranked very low.

Technological Concerns

Other concerns that faculty face are coping with technological issues, such as helping students access the online materials and the feeling of being constrained by the limitations of the technology (or an incomplete understanding of its capabilities) in their teaching. Faculty find the need to develop new pedagogical behaviors in order to be able to interact and communicate with their students. The lack of verbal and visual feedback not only forces faculty to alter their preferred instructional style but also leads them to develop alternative methods of interpreting and inferring meaning (Schoenfeld-Tacher & Persichitte, 1999).

A 1995 study by Sherry and Morse identified three primary technological concerns for online educators:

(1) Lack of familiarity with online technologies;

(2) Lack of access to phone lines; and,

(3) Lack of training in methods and strategies for using telecommunications media.

Is teaching in the online environment anything like teaching in the classroom? The behaviors and methodologies may not be the same and the educator who brings the classroom techniques into the online environment, without modification,

will likely fail. Schlosser and Anderson (1994) found that at least in the US, the goal is to offer the online student an educational experience as much like the face-to-face classroom as possible. However, since online education is now considered to be more than classroom connections, there is a growing realization that classroom instructional techniques will not work in an online format (Thach & Murphy, 1995). But is this true? Aren't instructors modifying their instructional behaviors and techniques when they teach online? According to Sherry (1996), successful online education systems must involve interactivity between instructors, students, and the learning environment as well as active learning in the classroom.

It is the instructor's responsibility to deliver information to the group in such a way that it will be received, understood, and remembered. In synchronous online learning designs where students receive a large proportion of the information through listening, information should be designed for the ear as much as possible. An instructor also must be a good listener. Just as the instructor's tone of voice and inflections convey messages to the students, the tone of students' remarks and questions can give an instructor who listens clues to the students' mood and attitude. Most learning experiences are enhanced by interaction, especially in online situations, where the physical distance between the instructor and the students at various sites may be perceived as a psychological barrier to communication (Chute et al., 1999). The instructor can make the medium being used transparent and user friendly by prompting student to student and student to instructor interaction. By personalizing the program, students will feel more closely involved and make the online experience richer and more satisfying for them.

Course Development

Campus instructors typically work independently with course development and implementation. The online instructor becomes more of a team player to successfully develop and deliver a quality course. Course preparation time for an online course far exceeds that for a course delivered in the classroom setting. The instructor prepares course content material well in advance of the delivery time for the course. In addition to increased preparation time, the online instructor should consider delivery mechanisms, and continually interact with technical support personnel to ensure course delivery. The successful online instructor possesses fundamental behaviors and qualities that support and enhance the overall performance during the course development and delivery (Smith, Tyler, & Benscote, 2000).

When teaching in an online environment, a framework is developed to ensure the smoothness of the delivery. Instructors feel apprehensive about teaching an online course as opposed to a face-to-face course. The first step in adapting to an online environment is to identify any concerns about developing and delivering training via distance, schedule time to practice with the technology, talk with other online instructors to learn about their experiences, attend an online program as a student, or participate in a workshop that trains instructors to use online equipment (Smith, Tyler, & Benscote, 2000).

Course planning begins with the instructor's articulation of the issues he/she wants to address. Focus on any number of course-related issues: the instructor's ideas about the organization or flow of the course, the important and engaging ideas

for the instructor and the students, and the view of the discipline. In addition, the instructor's instructional philosophy and beliefs about roles for him/herself, students, and others who will support the course are critical to planning a successful course. Planning also includes identification of the instructor's pedagogical goals and objectives, the application of appropriate learning theories and principles of good teaching practice, the goals of the curriculum, and the students' learning objectives and needs (Peed-Neal, 1998).

Policy Concerns

Evidence suggests that in traditional colleges, policies are changed with regard to online education when someone trying to implement a course or program at a distance meets a barrier and through persuasion causes it to be changed or develops a plan to work around the obstacle (Berge, 1998a). Gellman-Danley and Fetzner (1998) published a framework of policy issues for online learning. They suggested that:

> Asking the tough policy questions in advance can mitigate future bureaucratic problems and roadblocks. Most educators know that even a minor mid-stream policy skirmish can draw the focus away from their most critical concern—teaching and learning. Policies can provide a framework for operation, an agreed-upon set of rules that explain all participant's roles and responsibilities.

They go on to mention group policy issues in seven operational areas: academic, fiscal, geographic service area, governance, labor-management, and legal and

student support services. To the extent that concerns to online teaching can be identified, analyzed, and policies changed where necessary to alleviate them, this framework should be useful to administrators and teachers in developing an online learning environment.

Areas of Concern in Online Education Summary

An online course is one method of reaching the adult learner. Because of the competing priorities of work, home, and school, adult learners desire a high degree of flexibility. The structure of online learning gives adults control over the time, place and pace of their education; however, it is not without concerns.

Although distance learning is not new, it has not received the respect of the academic community because of the number and seriousness of concerns people have encountered. Faculty are teaching online classes without the additional training needed in the use of the technology and in the revision of the instructional design. Technology is a major area of concern for faculty due to their lack of technological skills in assisting their students when problems arise. Further research into course development techniques will help learning institutions understand which methods work best in the online classroom. Close scrutiny of the concerns in online education will help overcome problems encountered by all online faculty. Despite the challenges online education presents to our traditional conceptions of education and instructional delivery, online education enrollment at community colleges has increased greatly over the last decade, suggesting that online education offers an alternative to the classroom experience that

accommodates many students' individual circumstances and educational needs (Parrott, 1999).

Instructional Behaviors, Styles and Methods

When analyzing existing online programs, a wide array of instructional styles can be noted. Upon closer examination, one can identify instructors who have successfully adapted their classroom strategies to suit their new teaching environment. Unfortunately, those instructors who have not redesigned their course are not hard to find (Willis, 1994). Reaching a comfort level for most faculty requires hours of rehearsal, trial and error, and planning. Lack of personal response and body language makes teaching at a distance a new experience. Additionally, the role of facilitator is unfamiliar to most faculty.

Another point of view states that the sentiment of many faculty entering into online education for the first time is to teach the same course offered on campus with the addition of a few more handouts. The faculty who are experienced in the art of online education find that the addition of a few more handouts is not the solution for successful course design. Work by McGiven (1994) found that the most important component in successful distance instruction was that of required and consistent interaction. Although much has been written about the need for interaction (Garrison, 1990; McGiven, 1994; Wagner, 1993), few researchers have offered specific ideas for integrating dialogue into online education. Many have indicated that the course design should focus on real world problems, students

working in teams to find solutions, and consistent dialogue between class members and the instructor.

Methods

A review of the literature dealing with online learning has found that with planning and adaptation, most of the instructional methods commonly used in a face-to-face learning environment can be used successfully in distance learning. Common examples of such methods include lectures, team teaching, celebrity guests, interviews, panel discussions, brainstorming, question and answer sessions, group discussions, role-playing, and case studies. The type of instructional method used by instructors greatly depends on the type of delivery method being used (U.S. Congress, Teachers and Technology, 1995).

Lecture.

The strengths of the lecture method include the presenting of factual material in a direct, logical manner, containing experience which inspires the students, stimulates thinking to open discussions, and is very useful for large groups. On the other hand, limitations to this type of instructional method include the idea that the audience is passive and normally does not respond or get a chance to respond, the experts giving the lecture are not always good teachers and have difficulty in getting their point across, the learning curve is difficult to gauge, and communication is basically one way. To use the lecture method that can be feasible in the classroom and online environments, the instructor needs to prepare clear introductions and be able to summarize, include examples and anecdotes in their lecture to break up the

process, and use the time constraint allowed for the lecture. Instructors can typically utilize PowerPoint slides that automatically flip in sync with audio or audio /video lecture presentations. Real-time chat space for student questions and dialogue can also be used. Lecture content is often intended for asynchronous access but several technologies enable live class presentations that can be archived for later use (U.S. Congress, Teachers and Technology, 1995).

The web-based lecture is becoming increasingly popular in delivering course content, and it now holds its own place among the various presentation technologies. The availability of tools that support the incorporation of video in web presentations has driven this expansion (Brusilovsky, 2000).

Since the early days of universities, a traditional oral lecture has been a keystone of higher education. Today, many universities and colleges are trying to preserve the lecture as an element of web-based education, replacing live, in-person lectures with *electronic lectures*. These can be classified into two major groups of lectures: synchronous and asynchronous. Synchronous lectures provide a distance access to a real lecture theater. Asynchronous lectures are recorded and can be viewed at any time. A number of advanced suites of tools support both synchronous and asynchronous lectures: a synchronously presented lecture can also be recorded, enhanced, and turned into an asynchronous lecture (Brusilovsky, 2000).

Web-based asynchronous electronic lectures sometimes are referred to as lectures on demand, just-in-time lectures, or simply web lectures. Increasingly, web lectures have become a popular method of presenting course material. Many faculty consider it the best substitute for classroom lectures, claiming that neither textbooks

nor handouts can adequately replace an up-to-date lecture done by a leading researcher or professional. Distance students appreciate that web lectures provide them with the "feeling of the classroom." Course developers find that a web lecture is often the easiest way to place some course content on the web. Content providers consider the web lecture an eligible courseware element that can be stored, "owned," and distributed (Brusilovsky, 2000).

Panel Discussions.

A panel of experts allows students to hear various opinions on a particular topic, can provoke better discussions than one person giving a lecture, and the frequent change of speaker has a tendency to keep the attention of all in the audience. Problems that may occur from this method could include the possibility that the subject matter given during the lecture may not be in a logical order which can cause some serious problems for the audience, the personalities may overshadow the actual content of the lecture, and the experts may not be good speakers. When dealing with this type of instructional method, a facilitator may be required to coordinate the focus of the panel, introduce them, summarize their discussion, and keep them on track (U.S. Congress, Teachers and Technology, 1995).

To use panel discussions that can be feasible in online environments, the instructor can set up chat rooms where synchronous technology can be used to facilitate the discussion in an online setting. This type of technology requires both students and panel to be present in the same virtual space at the same time. Sometimes chat software includes the capacity to share a virtual whiteboard and/or

to view other media simultaneously. Instant messaging systems have the added benefit of being able to notify you when others want to talk with you while online. The instructor would need to provide an opening comment that states the theme of the discussion and establish a communication model. Norms need to be set that suggest the rules of procedure for the discussion, and an agenda needs to be set to manage the discussion over time.

Brainstorming.

The brainstorming method is a listening exercise that allows creative thinking for new ideas, encourages full participation since all ideas are equally recorded, draws on the group's knowledge and experience, creates a spirit of congeniality, and sparks one idea given during the session into other ideas. Unfortunately, some brainstorming sessions can become unfocused as to the topic being discussed, time may become too long for the group to keep on track; and if there is no facilitator for the group or if the facilitator does not keep the discussion going, criticism and evaluation may occur. To help a brainstorming session, the topic or issue may need to be selected by the facilitator so that he or she can stimulate the group with some ideas if needed (U.S. Congress, Teachers and Technology, 1995).

Brainstorming relies on talking to generate ideas. In the online environment, brainstorming can be utilized by the concept of dictation. With the advent of voice recognition software, students can now transcribe their speech into words. IBM Via Voice and Dragon and Naturally Speaking are two popular programs that can be used for brainstorming. Virtual chat rooms are another concept that could be used for brainstorming. Students can interact with other students in the class by simply

typing in ideas or responses to questions while other students can see what is being typed. Online brainstorming, often called threads, messages, conferences or articles, allows students to post a message while other students can offer feedback or more creative ideas.

Videotapes.

The use of videotapes is an entertaining way of teaching content and raising issues. It also keeps the group's attention longer as compared to a lecture, it looks professional to the eye, and it stimulates discussion. Videotapes do have a problem of raising too many issues to have a focused discussion; the discussion that is raised may not have the full participation of the whole group and some important issues may not even be raised. Usually a facilitator would be helpful in this instance to prepare certain questions that deal with the issues dealt with by the videotape (U.S. Congress, Teachers and Technology, 1995).

The use of real time audio/video has enhanced the online environment. With the installation of fiber optic and digital technology, compression technology can now be used to transmit voice, video, and data. Digital information such as text, pictures, and sound, in digitized computer format, can now be sent from one computer system to another.

Class Discussions.

Class discussions are excellent ways of pooling ideas and experiences from a group. More likely then not, it allows everyone to participate in an active process. Class discussions are not always practical with a group of more than 20 people. The larger the group, the fewer the people can participate or in some cases, few

people can dominate the discussion. There may be many in the group who do not participate at all and those participating can get off track. A class discussion requires careful planning by a facilitator who can guide the discussion and develop an outline of questions to be used. Small group discussions allow for the participation of everyone because most people are often more comfortable in small groups and are more apt to share their viewpoints. With a smaller group you can reach a group consensus quicker and probably with less conflict. The only problem with a small group discussion is the group may become side tracked from what they are really trying to accomplish (U.S. Congress, Teachers and Technology, 1995).

In the online environment, class discussions can be handled by the use of chat rooms and/or forums. Chat rooms are special web sites that contain individual pages ('rooms') in which you can 'chat' with random surfers or specific people. The 'chat' takes the form of inputting lines of text and waiting for a typed response. These may be HTML pages or more efficient and speedy Java pages. Some suppliers are now experimenting with "voice mail" applications similar to conference telephone calls. Forums are tools that enable you to communicate and collaborate with your teammates. Examples of forums include discussions, chat rooms, messaging windows, and calendars. These online forums are similar to the classic definition of the word: forum--A public place or medium for open discussions. You access forums by clicking on the forum tab and by clicking on the title of the individual forum you want to view. For example, you can click on the Discussions tab to see a drop-down list of available discussions. Then, you can click on the title of discussion you wish to view.

Case Studies.

Case studies, another instructional method both in a classroom environment and in an online environment, develop analytical and problem-solving skills, allow for the exploration of solutions to complex issues, and allow students to apply new knowledge and skills that they have learned. Unfortunately, insufficient information can lead to inappropriate results. The case study needs to be clearly defined at the beginning and all those involved need to make sure that there are no questions as to what needs to be accomplished before they get too far into the study (U.S. Congress, Teachers and Technology, 1995).

Within the online environment, the instructor can utilize case studies by the use of discussion forums or chat rooms. Once a topic is selected, the instructor can develop an introduction that can set the stage for the case study scenario. Additional information may be included to add richness, clarify the case, or expand on the background information given in the introduction. One of the main features of online case studies is the interaction with the learner through questions developed by the instructor. The interactive questions should ask the learner to assess, plan, prioritize, implement, evaluate, or anticipate the action. With interactive questions, feedback to the student in both the correct and incorrect answer choices should also be provided. Graphics or visual material can be incorporated into the case study to increase the effectiveness of online learning. Online program visuals, such as photographs, audio, or other components can be added to capture the attention of the learner, along with enhancing the understanding of the concepts. Direct links

can also be added to guide the student to further information in journal articles, books, or web sites.

Role-Playing.

Role-playing can provide an opportunity for people to assume the roles of others and thus appreciate another point of view along with providing opportunity to practice skills learned. Role-playing does cause many people to be too self-conscious and is not appropriate for large groups where people may begin to feel threatened. The facilitator must be able to define the problem situation and roles clearly to all those involved as well as give very clear instructions as to what should occur (U.S. Congress, Teachers and Technology, 1995).

Online role-playing allows the student to overcome the problem of playing a face-to-face role-play where students may feel shy about acting out a role. Anonymity allows free exchange of opinions without the risks associated with a face-to-face environment.

With role-playing online, a suitable activity needs to be chosen. An activity is suitable if it requires interaction among a number of students with different points of view. Students must be able to convey their views through writing, have Internet access, and be able to commit to regular and frequent participation. Students can interact via email, online chat rooms, or discussion forums.

There may be many other types of instructional methods that can be used in both the classroom and online environments, but the instructor must be aware of the type of delivery method that will be used. Not all instructional methods can be done in all types of delivery or types of media. All instructors must focus on the best

instructional method for the students they are working with, the learning environment, and the type of technology that is available, if any, for the best possible situation.

According to Smith, Tyler, & Benscote (2000), online instructors should possess strong fundamental classroom behaviors. Fundamental classroom behaviors are important for both the campus courses and online courses. The challenges for online instructors involves adapting fundamental communication skills that enable them to communicate, relate to, and interact with students with whom they may never have face-to-face contact.

Schoenfeld-Tacher & Persichitte (1999) state that faculty who teach in online environments rely heavily on classroom pedagogical methods without expectation that these methods will transfer directly. Specifically, faculty must demonstrate these behaviors and competencies:

- Familiarity with basic research on the characteristics of online learners, their needs, and how these differ from those in face-to-face settings;
- Application of basic principles of instructional design;
- Thorough knowledge of subject matter and common misconceptions;
- Deep understanding of the necessity of learner centered environments in online settings;
- Practical applications of adult learning theories, self-paced instruction, and computer-mediated communication;
- Use of strategies that promote interaction among learners, instructor, and content;

- Adaptability and flexibility with the capabilities and limitations of the delivery media;
- Time management (e.g., respond to students in a timely manner, extensive advance preparation and planning); and,
- Professional characteristics (e.g., motivated to teach, self-confident, articulate, good writer) (Schoenfeld-Tacher & Persichitte, 1999).

Personalizing is an instructional technique used to create an atmosphere of group rapport and individual inclusion (Chute et al., 1999). The process of getting to know one another is an important step in the teaching and learning process. According to Chute et al (1999), the instructor must recognize the uniqueness of each student but at the same time point out common backgrounds and interests among the members of the group.

Instructors must learn to adapt face-to-face presentation and facilitation behaviors to the online environment. First impressions are very important. The instructor needs to set the stage for the online program in the first 20 minutes of the initial session. It is at this time that the students should become acquainted with each other and the instructor and make sure they are familiar with the equipment being used. The instructor needs to identify everyone's overall expectations of the course and try to anticipate the student's concerns about online learning (Chute et al., 1999).

Resources

Berge & Schrum (1998) say that online education requires different resources than classroom teaching and is often a greater initial investment. Since courses taught at a distance should be designed and produced to fit the available technology, they may require extensive written lesson notes, exercises and practice by students, or scripting of computer code. High-quality online learning demands more planning, as well as the development of materials and delivery methods beyond the skills of most faculty.

Technical support is critical to the success of teaching and learning at a distance. Any faculty member who asks, “How do I teach with this technology” or “In what ways does the use of the technology change the nature of my teaching?” should be encouraged and supported by the administration. Ongoing support through workshops, online discussion groups, and strategic feedback should be available for online faculty.

Internet Usage

Teaching in a live, interactive online environment ***is*** different from teaching a class face-to-face. The most obvious differences are that the instructor is separated by time and distance from some or all of the students, is working within a newly imposed, tight set of time constraints, and is teaching through a televised video format. Teaching in an online environment requires an investment of time—time to acclimate to the technology and altered learning space and time to plan and prepare.

In the classroom format, a text, videotapes and slides, instructor lectures, printed handouts, and products to demonstrate are the primary instructional tools. In the online version, the primary vehicles for learning are text, online instructor lectures, videotape, electronic mail, course electronic distribution list, and a World Wide Web server. The Internet is a powerful, flexible, and efficient tool for the delivery of instruction; but, it can also be very rigid, oppressive, and inefficient for some students. It provides new ways for instructors to teach and learn, and it allows us to do new things as well as to do traditional things in new ways.

In a classroom, in-person discussions provide opportunities for students to ask questions and share knowledge and experiences. Such discussions are generally limited to the scheduled class time plus whatever time can be arranged outside of the scheduled time. In the online class, full-class discussions take place via the class electronic distribution list. Small group discussions can break off from full-class discussions as people find common interests and concerns. Students can also communicate individually with each other and with the instructor via electronic mail.

As in a classroom, class participation can be required in an online class offered on the Internet. To keep communications lively and prevent some students from just observing without participating, each student can be required to contribute at least one comment via email to the discussion of each lesson. Course assignments are usually handed in to the instructor in a classroom but in an online class, assignments can be turned in via electronic mail.

Although using the Internet provides many benefits to the instructor and student, there are also important challenges. One limitation is that potential students must have access to the Internet in order to participate in class. Another challenge to the instructor is to provide sufficient Internet training within the class so students can access the resources referenced without allowing technical aspects of the course to dominate course discussions. Delivering a course, which typically includes in-class demonstrations, is a challenge to any instructor. However, videotapes and on-site visits can help this problem. And finally, an instructor cannot deny that something of value is lost when you give up the face-to-face interaction between instructors and students that occurs in classroom instruction. There is no way to replace this aspect of instruction electronically, but the increased opportunities for interaction via electronic mail and two-way audio/video help to compensate for this disadvantage (Burgstahler, 1997).

Behaviors

Collins and Berge (1996) categorize the various tasks and roles demanded of the online instructor into four general areas: pedagogical, social, managerial, and technical. The pedagogical function deals with educational facilitation while the social function is the promotion of the friendly social environment essential to online learning. The managerial function involves norms in agenda setting, pacing, objective setting, rule making, and decision making. The last category, technical, depends on the instructor first becoming comfortable and proficient with the

technology being used and then being able to transfer that level of comfort to the learners (Palloff & Pratt, 1999). Table 2.1 summarizes the four general areas.

Table 2.1: Tasks and Roles of the Online Instructor

Pedagogical	Social	Managerial	Technical
- Have clear objectives	- Watch the use of humor or sarcasm	- Be informal	- Learn how to operate the technologies you are employing
- Maintain maximum flexibility	- Use introductions	- Be responsive	- Have backup technical support available to you
- Encourage participation	- Facilitate interactivity	- Be patient	- Be prepared for technical failures
- Maintain a non-authoritarian style	- Do not ignore bad behavior	- Handle tangents appropriately	
- Be objective	- Be accepting of “lurkers”		
- Don’t rely on offline materials			

Adapted from Palloff & Pratt, 1999.

In 1988 the US Congress Office of Technology Assessment proposed the creation of in-service programs targeted at providing assistance for faculty to modify conventional instructional behaviors and to acquire the behaviors needed to become online educators. The topic areas for these training sessions included:

(1) The amount of time needed to prepare and teach online delivered courses;

(2) Methods to establish and maintain communication with online students;

(3) Experiences of other faculty members; strategies for adding visual components to audio courses;

4) Strategies for increasing interaction both among students and between students and faculty;

(5) Planning and management of organization details involved in online delivery; and,

(6) Strategies to encourage group cohesion and student motivation.

Two other areas pertaining to online education in general were identified by Cyrs (1997) in his meta-analysis–basic learning theory and knowledge of the online field. All instructors, regardless of the instructional medium, need an understanding of how human learning occurs in order to design lessons. When teaching at a distance, this becomes even more important because this knowledge will enable the instructor to adapt to varying learner needs and contextual situations. Instructors must also have a firm understanding of basic instructional design strategies and learning theory in order to be able to design interactive lessons (Cyrs, 1997).

The ability to construct an organized presentation, project enthusiasm for the subject matter, and appropriately pace a lecture is required of all teachers. In addition to these behaviors, faculty teaching online courses also need to be able to coordinate their presentations with the study guides or handouts being used by students at a different time and/or place (Schoenfeld-Tacher & Persichitte, 1999).

Online instructors must accomplish this while operating under a severe reduction in the set of verbal and visual feedback cues received from their students as well as the inherent time delay with asynchronous systems (Schoenfeld-Tacher & Persichitte, 1999).

Online instructors need to know how to construct questions at a variety of intellectual levels and for a variety of instructional purposes and to move among these levels and purposes during a questioning period (Cyrs, 1997). Even though these behaviors are also necessary in a classroom, online instructors face the added burden of clearly cueing the individuals and/or sites they want to respond; and they must interpret mediated responses (Schoenfeld-Tacher & Persichitte, 1999).

Faculty perceptions of what instructional behaviors are appropriate and what are not appropriate in traditional classrooms vary greatly. Somewhat different instructional strategies are needed for online classes. These strategies, rather than the course content, will determine if a class is successful (Hyslop, 1999). Instructors should strive toward the same student outcomes as a face-to-face class and they should adapt the technology to their teaching and not change their classes to fit the technology (Hyslop, 1999).

From the literature, it was found that a common instructional style of straight lecture and test in face-to-face classes works the poorest online (Hyslop, 1999). There may be times when an instructor feels face-to-face instruction is needed, but the line between face-to-face and online will fade. Many colleges seem to use a new type of class, a hybrid class. This type of class combines a regularly scheduled face-to-face class with class work presented through a class web page. Many

instructors feel that the time they spend face-to-face with their class is precious (Hyslop, 1999).

Instructional Behaviors, Styles, and Methods Summary

According to Willis (1994), it has been found that online teaching requires the enhancement of existing behaviors rather than developing new abilities. Instructors need to realistically assess the amount of content that can be delivered in the course. Because of the logistics involved, presenting content at a distance is usually more time consuming than presenting the same content in a classroom. Be aware that student participants will have different learning styles. Some will learn easily in group settings, while others will excel when working independently. Diversify and pace course activities and avoid long lectures. Intersperse content presentations with discussions and student-centered exercises. Humanize the course by focusing on the students, not the delivery system. Consider using a print component to supplement non-print materials. Use locally relevant case studies and examples as often as possible to assist students in understanding and applying course content. Be concise and use short, cohesive statements and ask direct questions. Develop strategies for student reinforcement, review, repetition, and remediation (Willis, 1994). These are only a few common behaviors that can be shared between the teaching of a classroom course and the teaching of an online course. Many more behaviors used by instructors in both types of courses can be modified to be used in the other.

Summary

This study focuses on the instructional behaviors of the business faculty of North Carolina community colleges who teach campus courses as compared to the instructional behaviors of the North Carolina community college business faculty who teach online courses. While an institution's current expertise and experience base with traditionally-delivered courses and programs certainly provides a strong foundation, faculty need to possess or acquire additional skill sets in order to achieve the same degree of success in distance learning environments (Levenburg & Major, 1998). Faculty who are excited about the use of online education are taking the necessary steps to learn all they can about this form of instructional delivery strategy. Ultimately, more and more students are taking online courses throughout the North Carolina Community College System. As a community college system, the faculty and administration must be doing something right. Table 2.2 reflects the number of students in North Carolina community colleges who enrolled in curriculum online courses during the Fall 1998, 1999 and 2000 semesters and the Spring 2001 semester. Data from the current Fall 2001 semester were not available at the time of this writing.

Table 2.2: North Carolina Community College System Fall 1998, 1999, 2000 and Spring 2001 Student Online Enrollment

Community College	Fall 1998 Semester	Fall 1999 Semester	Fall 2000 Semester	Spring 2001 Semester
Alamance Community College	129	165	280	303
Asheville-Buncombe Technical Community College	33	81	117	239
Beaufort County Community College	187	297	328	330
Bladen Community College	93	228	22	549
Blue Ridge Community College	14	72	92	220
Brunswick Community College	178	275	228	272
Caldwell Community College	126	312	488	502
Cape Fear Community College	227	168	220	317
Carteret Community College	74	142	369	662
Catawba Valley Community College	947	813	1,174	1,083
Central Carolina Community College	495	1,026	1,213	1,321
Central Piedmont Community College	874	1,467	1,523	1,701
Cleveland Community College	7	0	10	22
Coastal Carolina Community College	8	57	244	407
College of The Albemarle	235	492	745	862
Craven Community College	259	419	56	600
Davidson Country Community College	212	212	458	610
Durham Technical Community College	170	141	399	395
Edgecombe Community College	83	141	160	250
Fayetteville Technical Community College	1,239	1,528	1,609	1,985
Forsyth Technical Community College	543	736	1,159	696
Gaston College	103	140	326	367
Guilford Technical Community College	918	823	1,183	1,228
Halifax Community College	0	116	165	286
Haywood Community College	164	129	186	275
Isothermal Community College	54	46	86	0
James Sprunt Community College	54	91	127	195
Johnston Community College	75	150	280	474
Lenoir Community College	220	350	354	503
Martin Community College	35	14	59	78
Mayland Community College	101	169	126	182
McDowell Technical Community College	140	98	32	6
Mitchell Community College	57	21	12	163
Montgomery Community College	136	139	226	201
Nash Community College	119	196	135	260
Pamlico Community College	0	18	21	25
Piedmont Community College	307	782	0	741
Pitt Community College	575	989	1,341	1,510
Randolph Community College	126	177	169	263
Richmond Community College	0	0	36	80
Roanoke-Chowan Community College	47	76	140	172
Robeson Community College	84	150	29	107
Rockingham Community College	220	246	203	217
Rowan-Cabarrus Community College	656	632	922	790

Table 2.2 (continued)

Sampson Community College	0	66	79	133
Sandhills Community College	153	221	164	329
Southeastern Community College	328	368	287	272
South Piedmont Community College	64	142	249	581
Southwestern Community College	276	180	327	98
Stanly Community College	166	236	506	466
Surry Community College	139	331	364	448
Tri-County Community College	10	83	187	135
Vance-Granville Community College	61	87	127	188
Wake Technical Community College	278	553	483	425
Wayne Community College	165	223	367	455
Western Piedmont Community College	383	384	554	674
Wilkes Community College	220	385	262	324
Wilson Technical Community College	184	420	363	447
TOTAL	12,751	18,003	21,371	26,424

Note. From the North Carolina Community College System Office, Distance Learning Office, 2001.

According to the North Carolina Community College System, Distance Learning Office, there was a 225% increase in students using the Internet as a medium for online courses from 1998 to 2001. Based upon North Carolina Community College System data, there is growth in all online learning except telecourses, which had a 9% decline. For the 1999-2000 school year, ten online courses were added to the Virtual Learning Community, 51 courses in 2000-2001, and in 2001-2002, 50 courses plus the revision of existing online courses will be added. The Virtual Learning Community (VLC) is a consortium of every college in the North Carolina Community College System. Through collaboration, the VLC develops online courses, provides training, enhances online student services, and facilitates communication about online learning across colleges. The goal is to provide easy access and quality distance education learning instruction for students in a cost-effective manner through the sharing of resources. As more and more

courses are added into the North Carolina Community College System, additional instructors will be needed to cover all the new and existing courses. The future of online learning is here. This growth suggests continuing access for all students, applications to special need students, growth of the Virtual Learning Community, and an increase in seamless education systems.

The instructor will hopefully make an online course feel and function like a campus course, turning the computer screen into a window on the world so the students feel and behave as if they are working together with a group of peers. The instructor's challenge is to create appropriate conditions for a group-learning environment (Harasim et al, 1995).

A quality educational experience is very important to the development of a successful professional career. While many factors play a role in the quality of a student's educational experience, the interaction and success that the student has in the classroom with his/her instructor is often the ultimate qualifier. To this end, the instructional styles which teachers prefer are of major importance. The compatibility of these styles and the use of delivery mechanisms by teachers often define the successes or subsequent failures that students endure during their college experience (Larsen, 1992).

Feenberg summarizes the need for expert instructors in the "Promise or Threat" article (1998) by concluding:

> The best way to maintain the connection (between online education and the values of classroom education) is through ensuring that online learning is 'delivered' not just by CD-ROMs, but by living teachers, fully qualified and

> interested in doing so online. . .Prepackaged material will be seen to replace not the teacher as a mentor and guide but the lecture and the textbook. Interaction with the instructor will continue to be the centerpiece of education, no matter what the medium.

Chapter Two reviewed previous research on online learning in college and university systems. The purpose of the literature review was to:

(a) Establish the historical relationship between the community college and online education,

(b) Express the theoretical foundation of online education,

(c) Identify the challenges when dealing with online education,

(d) Describe the concerns that are encountered in online education; and,

(e) Identify the instructional behaviors, styles, and methods that are currently suggested in the literature.

The review of the literature contributed to the understanding of the overall scope and nature of online education. There was found to be a lack of research on the actual instructional behaviors that are currently being utilized in education today, particularly in the area of online business education. It was the intent of this study to identify the instructional behaviors that instructors use when teaching an online business course and what behaviors they use in both their classroom and their online course. This knowledge may be useful to assist new business instructors with their online instructional behaviors. Knowing the intrinsic problems and overcoming

them will be critical to successful implementation of online programs on a larger scale in the future.

Chapter Three will describe the procedures used to implement this study, and it contains a detailed description of the research design, the population used, the creation and implementation of the survey instrument, data collection methodology, and the analysis of the data.

CHAPTER THREE

RESEARCH METHODOLOGY

Introduction

This chapter identifies the research design of the study, defines the population used, describes the survey instrument, data collection methodology, and the measurement of variables, and identifies the statistical treatments and procedures used to analyze the data.

The research questions of this study were the following:

Research Question One:

- How do the instructional behaviors used by North Carolina community college campus business instructors compare to the instructional behaviors used by North Carolina community college online business instructors?

Research Question Two:

- Are there any differences in instructional behaviors used by North Carolina community college campus business instructors and North Carolina community college online business instructors based on age, years of teaching, gender, educational level, training, and online learning experience, as well as differences in use of technology, and the use of specific types of instructional behaviors?

Population

The target population used in this study included all business instructors who taught (school year 2000-2001) campus or online courses in the 58 community colleges of North Carolina. The full-time faculty directory of each community college was used to determine the population for this study. A listing of North Carolina community college business instructors obtained from the community college system office in Raleigh who teach an online course was used to distinguish a campus instructor and an online instructor. Cluster sampling was used to select groups of individuals instead of individuals from a defined population (Agresti & Finlay, 1997). By using a multistage cluster sampling, the researcher first selected clusters and then selected individual community colleges within each cluster. All 58 North Carolina community colleges were clustered into one of three groups—small, medium, or large—according to their student population size. Using the 2000-2001 statistics from the North Carolina Community College System Office in Raleigh, a small community college was determined to have enrollment that is less than or equal to 2,499 curriculum students. A medium-sized community college had between 2,500 and 4,999 curriculum students, and a large community college had an enrollment of 5,000 or more. These criteria also helped to identify the three community colleges that were chosen for the pilot study. The three community colleges in the pilot study were from one of the three groups. Once the three groups were created, the researcher's committee decided that the study would include the five largest schools in each group according to their curriculum enrollment. Table 3.1 indicates the schools used in the study.

Table 3.1: Population of the Study.

College	Curriculum Total	Group
Central Piedmont Community College	28,962	Large
Wake Technical Community College	14,214	Large
Fayetteville Technical Community College	12,642	Large
Guilford Technical Community College	10,871	Large
Cape Fear Community College	7,629	Large
Asheville-Buncombe Technical Comm. Coll.	7,415	Large – Pilot Study
Alamance Community College	4,969	Medium
Vance-Granville Community College	4,830	Medium
Johnston Community College	4,572	Medium
Caldwell Community College	4,425	Medium
Wayne Community College	4,408	Medium
Blue Ridge Community College	2,634	Medium – Pilot Study
Robeson Community College	2,475	Small
Wilson Community College	2,391	Small
Southwestern Community College	2,372	Small
Haywood Community College	2,296	Small – Pilot Study
Stanly Community College	2,282	Small
Carteret Community College	2,242	Small

Research Design

A survey research design was used to seek information related to the purposes and objectives of this study. Survey research is appropriate for collecting data for descriptive studies and, according to Babbie (1983), “is used primarily in studies with individual people as the unit of analysis and are considered excellent vehicles for measuring attitudes.”

Survey research also allowed a larger number of respondents to be surveyed in a shorter time frame and at less cost than either direct observations or interviews. Survey research probably is best suited to obtaining personal and social facts, beliefs, and attitudes. In this study Likert scale responses were used in determining perception of usage of, and perception of involvement in, instructional behaviors used in both campus teaching and in online education.

Surveys are a cost effective method of gathering information. They are ideal for large sample sizes or when the sample comes from a wide geographic area. Because there is no interviewer, there is no possibility of interviewer bias. The main disadvantage is the inability to probe respondents for more detailed information. These data-collection methods typically inquire about the feelings, motivations, attitudes, accomplishments, and experiences of individuals. This study will use the descriptive research method. Descriptive research asks questions about the nature, incidence, or distribution of variables; it involves description but not manipulation of variables (Ary, Jacobs & Razavieh, 1996). Descriptive research often involves the reporting of characteristics of one sample at one point in time (cross-sectional). Because of its flexibility and the fact that it deals with current topics, descriptive

research is probably the most popular form of research in education today. This type of research allows researchers to understand many variables more fully and are then able to develop more worthwhile and useful studies.

Quantitative descriptive designs yield numeric or statistical descriptive data about how variables are distributed among members of a population (Crowl, 1993). Quantitative descriptive designs include surveys, interviews, and standardized tests. Survey research has as a basic goal the collection of information about variables or phenomena within a population through use of interviews or questionnaires. For this study, a survey was used to gather data.

Survey Instrument Development

Since there was no known research instrument available that could be utilized for this study, the researcher, her dissertation advisory committee, and a Panel of Professionals with experience or expertise in online education, developed reliable and valid instruments for both campus business instructors and online business instructors. As a preliminary to designing the survey instruments to be used in collecting the data for this study, statements regarding instructional behaviors were developed, the responses to which could be used to determine the respondents' usage of the instructional behavior. For this purpose, the researcher made an in-depth review of the related literature. Two identical survey instruments were created: one for campus business instructors and one for online business instructors.

After they were initially composed, both survey instruments were given to the Panel of Professionals, comprised of eight North Carolina community college administrators whose selection was based on their expertise in the fields of education, the community college, and online education. The panel members were asked to review, modify, add to, and rate the statements used in both survey instruments. The identified and validated statements were then used in the construction of the survey instruments used in this study.

Each survey consisted of 46 items divided into two major sections. The first major section consists of 38 items dealing with instructional behaviors that were categorized into four subsections: (1) pedagogical, (2) social, (3) managerial, and (4) technical. This section was designed to elicit information concerning the respondents' use of various types of instructional behaviors. The second major section of each survey consists of eight demographic questions developed to determine the characteristics of the respondents that were deemed appropriate to the research from having reviewed the literature.

Panel of Professionals

The members of the Panel of Professionals were selected from the 58 community colleges in the North Carolina Community College System. They were chosen based on their leadership quality, their direct involvement in online education at the community college level, the researcher's knowledge of the person, and recommendations from various community college instructors. As a result of their experiences and backgrounds, the members of the Panel of Professionals were

asked to review each survey item for face and content validity. The Panel of Professionals included:

1. Dr. Olin Wood – Vice President of Instructional Services – Asheville-Buncombe Technical Community College, Asheville, NC.
2. Mr. Rusty Holmes – Online Education Coordinator – Asheville-Buncombe Technical Community College, Asheville, NC.
3. Dr. Earl Medlin – Dean for Instruction – Blue Ridge Community College, Flat Rock, NC.
4. Dr. Linda Phillips – Vice President of Academic Affairs – Catawba Valley Community College, Hickory, NC.
5. Dr. Linda Lutz – Educational Support Services – Catawba Valley Community College, Hickory, NC.
6. Ms. Susan Phelps – Dean, Curriculum Development – Forsyth Technical Community College, Winston-Salem, NC.
7. Dr. C. Neill McLeod – Senior Vice President – Office of the President & Acting Vice President – Curriculum Education Services – Wake Technical Community College, Raleigh, NC.
8. Mr. Neil Hollands – Project Coordinator, Virtual Learning Community – North Carolina Community College System Office, Raleigh, NC.

All members of the Panel of Professionals were sent a packet containing information about the purpose of the study, the research objectives, and a draft copy of each survey instrument (Appendices B and C).

The panel was requested to review the items, suggest potential additions to the list, and rate each item on a scale of 1 to 3 (1 = very important, 2 = important, and 3 = not important) the degree of importance as an instructional skill that could be used in a classroom as well as in an online education course. Statements identified as very important or important by over two-thirds of the members of the Panel of Professionals were included in the final survey.

The members of the Panel of Professionals were also asked to indicate if the survey instrument had content validity. They were asked to judge whether the survey items were appropriate for measuring what they were supposed to measure and whether they represented behaviors within the area being investigated (i.e., classroom instructional behaviors and online education instructional behaviors). Evidence of content validity is often gathered by asking experts in a field to examine survey items to determine if they are appropriate to measure what they are supposed to measure (Ary, Jacob, & Razavieh, 1996). Statements rated as important or very important by the Panel of Professionals were deemed to have content validity.

Of the 48 items reviewed by the Panel of Professionals, five items were eliminated: item # 5, 7, 16, 22, and 25. In order for the item to be included in the survey instrument, it needed to be rated as very important or important by two-thirds (or 67%) of the Panel. Item #5 was shown to be the same as item #14, item #7 was shown to be the same as item #13, and item #16 was shown to be the same as item #6. Item #22 on both surveys was rated as not important by 50% of the Panel. This statement asked the instructors if they used appropriate verbal and nonverbal

communication, such as the effective use of voice, eye contact, and gestures. The Panel did not consider this statement appropriate for the online survey, therefore it was eliminated. Item #25 was shown to be the same as item #22.

In addition to evaluating the 48 original items, Panel members were asked to consider the wording of each item. Out of the 48 items, ten items were changed.

As part of the Panels' review, they were asked to identify additional instructional behaviors based on their knowledge and expertise. The following three items were added to each instrument at the suggestion of the Panel of Professionals:

- Facilitate interaction between students.
- Have a staffed "help desk" to assist in the students' success.
- College Webmaster available to assist with course development.

Finally, within the demographics section, the choice of "Ed.S" was added to question #4 and in question #7, the definition of "online" was added.

The researcher and the chairs of her dissertation advisory committee reviewed the final list of 46 items identified by the Panel of Professionals.

The Survey Instrument

The final survey instrument, constructed of items identified by the Panel of Professionals as instructional behaviors, contains a minimum of 10 items in order to obtain a reliable assessment of each individual's attitude (Schuman & Presser, 1981). A Likert scale was used to collect information about what instructional behaviors North Carolina community college business instructors use in both

campus courses and online courses. A Likert scale is a widely used tool in the social sciences and is an appropriate response to measure attitude, perception or opinion (Gall, Borg, & Gall, 1996).

There are two surveys, both identical as to the questions, but are specific for either a campus instructor or an online instructor. Those North Carolina community college business instructors who teach a campus course received the survey for campus education and the business instructors who teach an online course received the survey for online education. The responses for each section are as follows: 0 = Do Not Use, 1 = Occasionally Use (now and then) and, 2 = Frequently Use (happening or occurring at short intervals). Data generated by the instrument were considered to be ordinal and means were calculated. The instrument consisted of 46 items divided into two major sections. The first section consisted of 38 items dealing with instructional behaviors that were categorized into four sections: (1) Pedagogical, (2) Social, (3) Managerial, and (4) Technical. This section was designed to elicit information concerning the respondents' use of various types of instructional behaviors. The second section of the survey consisted of eight demographic questions developed to determine the characteristics of the respondents that were deemed appropriate to the research from having reviewed the literature.

Measurement of Variables

This study identified the behaviors that affect campus business instructors and online business instructors in the North Carolina Community College System.

This was accomplished through a review of the literature and with the assistance of a Panel of Professionals with experience or expertise in the field of distance education. Through the review and rating process described in this chapter, a final survey of 38 behaviors was created.

These 38 behaviors were classified by the researcher into four major categories dealing with the online instruction/moderator/facilitator's roles as perceived by Berge (1995) in his article on the role of the online instructor. The four categories, based on a review of the literature, are: (1) Pedagogical, (2) Social, (3) Managerial, and (4) Technical. The pedagogical category is expressed as the instructor contributing their special knowledge and insights and the use of questions and probes for student responses that focus discussions on critical concepts, principles, and skills. By modeling appropriate online behaviors, the instructor can prepare students, alone or in groups, to experience moderating the conference for themselves (Berge, 1995). The social category expresses the need to create a friendly, social environment in which learning is promoted. This suggests promoting human relationships, affirming and recognizing students' input; providing opportunities for students to develop a sense of group cohesiveness, maintaining the group as a unit, and in other ways helping members to work together in a mutual cause (Berge, 1995). The managerial category involves setting the agenda and pacing for the course: the objectives, the procedural rules, and the decision-making norms along with taking care of any problems within the course (Berge, 1995). Lastly, Berge (1995) states that the technical category deals with the instructor first becoming comfortable and proficient with the technology and then ensuring that the

students are comfortable with the system and the software that will be used. The ultimate technical goal for the instructor is to make the technology transparent. When this is done, the learner may concentrate on the academic task at hand (Berge, 1995).

By using Berge's four categories and with the assistance of the Panel, the 38 behaviors used in the survey are:

Pedagogical:

1. Select instructional methods that enhance the delivery of specific course content.
2. Demonstrate subject matter expertise.
3. Organize instructional content in a way that enhances instructional delivery.
4. Use frames of reference familiar to the learners.
5. Provide opportunities for learner success.
6. Provide prompt feedback.
7. Use positive reinforcement during instruction.
8. Self-evaluate effectiveness of instructional delivery.
9. Use frequent examples during instruction time.
10. Explain course logistics to learners.
11. Implement a variety of methods to engage learners and encourage participation.
12. Use a variety of instructional delivery techniques to accommodate individual differences in learning styles.
13. Sequence content delivery in a clear and concise manner.

14. Maintain learner attention.
15. Maintain learner curiosity.
16. Use active listening techniques.
17. Apply course content to other fields of study.

Social:

18. Demonstrate acceptable personal conduct, including serving as a model for professional behavior.
19. Involve learners in establishing an appropriate level of learner comfort.
20. Ensure written communication is free of bias.
21. Show enthusiasm for the student.
22. Show enthusiasm for the subject taught.
23. Facilitate interaction between students.

Managerial:

24. Manage time available for instructional delivery.
25. Manage group interactions.
26. Resolve learner performance problems.
27. Implement the most appropriate way to manage learner participation based on course delivery technology.
28. Produce materials for the course that can be distributed to participants.
29. Provide learners with post-course support methods of communication needed for questions or individual guidance.
30. Maintain a clear, well-organized class format.
31. Available for students when assistance is needed.

32. Impartiality in evaluating student's work.

Technical:

33. Develop contingency plans for handling technical difficulties.
34. Learn to operate technology being used.
35. Have backup technical support available.
36. Stay abreast of technology.
37. Have a staffed "help desk" to assist in the students' success.
38. College Webmaster available to assist with course development.

Pilot Study

A pilot study was conducted to determine whether the survey had merit and to correct obvious flaws (Gall, Borg, & Gall, 1996). The purpose of the pilot study was (a) to demonstrate the adequacy of the research procedures and the survey instrument, and (b) to provide an opportunity to check for reliability. Once the survey was approved by members of the dissertation committee, the survey was given to business instructors at Asheville-Buncombe Technical Community College, Blue Ridge Community College, and Haywood Community College who teach either a campus business course or an online business course. A decision was made by the dissertation committee to survey only those community colleges that were the top five in student enrollment for a small-sized community college, a medium-sized community college, and a large-sized community college. Each of the three community colleges used in the pilot study were in one of the three areas. These three community colleges were chosen based on their similarity to the intended

respondents. A complete list of the pilot study participants can be found in Appendix D.

It was from these three community colleges that 29 instructors, 14 online business instructors and 15 campus business instructors, were selected. Each business instructor self-administered the survey and returned the completed survey to the researcher by mail in self-addressed, stamped envelopes to duplicate and test the confidentiality of the response tracking system as described in the Data Collection section of this study. After a two-week time period, a second copy of the survey instrument was distributed to those members of the pilot study who did not respond during the first mailing. These 29 instructors are not included in the final study.

The design, construction, and testing of the survey instrument was the most important component of the research design of this study because pilot studies are "highly touted parts of questionnaire design" (Dillman, 2000, p.140). The pilot study served many purposes:

- It provided an evaluation of the procedures to be used in data collection;
- It allowed the researcher to discover if any production mistakes were made in the printing of the survey instrument; and,
- It gave an indication of whether people understood the survey instrument and the instructions.

Prior to conducting the actual data collection for this study, the pilot study was conducted for these purposes as well as to ensure the reliability of the survey instrument. Test reliability refers to the consistency, stability, and precision of test

scores. Any time a test or other measure is administered in which some characteristic is expressed in the form of a score, the obtained score always contains some measurement error. How reliable a score is can be described statistically through either a reliability coefficient or a standard error of measurement (Gall, Borg, & Gall, 1996). One way to estimate the reliability of a survey is to use a method of reliability estimation known as internal consistency reliability. This type of reliability is attractive because it requires only one administration of the test. It is the method used by Penn State University Testing Services in computing test reliability (Penn State, 2000). One method of estimating internal consistency involves calculating a split-half correlation coefficient, called the coefficient of internal consistency.

To calculate this coefficient, the test was administered to the pilot study group. Once the tests were returned, the test data for the 29 instructors in the pilot study was entered into the SPSS software to compute split-half reliability. The coefficient of internal consistency represents the reliability of only half the test. Therefore, the Spearman-Brown prophecy formula was used to make a correction to the reliability coefficient in order to obtain the reliability of the scores (Gall, Borg, & Gall, 1996). Table 3.2 presents the reliability analysis for the pilot study data.

Table 3.2: Reliability Analysis of Pilot Study Test Data

Statistics for	Mean	Variance	Std Dev	N of Variables
Part 1	32.3125	11.4292	3.3807	19
Part 2	24.3750	5.3167	2.3058	16
Scale	56.6875	27.5625	5.2500	35

Note: Questions 22, 31, and 34 had a zero variance and were not in calculation.

Reliability Information:

Reliability Coefficients	35 items
Equal-length Spearman-Brown	.8192
Unequal-length Spearman-Brown	.8201

Reliability coefficients vary between values of .00 and 1.00 with 1.00 indicating perfect reliability of the test scores and .00 indicating no reliability. In general, tests that yield scores with a reliability of .80 or higher are sufficiently reliable for most research purposes (Gall, Borg, & Gall, 1996). In the above test data, the Spearman-Brown formula was used to make the correction to the reliability coefficient. Both the equal-length and the unequal-length Spearman-Brown estimate were above the reliability of .80 that indicates an acceptable level of reliability for the survey instrument.

The feedback from this pilot study helped to refine the survey and the survey process. Table 3.3 presents data collected from the pilot study showing the comparison of campus business instructors and online business instructors' responses to questions 1 through 38.

Table 3.3: Pilot Study Frequency Distribution Comparing Online Business Instructors and Campus Business Instructors

	Campus Business Instructors			Online Business Instructors		
Question No.	Do Not Use (%)	Occasionally Use (%)	Frequently Use (%)	Do Not Use (%)	Occasionally Use (%)	Frequently Use (%)
1	0.0%	9.1%	90.9%	0.0%	33.3%	66.7%
2	0.0%	9.1%	90.9%	0.0%	11.1%	88.9%
3	0.0%	0.0%	100.0%	0.0%	22.2%	77.8%
4	0.0%	0.0%	100.0%	0.0%	33.3%	66.7%
5	0.0%	9.1%	90.9%	0.0%	11.1%	88.9%
6	0.0%	18.2%	81.8%	0.0%	11.1%	88.9%
7	0.0%	0.0%	100.0%	0.0%	11.1%	88.9%
8	0.0%	45.5%	54.5%	0.0%	22.2%	77.8%
9	0.0%	0.0%	100.0%	0.0%	44.4%	55.6%
10	0.0%	27.3%	72.7%	0.0%	22.2%	77.8%
11	0.0%	30.0%	70.0%	0.0%	55.6%	44.4%
12	0.0%	54.5%	45.5%	11.1%	55.6%	33.3%
13	0.0%	27.3%	72.7%	0.0%	0.0%	100.0%
14	0.0%	18.2%	81.8%	11.1%	55.6%	33.3%
15	0.0%	27.3%	72.7%	0.0%	66.7%	33.3%
16	0.0%	63.6%	36.4%	50.0%	12.5%	37.5%
17	0.0%	45.5%	54.5%	0.0%	66.7%	33.3%
18	0.0%	18.2%	81.8%	11.1%	22.2%	66.7%
19	0.0%	20.0%	80.0%	0.0%	55.6%	44.4%
20	0.0%	27.3%	72.7%	0.0%	0.0%	100.0%
21	0.0%	0.0%	100.0%	0.0%	11.1%	88.9%
22	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
23	0.0%	9.1%	90.95%	0.0%	55.6%	44.4%
24	0.0%	18.2%	81.8%	0.0%	11.1%	88.9%
25	9.1%	63.6%	27.3%	33.3%	55.6%	11.1%
26	0.0%	36.4%	63.6%	0.0%	22.2%	77.8%
27	0.0%	36.4%	63.6%	11.1%	22.2%	66.7%
28	9.1%	36.4%	54.5%	0.0%	22.2%	77.8%
29	9.1%	72.7%	18.2%	33.3%	55.6%	11.1%
30	0.0%	9.1%	90.9%	0.0%	11.1%	88.9%
31	0.0%	9.1%	90.9%	0.0%	0.0%	100.0%
32	0.0%	9.1%	90.9%	0.0%	0.0%	100.0%
33	0.0%	72.7%	27.3%	0.0%	44.4%	55.6%
34	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
35	0.0%	45.5%	54.5%	11.1%	44.4%	44.4%
36	0.0%	9.1%	90.9%	0.0%	11.1%	88.9%
37	60.0%	30.0%	10.0%	44.4%	55.6%	0.0%
38	45.5%	45.5%	9.1%	44.4%	44.4%	11.1%

Frequency distribution and Chi-square were also used to analyze the data received from the pilot study. A frequency distribution shows the number of

observations or the percentage of observations that fall into each of several ranges of values. Chi-square tests hypotheses about data that are counts and then compares its value to the Chi-square distribution to see how unlikely the observed value is if the null hypothesis is true.

Collection of Data

The survey instrument was mailed to the randomly selected North Carolina community college business instructors who have taught either a campus course or an online course during the school year 2000-2001, except for those instructors who were in the pilot study. This mailing occurred during the Spring 2002 semester. Included with the survey instrument, the mailing contained a cover letter, printed on Asheville-Buncombe Technical Community College letterhead conveying the purpose and confidentiality of the survey, a request for cooperation, a description of the confidential and voluntary nature of the study, a promise of results to be shared with the respondent, a statement of appreciation, and a request for the immediate return of the survey, as well as directions on how to complete the instrument (Gall, Borg, & Gall, 1996). A stamped, self-addressed return envelope was also included for returning the survey. It was requested in the cover letter that they return their responses by the end of three weeks time. The survey instrument and the cover letter are reproduced in Appendices F and G.

Each of the surveys were coded so that non-respondents could be identified. Ten days after the initial mailing, a postcard was sent as a reminder to the respondent. If a second reminder was needed, it was sent three weeks after the

original mailing and included a letter, another copy of the survey, and a stamped, self-addressed envelope. The cover letter included in the second reminder is also contained in Appendix G.

Data Analysis

For each question on the survey, the responses were coded as follows: Do Not Use = 0, Occasionally Use = 1, and Frequently Use = 2. Data generated were analyzed using nonparametric statistics. In this study, One-Way Analysis of Variance was used for Research Questions One and Two and Hypotheses One through Seven concerning the instructional behaviors of classroom instructors and online instructors. These research questions and hypotheses are as follows:

Research Question One:

- How do the instructional behaviors used by North Carolina community college campus business instructors compare to the instructional behaviors used by North Carolina community college online business instructors?

Based on this research question, the following null hypothesis was formulated:

H1: There is no significant difference in the comparison of instructional behaviors used by North Carolina community college business instructors who teach campus courses and the comparison of instructional behaviors used by North Carolina community college business instructors who teach online courses.

Research Question Two:

- Are there any differences in instructional behaviors used by North Carolina community college campus business instructors and North Carolina community college online business instructors based on age, years of teaching, gender, educational level, training, and online learning experience, as well as differences in use of technology, and the use of specific types of instructional behaviors?

Based on this research question, the following null hypotheses were formulated:

H2: There is no significant difference in the comparison of instructional behaviors used by North Carolina community college campus business instructors and the comparison of instructional behaviors used by North Carolina community college online business instructors across all age groups.

A. 20 – 29 years of age
B. 30 – 39 years of age
C. 40 – 49 years of age
D. 50 – 59 years of age
E. 60 – 69 years of age

H3: There is no significant difference in the comparison of instructional behaviors used by North Carolina community college campus business instructors and the comparison of instructional behaviors used by North

Carolina community college online business instructors across all years of teaching.

A. 0 – 10 years of teaching

B. 11 – 20 years of teaching

C. 21 – 30 years of teaching

D. 31 or more years of teaching

H4: There is no significant difference in the comparison of instructional behaviors used by North Carolina community college campus business instructors and the comparison of instructional behaviors used by North Carolina community college online business instructors across both genders.

H5: There is no significant difference in the comparison of instructional behaviors used by North Carolina community college campus business instructors and the comparison of instructional behaviors used by North Carolina community college online business instructors across all educational levels.

A. Some College/Associate's Degree

B. Bachelor's Degree

C. Master's Degree

D. Educational Specialist Degree

E. Doctorate Degree

H6: There is no significant difference in the comparison of instructional behaviors used by North Carolina community college campus and online

business instructors who have had staff development training in the area of online education and the comparison of instructional behaviors used by North Carolina community college campus and online business instructors who have not had staff development training in the area of online education.

H7: There is no significant difference in the comparison of instructional behaviors used by North Carolina community college campus and online business instructors who have taken an online course and the comparison of instructional behaviors used by North Carolina community college campus and online business instructors who have not taken an online course.

Upon the recommendation of a statistician, Dr. Robbie Pittman of Western Carolina University, Chi-Square was used with Hypotheses Eight and Nine instead of grouping them into the four major categories of Pedagogical, Social, Managerial, and Technical.

H8: There is no significant difference between the frequency of specific types of technology used in a campus class and the frequency of specific types of technology used in an online class.

H9: There is no significant difference in the frequency of specific types of instructional behaviors used by North Carolina community college campus business instructors and the frequency of specific types of instructional behaviors used by North Carolina community college online business instructors.

During the course of this study, additional data was found that dealt with what classroom instructional behaviors were used by North Carolina community college business instructors when teaching an online course and what classroom instructional behaviors were not being used by North Carolina community college business instructors when teaching an online course. Based on the type of data found, no hypotheses were formulated and could not be generalized. This data is explained in Chapters Four and Five.

For quantitative response variables, one of the most common analyses refers to comparing the mean responses of several groups. Analysis of Variance is a method used to compare the means of several groups of observations. In its simplest form, ANOVA is called one-way analysis of variance (Gall, Borg, & Gall, 1996). The analysis is based upon the assumption that the scores are normally distributed, the scores are independent, and the variances are equal in each group. The Analysis of Variance yields an F-statistic, which signifies the probability that the means of the dependent variable statistically differ from each other.

Chi-square is a nonparametric statistical test to determine whether research data in the form of frequency counts are distributed differently for different samples (Gall, Borg, & Gall, 1996). The test statistic for the test of independence summarizes how close the expected frequencies fall to the observed frequencies (Agresti & Finlay, 1997). The test will be administered with an alpha level set at .05 to determine whether research data in the form of frequency counts are distributed differently for different samples (Gall, Borg, & Gall, 1996).

The Chi-square test was utilized to determine if the differences between the expected and observed frequencies are beyond what would be expected by chance. The test determined if there was reliable evidence that there was a relationship between all variables affecting the instructional behaviors of campus business instructors and online business instructors.

When the data are at the nominal level and the researcher wants to determine whether groups are different, the researcher uses the Chi-square statistical test. Chi-square analysis can be used to calculate the differences among the subjects in a research study to determine if extraneous variables influenced the outcome. If the calculated Chi-square value is high enough, the researcher can conclude that the frequencies found would not be expected on the basis of chance alone and the null hypothesis would be rejected.

Results of the study for Research Questions One and Two and Hypotheses One through Seven are presented in table form showing Means, Standard Deviation, F-values, and p-Values. For Hypotheses Eight and Nine, results are presented in table form showing Chi-Square and p-Values. Discussion of the results was organized around the research questions and hypotheses and included the interpretation of the findings, the implications or contributions of the findings, and the application of the findings in practice.

CHAPTER FOUR

FINDINGS

Introduction

The purpose of this chapter is to present an analysis of the data collected regarding the instructional behaviors between campus business instructors and online business instructors in the North Carolina Community College System. The instructors were surveyed during the Spring 2002 semester after a pilot study was conducted at Asheville-Buncombe Technical Community College, Blue Ridge Community College, and Haywood Community College during the Fall of 2001.

The data were collected through a survey instrument developed by the researcher and validated by eight professionals with experience or expertise in online education.

To assist in the understanding of the findings of this study, the data will be presented in the following sequence:

1. Demographic data regarding respondents will be presented by college classification and school along with percentage of surveys returned.
2. Data regarding the first research question of this study, which was to determine how the instructional behaviors used by North Carolina community college campus business instructors compared to the instructional behaviors used by North Carolina community college online business instructors. Based on this research question, the following null hypothesis was formulated:

H1: There is no significant difference in the comparison of instructional behaviors used by North Carolina community college business instructors

who teach campus courses and the comparison of instructional behaviors used by North Carolina community college business instructors who teach online courses.

3. Data regarding the second research question of this study which was to determine if there are any differences in instructional behaviors used by North Carolina community college campus business instructors and North Carolina community college online business instructors based on age, years of teaching, gender, educational level, training, online learning experience, as well as differences in use of technology, and the use of specific types of instructional behaviors. Based on this research question, the following null hypotheses were formulated:

H2: There is no significant difference in the comparison of instructional behaviors used by North Carolina community college campus business instructors and the comparison of instructional behaviors used by North Carolina community college online business instructors across all age groups.

F. 20 – 29 years of age

G. 30 – 39 years of age

H. 40 – 49 years of age

I. 50 – 59 years of age

J. 60 – 69 years of age

H3: There is no significant difference in the comparison of instructional behaviors used by North Carolina community college campus business instructors and the comparison of instructional behaviors used by North

Carolina community college online business instructors across all years of teaching.

E. 0 – 10 years of teaching

F. 11 – 20 years of teaching

G. 21 – 30 years of teaching

H. 31 or more years of teaching

H4: There is no significant difference in the comparison of instructional behaviors used by North Carolina community college campus business instructors and the comparison of instructional behaviors used by North Carolina community college online business instructors across both genders.

H5: There is no significant difference in the comparison of instructional behaviors used by North Carolina community college campus business instructors and the comparison of instructional behaviors used by North Carolina community college online business instructors across all educational levels.

A. Some College/Associate Degree

B. Bachelor's Degree

C. Master's Degree

D. Educational Specialist Degree

E. Doctorate Degree

H6: There is no significant difference in the comparison of instructional behaviors used by North Carolina community college campus and online

business instructors who have had staff development training in the area of online education and the comparison of instructional behaviors used by North Carolina community college campus and online business instructors who have not had staff development training in the area of online education.

H7: There is no significant difference in the comparison of instructional behaviors used by North Carolina community college campus and online business instructors who have taken an online course and the comparison of instructional behaviors used by North Carolina community college campus and online business instructors who have not taken an online course.

H8: There is no significant difference between the frequency of specific types of technology used in a campus class and the frequency of specific types of technology used in an online class.

H9: There is no significant difference in the frequency of specific types of instructional behaviors used by North Carolina community college campus business instructors and the frequency of specific types of instructional behaviors used by North Carolina community college online business instructors.

4. During the course of the study, additional data were collected concerning what classroom instructional behaviors are used by North Carolina community college business instructors when teaching an online course and what classroom instructional behaviors are not being used by North Carolina community college

business instructors when teaching an online course. This information will be given in the section entitled “Additional Findings” at the end of this chapter.

Target Population

The survey instrument was mailed to 329 North Carolina community college business instructors in 15 different community colleges. Of these 15 community colleges, five were categorized as large schools, five as medium schools, and five as small schools as designated by the North Carolina Community College System Office for the school year 2000-2001. Table 4.1 presents all of the North Carolina community colleges sorted by curriculum total for that year. Curriculum total is the number of total students taking curriculum courses. This listing was used to designate the largest five community colleges in each category. Those noted as pilot study were not included in the final survey.

Table 4.1: North Carolina Community College System Enrollment Sorted by Curriculum Total – Year 2000-2001

College	Curriculum Total	
Central Piedmont	28,952	
Wake Technical	14,214	
Fayetteville Technical	12,642	
Guilford Technical	10,871	
Cape Fear	7,629	
Durham Technical	7,507	
Pitt	7,454	
Asheville-Buncombe Technical	7,415	(Pilot Study)
Forsyth Technical	7,329	
Rowan-Cabarrus	6,135	
Central Carolina	5,829	
Coastal Carolina	5,816	
Gaston	5,806	
Catawba Valley	5,589	
Alamance	4,969	
Vance-Granville	4,830	
Johnston	4,572	
Caldwell	4,425	
Wayne	4,408	
Surry	4,199	
Sandhills	3,967	
Craven	3,906	
Cleveland	3,504	
Davidson	3,474	
Nash	3,278	
Western Piedmont	3,266	
College of the Albemarle	3,211	
Lenoir	3,040	
Wilkes	2,903	
Piedmont	2,855	
Edgecombe	2,819	
Southeastern	2,782	
South Piedmont	2,782	
Isothermal	2,709	
Mitchell	2,664	
Randolph	2,649	
Blue Ridge	2,634	(Pilot Study)
Rockingham	2,548	
Robeson	2,475	
Wilson	2,391	
Southwestern	2,372	

Table 4.1 (continued)

Haywood	2,296	(Pilot Study)
Stanly	2,282	
Carteret	2,242	
Beaufort	1,977	
Richmond	1,918	
Sampson	1,899	
Halifax	1,898	
James Sprunt	1,816	
McDowell	1,612	
Tri-County	1,525	
Mayland	1,477	
Bladen	1,391	
Roanoke-Chowan	1,387	
Brunswick	1,273	
Montgomery	1,091	
Martin	904	
Pamlico	452	

A total of 185 survey instruments were returned, 59% from large community colleges, 51% from medium community colleges, and 58% from small community colleges. The total return rate for all three categories was 56%.

Table 4.2 presents the number of survey instruments mailed to each of the 15 community colleges along with their return rate.

Table 4.2: Percentage of Survey Instruments Returned

	Mailed			Returned			Percentage Returned		
	Online	Campus	Total	Online	Campus	Total	Online	Campus	Total
Large Schools:									
Central Piedmont	18	26	44	5	15	20	28%	58%	45%
Wake	13	35	48	11	22	33	85%	63%	69%
Fayetteville	17	12	29	11	7	18	65%	58%	62%
Guilford	14	21	35	7	12	19	50%	57%	54%
Cape Fear	6	7	13	3	6	9	50%	86%	69%
Subtotal	68	101	169	37	62	99	54%	61%	59%
Medium Schools:									
Alamance	9	13	22	5	5	10	56%	38%	45%
Vance-Granville	6	26	32	2	14	16	33%	54%	50%
Johnston	3	13	16	1	6	7	33%	46%	44%
Caldwell	6	9	15	4	7	11	67%	78%	73%
Wayne	9	11	20	5	5	10	56%	45%	50%
Subtotal	33	72	105	17	37	54	52%	51%	51%
Small Schools:									
Robeson	3	8	11	3	3	6	100%	38%	55%
Wilson	6	5	11	4	3	7	67%	60%	64%
Southwestern	5	7	12	4	4	8	80%	57%	67%
Stanly	4	11	15	1	6	7	25%	55%	47%
Carteret	4	2	6	3	1	4	75%	50%	67%
Subtotal	22	33	55	15	17	32	68%	52%	58%
TOTALS	123	206	329	69	116	185	56%	56%	56%

Reliability Scores for the Behaviors Affecting Campus Business Instructors and Online Business Instructors

This study identified the behaviors that affect campus business instructors and online business instructors in the North Carolina Community College System. This was accomplished through a review of the literature and with the assistance of a Panel of Professionals with experience or expertise in the field of distance education. Through the review and rating process described in Chapter Three of this study, a final survey of 38 behaviors was created.

These 38 behaviors were classified by the researcher into four major categories after reviewing the literature, particularly the literature of Berge (1995). The four categories, based on a review of this literature, are: (1) Pedagogical, (2) Social, (3) Managerial, and (4) Technical. Each of the 38 behaviors are listed in Chapter Three within the Measurement of Variables section.

Since these 38 behaviors were placed into four categories by the researcher, it was necessary to test the internal consistency of the survey instrument to determine the reliability of the categorization process. A commonly used process is to calculate a reliability coefficient known as Cronbach alpha (or alpha). Cronbach alpha is an internal reliability coefficient that measures the extent to which the scores on individual items within categories agree with one another and is especially useful with attitude scales (Ary, Jacobs, & Razavieh, 1996). This measurement assumes the items on a scale are positively correlated with each other because they are measuring, to a certain extent, a common entity. Table 4.3 presents data on the Cronbach's alpha coefficients for the four categories of behaviors in this study's survey instrument and for the total instrument. The total instrument reliability coefficient of .9020 indicated that the behaviors on the entire instrument were positively correlated and measured a common entity.

Table 4.3: Cronbach's Alpha Coefficients by Category and Total

Category	Alpha	Number of items
Pedagogical	.8319	n = 17
Social	.7037	n = 6
Managerial	.7192	n = 9
Technical	.6614	n = 6
Total	.9020	n = 38

Research Question One

Research Question One asked how do the instructional behaviors used by North Carolina community college campus business instructors compare to the instructional behaviors used by North Carolina community college online business instructors. Data summarizing the individual behavioral responses from the 185 respondents to the survey instrument are in Appendix H. One-way Analysis of Variance (ANOVA) was used to compare the means of various groups. Mean, Standard Deviation, F-value, and p-value for each of the 38 behaviors are presented.

Null Hypothesis One stated that there was no significant difference in the comparison of instructional behaviors used by North Carolina community college business instructors who teach campus courses and the comparison of instructional behaviors used by North Carolina community college business instructors who teach online courses. Table 4.4 presents the summary data of the above hypothesis for pedagogical, social, managerial, and technical behaviors for both campus and online North Carolina community college business instructors.

Table 4.4: Comparison of Means of Campus and Online Groups on the Pedagogical, Social, Managerial, and Technical Behaviors

Variable	Group	N	Mean	Standard Deviation	F-Value	p-Value
Pedagogical	Campus	116	16.64	1.25	17.76	.00
	Online	69	15.62	2.03		
Social	Campus	116	5.81	.81	2.80	.10
	Online	69	5.58	1.05		
Managerial	Campus	116	8.61	.84	9.06	.00
	Online	69	8.10	1.47		
Technical	Campus	116	4.86	1.13	.02	.90
	Online	69	4.84	1.21		

For Table 4.4, it was shown that the means for campus instructors on Pedagogical and Managerial behaviors were found to be significantly different from the online instructors. In each case (Pedagogical, Social, Managerial and Technical), the campus mean was higher than the online mean, although it was found to be statistically significant only for Pedagogical and Managerial. Hypothesis One was rejected since significant differences were found between campus instructors and online instructors for the Pedagogical and Managerial behaviors.

Research Question Two

Research Question Two explored differences in instructional behaviors used by North Carolina community college campus business instructors and North Carolina community college online business instructors based on age, years of teaching, gender, educational level, training, and online learning experience, as well as differences in use of technology, and the use of specific types of instructional behaviors. To determine this, the researcher used Analysis of Variance (ANOVA) to find the mean along with the standard deviation, F-value, and p-Value for campus and online North Carolina community college business instructors for all four behavior categories within each area as listed above.

The second null hypothesis stated that there was no significant difference in the comparison of instructional behaviors used by North Carolina community college campus business instructors and the comparison of instructional behaviors used by North Carolina community college online business instructors across all age groups. Tables 4.5 through 4.7 indicate the comparison of campus and online groups on the pedagogical, social, managerial, and technical behaviors for all age groups. The five age groups compared included:(a) age 20 – 29, (b) age 30 – 39, (c) age 40 – 49, (d) age 50 – 59, and (e) age 60 – 69. Due to the small number of respondents within certain age groups, the researcher collapsed the age groups into 3 groups instead of 5, with the approval of her committee. The age groups for 20 – 29 and 30 – 39 were combined as well as the 50 – 59 and 60 – 69 age groups.

One-way Analysis of Variance (ANOVA) was used to compare the means of various groups. Mean, Standard Deviation, F-value, and p-value for each of the age groups are presented.

Table 4.5: Comparison of Means of Instructional Behaviors Used by North Carolina Community College Campus and Online Business Instructors for Those in the 20-39 Age Group

Behavior	Group	N	Mean	Standard Deviation	F-value	p-value
Pedagogical	Campus	31	16.18	2.22	3.91	.50
	Online	18	15.72	1.91		
Social	Campus	31	5.48	1.57	.20	.67
	Online	18	5.75	.78		
Managerial	Campus	31	8.49	1.12	2.52	.30
	Online	18	8.41	1.15		
Technical	Campus	31	4.49	2.86	2.01	.19
	Online	18	5.03	.79		

In the 20-39 age group, for each behavior, there was no significant difference between the campus instructor's mean and the online instructor's mean.

Table 4.6: Comparison of Means of Instructional Behaviors Used by North Carolina Community College Campus and Online Business Instructors for Those in the 40-49 Age Group

Behavior	Group	N	Mean	Standard Deviation	F-value	p-value
Pedagogical	Campus	38	16.76	.54	16.36	.00
	Online	17	14.76	2.97		
Social	Campus	38	5.95	.32	7.03	.01
	Online	17	5.47	1.01		
Managerial	Campus	38	8.76	.49	12.68	.00
	Online	17	7.82	1.47		
Technical	Campus	38	5.24	.79	1.93	.17
	Online	17	4.88	1.05		

As displayed in Table 4.6, for the 40-49 age group, the means for campus instructors on Pedagogical, Social, and Managerial behaviors were found to be significantly different from the online instructors. In each case, the campus mean was significantly higher than the online mean.

Table 4.7: Comparison of Means of Instructional Behaviors Used by North Carolina Community College Campus and Online Business Instructors for Those in the 50-69 Age Group

Behavior	Group	N	Mean	Standard Deviation	F-value	p-value
Pedagogical	Campus	47	16.35	1.17	3.23	.51
	Online	34	15.95	1.14		
Social	Campus	47	5.91	.28	1.10	.32
	Online	34	5.59	.97		
Managerial	Campus	47	8.47	.79	.45	.52
	Online	34	8.46	.75		
Technical	Campus	47	4.76	.95	2.40	.42
	Online	34	5.07	.93		

Table 4.7 indicates for each behavior within the 50-69 age group, there was no significant difference between the campus instructor's mean and the online instructor's mean.

Summarizing across Tables 4.5 through 4.7, Hypothesis Two was rejected since significant differences were found between campus instructors and online instructors for the Pedagogical, Social, and Managerial behaviors for instructors in the 40-49 age group. No significant differences were found in the mean behaviors for instructors in other age groups.

The third null hypothesis stated that there was no significant difference in the comparison of instructional behaviors used by North Carolina community college campus business instructors and the comparison of instructional behaviors used by North Carolina community college online business instructors across the number of years teaching. Tables 4.8 through 4.10 indicate the comparison of campus and online groups on the pedagogical, social, managerial, and technical behaviors across the number of years teaching. The years of teaching compared are: (a) 0 – 10 years, (b) 11 – 20 years, (c) 21 – 30 years, and (d) 31 years or more. Due to the small number of respondents in some of the years of teaching categories, the researcher collapsed the years of teaching groups into 3 instead of 4, with the approval of her committee. The years of teaching groups for 21 – 30 and 31 or more were combined to form one group.

Table 4.8: Comparison of Means of Instructional Behaviors Used by North Carolina Community College Campus and Online Business Instructors With 0 – 10 Years of Teaching

Behavior	Group	N	Mean	Standard Deviation	F-value	p-value
Pedagogical	Campus	77	16.78	.72	26.67	.00
	Online	36	15.58	1.75		
Social	Campus	77	5.84	.76	1.75	.19
	Online	36	5.61	1.08		
Managerial	Campus	77	8.70	.74	14.33	.00
	Online	36	7.83	1.70		
Technical	Campus	77	4.88	1.12	1.84	.18
	Online	36	4.56	1.34		

As shown in Table 4.8, for those instructors with 0-10 years of teaching, the means for campus instructors on Pedagogical and Managerial behaviors were found to be significantly different from the online instructors. For each, the campus mean was significantly higher than the online mean.

Table 4.9: Comparison of Means of Instructional Behaviors Used by North Carolina Community College Campus and Online Business Instructors With 11 – 20 Years of Teaching

Behavior	Group	N	Mean	Standard Deviation	F-value	p-value
Pedagogical	Campus	25	16.76	.52	4.79	.03
	Online	25	15.60	2.60		
Social	Campus	25	5.92	.40	2.59	.11
	Online	25	5.56	1.04		
Managerial	Campus	25	8.68	.48	1.90	.17
	Online	25	8.32	1.22		
Technical	Campus	25	5.16	.80	.10	.76
	Online	25	5.08	1.00		

In Table 4.9, those instructors with 11-20 years of teaching, the means for campus instructors on the Pedagogical behavior was found to be significantly different from the online instructors. For each, the campus mean was significantly higher than the online mean.

Table 4.10: Comparison of Means of Instructional Behaviors Used by North Carolina Community College Campus and Online Business Instructors With 21 or More Years of Teaching

Behavior	Group	N	Mean	Standard Deviation	F-value	p-value
Pedagogical	Campus	13	16.49	.95	.15	.30
	Online	8	7.94	.63		
Social	Campus	13	5.84	.36	.08	.36
	Online	8	2.75	.54		
Managerial	Campus	13	8.36	.84	.39	.20
	Online	8	4.32	.37		
Technical	Campus	13	4.60	.85	2.73	.02
	Online	8	2.69	.46		

For Table 4.10, those instructors with 21 or more years of teaching, the means for campus instructors on the Technical behavior was found to be significantly different from the online instructors. For each, the campus mean was significantly higher than the online mean.

Summarizing for Table 4.8 through 4.10, Hypothesis Three was rejected since significant differences were found between campus instructors and online instructors for the Pedagogical, Managerial, and Technical behaviors, particularly the Pedagogical and Managerial behaviors for instructors with 0-10 years of teaching, the Pedagogical behaviors for instructors with 11-20 years of teaching, and the Technical behaviors for instructors with 21 or more years of teaching.

The fourth null hypothesis stated that there was no significant difference in the comparison of instructional behaviors used by North Carolina community college campus business instructors and the comparison of instructional behaviors used by North Carolina community college online business instructors across both genders. The summary data in Tables 4.11 and 4.12 indicates the comparison of campus and online groups on the pedagogical, social, managerial, and technical behaviors for gender.

Table 4.11: Comparison of Means of Instructional Behaviors Used by North Carolina Community College Campus and Online Business Instructors For Male Instructors

Behavior	Group	N	Mean	Standard Deviation	F-value	p-value
Pedagogical	Campus	55	16.62	.85	10.51	.00
	Online	28	15.36	2.64		
Social	Campus	55	5.89	.46	8.21	.01
	Online	28	5.29	1.44		
Managerial	Campus	55	8.62	.83	6.07	.02
	Online	28	7.82	2.11		
Technical	Campus	55	4.91	.89	1.35	.25
	Online	28	4.61	1.47		

In Table 4.11 for male instructors, the means for campus instructors on the Pedagogical, Social, and Managerial behaviors were found to be significantly different from the online instructors. For each significant finding, the campus mean was significantly higher than the online mean.

Table 4.12: Comparison of Means of Instructional Behaviors Used by North Carolina Community College Campus and Online Business Instructors For Female Instructors

Behavior	Group	N	Mean	Standard Deviation	F-value	p-value
Pedagogical	Campus	59	16.86	.60	24.34	.00
	Online	41	15.80	1.49		
Social	Campus	59	5.81	.84	.05	.83
	Online	41	5.78	.61		
Managerial	Campus	59	8.68	.63	7.76	.01
	Online	41	8.29	.75		
Technical	Campus	59	4.90	1.17	.21	.65
	Online	41	5.00	.97		

In Table 4.12 for female instructors, the means for campus instructors on the Pedagogical and Managerial behaviors were found to be significantly different from the online instructors. For each significant finding, the campus mean was significantly higher than the online mean.

Summarizing for Table 4.11 and 4.12, Hypothesis Four was rejected since significant differences were found between campus instructors and online instructors for the Pedagogical, Social, and Managerial behaviors for male instructors and Pedagogical and Managerial behaviors for female instructors.

The fifth null hypothesis stated that there was no significant difference in the comparison of instructional behaviors used by North Carolina community college campus business instructors and the comparison of instructional behaviors used by North Carolina community college online business instructors across all educational levels. The summary data in Tables 4.13 through 4.15 indicate the comparison of campus and online groups on the pedagogical, social, managerial, and technical behaviors across all educational levels. The educational levels compared are: (a) some college/associate degree, (b) bachelor's degree, (c) master's degree, (d) educational specialist degree, and (e) doctorate degree. Due to the small number of respondents in some of the education levels, the researcher collapsed the education levels into 3 groups instead of 5, with the approval of her committee. The two education levels of some college/associate degree and bachelor's degree were combined as well as educational specialist degree and doctorate degree.

Table 4.13: Comparison of Mean of Instructional Behaviors Used by North Carolina Community College Campus and Online Business Instructors With Some College/Associate Degree/Bachelor's Degree

Behavior	Group	N	Mean	Standard Deviation	F-value	p-value
Pedagogical	Campus	37	16.64	1.23	38.42	.27
	Online	12	14.96	1.01		
Social	Campus	37	5.82	.67	.19	.69
	Online	12	5.96	.15		
Managerial	Campus	37	8.73	.71	.18	.69
	Online	12	8.68	.46		
Technical	Campus	37	5.16	1.01	.23	.76
	Online	12	5.41	.54		

For Table 4.13, those instructors with some college/Associate's Degree/Bachelor's Degree, for each behavior, there was no significant difference between the campus instructor's mean and the online instructor's mean.

Table 4.14: Comparison of Mean of Instructional Behaviors Used by North Carolina Community College Campus and Online Business Instructors With a Master's Degree

Behavior	Group	N	Mean	Standard Deviation	F-value	p-value
Pedagogical	Campus	66	16.77	.67	17.94	.00
	Online	49	15.57	2.17		
Social	Campus	66	5.82	.82	1.60	.21
	Online	49	5.59	1.10		
Managerial	Campus	66	8.67	.59	9.76	.00
	Online	49	7.98	1.65		
Technical	Campus	66	4.88	1.06	.01	.92
	Online	49	4.86	1.27		

For Table 4.14, those instructors with a Master's Degree, the means for campus instructors on the Pedagogical and Managerial behaviors were found to be significantly different from the online instructors. For each significant finding, the campus mean was significantly higher than the online mean.

Table 4.15: Comparison of Means of Instructional Behaviors Used by North Carolina Community College Campus and Online Business Instructors With an Ed.S/Doctorate Degree

Behavior	Group	N	Mean	Standard Deviation	F-value	p-value
Pedagogical	Campus	13	16.63	.74	.54	.16
	Online	8	16.29	.57		
Social	Campus	13	5.92	.29	2.47	.02
	Online	8	5.43	.68		
Managerial	Campus	13	8.59	.74	.02	.43
	Online	8	8.65	.38		
Technical	Campus	13	4.67	.62	.09	.34
	Online	8	4.79	.57		

For Table 4.15, those instructors with an Ed.S/Doctorate Degree, the means for campus instructors on the Social behavior was found to be significantly different from the online instructors, with the campus mean significantly higher than the online mean.

Summarizing for Tables 4.13 through 4.15, Hypothesis Five was rejected since significant differences were found between campus instructors and online instructors for the Pedagogical, Social and Managerial behaviors, particularly the Pedagogical and Managerial behaviors for those instructors with a Master's Degree and the Social behaviors for those instructors with an Ed.S/Doctorate Degree.

The sixth null hypothesis stated that there was no significant difference in the comparison of instructional behaviors used by North Carolina community college campus and online business instructors who have had staff development training in the area of online education and the comparison of instructional behaviors used by North Carolina community college campus and online business instructors who have not had staff development training in the area of online education. The summary data in Tables 4.16 and 4.17 indicate the comparison of campus and online instructors on the pedagogical, social, managerial, and technical behaviors for those instructors who have had staff development training in the area of online education and those who have not had staff development training in the area of online education.

Table 4.16: Comparison of Means of Instructional Behaviors Used by North Carolina Community College Campus and Online Business Instructors Having Staff Development Training in the Area of Online Education

Behavior	Group	N	Mean	Standard Deviation	F-value	p-value
Pedagogical	Campus	83	16.69	.85	12.69	.00
	Online	60	15.82	1.99		
Social	Campus	83	5.81	.79	1.74	.19
	Online	60	5.60	1.09		
Managerial	Campus	83	8.63	.81	6.27	.01
	Online	60	8.13	1.52		
Technical	Campus	83	4.96	.99	.07	.80
	Online	60	4.92	1.20		

For Table 4.16, those instructors that had staff development training in the area of online education, the means for campus instructors on the Pedagogical and Managerial behaviors were found to be significantly different from the online instructors. For each significant finding the campus mean was significantly higher than the online mean.

Table 4.17: Comparison of Means of Instructional Behaviors Used by North Carolina Community College Campus and Online Business Instructors Not Having Had Staff Development Training in the Area of Online Education

Behavior	Group	N	Mean	Standard Deviation	F-value	p-value
Pedagogical	Campus	33	16.52	1.92	9.08	.00
	Online	9	14.33	1.94		
Social	Campus	33	5.82	.88	1.36	.25
	Online	9	5.44	.73		
Managerial	Campus	33	8.58	.94	3.61	.00
	Online	9	7.89	1.05		
Technical	Campus	33	4.61	1.39	.29	.60
	Online	9	4.33	1.22		

For Table 4.17, those instructors that did not have staff development training in the area of online education, the means for campus instructors on the Pedagogical and Managerial behaviors were found to be significantly different from the online instructors. For each the campus mean was significantly higher than the online mean.

Summarizing for Tables 4.16 and 4.17, Hypothesis Six was rejected since significant differences were found between campus instructors and online instructors for the Pedagogical and Managerial behaviors for both those instructors who had staff development training in the area of online education and also for those instructors who have not had staff development training in the area of online

education. Since both those instructors that had staff development training and those not having staff development training were found to be significantly different for both campus and online instructors, the differences could be found in the actual tasks and roles of the instructor. (See Table 2.1) More campus instructors, whether they had staff development training or not, reported significantly higher use of clear objectives; maintaining maximum flexibility; encouraging participation; maintaining a non-authoritarian style; being objective; not relying on offline materials; being informal, responsive, and patient; and handling tangents appropriately.

The seventh null hypothesis stated that there is no significant difference in the comparison of instructional behaviors used by North Carolina community college campus and online business instructors who have taken an online education course and the comparison of instructional behaviors used by North Carolina community college campus and online business instructors who have not taken an online education course. The summary data in Tables 4.18 and 4.19 indicate the comparison of campus and online instructors on the pedagogical, social, managerial, and technical behaviors for instructors who have taken an online education course and those instructors who have not taken an online education course.

Table 4.18: Comparison of Means of Instructional Behaviors Used by North Carolina Community College Campus and Online Business Instructors Who Have Taken an Online Education Course

Behavior	Group	N	Mean	Standard Deviation	F-value	p-value
Pedagogical	Campus	62	16.79	.85	12.89	.00
	Online	50	15.70	2.20		
Social	Campus	62	5.76	.88	.13	.72
	Online	50	5.70	.81		
Managerial	Campus	62	8.61	.86	3.86	.05
	Online	50	8.24	1.15		
Technical	Campus	62	4.95	1.03	.38	.54
	Online	50	4.82	1.24		

For Table 4.18, those instructors that have taken an online education course, the means for campus instructors on the Pedagogical behavior was found to be significantly different from the online instructors. The campus mean was significantly higher than the online mean.

Table 4.19: Comparison of Means of Instructional Behaviors Used by North Carolina Community College Campus and Online Business Instructors Who Have Not Taken an Online Education Course

Behavior	Group	N	Mean	Standard Deviation	F-value	p-value
Pedagogical	Campus	54	16.46	1.57	6.22	.02
	Online	19	15.42	1.54		
Social	Campus	54	5.87	.73	5.43	.02
	Online	19	5.26	1.48		
Managerial	Campus	54	8.61	.83	6.66	.01
	Online	19	7.74	2.08		
Technical	Campus	54	4.76	1.23	.18	.68
	Online	19	4.89	1.15		

For Table 4.19, those instructors that have not taken an online education course, the means for campus instructors on the Pedagogical, Social, and Managerial behaviors were found to be significantly different from the online instructors. For each, the campus mean was significantly higher than the online mean.

Summarizing for Tables 4.18 and 4.19, Hypothesis Seven was rejected since significant differences were found between campus instructors and online instructors for the Pedagogical, Social, and Managerial behaviors for both those instructors who had taken an online education course and also for those instructors who have not taken an online education course. Since both those instructors that had taken an

online education course and those not having taken an online education course were found to be significantly different for both campus and online instructors, the differences could be found in the actual tasks and roles of the instructor. (See Table 2.1) More campus instructors, whether they had taken an online education course or not, reported significantly higher use of clear objectives; maintaining maximum flexibility; encouraging participation; maintaining a non-authoritarian style; being objective; not relying on offline materials; being informal, responsive, and patient; handling tangents appropriately; watching the use of humor or sarcasm; using introductions; facilitating interactivity; not ignoring bad behavior; and being aware of "lurkers".

The eighth null hypothesis stated that there is no significant difference between the frequency of specific types of technology used in a campus class and the frequency of specific types of technology used in an online class. The summary data in Table 4.20 presents the frequency for each type of technology used to deliver an online course. Upon the recommendation of a statistician, Dr. Robbie Pittman of Western Carolina University, Chi-square was used with each of the eight specific types of technology instead of grouping them into the four major categories of pedagogical, social, managerial, and technical.

Table 4.20: Comparison of the Frequency of Use of Specific Types of Technology Across Campus and Online Classes

Use of Two-Way Interactive Video

Group	Yes	No	Chi-square Value	p-Value
Campus	24 (20.7)	92 (79.3)		
			1.11	.29
Online	10 (14.5)	59 (85.5)		

Use of One-Way Prerecorded Video

Group	Yes	No	Chi-square Value	p-Value
Campus	37 (31.9)	79 (68.1)		
			.39	.53
Online	19 (27.5)	50 (72.5)		

Use of Two-Way Audio

Group	Yes	No	Chi-square Value	p-Value
Campus	6 (5.2)	110 (94.8)		
			.33	.56
Online	5 (7.2)	64 (92.8)		

Use of One-Way Audio

Group	Yes	No	Chi-square Value	p-Value
Campus	14 (12.1)	102 (87.9)		
			.01	.92
Online	8 (11.6)	61 (88.4)		

Use of Two-Way Online (Computer-Based) Interactions

Group	Yes	No	Chi-square Value	p-Value
Campus	52 (44.8)	64 (55.2)		
			.32	.57
Online	29 (42.0)	40 (58.0)		

Table 4.20 (continued)

Use of The Internet

Group	Yes	No	Chi-square Value	p-Value
Campus	96 (82.8)	20 (17.2)		
			10.72	.00
Online	68 (98.6)	1 (1.4)		

Note: The values in parentheses are the percentages of cases in that grouping. In some of the specific types of technology listed above, cell size was small and may limit the significance of these particular findings. Two specific types of technology, Use of Two-Way Audio, One-Way Video and Use of One-Way Live Video, were eliminated due to the number of participants (n) being too low.

The summary data in Table 4.20 indicates that with the frequency of specific types of technology used in a campus class and in an online class, the null hypothesis was rejected due to the significant findings in the use of the Internet. This technology was found to have a significantly higher percentage of use in online classes than in campus classes. There were no significant differences between campus and online classes for the other seven technologies.

The ninth and final null hypothesis stated that there is no significant difference in the frequency of specific types of instructional behaviors used by North Carolina community college campus business instructors and the frequency of specific types of instructional behaviors used by North Carolina community college online business instructors. Table 4.21 presents the summary data for the Chi-square test of independence showing the frequency of specific types of instructional behaviors

used between North Carolina community college campus business instructors and North Carolina community college online business instructors. Upon the recommendation of a statistician, Dr. Robbie Pittman of Western Carolina University, Chi-square was used with each of the 20 specific types of instructional behaviors instead of grouping them into the four major categories of pedagogical, social, managerial, and technical.

Table 4.21: Comparison of Frequency of Specific Types of Instructional Behaviors Used in Campus and Online Classes

Orally Providing Structured Content Such as Lecture

Group	Yes	No	Chi-square Value	p-Value
Campus	101 (87.1)	15 (12.9)		
			56.53	.00
Online	23 (33.3)	46 (66.7)		

Orally and Visually Providing Structured Content Such as Lecture with Visual Aids

Group	Yes	No	Chi-square Value	p-Value
Campus	101 (87.1)	15 (12.9)		
			44.30	.00
Online	28 (40.6)	41 (59.4)		

Independent Visual/Graphic Presentation of Structured Content Such as Reading Assignments

Group	Yes	No	Chi-square Value	p-Value
Campus	83 (71.6)	33 (28.4)		
			.24	.62
Online	47 (68.1)	22 (31.9)		

Table 4.21 (continued)

Combining Structured Content Delivery with Learner to Learner Interaction

Group	Yes	No	Chi-square Value	p-Value
Campus	67 (57.8)	49 (42.2)		
			.13	.72
Online	38 (55.1)	31 (44.9)		

Use of Group Projects

Group	Yes	No	Chi-square Value	p-Value
Campus	72 (62.1)	44 (37.9)		
			7.01	.01
Online	29 (42.0)	40 (58.0)		

Use of Outside Resource Persons Such as Guest Speakers or Panel of Experts

Group	Yes	No	Chi-square Value	p-Value
Campus	39 (33.6)	77 (66.4)		
			1.15	.28
Online	18 (26.1)	51 (73.9)		

Use of Individual Projects

Group	Yes	No	Chi-square Value	p-Value
Campus	92 (79.3)	24 (20.7)		
			.39	.53
Online	52 (75.4)	17 (24.6)		

Use of Group Problem-Solving activities Such as Brainstorming

Group	Yes	No	Chi-square Value	p-Value
Campus	58 (50.0)	58 (50.0)		
			7.84	.01
Online	20 (29.0)	49 (71.0)		

Table 4.21 (continued)

Use of Simulated Laboratories

Group	Yes	No	Chi-square Value	p-Value
Campus	46 (39.7)	70 (60.3)		
			5.27	.02
Online	16 (23.2)	53 (76.8)		

Use of Active Visual Presentations Such as Videotapes

Group	Yes	No	Chi-square Value	p-Value
Campus	56 (48.3)	60 (51.7)		
			8.88	.00
Online	18 (26.1)	51 (73.9)		

Use of Structured Learning Assignments Such as Quizzes/Tests

Group	Yes	No	Chi-square Value	p-Value
Campus	109 (94.0)	7 (6.0)		
			4.84	.03
Online	58 (84.1)	11 (15.9)		

Use of Class Discussion

Group	Yes	No	Chi-square Value	p-Value
Campus	103 (88.8)	13 (11.2)		
			9.33	.00
Online	49 (71.0)	20 (29.0)		

Use of Research, Concept, or other ‘Scholarly’ Papers

Group	Yes	No	Chi-square Value	p-Value
Campus	42 (36.2)	74 (63.8)		
			.62	.43
Online	29 (42.0)	40 (58.0)		

Table 4.21 (continued)

Use of Small Group Discussion

Group	Yes	No	Chi-square Value	p-Value
Campus	58 (50.0)	58 (50.0)		
			4.06	.04
Online	24 (34.8)	45 (65.2)		

Use of Case Studies

Group	Yes	No	Chi-square Value	p-Value
Campus	63 (54.3)	53 (45.7)		
			2.03	.15
Online	30 (43.5)	39 (56.5)		

Use of Worksheets/Surveys

Group	Yes	No	Chi-square Value	p-Value
Campus	44 (37.9)	72 (62.1)		
			.40	.53
Online	23 (33.3)	46 (66.7)		

Use of Role Playing/Game Simulations

Group	Yes	No	Chi-square Value	p-Value
Campus	30 (25.9)	86 (74.1)		
			3.30	.07
Online	10 (14.5)	59 (85.5)		

Use of Demonstrations

Group	Yes	No	Chi-square Value	p-Value
Campus	65 (56.0)	51 (44.0)		
			14.18	.00
Online	19 (27.5)	50 (72.5)		

Table 4.21 (continued)

Use of Tours/Field Trips

Group	Yes	No	Chi-square Value	p-Value
Campus	32 (27.6)	84 (72.4)		
			5.30	.02
Online	9 (13.0)	60 (87.0)		

Use of Individual Mentoring/Tutoring with Students

Group	Yes	No	Chi-square Value	p-Value
Campus	61 (52.6)	55 (47.4)		
			3.14	.08
Online	27 (39.1)	42 (60.9)		

Note: The values in parentheses are the percentages of cases in the grouping.

The summary data in Table 4.21 indicates that for specific types of instructional behaviors used in classes across campus and online classes, the null hypothesis was rejected due to the significant p-value differences. The study showed that lecture, lecture with visual aids, group projects, problem-solving such as brainstorming, simulated labs, visual presentations, quizzes/tests, class discussion, small group discussion, demonstrations, and field trips had significantly different means for campus and online instructors. Campus instructors were more likely to report using these behaviors than online instructors. There were no significant differences between campus and online instructors for the other instructional behaviors.

Additional Findings

Information was collected as to what classroom instructional behaviors were used by North Carolina community college business instructors when teaching an

online course as well as what classroom instructional behaviors were not used by North Carolina community college business instructors when teaching an online course. The additional data were derived from the 69 online respondents to the survey.

The summary data in Table 4.22 presents the frequency distribution and percent of total response of instructional behaviors used when teaching an online course.

Table 4.22: Frequency Distribution: Behaviors Used When Teaching an Online Course

	Frequency	Percent of Total Response
Behavior 1: Select instructional methods that enhance the delivery of specific course content.		
Occasionally Use	14	20.3
Frequently Use	51	73.9
Behavior 2: Demonstrate subject matter expertise.		
Occasionally Use	10	14.5
Frequently Use	55	79.7
Behavior 3: Organize instructional content in a way that enhances instructional delivery.		
Occasionally Use	8	11.6
Frequently Use	60	87.0
Behavior 4: Use frames of reference familiar to the learners.		
Occasionally Use	23	33.3
Frequently Use	44	63.8

Table 4.22 (continued)

Behavior 5: Provide opportunities for learner success.

Occasionally Use	7	10.1
Frequently Use	59	85.5

Behavior 6: Provide prompt feedback.

Occasionally Use	13	18.8
Frequently Use	56	81.2

Behavior 7: Use positive reinforcement during instruction.

Occasionally Use	19	27.5
Frequently Use	47	68.1

Behavior 8: Self-evaluate effectiveness of instructional delivery.

Occasionally Use	29	42.0
Frequently Use	37	53.6

Behavior 9: Use frequent examples during instruction time.

Occasionally Use	21	30.4
Frequently Use	42	60.9

Behavior 10: Explain course logistics to learners.

Occasionally Use	15	21.7
Frequently Use	52	75.4

Behavior 11: Implement a variety of methods to engage learners and encourage participation.

Occasionally Use	22	31.9
Frequently Use	45	65.2

Behavior 12: Use a variety of instructional delivery techniques to accommodate individual differences in learning styles.

Occasionally Use	34	49.3
Frequently Use	28	40.6

Table 4.22 (continued)

Behavior 13: Sequence content delivery in a clear and concise manner.

Occasionally Use	6	8.7
Frequently Use	61	88.4

Behavior 14: Maintain learner attention.

Occasionally Use	22	31.9
Frequently Use	40	58.0

Behavior 15: Maintain learner curiosity.

Occasionally Use	24	34.8
Frequently Use	37	53.6

Behavior 16: Use active listening techniques.

Occasionally Use	17	24.6
Frequently Use	23	33.3

Behavior 17: Apply course content to other fields of study.

Occasionally Use	29	42.0
Frequently Use	28	40.6

Behavior 18: Demonstrate acceptable personal conduct, including serving as a model for professional behavior.

Occasionally Use	13	18.8
Frequently Use	49	71.0

Behavior 19: Involve learners in establishing an appropriate level of learner comfort.

Occasionally Use	29	42.0
Frequently Use	34	49.3

Behavior 20: Ensure written communication is free of bias.

Occasionally Use	8	11.6
Frequently Use	55	79.7

Table 4.22 (continued)

Behavior 21: Show enthusiasm for the student.

Occasionally Use	9	13.0
Frequently Use	58	84.1

Behavior 22: Show enthusiasm for the subject taught.

Occasionally Use	7	10.1
Frequently Use	60	87.0

Behavior 23: Facilitate interaction between students.

Occasionally Use	26	37.7
Frequently Use	37	53.6

Behavior 24: Manage time available for instructional delivery.

Occasionally Use	16	23.2
Frequently Use	50	72.5

Behavior 25: Manage group interactions.

Occasionally Use	32	46.4
Frequently Use	19	27.5

Behavior 26: resolve learner performance problems.

Occasionally Use	27	39.1
Frequently Use	39	56.5

Behavior 27: Implement the most appropriate way to manage learner participation based on course delivery technology.

Occasionally Use	23	33.3
Frequently Use	41	59.4

Behavior 28: Produce materials for the course that can be distributed to participants.

Occasionally Use	13	18.8
Frequently Use	48	69.6

Table 4.22 (continued)

Behavior 29: Provide learners with post-course support methods of communication needed for questions or individual guidance.

Occasionally Use	25	36.2
Frequently Use	24	34.8

Behavior 30: Maintain a clear, well-organized class format.

Occasionally Use	11	15.9
Frequently Use	56	81.2

Behavior 31: Available for students when assistance is needed.

Occasionally Use	9	13.0
Frequently Use	58	84.1

Behavior 32: Impartiality in evaluating student's work.

Occasionally Use	3	4.3
Frequently Use	65	94.2

Behavior 33: Develop contingency plans for handling technical difficulties.

Occasionally Use	19	27.5
Frequently Use	42	60.9

Behavior 34: Learn to operate technology being used.

Occasionally Use	7	10.1
Frequently Use	60	87.0

Behavior 35: Have backup technical support available.

Occasionally Use	21	30.4
Frequently Use	36	52.2

Behavior 36: Stay abreast of technology.

Occasionally Use	10	14.5
Frequently Use	58	84.1

Table 4.22 (continued)

Behavior 37: Have a staffed “help desk” to assist in the students’ success.

Occasionally Use	18	26.1
Frequently Use	23	33.3

Behavior 38: College Webmaster available to assist with course development.

Occasionally Use	18	26.1
Frequently Use	22	31.9

The data in Table 4.22 indicates the frequency distribution and the percent of total response for all 38 behaviors used by instructors teaching an online course. Of the 38 behaviors, 30 of the behaviors had a percent of total response greater than 50% for frequently use. The other 8 behaviors had a percent of total response less than 50%.

The summary data in Table 4.23 presents the frequency distribution and percent of total response of instructional behaviors not used when teaching an online course as reported by the 69 online instructors.

Table 4.23: Frequency Distribution: Behaviors Not Used When Teaching an Online Course

	Frequency	Percent of Total Response
Behavior 1: Select instructional methods that enhance the delivery of specific course content.		
Do Not Use	4	5.8
Behavior 2: Demonstrate subject matter expertise.		
Do Not Use	4	5.8
Behavior 3: Organize instructional content in a way that enhances instructional delivery.		
Do Not Use	1	1.4
Behavior 4: Use frames of reference familiar to the learners.		
Do Not Use	2	2.9
Behavior 5: Provide opportunities for learner success.		
Do Not Use	3	4.3
Behavior 6: Provide prompt feedback.		
Do Not Use	0	0.0
Behavior 7: Use positive reinforcement during instruction.		
Do Not Use	3	4.3
Behavior 8: Self-evaluate effectiveness of instructional delivery.		
Do Not Use	3	4.3
Behavior 9: Use frequent examples during instruction time.		
Do Not Use	6	8.7
Behavior 10: Explain course logistics to learners.		
Do Not Use	2	2.9
Behavior 11: Implement a variety of methods to engage learners and encourage participation.		
Do Not Use	2	2.9

Table 4.23 (continued)

Behavior 12: Use a variety of instructional delivery techniques to accommodate individual differences in learning styles.

Do Not Use	7	10.1

Behavior 13: Sequence content delivery in a clear and concise manner.

Do Not Use	2	2.9

Behavior 14: Maintain learner attention.

Do Not Use	7	10.1

Behavior 15: Maintain learner curiosity.

Do Not Use	8	11.6

Behavior 16: Use active listening techniques.

Do Not Use	29	42.0

Behavior 17: Apply course content to other fields of study.

Do Not Use	12	17.4

Behavior 18: Demonstrate acceptable personal conduct, including serving as a model for professional behavior.

Do Not Use	6	8.7

Behavior 19: Involve learners in establishing an appropriate level of learner comfort.

Do Not Use	6	8.7

Behavior 20: Ensure written communication is free of bias.

Do Not Use	6	8.7

Behavior 21: Show enthusiasm for the student.

Do Not Use	2	2.9

Behavior 22: Show enthusiasm for the subject taught.

Do Not Use	2	2.9

Behavior 23: Facilitate interaction between students.

Do Not Use	6	8.7

Table 4.23 (continued)

Behavior 24: Manage time available for instructional delivery.

Do Not Use	3	4.3

Behavior 25: Manage group interactions.

Do Not Use	18	26.1

Behavior 26: resolve learner performance problems.

Do Not Use	3	4.3

Behavior 27: Implement the most appropriate way to manage learner participation based on course delivery technology.

Do Not Use	5	7.2

Behavior 28: Produce materials for the course that can be distributed to participants.

Do Not Use	8	11.6

Behavior 29: Provide learners with post-course support methods of communication needed for questions or individual guidance.

Do Not Use	19	27.5

Behavior 30: Maintain a clear, well-organized class format.

Do Not Use	2	2.9

Behavior 31: Available for students when assistance is needed.

Do Not Use	2	2.9

Behavior 32: Impartiality in evaluating student's work.

Do Not Use	1	1.4

Behavior 33: Develop contingency plans for handling technical difficulties.

Do Not Use	8	11.6

Behavior 34: Learn to operate technology being used.

Do Not Use	2	2.9

Behavior 35: Have backup technical support available.

Do Not Use	12	17.4

Table 4.23 (continued)

Behavior 36: Stay abreast of technology.			
	Do Not Use	1	1.4
Behavior 37: Have a staffed “help desk” to assist in the students’ success.			
	Do Not Use	28	40.6
Behavior 38: College Webmaster available to assist with course development.			
	Do Not Use	29	42.0

The summary data in Table 4.23 indicates out of the 38 behaviors, 12 behaviors not used when teaching an online class had a percent of total response greater than 10%. Three of the 12 behaviors had a percent of total response greater than 40%: Not using active listening techniques, not having a staffed “help desk” to assist in the students’ success, and a college Webmaster was not available to assist with course development. The other 26 behaviors had a percent of total response less than 10%.

Summary of Findings

In Research Question One, the null hypothesis which stated that there was no significant difference in the comparison of instructional behaviors used by North Carolina community college business instructors who teach campus courses and the comparison of instructional behaviors used by North Carolina community college business instructors who teach online courses, was rejected since significant differences were found between campus instructors and online instructors for the Pedagogical and Managerial behaviors.

Research Question Two explored differences in instructional behaviors used by North Carolina community college campus business instructors and North Carolina community college online business instructors based on age, years of teaching, gender, educational level, training, and online learning experience, as well as differences in use of technology, and the use of specific types of instructional behaviors. Hypothesis Two through Hypothesis Nine deal with each of the above criteria.

Hypothesis Two stated that there was no significant difference in the comparison of instructional behaviors used by North Carolina community college campus business instructors and the comparison of instructional behaviors used by North Carolina community college online business instructors across all age groups. The data indicated that the second null hypothesis was rejected since significant differences were found between campus instructors and online instructors for the Pedagogical, Social, and Managerial behaviors for instructors in the 40-49 age group. No significant differences were found in the mean behaviors for instructors in the other age groups.

Hypothesis Three stated that there was no significant difference in the comparison of instructional behaviors used by North Carolina community college campus business instructors and the comparison of instructional behaviors used by North Carolina community college online business instructors across all years of teaching. Hypothesis Three was rejected since significant differences were found between campus instructors and online instructors for the Pedagogical, Managerial, and Technical behaviors, particularly for instructors with 0-10 years of teaching with

the Pedagogical and Managerial behaviors, with the Pedagogical behaviors for those instructors with 11-20 years of teaching, and the Technical behaviors for instructors with 21 or More years of teaching.

Hypothesis Four stated that there was no significant difference in the comparison of instructional behaviors used by North Carolina community college campus business instructors and the comparison of instructional behaviors used by North Carolina community college online business instructors across both genders. Hypothesis Four was rejected since significant differences were found between campus instructors and online instructors for the Pedagogical, Social, and Managerial behaviors for male instructors and Pedagogical and Managerial behaviors for female instructors.

Hypothesis Five stated that there was no significant difference in the comparison of instructional behaviors used by North Carolina community college campus business instructors and the comparison of instructional behaviors used by North Carolina community college online business instructors across all educational levels. Hypothesis Five was rejected since significant differences were found between campus instructors and online instructors for the Pedagogical, Social, and Managerial behaviors, particularly the Pedagogical and Managerial behaviors for those instructors with a Master's Degree and the Social behaviors for those instructors with an Ed.S/Doctorate Degree.

Hypothesis Six stated that there was no significant difference in the comparison of instructional behaviors used by North Carolina community college campus business instructors who have had staff development training in the area of

online education and the comparison of instructional behaviors used by North Carolina community college online business who have had staff development training in the area of online education. The data indicated that the sixth null hypothesis was rejected since significant differences were found between campus instructors and online instructors for the Pedagogical and Managerial behaviors for both those instructors who had staff development training in the area of online education and also for those instructors who have not had staff development training in the area of online education. Since both those instructors that had staff development training and those not having staff development training were found to be significantly different for both campus and online instructors, the differences could be found in the actual tasks and roles of the instructor. (See Table 2.1) More campus instructors, whether they had staff development training or not, reported significantly higher use of clear objectives; maintaining maximum flexibility; encouraging participation; maintaining a non-authoritarian style; being objective; not relying on offline materials; being informal, responsive, and patient; and handling tangents appropriately.

Hypothesis Seven stated that there was no significant difference in the comparison of instructional behaviors used by North Carolina community college campus business instructors who had taken an online education course and the comparison of instructional behaviors used by North Carolina community college online business who had taken an online education course. The seventh null hypothesis was rejected since significant differences were found between campus instructors and online instructors for the Pedagogical, Social, and Managerial

behaviors for both those instructors who had taken an online education course and also for those instructors who have not taken an online education course. Since both those instructors that had taken an online education course and those not having taken an online education course were found to be significantly different for both campus and online instructors, the differences could be found in the actual tasks and roles of the instructor. (See Table 2.1) More campus instructors, whether they had taken an online education course or not, reported significantly higher use of clear objectives; maintaining maximum flexibility; encouraging participation; maintaining a non-authoritarian style; being objective; not relying on offline materials; being informal, responsive, and patient; and handling tangents appropriately; watching the use of humor or sarcasm; using introductions; facilitating interactivity; not ignoring bad behavior; and being aware of “lurkers”.

Hypothesis Eight stated there is no significant difference between the frequency of specific types of technology used in a campus class and the frequency of specific types of technology used in an online class. The data indicated that with the frequency of specific types of technology used in a campus class and in an online class, the null hypothesis was rejected due to the significant finding in the use of the Internet. This technology was found to have a significantly higher percentage of use in online classes than in campus classes. There were no significant differences between campus and online classes for the other seven technologies.

Hypothesis Nine stated there is no significant difference in the frequency of specific types of instructional behaviors used by North Carolina community college campus business instructors and the frequency of specific types of instructional

behaviors used by North Carolina community college online business instructors. The data indicated that for specific types of instructional behaviors used in classes across campus and online classes, the null hypothesis was rejected due to the significant p-value differences. The study showed that lecture, lecture with visual aids, group projects, problem-solving such as brainstorming, simulated labs, visual presentations, quizzes/tests, class discussions, small group discussions, demonstrations, and field trips had significantly different means for campus and online instructors. Campus instructors were more likely to report using these behaviors than online instructors. There were no significant differences between campus and online instructors for the other instructional behaviors.

Additional information was found following the completion of the study as to what classroom instructional behaviors were used by North Carolina community college business instructors when teaching an online course as well as what classroom instructional behaviors were not used by North Carolina community college business instructors when teaching an online course. The additional data was derived from the 69 online instructors.

CHAPTER FIVE
CONCLUSIONS AND RECOMMENDATIONS

Introduction

Today's academic institutions are in transition. Larger numbers of nontraditional students are returning to school to seek new skills or change to a totally different work environment. In recent years the interest in online courses through the use of the Internet for the delivery of higher education has increased considerably.

It seems reasonable, given its traditional role in the preparation of professionals, that the universities and community colleges would take the leadership role in online education. As technology becomes more prevalent, faculty and students alike are struggling with the changes it brings to the educational environment. Virtual universities allow students to apply for admission, register for courses, purchase books, and attend classes without ever visiting a physical place called a campus (Palloff & Pratt, 1999). Education programs at these levels have been developed that involve students interacting with a piece of software on a computer or with very little interaction with other students. Other programs are more interactive, allowing students to post comments to a discussion area on a website. Regardless of which instructional method or behavior is used, a transition should be made from the typical campus classroom to the online classroom. Institutions entering the online arena must be prepared to tackle new issues and concerns and to develop new approaches and new behaviors in order to create an empowering learning process.

Purposes and/or Objectives

The purpose/objectives of this study were to identify the following:

1. To identify the instructional behaviors being used by North Carolina community college campus business instructors when teaching a campus course.
2. To identify the instructional behaviors being used by North Carolina community college campus business instructors when teaching an online course.
3. To determine if there were any significant differences between the comparison of instructional behaviors that are used by a campus business instructor and the comparison of instructional behaviors that are used by an online business instructor.

Methods

A review of the literature found that there is little documented information on the instructional behaviors that are being used in a campus classroom and in an online classroom within the community college environment. Because of the lack of research on the actual instructional behaviors that are currently being utilized in education today, particularly in the area of online community college business education, this study may be seen as a starting point in helping administrators understand the type of professional development their instructors require when changing to an online classroom environment. With the lack of a previous study, a

survey instrument was developed for the first time with the assistance of a Panel of Professionals.

This descriptive study used a survey instrument to determine the instructional behaviors used by campus business instructors and online business instructors in the North Carolina Community College System. Forty instructional behaviors (Appendix C) were identified through a review of the literature and with the assistance of the Panel. The eight members of the Panel of Professionals reviewed, modified, and rated each item to determine which items would be included in the draft survey instrument, along with testing for validity and reliability. This process led to the elimination of five instructional behaviors from the original list and the addition of three new instructional behaviors.

The draft survey instrument (Appendix F), therefore, contained thirty-eight instructional behaviors and eight demographic questions. A three-point Likert-type scale was used with options of “Do Not Use”, “Occasionally Use” and “Frequently Use”. A pilot study was then conducted to establish the adequacy of the research procedures and the survey instrument and to provide an opportunity to check for reliability. As a result of the pilot study, no items were eliminated or changed from the draft instrument. The survey instrument used in this study contains the final 46 items and can be found in Appendix F.

A decision was made by the dissertation committee to survey the top five colleges in student enrollment among three groups: small-sized community colleges, medium-sized community colleges, and large-sized community colleges. Listings

that show how these colleges were selected can be found in Table 4.1 along with the actual colleges selected in Table 4.2.

The final survey instrument was mailed to 329 North Carolina community college business instructors in 15 different community colleges, based on the total enrollment for each school during the school year 2000-2001. A total of 185 survey instruments were returned, with return rates of 59% from large community colleges, 51% from medium community colleges, and 58% from small community colleges, representing a total return rate of 56%. Following discussions with the dissertation co-chairs, it was determined there was sufficient response from each category of community colleges.

Based on a review of the literature, particularly the literature of Berge (1995), the 38 behaviors were classified into four major categories consisting of pedagogical, social, managerial, and technical. Analysis of Variance (ANOVA) was used to compare the means of various groups for Hypotheses One through Seven related to Research Questions One and Two. Analysis for Research Question One and Hypothesis One compared the instructional behaviors of a campus business instructor and an online business instructor in the North Carolina Community College System.

H1: There are no significant differences in the comparison of instructional behaviors used by North Carolina community college business instructors who teach a campus course and the comparison of instructional behaviors used by North Carolina community college business instructors who teach an online course.

Research Question Two asked if there are any differences in instructional behaviors used by North Carolina community college campus business instructors and North Carolina community college online business instructors based on age, years of teaching, gender, educational level, training, and online learning experience, as well as differences in use of technology.

Hypothesis Two through Hypothesis Seven below were related to the second research question.

H2: There is no significant difference in the comparison of instructional behaviors used by North Carolina community college campus business instructors and the comparison of instructional behaviors used by North Carolina community college online business instructors across all age groups.

H3: There is no significant difference in the comparison of instructional behaviors used by North Carolina community college campus business instructors and the comparison of instructional behaviors used by North Carolina community college online business instructors across all years of teaching.

H4: There is no significant difference in the comparison of instructional behaviors used by North Carolina community college campus business instructors and the comparison of instructional behaviors used by North Carolina community college online business instructors across both genders.

H5: There is no significant difference in the comparison of instructional behaviors used by North Carolina community college campus business instructors and the comparison of instructional behaviors used by North Carolina community college online business instructors across all educational levels.

H6: There is no significant difference in the comparison of instructional behaviors used by North Carolina community college campus and online business instructors who have had staff development training in the area of online education and the comparison of instructional behaviors used by North Carolina community college campus and online business instructors who have not had staff development training in the area of online education.

H7: There is no significant difference in the comparison of instructional behaviors used by North Carolina community college campus and online business instructors who have taken an online course and the comparison of instructional behaviors used by North Carolina community college campus and online business instructors who have not taken an online course.

Upon the recommendation of a statistician, Dr. Robbie Pittman of Western Carolina University, Chi-square was used with each of the next two items that became Hypothesis Eight and Hypothesis Nine within Research Question Two. This technique was used instead of grouping them into the four major categories of Pedagogical, Social, Managerial, and Technical.

H8: There is no significant difference between the frequency of specific types of technology used in a campus class and the frequency of specific types of technology used in an online class.

H9: There is no significant difference in the frequency of specific types of instructional behaviors used by North Carolina community college campus business instructors and the frequency of specific types of instructional behaviors used by North Carolina community college online business instructors.

For each of these, the level of significance was set at .05 for the 38 instructional behaviors and eight demographic questions.

After the completion of the study, additional findings were gathered from the same data found during the study. The additional findings deal with what classroom instructional behaviors were used by North Carolina community college business instructors when teaching an online course as well as what classroom instructional behaviors were not being used by North Carolina community college business instructors when teaching an online course. The additional findings were derived from the 69 online respondents to the survey. This information is located in Chapter Four in the “Additional Findings” section.

Conclusions

Conclusions and discussion of relevant findings, corresponding to the study’s research questions and hypotheses, follow.

Research Question One: How do the instructional behaviors used by North Carolina community college campus business instructors compare to the instructional behaviors used by North Carolina community college online business instructors?

Relevant Findings: The means for campus instructors on Pedagogical and Managerial behaviors were found to be significantly different from the online instructors. In each case (Pedagogical, Social, Managerial, and Technical), the campus mean was higher than the online mean, although it was found to be statistically significant only for Pedagogical and Managerial. Therefore, Hypothesis One was rejected since significant differences were found between campus instructors and online instructors for the Pedagogical and Managerial behaviors.

Conclusion for Research Question One: For this study, campus instructors used certain instructional behaviors more often than online instructors. The classroom environment allows for verbal interaction, and there are visual clues that the instructor can see if learning has occurred, such as body language and facial expressions. The instructor can be proactive by querying students to verify that learning has occurred. The online environment is different. There is an absence of visual and verbal cues from the student, more self-direction and organization is required of the student, the student may have less interaction than in a classroom environment, and the instructor is more reliant upon the student's feedback to convey their lack of understanding.

Comparison to the Literature: According to the literature, there are dozens of models and approaches to teaching and learning. Depending upon the specific

context (conditions and environment) of learning and teaching, various methods and strategies are selected by the instructor to teach or facilitate learners to certain outcomes (Berge, 1998b). Some of the methods used are more appropriate to be used in the classroom as opposed to the online environment. The challenges faced by the online instructor are imposing. Few with online teaching experience would downplay the importance of adapting classroom delivered courses to the unique instructional environment confronted in online education. In many cases, the more comfortable the instructor is in teaching in a classroom setting, the more difficult it is to face the reality that significant rethinking and adaptation may be required for online course delivery. The shift from the role of content provider to content facilitator is a problem for many instructors. Online instructors taking the facilitator approach need a proficiency that required undisputed mastery of the subject being taught as well as an ability to draw on the varied backgrounds and hidden talents of the students (Willis, 1994).

To use online strategies, faculty may need to alter instructional styles used within the “traditional classroom” and develop new behaviors to reach the distant learner (Rockwell et al., 1999a). Dillon and Walsh (1992) and Clark (1993) observed that faculty using online education technology faced a variety of challenges when adapting their instructional styles to a framework compatible with the distance learning environment.

Based on the researcher’s observations, more and more instructors who currently teach campus classes are slowly deciding to teach an online course.

There are a few that are ready to teach online courses and seek to teach one or two more each semester, but some instructors want to teach just one course online along with their regular number of campus courses. Some don't want to teach too many online courses due to the amount of work that is required to get them working properly while others feel that there is no support from the administration when it comes to working on an online class. Some instructors feel that when they teach an online class all they are doing is taking what they know in a campus class and putting it into written form for the online students. These instructors seem to question if teaching in the online environment is anything like teaching in the classroom. Ultimately, according to Sherry (1996), it is the instructor's responsibility to deliver information to the online group in such a way that successful online education systems must involve interactivity between instructors, students, and the learning environment as well as active learning in the classroom.

Research Question Two: Are there any differences in instructional behaviors used by North Carolina community college campus business instructors and North Carolina community college online business instructors based on age, years of teaching, gender, educational level, training, and online learning experience, as well as differences in use of technology?

Relevant Findings: For all of the hypotheses that dealt with Research Question Two, significant differences were found based on the different variables: age, years of teaching, gender, educational level, staff development training, online learning experience, as well as specific types of technology used and specific types

of instructional behaviors used. It was found in all cases that the campus mean was higher than the online mean.

Conclusion for Research Question Two: When testing for differences by age, years of teaching, gender, educational level, training, and online learning experience, as well as specific types of technology used and specific types of instructional behaviors used, campus instructors in this study used certain instructional behaviors more often than online instructors.

Campus instructors in the 40-49 age group were found to use the Pedagogical, Social, and Managerial behaviors more than the online instructors of the same age group. Campus instructors with 0-10 years of teaching used Pedagogical and Managerial behaviors more than online instructors while Pedagogical behaviors were used more by campus instructors with 11-20 years of teaching and Technical behaviors were used more by campus instructors with 21 or more years of teaching. Campus male instructors used Pedagogical, Social, and Managerial behaviors more often than online male instructors while campus female instructors used Pedagogical and Managerial behaviors more often than online female instructors. Even though there was no difference found for instructors with some college/Associate's Degree/Bachelor's Degree, campus instructors with Master's degrees used Pedagogical and Managerial behaviors more while campus instructors with an Ed.S/Doctorate degree used Social behaviors more than online instructors with the same levels of education.

Staff development training did not raise the level of use for certain behaviors by online instructors to that of campus instructors. The same was found for

instructors that had taken an online education course and those who had not taken an online education course. The use of the Internet was found to have a significantly higher percentage of use in online classes than in campus classes. Lecture, lecture with visual aids, group projects, problem-solving such as brainstorming, simulated labs, visual presentations, quizzes/tests, class discussions, small group discussions, demonstrations, and field trips were reported to be used more by campus instructors.

Comparison to the Literature: No research data was found concerning the use of instructional behaviors by community college instructors across all age groups, across all years of teaching, gender, or across all educational levels. However, according to Willis and Touchstone (1996), to be successful in online education, faculty should have training before their initial teaching experience. The challenge is to prepare faculty for their online experience. The critical role of the instructor in the online setting makes it imperative that instructors get adequate training not only in the technical aspects of the system, but also in the educational applications of the technology (Willis, 1994). Training is a critical component of any online program and should not be overlooked. Schieman, Taire & McLaren (1992) state that most instructors come to online education with classroom teaching experience and find that the theoretical-based assumptions that worked successfully in face-to-face instruction do not translate well into technologically mediated instruction. As a result, faculty retraining is essential not only to assist with the use of the technology, but to also help with the revision of the instructional design.

In a study done by Rockwell, Schauer, Fritz, & Marx (1999b), faculty also felt it was very important to obtain further education about, assistance with, or support for developing interaction, developing instructional materials, learning about newer web-based delivery strategies as well as using a mix of different technologies, and marketing a course. Faculty felt it was somewhat important to have help with developing the curriculum content, its design, and evaluating the delivery process as well as the student outcomes, have student or graduate assistant help, learn how to better use and integrate the “older technologies”, and have peer support. Smith, Tyler, & Benscot (2000) suggested that the first step in adapting to an online environment was to identify any concerns about developing and delivering training via distance, schedule time to practice with the technology, talk with other online instructors to learn about their experiences, attend an online program as a student, or participate in a workshop that trains instructors to use online equipment.

Berge & Schrum (1998) say that online education requires different resources than classroom teaching and is often a greater initial investment. Since courses taught at a distance should be designed and produced to fit the available technology, they may require extensive written lesson notes, exercises and practice by students, or scripting of computer code. High-quality online learning demands more planning, as well as the development of materials and delivery methods beyond the skills of most faculty. Technical support is critical to the success of teaching and learning at a distance. Ongoing support through workshops, online discussion groups, and strategic feedback should be available for online faculty.

In 1988 the US Congress Office of Technology Assessment proposed the creation of in-service programs targeted at providing assistance for faculty to modify conventional instructional behaviors and to acquire the behaviors needed to become online educators. While an institution's current expertise and experience base with traditionally-delivered courses and programs certainly provide a strong foundation, faculty need to possess or acquire additional skill sets in order to achieve the same degree of success in distance learning environments (Levenburg & Major, 1998).

Based on the researcher's observations, it may be that older, more experienced instructors have established themselves in the knowledge of their subject matter, and having evolved in their ability as an educational facilitator in the classroom, may find it more difficult to transfer those skills to online instruction. Since many of the instructional behaviors identified may be easier to learn in the campus classroom setting, less experienced instructors may learn to use a wider range of behaviors more easily in the face-to-face environment.

Having a higher degree was associated with more use of certain instructional behaviors by campus instructors than online instructors. It may be that participation in advanced degree programs enhanced the level of more traditional instructional behaviors overall but were lacking in attention to effective behaviors for use in online classrooms.

Having had staff development training or not having had staff development training was found to not make a difference from other findings when comparing the use of instructional behaviors between campus and online instructors. Campus instructors tended to use both Pedagogical and Managerial behaviors whether they

had training or not. Staff development training did not facilitate or enhance these behaviors in online instructors to the same level as campus. Since the content of training was not examined in this study, it is unknown if it was appropriate or not.

Having taken or not taken an online education course was found to not make a difference compared to other findings in the use of instructional behaviors. Campus instructors used the Pedagogical, Social, and Managerial behaviors more often than online instructors whether they had taken an online course or not. Having taken an online education course evidently did not enhance these behaviors for some online instructors. It may be that these behaviors were acquired from the instructor's knowledge of their subject matter and their own teaching experience.

The type of technological equipment that is available for campus and online business instructors is, of course, dependent on what their community college possesses. The findings of this study may be related to that availability but this was not measured. Depending on the amount of funds available for technology within the college, depends on the type of equipment that instructors will be able to use in their campus and online classes.

The specific types of instructional behaviors that were used more by campus business instructors by their nature may be more easily facilitated within a campus classroom environment. Lecture and lecture with visual aids require that an instructor be present to conduct the lecture and present the visual aids. The instructor is also able to "read the audience" – to interpret questions, and read facial expressions and body language to verify that learning is occurring. Although group projects could be conducted in an online class, a group project is easier to facilitate

in the classroom from an instructor's perspective because the instructor is present and able to better facilitate the group, to observe group behavior and progress, to provide guidance when appropriate, and to be proactive. Online group projects might rely less on the instructor as a facilitator.

The nature of brainstorming requires immediate feedback, discussions, 'group think' spontaneous reactions, all of which are more easily captured 'live' within the classroom. An online class rarely provides such spontaneous activity on the part of the students and instructor, since the online class more likely allows the student a less structured time access. The online students and instructor may never interact simultaneously due to the restrictions or design of the online environment.

Simulated labs and demonstrations require the student to master the skill of doing. These two types of instructional behaviors are more easily facilitated in a classroom environment due to the student needing to become physically active after a period of listening. Unless the student has all of the pieces that make up the lab or demonstration at home or simulated on the computer, they cannot readily achieve the skill of doing.

Videotapes can be utilized in any classroom for a group of students when using the proper equipment; however, for an online student, using a videotape may not be feasible. The student may not have the appropriate equipment or the level of expertise in the use of the tape. Quizzes/tests are readily given in a classroom environment with the instructor proctoring the quiz/test. A specific time limit is given for the test and students understand the rules. In the online environment, the quiz/test may have to be given for a longer period of time due to problems with

technology. The technology may be unavailable at the time the test is given so arrangements must be made to accommodate those students. With a quiz/test given online, the instructor can only hope that the person taking the quiz/test is the actual student without receiving any help from family or friends.

Class discussions and small group discussions are more easily utilized in a classroom environment due to the fact that these methods may be instructor-controlled and are an interactive process of sharing information and experiences. They may be very similar to a lecture in that they require the instructor to be present to conduct the discussion, ask focused questions, and periodically summarize the concepts and principles that were covered. In discussions, students are more active participants and are encouraged to explore a subject by actively offering their knowledge, ideas, opinions, and experiences. Creating this in an online environment may be more difficult for some instructors.

Discussion of the Instrument

At the time the study was conducted, there was no previous research found that dealt with specific instructional behaviors. By redoing the study with the same questions during a more current time period, the researcher may find different outcomes to the actual study. A great deal has changed in the area of online teaching in a short period of time and with the changes in technology, many of the previous findings could change. The researchers own experience in teaching online courses has changed in the fours years of teaching a class online. As we finish each semester, we also learn by our students and how they complete the course.

Problems that come up during the time of the online course can only make an instructor become a better online instructor.

Another concern of the researcher is that the development of the instrument might have changed over time. With the process of the study taking about five years in length, I feel that different parts of the instrument would be different now if given the opportunity to make changes. Even if the same panel could be used, the experience and expertise of the Panel would be different. Technology and knowledge of that technology has changed greatly in a short amount of time. With that fact, different instructional behaviors could be identified.

Recommendations for Practice

1. Instructors need to learn to teach without the visual control provided by direct eye contact in the classroom. Online instructors have few, if any, visual cues. Even the visual cues that do exist are filtered through technological devices such as video monitors. Ultimately it is the faculty who need to be aware of diverse technologies and delivery methods available for online education so they can incorporate them into their teaching and learning strategies.
2. Community college administrators and undergraduate college and university administrators should become familiar with the instructional behaviors and learn how these behaviors may help new instructors when teaching an online course.

3. New instructors should become familiar with the instructional behaviors used by both campus and online instructors.
4. Instructors should be given the opportunity to network with other instructors to discuss what works for them and to see what other instructional behaviors could possibly work.
5. Staff and professional development activities in the area of online teaching should be evaluated and continuously improved.
6. Training should be made available for all instructors in the use of technology.

Recommendations for Further Research

Given the current trend of enrollment in online courses in North Carolina community colleges, the following recommendations for further research are based on the findings and conclusions of this study.

1. Conduct further research to continually update, revise, and add to the list of instructional behaviors affecting the teaching of both campus and online courses in the North Carolina Community College System.
2. Conduct further research with community college instructors in other fields of study.
3. Conduct research to compare the types of technological equipment used in each of the community colleges and how they affect the online instructor.

4. Conduct additional research to further explore staff development training that is used for online instructors in the North Carolina Community College System.

Summary

This chapter contained a summary of the study including the objectives of the study, the procedures and methodology utilized in the study, and a synopsis of the findings of the study. The conclusions and recommendations for further research are also contained in this chapter.

As more and more students require the choice of an online course, community colleges must be on the cutting edge to be able to administer these courses by having their instructors become comfortable in the online environment. The challenges faced by the online instructor are imposing. Few with online teaching experience would downplay the importance of training. In many cases, the more comfortable the instructor is in teaching an online course, the more the instructor will want to continue to teach in the online environment.

The North Carolina Community College System is striving to make available to its 58 community colleges the best online courses available. With the advent of the Virtual Learning Community, North Carolina's community college system is fast becoming one of the top community college systems in the nation. All community colleges, not only those in North Carolina, need to assess how online courses can be made available for all students, no matter where they live or work. Traditional teaching methodologies will always be available in the classroom, but we must find

ways to interpret what we already know to be successful instructional techniques with new technologies to meet the demands of growing online class enrollments.

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APPENDICES

APPENDIX A

List of Panel of Professionals

Panel of Professionals

- Dr. Olin Wood – Vice President of Instructional Services – Asheville-Buncombe Technical Community College, Asheville, NC.
- Mr. Rusty Holmes – Online Education Coordinator – Asheville-Buncombe Technical Community College, Asheville, NC.
- Dr. Earl Medlin – Dean for Instruction – Blue Ridge Community College, Flat Rock, NC.
- Dr. Linda Phillips – Vice President of Academic Affairs – Catawba Valley Community College, Hickory, NC.
- Dr. Linda Lutz – Educational Support Services – Catawba Valley Community College, Hickory, NC.
- Ms. Susan Phelps – Dean, Curriculum Development – Forsyth Technical Community College, Winston-Salem, NC.
- Dr. C. Neill McLeod – Senior Vice President – Office of the President & Acting Vice President – Curriculum Education Services – Wake Technical Community College, Raleigh, NC.
- Mr. Neil Hollands – Project Coordinator, Virtual Learning Community – North Carolina Community College System Office, Raleigh, NC.

APPENDIX B

Cover Letter Used to Send Draft Survey Instrument to Panel of Professionals

April 24, 2006

Mr. Neil Hollands, Project Coordinator
NC Community College System
200 W. Jones St.
Raleigh, NC 27603

Dear Neil:

Per my email of November 2001 concerning my study on the comparison of instructional behaviors between campus business instructors and online business instructors in the North Carolina Community College System, I have listed some information for you dealing with this study.

Background of the Study:
The purpose of this study is to identify the following: (a) Instructional behaviors that are being used by North Carolina Community College campus business instructors when teaching a campus course; (b) Instructional behaviors that are being used by North Carolina Community College campus business instructors when teaching an online course; and, (c) Are there any significant differences between the instructional behaviors that are used by a campus business instructor and the instructional behaviors that are used by an online business instructor.

This research is important because it has significance in the assessment of instructional behaviors that these instructors believe have assisted them in participating in teaching an online course. The instructional behaviors that they have used within their online course could become the training that all North Carolina community college business instructors would need to teach an online course. The knowledge of what causes business instructors to continue teaching an online course would allow administrators the opportunity to develop programs that would encourage more business instructors to teach online courses.

Attached you will find two draft survey instruments; one for campus instructors and one for online instructors. The instruments present a number of items that may affect online education in North Carolina. You are asked to review, rate, modify, or add to the items on the survey instruments. The results of your assessment will be used to produce two final survey instruments measuring the instructional behaviors of North Carolina community college campus business instructors and North Carolina community college online business instructors.

Directions:
Please review each of the following forty-six (48) possible items and indicate its importance regarding instructional behaviors in both community college campus courses and online courses. For each item, please circle the number that represents your choice of level of importance: 1 – very important; 2 – important; or, 3 – not important. Items identified as important or very important by more than two-thirds of the professionals reviewing these drafts will be included in the final survey instruments for this study.

If you believe there are items that affect instructional behavior in campus courses and online courses, please list them in the space provided and rate them accordingly. After you have completed the instruments, please return them to me in the self-addressed, stamped envelope by April 26th.

Thank you very much for your time and assistance with this study.

Kathie Doole
Researcher

APPENDIX C

Draft Survey Instruments Used by the Panel of Professionals

North Carolina Community College Business Instructor's Instructional Behaviors For Campus Education

Pedagogical:

1. Select instructional methods that enhance the delivery of specific course content
   1 – very important 2 – important 3 – not important

2. Demonstrate subject matter expertise
   1 – very important 2 – important 3 – not important

3. Organize instructional content in a way that enhances instructional delivery
   1 – very important 2 – important 3 – not important

4. Use frames of reference familiar to the learners
   1 – very important 2 – important 3 – not important

5. Adapt instruction based on learner needs identified during course delivery
   1 – very important 2 – important 3 – not important

6. Provide opportunities for learner success
   1 – very important 2 – important 3 – not important

7. Create an instructional environment that enhances engagement and involvement in the learning process, including integration of learner experiences
   1 – very important 2 – important 3 – not important

8. Provide prompt feedback
   1 – very important 2 – important 3 – not important

9. Plan and use positive reinforcement during instruction
   1 – very important 2 – important 3 – not important

10. Self-evaluate effectiveness of instructional delivery
    1 – very important 2 – important 3 – not important

11. Use frequent examples during instruction time
    1 – very important 2 – important 3 – not important

12. Explain course logistics to learners
    1 – very important 2 – important 3 – not important

13. Implement a variety of methods to engage learners and encourage participation
    1 – very important 2 – important 3 – not important

14. Use a variety of instructional delivery techniques to accommodate individual differences in learning styles
    1 – very important 2 – important 3 – not important

15. Sequence content delivery in a clear and concise manner
    1 – very important 2 – important 3 – not important

16. Provide opportunities for learners to achieve goals using a variety of techniques
    1 – very important 2 – important 3 – not important

17. Maintaining learner attention
    1 – very important 2 – important 3 – not important

18. Maintaining learner curiosity
    1 – very important 2 – important 3 – not important

19. Use active listening techniques
    1 – very important 2 – important 3 – not important

20. Apply course materials to other fields of study
    1 – very important 2 – important 3 – not important

Social:

21. Demonstrate acceptable personal conduct and social practices, including serving as a model for professional behavior
    1 – very important 2 – important 3 – not important

22. Use appropriate verbal and nonverbal communication techniques (e.g., effective use of voice, eye contact, gestures)
    1 – very important 2 – important 3 – not important

23. Involve learners in establishing an appropriate level of learner comfort
    1 – very important 2 – important 3 – not important

24. Ensure verbal communication is free of bias
    1 – very important 2 – important 3 – not important

25. Skill in nonverbal communication (e.g., eye contact, gestures, body movement)
    1 – very important 2 – important 3 – not important

26. Show enthusiasm for the student
    1 – very important 2 – important 3 – not important

27. Show enthusiasm for the subject taught
    1 – very important 2 – important 3 – not important

Managerial:

28. Manage time available for instructional delivery
    1 – very important 2 – important 3 – not important

29. Manage group interactions and participation
    1 – very important 2 – important 3 – not important

30. Resolve learner behavioral problems
    1 – very important 2 – important 3 – not important

31. Implement the most appropriate way to manage learner participation based on course delivery technology

1 – very important 2 – important 3 – not important

32. Produce media of the course that can be distributed to participants
1 – very important 2 – important 3 – not important

33. Provide learners with post-course support methods of communication needed for questions or individual guidance
1 – very important 2 – important 3 – not important

34. Maintain a clear, well-organized class format
1 – very important 2 – important 3 – not important

35. Available for students when assistance is needed
1 – very important 2 – important 3 – not important

36. Impartiality in evaluating student's work
1 – very important 2 – important 3 – not important

Technical:

37. Develop contingency plans for handling audio and/or video technical difficulties
1 – very important 2 – important 3 – not important

38. Learn to operate technology being used
1 – very important 2 – important 3 – not important

39. Have backup technical support available
1 – very important 2 – important 3 – not important

40. Stay abreast of technology
1 – very important 2 – important 3 – not important

Second section of survey for demographics:

1. Which of the following represents your age group?

(1) ❒ 20 – 29 (2) ❒ 30 – 39 (3) ❒ 40 – 49
(4) ❒ 50 – 59 (5) ❒ 60 – 69

1 – very important 2 – important 3 – not important

2. How many years have you been a North Carolina community college instructor?

(1) ❒ 0 – 10 years (2) ❒ 11 – 20 years
(3) ❒ 21 – 30 years (4) ❒ 31 years or more

1 – very important 2 – important 3 – not important

3. What is your gender? (1) ❒ Male (2) ❒ Female

1 – very important 2 – important 3 – not important

4. Which one of the following best describes your highest educational attainment?

(1) ❒ Some college / Associates degree (2) ❒ Bachelor's degree
(3) ❒ Master's degree (4) ❒ Doctorate

1 – very important 2 – important 3 – not important

5. Have you had staff development training in the area of online education?

(1) ❒ Yes (2) ❒ No

1 – very important 2 – important 3 – not important

6. Have you taken an online course? (1) ❒ Yes (2) ❒ No

1 – very important 2 – important 3 – not important

7. Which types of technology are used to deliver the online course(s) at your college? (Check all that apply)

(1) ☐ Two-way interactive video
(2) ☐ Two-way audio, one-way video
(3) ☐ One-way live video
(4) ☐ One-way prerecorded video
(5) ☐ Two-way audio (e.g., audio/phone conferencing)
(6) ☐ One-way audio (e.g., radio, audiotapes, CD)
(7) ☐ Two-way online (computer-based) interactions
(8) ☐ Internet
(9) ☐ Other (*specify*) _____

1 – very important 2 – important 3 – not important

8. What types of instructional behaviors do you use in your class? (Check all that apply)

(1) ☐ Orally providing structured content such as lecture
(2) ☐ Orally and visually providing structured content such as lecture with visual aids
(3) ☐ Independent visual/graphic presentation of structured content such as reading assignments
(4) ☐ Combining structured content delivery with learner to learner interaction
(5) ☐ Group projects
(6) ☐ Use of outside resource persons such as guest speakers or panel of experts
(7) ☐ Individual projects
(8) ☐ Group problem-solving activities such as brainstorming
(9) ☐ Simulated laboratories
(10) ☐ Active visual presentations such as videotapes
(11) ☐ Structured learning assignments such as quizzes/tests
(12) ☐ Class discussion
(13) ☐ Research, concept, or other 'scholarly' papers
(14) ☐ Small group discussion
(15) ☐ Case studies

(16) ☐ Worksheets/Surveys
(17) ☐ Role playing/game simulations
(18) ☐ Demonstrations
(19) ☐ Tours/field trips
(20) ☐ Individual mentoring/tutoring with students
(21) ☐ Other (*specify)* _____

1 – very important 2 – important 3 – not important

Additional instructional behaviors not previously identified:

_____

1 – very important 2 – important 3 – not important

_____

1 – very important 2 – important 3 – not important

_____

1 – very important 2 – important 3 – not important

_____

1 – very important 2 – important 3 – not important

If additional behaviors, suggested by you or other members of the Panel of Professionals, are to be added to the final survey instrument for this study, you may be requested to rate their importance for possible inclusion in the final survey instrument.

If you would like a copy of the final survey instrument, please call or email me at your convenience.

Please provide your email address for possible follow-up questions:

_____

Once again, thank you for your assistance and support.

Kathie Doole
Asheville-Buncombe Technical Community College
340 Victoria Road
Asheville, NC 28801
828-254-1921 ext. 236
kdoole@asheville.cc.nc.us

North Carolina Community College Business Instructor's Instructional Behaviors For Online Education

Pedagogical:

1. Select instructional methods that enhance the delivery of specific course content
   1 – very important 2 – important 3 – not important

2. Demonstrate subject matter expertise
   1 – very important 2 – important 3 – not important

3. Organize instructional content in a way that enhances instructional delivery
   1 – very important 2 – important 3 – not important

4. Use frames of reference familiar to the learners
   1 – very important 2 – important 3 – not important

5. Adapt instruction based on learner needs identified during course delivery
   1 – very important 2 – important 3 – not important

6. Provide opportunities for learner success
   1 – very important 2 – important 3 – not important

7. Create an instructional environment that enhances engagement and involvement in the learning process, including integration of learner experiences
   1 – very important 2 – important 3 – not important

8. Provide prompt feedback
   1 – very important 2 – important 3 – not important

9. Plan and use positive reinforcement during instruction
   1 – very important 2 – important 3 – not important

10. Self-evaluate effectiveness of instructional delivery
    1 – very important 2 – important 3 – not important

11. Use frequent examples during instruction time
    1 – very important 2 – important 3 – not important

12. Explain course logistics to learners
    1 – very important 2 – important 3 – not important

13. Implement a variety of methods to engage learners and encourage participation
    1 – very important 2 – important 3 – not important

14. Use a variety of instructional delivery techniques to accommodate individual differences in learning styles
    1 – very important 2 – important 3 – not important

15. Sequence content delivery in a clear and concise manner
    1 – very important 2 – important 3 – not important

16. Provide opportunities for learners to achieve goals using a variety of techniques
    1 – very important 2 – important 3 – not important

17. Maintaining learner attention
    1 – very important 2 – important 3 – not important

18. Maintaining learner curiosity
    1 – very important 2 – important 3 – not important

19. Use active listening techniques
    1 – very important 2 – important 3 – not important

20. Apply course materials to other fields of study
    1 – very important 2 – important 3 – not important

Social:

21. Demonstrate acceptable personal conduct and social practices, including serving as a model for professional behavior
    1 – very important 2 – important 3 – not important

22. Use appropriate verbal and nonverbal communication techniques (e.g., effective use of voice, eye contact, gestures)
    1 – very important 2 – important 3 – not important

23. Involve learners in establishing an appropriate level of learner comfort
    1 – very important 2 – important 3 – not important

24. Ensure verbal communication is free of bias
    1 – very important 2 – important 3 – not important

25. Skill in nonverbal communication (e.g., eye contact, gestures, body movement)
    1 – very important 2 – important 3 – not important

26. Show enthusiasm for the student
    1 – very important 2 – important 3 – not important

27. Show enthusiasm for the subject taught
    1 – very important 2 – important 3 – not important

Managerial:

28. Manage time available for instructional delivery
    1 – very important 2 – important 3 – not important

29. Manage group interactions and participation
    1 – very important 2 – important 3 – not important

30. Resolve learner behavioral problems
    1 – very important 2 – important 3 – not important

31. Implement the most appropriate way to manage learner participation based on course delivery technology
    1 – very important 2 – important 3 – not important

32. Produce media of the course that can be distributed to participants
    1 – very important 2 – important 3 – not important

33. Provide learners with post-course support methods of communication needed for questions or individual guidance
    1 – very important 2 – important 3 – not important

34. Maintain a clear, well-organized class format
    1 – very important 2 – important 3 – not important

35. Available for students when assistance is needed
    1 – very important 2 – important 3 – not important

36. Impartiality in evaluating student's work
    1 – very important 2 – important 3 – not important

Technical:

37. Develop contingency plans for handling audio and/or video technical difficulties
    1 – very important 2 – important 3 – not important

38. Learn to operate technology being used
    1 – very important 2 – important 3 – not important

39. Have backup technical support available
    1 – very important 2 – important 3 – not important

40. Stay abreast of technology
    1 – very important 2 – important 3 – not important

Second section of survey for demographics:

1. Which of the following represents your age group?

   (1) ❒ 20 – 29 (2) ❒ 30 – 39 (3) ❒ 40 – 49
   (4) ❒ 50 – 59 (5) ❒ 60 – 69

   1 – very important 2 – important 3 – not important

2. How many years have you been a North Carolina community college instructor?

   (1) ❒ 0 – 10 years (2) ❒ 11 – 20 years
   (3) ❒ 21 – 30 years (4) ❒ 31 years or more

   1 – very important 2 – important 3 – not important

3. What is your gender? (1) ❒ Male (2) ❒ Female

   1 – very important 2 – important 3 – not important

4. Which one of the following best describes your highest educational attainment?

(1) ❒ Some college / Associates degree (2) ❒ Bachelor's degree
(3) ❒ Master's degree (4) ❒ Doctorate

1 – very important 2 – important 3 – not important

5. Have you had staff development training in the area of online education?

(1) ❒ Yes (2) ❒ No

1 – very important 2 – important 3 – not important

6. Have you taken an online course? (1) ❒ Yes (2) ❒ No

1 – very important 2 – important 3 – not important

7. Which types of technology are used to deliver the online course(s) at your college? (Check all that apply)

(1) ☐ Two-way interactive video
(2) ☐ Two-way audio, one-way video
(3) ☐ One-way live video
(4) ☐ One-way prerecorded video
(5) ☐ Two-way audio (e.g., audio/phone conferencing)
(6) ☐ One-way audio (e.g., radio, audiotapes, CD)
(7) ☐ Two-way online (computer-based) interactions
(8) ☐ Internet
(9) ☐ Other (*specify*) _____

1 – very important 2 – important 3 – not important

8. What types of instructional behaviors do you use in your class? (Check all that apply)

(1) ☐ Orally providing structured content such as lecture
(2) ☐ Orally and visually providing structured content such as lecture with visual aids
(3) ☐ Independent visual/graphic presentation of structured content such as reading assignments
(4) ☐ Combining structured content delivery with learner to learner interaction
(5) ☐ Group projects
(6) ☐ Use of outside resource persons such as guest speakers or panel of experts
(7) ☐ Individual projects
(8) ☐ Group problem-solving activities such as brainstorming
(9) ☐ Simulated laboratories
(10) ☐ Active visual presentations such as videotapes
(11) ☐ Structured learning assignments such as quizzes/tests
(12) ☐ Class discussion
(13) ☐ Research, concept, or other 'scholarly' papers
(14) ☐ Small group discussion
(15) ☐ Case studies

(16) ☐ Worksheets/Surveys
(17) ☐ Role playing/game simulations
(18) ☐ Demonstrations
(19) ☐ Tours/field trips
(20) ☐ Individual mentoring/tutoring with students
(21) ☐ Other (*specify)* _____

1 – very important 2 – important 3 – not important

Additional instructional behaviors not previously identified:

_____

1 – very important 2 – important 3 – not important

_____

1 – very important 2 – important 3 – not important

_____

1 – very important 2 – important 3 – not important

_____

1 – very important 2 – important 3 – not important

If additional behaviors, suggested by you or other members of the Panel of Professionals, are to be added to the final survey instrument for this study, you may be requested to rate their importance for possible inclusion in the final survey instrument.

If you would like a copy of the final survey instrument, please call or email me at your convenience.

Please provide your email address for possible follow-up questions:

_____

Once again, thank you for your assistance and support.

Kathie Doole
Asheville-Buncombe Technical Community College
340 Victoria Road
Asheville, NC 28801
828-254-1921 ext. 236
kdoole@asheville.cc.nc.us

APPENDIX D

List of Pilot Study Participants

Pilot Study Participants

Asheville-Buncombe Technical Community College

- John Humphrey
- Carol Mull
- Marilyn Schmid
- Rhonda Wood
- Carol Paxton
- Lewis Lightner
- Pam Silvers
- Phil Leftwich

Blue Ridge Community College

- Celeste Oprean
- Roy Bonnett
- Debra Pressley
- Jim Duckworth
- Mihoko Knudsen
- Karen Workman
- Blain Jones
- Leanne Ruff
- Paul Edwards
- Ida Rogers
- Mary Zegarski

Haywood Community College

- Julie Stevens
- Ernest Morgan
- James Moody
- Amy Vester
- Marsha Monroe
- Jon Feichter
- Patricia Smith
- Tony Gaddis
- David Forester
- Judy Smith

APPENDIX E

Cover Letter Sent with Survey Instrument to Pilot Study

April 24, 2006

Mr. Paul Edwards
Blue Ridge Community College
College Drive
Flat Rock, NC 28731-9624

Dear Paul:

Due to the increase in enrollment at all 58 North Carolina community colleges, large numbers of students are interested in online courses. Faculty play an important role in the implementation of distance education despite the research that indicates that many faculty resist participation in distance education.

The purpose of this study is to identify the following: (a) Instructional behaviors that are being used by North Carolina Community College business instructors when teaching a classroom course; (b) Instructional behaviors that are being used by North Carolina Community College business instructors when teaching an online course; and, (c) Are there significant differences between the instructional behaviors that are used by business instructors for those courses taught on campus vs. online?

This research is important because it assesses instructional behaviors. The instructional behaviors that business instructors have used within their own online course may become the training that all North Carolina community college business instructors would need to teach an online course. The knowledge of what causes business instructors to continue teaching an online course would enable administrators to develop programs that would encourage better participation of business instructors to teach online courses.

A pilot study needs to be conducted to test the survey instrument and to determine the reliability of the survey items. I am requesting your assistance in the hope that you will actually do the survey and indicate the importance of each item as it relates to your teaching. Please notice that you have been sent either an online survey since you teach or have taught an online course or a campus survey.

Included with this letter and a survey, you will find a stamped, self-addressed return envelope. After you have completed the instrument, please return it in the envelope by June 21st. Your responses will be analyzed to determine (1) if any production mistakes were made in printing the survey instrument, (2) provide an evaluation of the procedures to be used in data collection, and (3) indicate whether participants understand the survey instrument.

If you have any questions regarding this study, please feel free to call me at 828-254-1921 ext. 236 or email me at kdoole@asheville.cc.nc.us

Thank you,

Kathie Doole
Researcher/NCSU Doctoral Student
Instructor, Asheville-Buncombe Technical Community College

Enclosures

APPENDIX F

Survey Instruments Sent to Pilot Study and Survey Participants

North Carolina Community College Business Instructor's Instructional Behaviors For Campus Education

The purpose of this study is to examine what instructional behaviors North Carolina Community College business instructors use to teach a campus course. Your responses will be analyzed to determine what instructional behaviors are needed for more business instructors to teach a campus course.

INSTRUCTIONS FOR THIS SECTION OF THE SURVEY

Please read each of the following statements and indicate by circling the number that indicates your usage of each as it affects your teaching a campus course. 0 = Do Not Use, 1 = Occasionally Use (now and then), 2 = Frequently Use (happening or occurring at short intervals)

	Do Not Use	Occasionally Use	Frequently Use
Pedagogical:			
1. Select instructional methods that enhance the delivery of specific course content	0	1	2
2. Demonstrate subject matter expertise	0	1	2
3. Organize instructional content in a way that enhances instructional delivery	0	1	2
4. Use frames of reference familiar to the learners	0	1	2
5. Provide opportunities for learner success	0	1	2
6. Provide prompt feedback	0	1	2
7. Use positive reinforcement during instruction	0	1	2
8. Self-evaluate effectiveness of instructional delivery	0	1	2
9. Use frequent examples during instruction time	0	1	2
10. Explain course logistics to learners	0	1	2
11. Implement a variety of methods to engage learners and encourage participation	0	1	2
12. Use a variety of instructional delivery techniques to	0	1	2

	Do Not Use	Occasionally Use	Frequently Use
accommodate individual differences in learning styles			
13. Sequence content delivery in a clear and concise manner	0	1	2
14. Maintain learner attention	0	1	2
15. Maintain learner curiosity	0	1	2
16. Use active listening techniques	0	1	2
17. Apply course content to other fields of study	0	1	2
Social:			
18. Demonstrate acceptable personal conduct, including serving as a model for professional behavior	0	1	2
19. Involve learners in establishing an appropriate level of learner comfort	0	1	2
20. Ensure written communication is free of bias	0	1	2
21. Show enthusiasm for the student	0	1	2
22. Show enthusiasm for the subject taught	0	1	2
23. Facilitate interaction between students	0	1	2
Managerial:			
24. Manage time available for instructional delivery	0	1	2
25. Manage group interactions	0	1	2
26. Resolve learner performance problems	0	1	2
27. Implement the most appropriate way to manage learner participation based on course delivery technology	0	1	2
28. Produce materials for the course that can be distributed to participants	0	1	2
29. Provide learners with post-course support methods of communication needed for questions or individual guidance	0	1	2
30. Maintain a clear, well-organized class format	0	1	2
31. Available for students when assistance is needed	0	1	2
32. Impartiality in evaluating student's work	0	1	2

Technical:			
33. Develop contingency plans for handling technical difficulties	0	1	2
34. Learn to operate technology being used	0	1	2
35. Have backup technical support available	0	1	2
36. Stay abreast of technology	0	1	2
37. Have a staffed "help desk" to assist in the students' success	0	1	2
38. College Webmaster available to assist with course development	0	1	2

INSTRUCTIONS FOR THIS SECTION OF THE SURVEY

Please read each of the following and indicate your answer by checking the box that closely describes you. Unless otherwise indicated, please provide only one response for each question.

1. Which of the following represents your age group?

(1) ❒ 20 – 29 (2) ❒ 30 – 39 (3) ❒ 40 – 49

(4) ❒ 50 – 59 (5) ❒ 60 – 69

2. How many years have you been a North Carolina community college instructor?

(1) ❒ 0 – 10 years (2) ❒ 11 – 20 years

(3) ❒ 21 – 30 years (4) ❒ 31 years or more

3. What is your gender? (1) ❒ Male (2) ❒ Female

4. Which one of the following best describes your highest educational attainment?

(1) ❒ Some college / Associates degree (2) ❒ Bachelor's degree

(3) ❒ Master's degree (4) ❒ Ed.S (5) ❒ Doctorate

5. Have you had staff development training in the area of online education?

(1) ❒ Yes (2) ❒ No

6. Have you taken an online course? (1) ❒ Yes (2) ❒ No

7. Which types of technology are used to deliver the online course(s) at your college? (Online courses - typically refers to a type of online education/learning. An online education involves the use of the Internet to aid in teaching. The majority of the instruction occurs when student and instructor are not in the same place. Students typically use email, discussion forums, and/or chat rooms to communicate with the instructor (Todd, 2000).

(Check all that apply)

(1) ☐ Two-way interactive video
(2) ☐ Two-way audio, one-way video
(3) ☐ One-way live video
(4) ☐ One-way prerecorded video
(5) ☐ Two-way audio (e.g., audio/phone conferencing)
(6) ☐ One-way audio (e.g., radio, audiotapes, CD)
(7) ☐ Two-way online (computer-based) interactions
(8) ☐ Internet
(9) ☐ Other (*specify*) _____

8. What types of instructional behaviors do you use in your class? (Check all that apply)

(1) ☐ Orally providing structured content such as lecture
(2) ☐ Orally and visually providing structured content such as lecture with visual aids
(3) ☐ Independent visual/graphic presentation of structured content such as reading assignments
(4) ☐ Combining structured content delivery with learner to learner interaction
(5) ☐ Group projects
(6) ☐ Use of outside resource persons such as guest speakers or panel of experts
(7) ☐ Individual projects

(8) ☐ Group problem-solving activities such as brainstorming
(9) ☐ Simulated laboratories
(10) ☐ Active visual presentations such as videotapes
(11) ☐ Structured learning assignments such as quizzes/tests
(12) ☐ Class discussion
(13) ☐ Research, concept, or other 'scholarly' papers
(14) ☐ Small group discussion
(15) ☐ Case studies
(16) ☐ Worksheets/Surveys
(17) ☐ Role playing/game simulations
(18) ☐ Demonstrations
(19) ☐ Tours/field trips
(20) ☐ Individual mentoring/tutoring with students
(21) ☐ Other (*specify)* _____

Thank you very much for completing this survey

Kathleen R. Doole
248 Laurelwood Lane
Horse Shoe, NC 28742
(828) 891-2560
kdoole@asheville.cc.nc.us

Please fold and mail the survey in the enclosed self-addressed, stamped envelope.

North Carolina Community College Business Instructor's Instructional Behaviors For Online Education

The purpose of this study is to examine what instructional behaviors North Carolina Community College business instructors use to teach an online course. Your responses will be analyzed to determine what instructional behaviors are needed for more business instructors to teach an online course.

INSTRUCTIONS FOR THIS SECTION OF THE SURVEY

Please read each of the following statements and indicate by circling the number that indicates your usage of each as it affects your teaching an online course:
0 = Do Not Use, 1 = Occasionally Use (now and then),
2 = Frequently Use (happening or occurring at short intervals)

	Do Not Use	Occasionally Use	Frequently Use
Pedagogical:			
1. Select instructional methods that enhance the delivery of specific course content	0	1	2
2. Demonstrate subject matter expertise	0	1	2
3. Organize instructional content in a way that enhances instructional delivery	0	1	2
4. Use frames of reference familiar to the learners	0	1	2
5. Provide opportunities for learner success	0	1	2
6. Provide prompt feedback	0	1	2
7. Use positive reinforcement during instruction	0	1	2
8. Self-evaluate effectiveness of instructional delivery	0	1	2
9. Use frequent examples during instruction time	0	1	2
10. Explain course logistics to learners	0	1	2
11. Implement a variety of methods to engage learners and encourage participation	0	1	2
12. Use a variety of instructional delivery techniques to	0	1	2

	Do Not Use	Occasionally Use	Frequently Use
accommodate individual differences in learning styles			
13. Sequence content delivery in a clear and concise manner	0	1	2
14. Maintain learner attention	0	1	2
15. Maintain learner curiosity	0	1	2
16. Use active listening techniques	0	1	2
17. Apply course content to other fields of study	0	1	2
Social:			
18. Demonstrate acceptable personal conduct, including serving as a model for professional behavior	0	1	2
19. Involve learners in establishing an appropriate level of learner comfort	0	1	2
20. Ensure written communication is free of bias	0	1	2
21. Show enthusiasm for the student	0	1	2
22. Show enthusiasm for the subject taught	0	1	2
23. Facilitate interaction between students	0	1	2
Managerial:			
24. Manage time available for instructional delivery	0	1	2
25. Manage group interactions	0	1	2
26. Resolve learner performance problems	0	1	2
27. Implement the most appropriate way to manage learner participation based on course delivery technology	0	1	2
28. Produce materials for the course that can be distributed to participants	0	1	2
29. Provide learners with post-course support methods of communication needed for questions or individual guidance	0	1	2
30. Maintain a clear, well-organized class format	0	1	2
31. Available for students when assistance is needed	0	1	2
32. Impartiality in evaluating student's work	0	1	2

Technical:			
33. Develop contingency plans for handling technical difficulties	0	1	2
34. Learn to operate technology being used	0	1	2
35. Have backup technical support available	0	1	2
36. Stay abreast of technology	0	1	2
37. Have a staffed "help deck" to assist in the students' success	0	1	2
38. College Webmaster available to assist with course development	0	1	2

INSTRUCTIONS FOR THIS SECTION OF THE SURVEY

Please read each of the following and indicate your answer by checking the box that closely describes you. Unless otherwise indicated, please provide only one response for each question.

1. Which of the following represents your age group?

(1) ❒ 20 – 29 (2) ❒ 30 – 39 (3) ❒ 40 – 49

(4) ❒ 50 – 59 (5) ❒ 60 – 69

2. How many years have you been a North Carolina community college instructor?

(1) ❒ 0 – 10 years (2) ❒ 11 – 20 years

(3) ❒ 21 – 30 years (4) ❒ 31 years or more

3. What is your gender? (1) ❒ Male (2) ❒ Female

4. Which one of the following best describes your highest educational attainment?

(1) ❒ Some college / Associates degree (2) ❒ Bachelor's degree

(3) ❒ Master's degree (4) ❒ Ed.S (5) ❒ Doctorate

5. Have you had staff development training in the area of online education?

(1) ❒ Yes (2) ❒ No

6. Have you taken an online course? (1) ❒ Yes (2) ❒ No

7. Which types of technology are used to deliver the online course(s) at your college? (Online courses - typically refers to a type of online education/learning. An online education involves the use of the Internet to aid in teaching. The majority of the instruction occurs when student and instructor are not in the same place. Students typically use email, discussion forums, and/or chat rooms to communicate with the instructor (Todd, 2000).

(Check all that apply)

(1) ☐ Two-way interactive video
(2) ☐ Two-way audio, one-way video
(3) ☐ One-way live video
(4) ☐ One-way prerecorded video
(5) ☐ Two-way audio (e.g., audio/phone conferencing)
(6) ☐ One-way audio (e.g., radio, audiotapes, CD)
(7) ☐ Two-way online (computer-based) interactions
(8) ☐ Internet
(9) ☐ Other (*specify*) _____

8. What types of instructional behaviors do you use in your class? (Check all that apply)

(1) ☐ Orally providing structured content such as lecture
(2) ☐ Orally and visually providing structured content such as lecture with visual aids
(3) ☐ Independent visual/graphic presentation of structured content such as reading assignments
(4) ☐ Combining structured content delivery with learner to learner interaction
(5) ☐ Group projects
(6) ☐ Use of outside resource persons such as guest speakers or panel of experts
(7) ☐ Individual projects
(8) ☐ Group problem-solving activities such as brainstorming
(9) ☐ Simulated laboratories
(10) ☐ Active visual presentations such as videotapes
(11) ☐ Structured learning assignments such as quizzes/tests
(12) ☐ Class discussion
(13) ☐ Research, concept, or other 'scholarly' papers
(14) ☐ Small group discussion
(15) ☐ Case studies
(16) ☐ Worksheets/Surveys
(17) ☐ Role playing/game simulations
(18) ☐ Demonstrations
(19) ☐ Tours/field trips
(20) ☐ Individual mentoring/tutoring with students
(21) ☐ Other (*specify*) _____

Thank you very much for completing this survey.

Kathleen R. Doole
248 Laurelwood Lane
Horse Shoe, NC 28742
(828) 891-2560
kdoole@asheville.cc.nc.us

Please return the completed survey in the enclosed self-addressed, stamped envelope.

APPENDIX G

Cover Letters for the Initial Mailing of the Survey Instruments and the Follow-up Mailing

September 12, 2002

Name
Address1
Address2
City, State Zip

Dear Name:

Due to the increase in enrollment at all 58 North Carolina community colleges, large numbers of students are interested in online courses. Faculty play an important role in the implementation of distance education despite the research that indicates that many faculty resist participation in distance education.

The purpose of this study is to identify the instructional behaviors that are being used by North Carolina Community College business instructors when teaching a classroom course or an online course and to identify any significant differences between the instructional behaviors that are used by those business instructors.

This research is important because it assesses instructional behaviors. The instructional behaviors that business instructors have used within their own online course may become the training that all North Carolina community college business instructors would need to teach an online course. The knowledge of what causes business instructors to continue teaching an online course would enable administrators to develop programs that would encourage better participation of business instructors to teach online courses.

Because of these reasons, I am requesting your assistance in the hope that you will fill out the enclosed survey and indicate the importance of each item as it relates to your teaching. Please notice that you have been sent either an online survey if you have taught an online course **or** a campus survey if you teach a campus course.

Included with this letter and survey, you will find a stamped, self-addressed return envelope. After you have completed the survey, please return it in the envelope by September 27, 2002. Your responses will remain confidential. No responses will be reviewed until all surveys are received and the envelopes have been discarded.

If you have any questions regarding this study, please feel free to call me at 828-254-1921 ext. 236 or email me at kdoole@abtech.edu Thank you very much for your cooperation.

Sincerely,

Kathie Doole
Researcher/NCSU Doctoral Student
Computer Instructor, Asheville-Buncombe Technical Community College

Enclosures

April 24, 2006

Name
Address1
Address2
City, State ZIP

Dear Name:

Approximately three weeks ago, I wrote to you requesting that you complete a survey on the instructional behaviors that are being used by North Carolina Community College business instructors when teaching a classroom course or an online course and to identify any significant differences between the instructional behaviors that are used by those business instructors.

As of today, I have not received your completed survey. This research is important because it assesses instructional behaviors. The instructional behaviors that business instructors have used within their own online course may become the training that all North Carolina community college business instructors would need to teach an online course. The knowledge of what causes business instructors to continue teaching an online course would enable administrators to develop programs that would encourage better participation of business instructors to teach online courses.

If you have completed and returned the survey, please accept my sincere thanks. If not, please take a few minutes and complete it today. In the event your survey has been misplaced, another survey is enclosed. Your views on this subject are extremely important to the success of this study.

After you have completed the survey, please return it in the enclosed self-addressed, stamped envelope by October 15, 2002. Your responses will remain confidential. No responses will be reviewed until all surveys are received and the envelopes have been discarded.

If you have any questions about this study, please feel free to call me at 828-254-1921 ext. 236 or email me at kdoole@abtech.edu Thank you very much for your cooperation.

Sincerely,

Kathie Doole
Researcher/NCSU Doctoral Student
Computer Instructor, Asheville-Buncombe Technical Community College

Enclosures

APPENDIX H

Frequency Distribution of Total Respondents

Frequency Distribution for Questions 1 – 38 of Survey

Question 1: Select instructional methods that enhance the delivery of specific course content.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	4	5.8	4	3.4
Occasionally Use	14	20.3	23	19.8
Frequently Use	51	73.9	89	76.7
Total	69	100.0	116	100.0

Question 2: Demonstrate subject matter expertise.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	4	5.8	2	1.7
Occasionally Use	10	14.5	13	11.2
Frequently Use	55	79.7	101	87.1
Total	69	100.0	116	100.0

Question 3: Organize instructional content in a way that enhances instructional delivery.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	1	1.4	2	1.7
Occasionally Use	8	11.6	8	6.9
Frequently Use	60	87.0	106	91.4
Total	69	100.0	116	100.0

Question 4: Use frames of reference familiar to the learners.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	2	2.9	1	.9
Occasionally Use	23	33.3	17	14.7
Frequently Use	44	63.8	98	84.5
Total	69	100.0	116	100.0

Question 5: Provide opportunities for learner success.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	3	4.3	0	0.0
Occasionally Use	7	10.1	12	10.3
Frequently Use	59	85.5	104	89.7
Total	69	100.0	116	100.0

Question 6: Provide prompt feedback.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	0	0.0	0	0.0
Occasionally Use	13	18.8	11	9.5
Frequently Use	56	81.2	105	90.5
Total	69	100.0	116	100.0

Question 7: Use positive reinforcement during instruction.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	3	4.3	1	.9
Occasionally Use	19	27.5	21	18.1
Frequently Use	47	68.1	94	81.0
Total	69	100.0	116	100.0

Question 8: Self-evaluate effectiveness of instructional delivery.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	3	4.3	1	.9
Occasionally Use	29	42.0	47	40.5
Frequently Use	37	53.6	68	58.6
Total	69	100.0	116	100.0

Question 9: Use frequent examples during instruction time.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	6	8.7	1	.9
Occasionally Use	21	30.4	14	12.1
Frequently Use	42	60.9	101	87.0
Total	69	100.0	116	100.0

Question 10: Explain course logistics to learners.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	2	2.9	3	2.6
Occasionally Use	15	21.7	40	34.5
Frequently Use	52	75.4	73	62.9
Total	69	100.0	116	100.0

Question 11: Implement a variety of methods to engage learners and encourage participation.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	2	2.9	2	1.7
Occasionally Use	22	31.9	39	33.6
Frequently Use	45	65.2	75	64.7
Total	69	100.0	116	100.0

Question 12: Use a variety of instructional delivery techniques to accommodate individual differences in learning styles.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	7	10.1	4	3.4
Occasionally Use	34	49.3	48	41.4
Frequently Use	28	40.6	64	55.2
Total	69	100.0	116	100.0

Question 13: Sequence content delivery in a clear and concise manner.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	2	2.9	1	.9
Occasionally Use	6	8.7	12	10.3
Frequently Use	61	88.4	103	88.8
Total	69	100.0	116	100.0

Question 14: Maintain learner attention.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	7	10.1	2	1.7
Occasionally Use	22	31.9	22	19.0
Frequently Use	40	58.0	92	79.3
Total	69	100.0	116	100.0

Question 15: Maintain learner curiosity.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	8	11.6	3	2.6
Occasionally Use	24	34.8	38	32.8
Frequently Use	37	53.6	75	64.7
Total	69	100.0	116	100.0

Question 16: Use active listening techniques.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	29	42.0	6	5.2
Occasionally Use	17	24.6	30	25.9
Frequently Use	23	33.3	80	69.0
Total	69	100.0	116	100.0

Question 17: Apply course content to other fields of study.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	12	17.4	9	7.8
Occasionally Use	29	42.0	54	46.6
Frequently Use	28	40.6	53	45.7
Total	69	100.0	116	100.0

Question 18: Demonstrate acceptable personal conduct, including serving as a model for professional behavior.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	6	8.7	3	2.6
Occasionally Use	13	18.8	9	7.8
Frequently Use	49	71.0	104	89.7
Total	69	100.0	116	100.0

Question 19: Involve learners in establishing an appropriate level of learner comfort.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	6	8.7	7	6.0
Occasionally Use	29	42.0	30	25.9
Frequently Use	34	49.3	79	68.1
Total	69	100.0	116	100.0

Question 20: Ensure written communication is free of bias.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	6	8.7	7	6.0
Occasionally Use	8	11.6	20	17.2
Frequently Use	55	79.7	89	76.7
Total	69	100.0	116	100.0

Question 21: Show enthusiasm for the student.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	2	2.9	1	.9
Occasionally Use	9	13.0	7	6.0
Frequently Use	58	84.1	108	93.1
Total	69	100.0	116	100.0

Question 22: Show enthusiasm for the subject taught.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	2	2.9	2	1.7
Occasionally Use	7	10.1	4	3.4
Frequently Use	60	87.0	110	94.8
Total	69	100.0	116	100.0

Question 23: Facilitate interaction between students.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	6	8.7	2	1.7
Occasionally Use	26	37.7	33	28.4
Frequently Use	37	53.6	81	69.8
Total	69	100.0	116	100.0

Question 24: Manage time available for instructional delivery.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	3	4.3	2	1.7
Occasionally Use	16	23.2	16	13.8
Frequently Use	50	72.5	98	84.5
Total	69	100.0	116	100.0

Question 25: Manage group interactions.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	18	26.1	12	10.3
Occasionally Use	32	46.4	56	48.3
Frequently Use	19	27.5	48	41.4
Total	69	100.0	116	100.0

Question 26: resolve learner performance problems.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	3	4.3	3	2.6
Occasionally Use	27	39.1	47	40.5
Frequently Use	39	56.5	66	56.9
Total	69	100.0	116	100.0

Question 27: Implement the most appropriate way to manage learner participation based on course delivery technology.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	5	7.2	2	1.7
Occasionally Use	23	33.3	46	39.7
Frequently Use	41	59.4	68	58.6
Total	69	100.0	116	100.0

Question 28: Produce materials for the course that can be distributed to participants.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	8	11.6	2	1.7
Occasionally Use	13	18.8	29	25.0
Frequently Use	48	69.6	85	73.3
Total	69	100.0	116	100.0

Question 29: Provide learners with post-course support methods of communication needed for questions or individual guidance.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	19	27.5	23	19.8
Occasionally Use	25	36.2	57	49.1
Frequently Use	24	34.8	36	31.0
Total	69	100.0	116	100.0

Question 30: Maintain a clear, well-organized class format.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	2	2.9	1	.9
Occasionally Use	11	15.9	15	12.9
Frequently Use	56	81.2	100	86.2
Total	69	100.0	116	100.0

Question 31: Available for students when assistance is needed.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	2	2.9	0	0.0
Occasionally Use	9	13.0	9	7.8
Frequently Use	58	84.1	107	92.2
Total	69	100.0	116	100.0

Question 32: Impartiality in evaluating student's work.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	1	1.4	0	0.0
Occasionally Use	3	4.3	3	2.6
Frequently Use	65	94.2	113	97.4
Total	69	100.0	116	100.0

Question 33: Develop contingency plans for handling technical difficulties.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	8	11.6	8	6.9
Occasionally Use	19	27.5	58	50.0
Frequently Use	42	60.9	50	43.1
Total	69	100.0	116	100.0

Question 34: Learn to operate technology being used.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	2	2.9	1	.9
Occasionally Use	7	10.1	15	12.9
Frequently Use	60	87.0	100	86.2
Total	69	100.0	116	100.0

Question 35: Have backup technical support available.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	12	17.4	9	7.8
Occasionally Use	21	30.4	53	45.7
Frequently Use	36	52.2	54	46.6
Total	69	100.0	116	100.0

Question 36: Stay abreast of technology.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	1	1.4	4	3.4
Occasionally Use	10	14.5	23	19.8
Frequently Use	58	84.1	89	76.7
Total	69	100.0	116	100.0

Question 37: Have a staffed “help desk” to assist in the students’ success.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	28	40.6	54	46.6
Occasionally Use	18	26.1	38	32.8
Frequently Use	23	33.3	24	20.7
Total	69	100.0	116	100.0

Question 38: College Webmaster available to assist with course development.

	Online		Campus	
	Frequency	Percent of Total Response	Frequency	Percent of Total Response
Do Not Use	29	42.0	56	48.3
Occasionally Use	18	26.1	31	26.7
Frequently Use	22	31.9	29	25.0
Total	69	100.0	116	100.0

APPENDIX I

Frequency Distribution and Percent of Total Response of Instructional Behaviors Used and Not Used When Teaching Online

Frequency Distribution and Percent of Total Response of Instructional Behaviors Used and Not Used When Teaching Online

Question 1: Select instructional methods that enhance the delivery of specific course content.

	Frequency	Percent of Total Response
Do Not Use	4	5.8
Occasionally Use	14	20.3
Frequently Use	51	73.9
Total	69	100.0

Question 2: Demonstrate subject matter expertise.

	Frequency	Percent of Total Response
Do Not Use	4	5.8
Occasionally Use	10	14.5
Frequently Use	55	79.7
Total	69	100.0

Question 3: Organize instructional content in a way that enhances instructional delivery.

	Frequency	Percent of Total Response
Do Not Use	1	1.4
Occasionally Use	8	11.6
Frequently Use	60	87.0
Total	69	100.0

Question 4: Use frames of reference familiar to the learners.

	Frequency	Percent of Total Response
Do Not Use	2	2.9
Occasionally Use	23	33.3
Frequently Use	44	63.8
Total	69	100.0

Question 5: Provide opportunities for learner success.

	Frequency	Percent of Total Response
Do Not Use	3	4.3
Occasionally Use	7	10.1
Frequently Use	59	85.5
Total	69	100.0

Question 6: Provide prompt feedback.

	Frequency	Percent of Total Response
Do Not Use	0	0.0
Occasionally Use	13	18.8
Frequently Use	56	81.2
Total	69	100.0

Question 7: Use positive reinforcement during instruction.

	Frequency	Percent of Total Response
Do Not Use	3	4.3
Occasionally Use	19	27.5
Frequently Use	47	68.1
Total	69	100.0

Question 8: Self-evaluate effectiveness of instructional delivery.

	Frequency	Percent of Total Response
Do Not Use	3	4.3
Occasionally Use	29	42.0
Frequently Use	37	53.6
Total	69	100.0

Question 9: Use frequent examples during instruction time.

	Frequency	Percent of Total Response
Do Not Use	6	8.7
Occasionally Use	21	30.4
Frequently Use	42	60.9
Total	69	100.0

Question 10: Explain course logistics to learners.

	Frequency	Percent of Total Response
Do Not Use	2	2.9
Occasionally Use	15	21.7
Frequently Use	52	75.4
Total	69	100.0

Question 11: Implement a variety of methods to engage learners and encourage participation.

	Frequency	Percent of Total Response
Do Not Use	2	2.9
Occasionally Use	22	31.9
Frequently Use	45	65.2
Total	69	100.0

Question 12: Use a variety of instructional delivery techniques to accommodate individual differences in learning styles.

	Frequency	Percent of Total Response
Do Not Use	7	10.1
Occasionally Use	34	49.3
Frequently Use	28	40.6
Total	69	100.0

Question 13: Sequence content delivery in a clear and concise manner.

	Frequency	Percent of Total Response
Do Not Use	2	2.9
Occasionally Use	6	8.7
Frequently Use	61	88.4
Total	69	100.0

Question 14: Maintain learner attention.

	Frequency	Percent of Total Response
Do Not Use	7	10.1
Occasionally Use	22	31.9
Frequently Use	40	58.0
Total	69	100.0

Question 15: Maintain learner curiosity.

	Frequency	Percent of Total Response
Do Not Use	8	11.6
Occasionally Use	24	34.8
Frequently Use	37	53.6
Total	69	100.0

Question 16: Use active listening techniques.

	Frequency	Percent of Total Response
Do Not Use	29	42.0
Occasionally Use	17	24.6
Frequently Use	23	33.3
Total	69	100.0

Question 17: Apply course content to other fields of study.

	Frequency	Percent of Total Response
Do Not Use	12	17.4
Occasionally Use	29	42.0
Frequently Use	28	40.6
Total	69	100.0

Question 18: Demonstrate acceptable personal conduct, including serving as a model for professional behavior.

	Frequency	Percent of Total Response
Do Not Use	6	8.7
Occasionally Use	13	18.8
Frequently Use	49	71.0
Total	69	100.0

Question 19: Involve learners in establishing an appropriate level of learner comfort.

	Frequency	Percent of Total Response
Do Not Use	6	8.7
Occasionally Use	29	42.0
Frequently Use	34	49.3
Total	69	100.0

Question 20: Ensure written communication is free of bias.

	Frequency	Percent of Total Response
Do Not Use	6	8.7
Occasionally Use	8	11.6
Frequently Use	55	79.7
Total	69	100.0

Question 21: Show enthusiasm for the student.

	Frequency	Percent of Total Response
Do Not Use	2	2.9
Occasionally Use	9	13.0
Frequently Use	58	84.1
Total	69	100.0

Question 22: Show enthusiasm for the subject taught.

	Frequency	Percent of Total Response
Do Not Use	2	2.9
Occasionally Use	7	10.1
Frequently Use	60	87.0
Total	69	100.0

Question 23: Facilitate interaction between students.

	Frequency	Percent of Total Response
Do Not Use	6	8.7
Occasionally Use	26	37.7
Frequently Use	37	53.6
Total	69	100.0

Question 24: Manage time available for instructional delivery.

	Frequency	Percent of Total Response
Do Not Use	3	4.3
Occasionally Use	16	23.2
Frequently Use	50	72.5
Total	69	100.0

Question 25: Manage group interactions.

	Frequency	Percent of Total Response
Do Not Use	18	26.1
Occasionally Use	32	46.4
Frequently Use	19	27.5
Total	69	100.0

Question 26: resolve learner performance problems.

	Frequency	Percent of Total Response
Do Not Use	3	4.3
Occasionally Use	27	39.1
Frequently Use	39	56.5
Total	69	100.0

Question 27: Implement the most appropriate way to manage learner participation based on course delivery technology.

	Frequency	Percent of Total Response
Do Not Use	5	7.2
Occasionally Use	23	33.3
Frequently Use	41	59.4
Total	69	100.0

Question 28: Produce materials for the course that can be distributed to participants.

	Frequency	Percent of Total Response
Do Not Use	8	11.6
Occasionally Use	13	18.8
Frequently Use	48	69.6
Total	69	100.0

Question 29: Provide learners with post-course support methods of communication needed for questions or individual guidance.

	Frequency	Percent of Total Response
Do Not Use	19	27.5
Occasionally Use	25	36.2
Frequently Use	24	34.8
Total	69	100.0

Question 30: Maintain a clear, well-organized class format.

	Frequency	Percent of Total Response
Do Not Use	2	2.9
Occasionally Use	11	15.9
Frequently Use	56	81.2
Total	69	100.0

Question 31: Available for students when assistance is needed.

	Frequency	Percent of Total Response
Do Not Use	2	2.9
Occasionally Use	9	13.0
Frequently Use	58	84.1
Total	69	100.0

Question 32: Impartiality in evaluating student’s work.

	Frequency	Percent of Total Response
Do Not Use	1	1.4
Occasionally Use	3	4.3
Frequently Use	65	94.2
Total	69	100.0

Question 33: Develop contingency plans for handling technical difficulties.

	Frequency	Percent of Total Response
Do Not Use	8	11.6
Occasionally Use	19	27.5
Frequently Use	42	60.9
Total	69	100.0

Question 34: Learn to operate technology being used.

	Frequency	Percent of Total Response
Do Not Use	2	2.9
Occasionally Use	7	10.1
Frequently Use	60	87.0
Total	69	100.0

Question 35: Have backup technical support available.

	Frequency	Percent of Total Response
Do Not Use	12	17.4
Occasionally Use	21	30.4
Frequently Use	36	52.2
Total	69	100.0

Question 36: Stay abreast of technology.

	Frequency	Percent of Total Response
Do Not Use	1	1.4
Occasionally Use	10	14.5
Frequently Use	58	84.1
Total	69	100.0

Question 37: Have a staffed “help desk” to assist in the students’ success.

	Frequency	Percent of Total Response
Do Not Use	28	40.6
Occasionally Use	18	26.1
Frequently Use	23	33.3
Total	69	100.0

Question 38: College Webmaster available to assist with course development.

	Frequency	Percent of Total Response
Do Not Use	29	42.0
Occasionally Use	18	26.1
Frequently Use	22	31.9
Total	69	100.0