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**Moving from the Classroom to Online Teaching:
A Study of Change in Faculty Attitudes**

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**Moving from the Classroom to Online Teaching:
A Study of Change in Faculty Attitudes**

BY

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**Moving from the Classroom to Online Teaching:
A Study of Change in Faculty Attitudes**

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Much research exists on both the administrative and student issues of distance education. But there is little research on the perceptions and experiences of faculty who teach in online environments. This study focuses on what faculty experienced as they began to use the Internet as a medium for teaching and learning. In particular, this study explored faculty perceptions of changes in their teaching practices as a result of teaching online in five different graduate programs. This information may help other educators to understand the critical factors in the design of both effective training and support of faculty who teach online courses. This study also provides practical guidelines to help those who train faculty in online pedagogy and instructional designers.

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Chapter One: Introduction

BACKGROUND FOR THE STUDY

Online higher education courses have become quite common, and faculty who teach these courses face a huge challenge: how to teach in this new, very interactive environment. Those faculty involved in teaching college-credit online distance education classes need assistance in using the teaching strategies necessary to be successful in this environment. This study focuses on what faculty experienced as they began to use the Internet as a medium for teaching and learning online. In particular, the study explores faculty perceptions of changes in their teaching practices as a result of their teaching online.

Growth of Online Instruction

Over the last decade new communication technologies, such as audio conferencing, video conferencing, and the Internet, have been used more extensively in K-12 schools and by institutions of higher education. Distance education has expanded with the use of the Internet. Between 1995 and 2001, the proportion of four-year public colleges and universities that offered distance education courses grew from 62 to 89 percent, and among public two-year colleges from 58 to 90 percent (U.S. Department of Education, 2000; U.S. Department of Education, 2003).

In the 2000-2001 academic year, distance education courses from all types of educational institutions were delivered most often by the Internet, two-way video with two-way audio, and one-way prerecorded video. Ninety percent of the institutions offered Internet courses using asynchronous instruction, while 88

percent planned to start using or increase their number of Internet courses as the primary mode of delivery (U.S. Department of Education, 2003).

In the 2000-2001 academic year postsecondary institutions of all types estimated that there were 3,077,000 distance education enrollments out of an estimated 15.3 million students in 2- and 4-year degree granting postsecondary institutions (U.S. Department of Education, 2003). Of the 14.3 million students enrolled in college in 1995-96, more than 750,000 were enrolled in some sort of distance education course (Gibson, 1998). Online distance education in higher education institutions has continually increased since then, ranging from rural community colleges to Carnegie Research I universities. Many institutions of higher learning have felt competitive pressures from their peer institutions, and to a lesser degree from potential students (Carnevale, 2001). Bruce Chaloux, director of the Southern Regional Education Board's Electronic Campus, said, "It's turned around drastically in the past five years." (Carnevale, 2001, p. A41) According to Chaloux's estimates, only about ten to fifteen percent of all colleges and universities in the United States have not created significant online programs.

Financial Issues for Higher Education

Increased demand for distance education has been fueled in part by pressures to meet expanding higher education enrollments. Student enrollments in institutions of higher education have been projected to increase by twenty percent, from an estimated 14.6 million in 1998 to 17.5 million by the year 2010 ((U.S. Department of Education, 2000). Meanwhile, financial resources for higher education have dwindled. One study projected that the costs of higher education

will increase fifty percent, in constant dollars, from 1995-96 to 2009-10 (U.S. Department of Education, 2000).

With both enrollments and expenditures increasing, institutions of higher learning offer online courses in order to serve students in more economical ways, to increase enrollments, and to serve students who may not want to move nearer to campuses for their educations. Many adults rely on online courses to acquire new skills and credentials. Some of these adults enroll in online courses offered by traditional universities, while others take online courses offered by for-profit institutions such as the University of Phoenix. Online education is promoted as one way to serve more students in more economical ways, both on campus and off campus.

Online Learning Issues for Higher Education

While both students and colleges are concerned about the rising costs of higher education, neither group wants their quality of education lowered. Questions about the quality of distance education and how well online students learn have dominated research efforts for the last twenty years. Studies have shown that distance education methods achieve similar and sometimes superior results when compared to face-to-face teaching (Harasim, 1987; Holmgren, 1995; Harasim, Hiltz, Teles, & Turoff, 1998). The most famous research finding on quality in distance education is the “No Significant Difference Phenomenon.” Thomas L. Russell reviewed more than 355 comparative research studies, and suggested that students in technology-based, typically distance learning, courses learned as well as their on-campus counterparts (1999).

Schlosser and Anderson (1994) described distance education practitioners who concentrated on answering questions of immediate and practical significance. McIsaac and Gunawardena (1996) reinforced this observation when they wrote, “Because technologies as delivery systems have been so crucial to the growth of distance education, research has reflected rather than driven practice” (p. 403). Most research about online teaching and learning has been carried out from the administrative point of view, and has attempted to answer questions about administrative issues rather than implementation issues. Administrative issues have included research on rates of student attrition, the design of instructional materials for large-scale distribution, the appropriateness of certain technologies for delivery of instruction, and the cost effectiveness of programs.

Pedagogical Issues of Online Learning

Teaching in an online environment differs from classroom teaching, which relies heavily on lectures for the presentation of information. Teaching online requires different instructional strategies, knowledge, and tools with which faculty may have had little previous experience. The focus of research into online education is shifting from administrative issues to pedagogical and faculty issues. Early accounts were largely anecdotal or of how one school or college adopted distance education. In her research, Carol Twigg (2000) said that the majority of online courses were organized much as their on-campus counterparts. They are taught by individual faculty, follow traditional practices, and are evaluated by using traditional student satisfaction surveys. Many researchers have emphasized that new teaching techniques and skills are required in distance education settings

(Collins & Murphy, 1987; Dillon & Walsh, 1993). Dillon and Walsh (1992) found that a major challenge facing higher education faculty is learning how to teach in this new online environment. Faculty and other professionals involved in teaching distance education classes need assistance to learn the new strategies they must use to be successful (Beaudoin, 1990; Willis, 1991).

Developing Faculty Expertise in Online Learning

Higher education faculty who are teaching with the new technologies and the Internet need assistance in learning how to teach in the online environment (Palloff & Pratt, 2001, p. xv). Little is yet known about faculty experiences in moving toward integrating and developing instruction for the Internet. For example, are there common experiences that faculty go through in adapting their courses to be appropriate for delivery to students via technology? Dillon and Walsh (1992) noted that distance learners have received the focus of research about distance education, while research has been neglected on faculty learning to teach using distance education methods. Out of 225 articles on distance education, they found only 25 articles related to faculty. Since many faculty have a natural concern that technology will replace them in the classroom, McIsaac and Gunawardena suggested, “In addition to conducting research on the emerging roles of faculty involved in distance education activities, studies are needed to examine faculty attitudes” (1996, p. 429).

Research has shown that K-12 school teachers who successfully integrated technology into their classrooms followed a series of stages of adoption (Sandholtz, Ringstaff, & Dwyer, 1997). K-12 teachers took four to five years to reach a point

where they could seamlessly integrate technology-based instructional strategies with traditional instruction (Sheingold & Hadley, 1990). It is not known whether higher education faculty go through stages in integrating technology-based instructional strategies into their online instruction.

Curtis Bonk has suggested a ten-level Internet integration continuum for higher education faculty. Courses in levels one through five use the Internet for information, to market a course, share a syllabus, distribute course handouts, and post supplemental course resources (Bonk, Cummings, Hara, Fischler, & Lee, 1999). Levels six to ten feature increased student participation and interaction, where the Internet acts as more than a resource or add-on feature. In levels eight to ten, the Internet increasingly becomes central to course activity, until in level nine the course is entirely Internet-based, and at level ten, finally becomes part of larger programmatic initiatives of the institution.

Little is known about higher education faculty who chose to use technology to teach in an online environment and whether they went through similar stages. How did they perceive their path? This study is designed to understand the experiences of faculty teaching in the online environment. While there is much research on course effectiveness and student success in this new environment, little research has been done to understand the experiences of technology adoption by higher education faculty who are teaching on the Internet.

STATEMENT OF THE PROBLEM

Purpose of the Study

The purpose of this study is to examine faculty experiences teaching online graduate courses. This study provides an analysis of faculty perceptions of their experiences, roles, and pedagogical strategies as they moved from classroom teaching to online teaching. This study then examines what changes have ensued in faculty thinking and practices.

THE RESEARCH QUESTIONS

This study asks: What were the experiences and patterns of higher education faculty as they adapted to teaching on the Internet?

- What were faculty member perceptions of changes in their roles as they shifted from classroom to online teaching?
- What were faculty member perceptions of their motivations, or major events and factors that supported or impeded their moving from classroom to online teaching?
- What were faculty member perceptions of changes in their teaching strategies and practices as they shifted from classroom to online teaching?

Significance of the Study

This study builds on the research base on adoption of technology by K-12 teachers and extends it into the higher education area. Despite the explosion of online instruction, there are no comparable studies of adaptation by higher education faculty to online instruction. Many researchers on the integration of

technology into K-12 classrooms have said that the teachers' roles changed (Becker, 1994; Hadley & Sheingold, 1993; McIsaac & Gunawarden, 1996). Some research on higher education faculty who taught online courses has echoed the K-12 classroom experience, reporting that the role of the faculty members changed from deliverer of information to that of facilitator or moderator (Gunawardena, 1992; Kearsley, 2000; Moore, 1998).

The intent of this study is to better understand the complex faculty adaptation experiences. Such information in turn will help institutions of higher education to understand the new roles and responsibilities they ask faculty to assume. With better understanding of faculty perceptions of online instruction, those who provide training to faculty will be able to communicate more adequately to faculty what to expect of teaching online courses in relation to:

- changes in their roles;
- the time needed for course planning and course management;
- psychological and social support of students;
- appropriate teaching strategies; and
- the rhythms and anticipated time cycles for assignments.

The audience for this study might include university personnel of the participating university system, as well as from other universities interested in the possibility of establishing similar programs to support their faculty in teaching online. In addition, persons who want to establish or expand professional development programs for on-campus faculty to use online practices may find this study of interest.

Faculty recruited for this study came from a large southwestern United States university system that began offering online distance education graduate courses in the fall of 1999. A year later, by the fall of 2000, the system offered: a First Year Online program for undergraduates; seven online master's degree programs, including courses in educational technology, kinesiology, reading, business administration, computer science, and electrical engineering -- and other continuing education courses to a total of 1,707 students. Faculty members who had taught two or more online courses were recruited for this study.

DEFINITION OF TERMS

As an aid to clarity of meaning, the following definitions are provided as they pertain to this study:

Distance Education – education or training delivered to remote (off-campus) locations via audio, video, or computer technologies. It is also defined as planned learning that occurs in a different place from teaching and which, because of that separation, requires special techniques. These techniques pertain to: course design; instructional techniques; methods of communication by electronic technology; as well as unique organizational and administrative provisions (Moore & Kearsley, 1996, p. 2).

Institutions of Higher Education – institutions beyond the secondary school that offer programs terminating in an associate, bachelor, or higher degree (U.S. Department of Education, 1999).

Online Learning – a type of distance education that uses the Internet as the delivery mechanism for instruction, along with course materials, lectures, discussions, learning resources, and course administration.

Online Teaching – a type of instruction that uses the Internet as the delivery mechanism for instruction, along with course materials, lectures, discussions, learning resources, and course administration.

Organization of This Study

This chapter has presented information on the growth of online instruction. It also described associated financial, research, and pedagogical issues faced by institutions of higher education that offer online instruction. In this environment, the roles of higher education faculty as well as their pedagogical practices are both important and under-researched. The purposes of this study are to examine faculty members' experiences teaching online graduate courses and their perceptions about these experiences, as well as any changes in their roles and pedagogical strategies as they moved from classroom teaching to online teaching.

Chapter Two is a review of relevant literature, which begins with information on the growth of online instruction in higher education and studies relating to research and pedagogy issues. It concludes with an examination of research relating to higher education faculty teaching on the Internet. Chapter Three covers the initial questions guiding this study as well as the research methodology used in this study, including the methods used for data collection and data analysis. Chapter Four presents the research findings of five case studies. Chapter Five provides a discussion of the findings, conclusions, and implications for further research.

Chapter Two: Literature Review

The previous chapter presented information on the growth of online instruction, which included problems faced by institutions of higher education that offer online courses. These problems related to a variety of financial, research, and pedagogical issues. In this instructional environment, the roles of higher education faculty as well as their pedagogical practices are important topics that warrant careful research. This study focuses on understanding the experiences of faculty who taught online graduate courses, and it examines faculty perceptions of their instructional experiences, roles, and pedagogical strategies as they moved from traditional classroom teaching to online teaching.

This chapter presents a review of the relevant literature, in order to explore the context of online education as it impacted the experiences of higher education faculty who taught online distance education courses.

GROWTH OF ONLINE INSTRUCTION

Between 1995 and 1998 the proportion of four-year public higher education institutions offering distance education courses grew from 62 to 79 percent, and among public two-year institutions the proportion rose from 58 to 72 percent (U.S. Department of Education, 2000). CCA Consulting, a market research firm, reported in 2000 to the The Pew Learning and Technology Program Symposium that, of 94 percent of all colleges and universities, 63 percent were then engaged in distance or distributed learning or both, and that 31 percent planned similar activities (Twigg, 2000). More recently, in a 2001 article in *The Chronicle of Higher Education*, Bruce Chaloux, director of the Southern Regional Education Board's Electronic

Campus, spoke about the dramatic changes in online course offerings in the previous five years. He estimated that only about ten to fifteen percent of all colleges and universities in the United States had so far avoided creating significant online programs. Most institutions that have chosen not to participate are liberal arts institutions (Carnevale, 2001, p. 41).

The National Center for Education Statistics of the U.S. Department of Education, in a 1997 study entitled “Distance Education in Higher Education Institutions,” estimated that 25,730 distance education courses were offered by higher education institutions in the 1994-95 academic year. In the fall of 1995 an estimated 690 degrees and 170 certificates could be completed by taking distance education courses offered by approximately a quarter of all higher education institutions. From 1997 to 1999 the number of courses delivered via the Internet grew from an estimated 2,000 to approximately 15,000 (Olgren, 2000, p. 20). In 1994-95 about 3,430 students received degrees and 1,970 received certificates by taking distance education courses exclusively. Of the 14.3 million students enrolled in college in 1994-95, more than 753,640 were enrolled in distance education courses.

David Breneman, Dean of Education at the University of Virginia, noted in a *U.S. News & World Report* article: “part-time students twenty-five and older make up forty percent of the enrollment in higher education, compared with 28 percent in 1970” (Marcus, 2000, p. 44). These older learners have balanced work and family responsibilities with their educational activities, which has made distance learning a more attractive proposition, since it is easier to fit into older learners’ already crowded schedules. The 2001 National Survey of Information

Technology in U.S. Higher Education (Green, 2001a), which used survey results from 590 post-secondary institutions, reported online courses at:

- 84.1 percent of public universities;
- 83.3 percent of public 4-year colleges;
- 74 percent of community colleges;
- 53.6 percent of private universities; and
- 35.5 percent of private 4-year colleges.

Growth of the Adult Learner Market

Institutions of higher learning, from community colleges to the University of Phoenix, have established growing markets among adult learners who have largely been ignored by traditional colleges and universities (Armstrong, 2000). In 2001 the University of Phoenix enrolled over 90,000 students from 21 states. The University of Phoenix Online reported 33,400 degree enrollments at November 30, 2001, compared to 18,500 in the same period in 2000 (Apollo Group, Inc., 2002). The University of Maryland University College, the largest provider of distance education in the United States, provided 44,000 online courses in 2000 (Shea & Boser, 2001).

In a report by the Council for Higher Education Accreditation (Eaton, 2001), “Distance Learning: Academic and Political Challenges for Higher Education Accreditation,” the Council concluded that even with more than 5,000 postsecondary institutions in the United States, the number of students taking distance learning credit-bearing courses amounted to only 1.6 million students. There was not a major shift when 54,000 courses were spread over thousands of

institutions. The Council noted that the speed with which distance learning has grown has been remarkable, and that it was significant that so many of the institutions and programs that had adopted distance learning practices were among the most well established and highly regarded in the United States.

By the of 1998, six percent of full-time and part-time instructional faculty and staff at degree-granting institutions, who had any instructional duties for credit, indicated that they taught at least one class or section through a distance education program (U.S. Department of Education, 2002, p. iv). In addition, nine percent said they taught at least one class primarily in a non-face-to-face mode, using computers, TV-based, or other non-face-to-face primary media. Faculty at four-year doctoral institutions were more likely to use e-mail and course-specific Internet sites than those who taught at four-year non-doctoral or two-year institutions (U.S. Department of Education, 2001).

Growth of Foreign Distance Education Institutions

Outside of the United States several institutions of higher learning have created virtual universities. For example, in 1985 the Ontario Institute for Studies in Education, the graduate school in education for the University of Toronto, and Connected Education, affiliated with the New School for Social Research in New York City, began offering graduate-level courses online, using computer conferencing as the principal mode of delivery (Harasim, Hiltz, Teles, & Turoff, 1998). In the United Kingdom, The Open University, established by the British Government in 1969 as a distance education institution, began to offer online courses in 1988 with an undergraduate course for 1,300 students. The Open

University has had more than 100,000 graduates from all its programs since 1972, with 130,000 students taking courses every year. Over 150 Open University courses have been enhanced by information technology. About 110,000 students sent more than 170,000 e-mail and computer conference messages every day (The Open University, 2002). The curriculum of the Open University of Catalonia which began in 1995, was designed around communication technology and has experienced rapid growth (Rowley, Lujan, & Dolence, 1998).

Generally, there has been remarkable growth of distance education and online distance education in institutions of higher education, as well as for-profit institutions, in the United States and abroad. One of the reasons for this growth has stemmed from the financial issues faced by higher education.

FINANCIAL ISSUES FOR HIGHER EDUCATION

American higher education is a \$200 billion industry that bears little resemblance to its origins in 1636, when Harvard was established (Armstrong, 2000; Marcus, 2000). While enrollment was projected to increase by twenty percent, from an estimated 14.6 million in 1998 to 17.5 million by the year 2010, The National Center for Educational Statistics has projected that the costs of higher education will increase by fifty percent, in constant dollars, from 1995-96 to 2009-2010. Much of American higher education funding has come from state legislatures, which dropped their support from 46 percent in 1980-81 to 37 percent in 1991-92 (Rowley, et al., 1998).

Reduced Funding and Competition

The Western Interstate Commission for Higher Education (WICHE) found that 1991 was the first year in which thirty states appropriated less than they had the previous year (WICHE, 1992). For most states, higher education funding ranked below prisons, health care, and K-12 education (Rowley et al., 1998). State legislatures have sought increased efficiencies and accountabilities from universities and have demanded that higher education become more entrepreneurial by supplementing legislative funds with revenues from elsewhere, which has thus encouraged an increasingly corporate and managerial spirit in academic administrations (Burbules, 2000).

In addition to lower state funding, higher education institutions have also faced competition from other higher education institutions, private corporations, and new hybrid consortia that market courses more directly and aggressively to students. In 1999 the University of Phoenix had revenues of \$498.8 million, had spread to fifteen states, and had enrolled 68,600 students, more than Harvard, Princeton, and Duke combined. The University of Phoenix Online reported net revenues for the three months ended November 30, 2001 of \$10.9 million, compared to \$5.6 million for the same period in 2000. According to Eduventures.com, a Boston-based market research firm, about 700,000 students took online distance education courses in 1999, and the firm predicted that the number of students would triple by the end of 2002 (Marcus, 2000).

Higher Education Distance Course Enrollments Have Risen

At the University of Wisconsin enrollment in online courses grew from less than 2,200 online students in 1998-1999 to more than 5,000 online students in

1999-2000. The Pennsylvania State University World Campus in 1999-2000 enrolled 3,000 students, three times the previous year's enrollment (Eaton, 2001). Frank Mayadas, program director for the Alfred P. Sloan Foundation, testified in 2000 before the Kerry Commission on online education that for the 1999-2000 academic year, 300,000 learners were enrolled in for-credit courses from traditional postsecondary institutions as well as community colleges (Mayadas, 2001). He estimated that between half to two-thirds of those enrollments came from Sloan Consortium member institutions, comprising a range of two-year and four-year institutions that included major research institutions, such as Stanford, the University of Illinois, and Pennsylvania State University. Mayadas reported that by Sloan's calculations the three largest entities in online education were the University of Maryland University College, the SUNY Learning Network (SLN) of the State University of New York, and the University of Phoenix, the only for-profit institution with any significant national enrollment (Mayadas, 2001, pp. 136-137).

Online courses and programs not affiliated with any institution were estimated to number anywhere from 100,000 to one million, depending on whether the courses offered were credit or non-credit. Kaplan, Inc. offered over 500 online courses covering nine professions (Eaton, 2001). In July 2001 Sylvan Learning Systems, one of the nation's largest educational-service companies, formed an online higher education division to focus its investments in online learning. Some industry experts saw the entry of Sylvan Learning Systems into online learning as further proof that online higher education has become extremely competitive

(Olsen, 2001). Eaton (2001) quoted a Merrill Lynch report that estimated that the online higher education market will grow to \$7 billion by 2003.

Distance Education Offers Potential Income

Some have seen online distance education as offering a lower cost structure, scalability, greater convenience, and worldwide access (Armstrong, 2000). AT&T has reported increased productivity and cumulative savings of over \$20 million in travel costs by bringing education and training directly to the workplace (Thompson, 1994). Without evaluating the different cost analysis reports that compared distance education, or specifically, online distance education, with traditional education, it is possible to say that distance education has offered the potential for instructional cost effectiveness through its ability to extend access to large numbers of students. The model many have pointed to is the British Open University, which piloted with 800 students what is now its most successful online course, “You, Your Computer, and the Net”. In 2000 this course had a total student cohort of around 12,000 (Twigg, 2000). The growth of the global learning infrastructure has meant and will mean that millions of students interact with a multitude of individual and institutional suppliers delivering courses over the Internet. Time and geography will not be an issue.

Some educators have said that distance education is about increasing access and not about saving money. Willis (1998) advocated that the potential of providing educational access to historically under-served, place-bound, and highly motivated populations is the greatest benefit of distance education.

Although the costs of providing distance programs vary greatly, a report in 2000 sponsored by the United Nations Educational, Scientific and Cultural Organization and the World Bank confirmed that poor countries, which seek to close their education gap with rich nations, see investing in distance programs as a way to educate more people for less money. The report found that at the world's ten biggest distance institutions, the majority of which were in the third world, the cost of education per student was on average about one-third the cost at traditional institutions in the same country. The Southeast Asian Ministers of Education Organization has been developing a project for a region-wide "virtual campus system" (Bollag & Overland, 2001). The population eligible for online distance education is huge. In sub-Saharan Africa only about three percent of young people and in Asia only about seven percent attended some form of postsecondary education. This compared with 58 percent in industrialized countries as a whole, and 81 percent in the United States (Bollag & Overland, 2001).

Universities and colleges in the United States face higher enrollments, less funding, higher costs, and competition from other higher education institutions both inside and outside the United States, as well as from private for-profit corporations. Distance education, online education in particular, has been seen as a possible solution to some of the problems facing higher education, as well as providing access to a population of students that higher educational institutions might not normally reach. The question many institutions ask is whether online courses represent quality educational experiences.

ONLINE LEARNING ISSUES FOR HIGHER EDUCATION

Research on the quality of distance education, and more recently, online education, has dominated research efforts on distance education for over twenty years. Traditional higher education institutions have questioned whether online instruction is as effective as classroom instruction. Another way to ask this question is, “How can a teaching and learning process that deviates so markedly from what has been practiced for hundreds of years embody quality education?” (Institute for Higher Education Policy, 2000).

Thomas Russell reviewed more than 355 comparative research studies on all types of distance education. He suggested in his study, the “No Significant Difference Phenomenon,” that students in technology-based (typically, distance learning) courses learned as well as their on-campus counterparts (1999). Stephen Ehrman, director of the Annenberg/CPB Flashlight Project, criticized this type of research, which attempts to compare technology-based teaching methods with traditional methods, for not asking the right question (1995). Comparisons of this sort have assumed that traditional teaching methods are successful or even employ uniform standards. Ehrman argued that research should focus not on media but on specific teaching-learning methods. Nevertheless, numerous studies have supported the idea that online environments can have learning outcomes that are equal or superior to those generated in traditional classrooms (Harasim et al., 1998).

In a report to the Alfred P. Sloan Foundation, which has funded the development of university online courses, the program director Frank Mayadas said that, based on their considerable experience with classes taught on campus and on the Internet by the same instructor giving the same examinations, no significant

variation was found in learning effectiveness between classroom courses and online courses (Mayadas, 2001, p. 136). Murray Turoff, a pioneer of computer conferencing, stated (1999) that:

Today, those distance students utilizing modern group communications in their distance courses may very well be getting a better quality education than the typical student in a face to face class. It is my view that it is not the distance student who is being mistreated in this segregation but probably the face-to-face student (p. 1).

Moving Beyond Comparisons

Nicholas Burbules (2000), in his article “Universities in Transition: The Promise and the Challenge of New Technologies,” asserted that the discussion needed to progress beyond comparisons of which form of education was better to questions such as “Which way of teaching is better for whom?” and “What is being compared here?” As Burbules said, “If on-campus, real-time, face-to-face teaching is so demonstrably better and more satisfying,” then how does one account for student complaints about the costs of tuition, housing, and travel, as well as the pressures on students who, because of cultural, social class background, age, and English language proficiency factors, may not feel comfortable as part of the on-campus college community? Burbules suggested that it was perhaps inappropriate to romanticize the on-campus experience, which traditionally has had faculty lecturing from behind a podium on a stage to an auditorium of hundreds of students, often with inexperienced teaching assistants facilitating discussion sections, and busy faculty with short office hours (2000, p. 276). On the other hand, on-campus classroom teaching can accomplish some things that online teaching

cannot: In the smaller colleges and campuses, there are more opportunities for intimate, one-to-one teaching.

Brown and Duguid (1996) extended Burbules's argument by suggesting that institutions of higher education foster communities of people who share the same tasks, obligations, and goals. As Brown and Duguid pointed out, disciplines form communities, enculturating newcomers into communities of practice. Access by virtual students to such communities is limited. To Brown and Duguid, the real test of an institution was the quality of access it provided students to academic communities. A degree says something more about individuals than their participation; it reflects the quality of access made available by their institutions. In addition, Brown and Duguid asserted that institutions of higher education were more likely to be reconfigured than bypassed or abandoned as they strove to meet learners' needs for access to communities and credentials.

Online instruction may well be as effective as classroom instruction, since studies have concluded that online instruction results were not significantly different and in some cases were better than results in on-campus courses (e.g., Mayadas, 2001; Russell, 1999). Other researchers have proposed that while the learning results may not differ, access to communities of practice is limited in online environments. Higher education may need to transform itself in order to provide both access to learning and access to communities of practice. In the process of that transformation, faculty may change their pedagogy.

PEDAGOGICAL ISSUES OF ONLINE LEARNING

As the focus of distance education research has moved from administrative issues to pedagogical and faculty issues, debate has grown about how faculty

change their pedagogical approaches when they teach online. Carol Twigg (2000b), in her analysis of distance learning in higher education, wrote that the majority of online courses followed traditional practices and were evaluated using traditional student satisfaction methods, although many researchers have advocated new teaching techniques and skills. An earlier study of 436 educational Internet sites, which focused on mathematics, science, and technology learning, summarized the overall effect of online instruction in the Web sites as “one step ahead for the technology, two steps back for the pedagogy” (Mioduser, Nachmias, Lahav, & Oren, 2000, p. 55). In their analysis of the pedagogical features of the Internet sites, the researchers found that more than 93 percent supported individual work, while 72 percent showed a traditional, hierarchical, highly structured, and directed instructional mode. Brown and Duguid (1996) warned that new communication technologies might be under-exploited and might well reinforce the current limitations of our higher education system.

Lecturing, Higher Education’s Primary Instructional Method

As of the fall of 1998, 83 percent of faculty and staff with instructional responsibilities at the undergraduate, graduate, and professional levels reported that lecturing remained the primary instructional method in at least one class taught for credit, according to a report by the U.S. Department of Education (2001). Perhaps it is incorrect to assume that lecturing is an efficient way to transmit information. Lectures can serve the function of providing overviews or outlines of what has to be learned, but they cannot provide sufficient context for the learning experience itself. Oblinger and Maruyama (1996) noted that dissatisfaction with the efficiency

of lectures as a delivery-of-instruction method has caused many instructors to advocate educational models with greater student interaction with faculty, with each other, and with learning materials.

Faculty Roles Have Changed

In a 1989 report, *Linking for learning: A new course for education*, the Office of Technology Assessment noted that, while technology had removed barriers and expanded opportunities for learning, instructors found that they needed to change their methods of teaching when they taught online, by giving more attention to course planning and materials and student interaction. Moore and Kearsley (1996) found that the differences between classroom teaching and teaching via distance education might require faculty to enhance or emphasize particular behaviors and to modify teaching materials, learn new techniques, or even take on new roles.

Distance education literature, before the online revolution, promoted the idea that the instructors' roles needed to change. Distance education theorists such as Peters (1983), Wedemeyer (1981), Holmberg (1986), Moore (1973), and others have agreed with the assertion that distance education has "become a sophisticated, complex set of phenomena which has drastically altered the role of the teaching faculty. Distance education requires a group, or team, effort" (Strain, 1987). Creating an online course can involve numerous specialists, including instructional designers, graphics and multimedia designers, and programmers. Few faculty have the time or enthusiasm or expertise to create an online course without such a support team. Higher education faculty, who have been accustomed to autonomy in

their classrooms, have had to forfeit their instructional autonomy, which might be difficult and might be a barrier to their participation as online instructors (Hardy & Olcott, 1995).

Faculty Have Become Facilitators

In addition to learning to work as members of a team, faculty learning to teach online may change their pedagogical approaches to teaching and learning, by moving from being presenters of information to being facilitators of learning. The roles of faculty members in learning through distance education have evolved. Originally, the distance education teaching and learning model was based on a one-way transmission of information model, which did not change with the advent of televised instruction. Charles Wedemeyer (1981) observed that learning facilitated by technology altered the roles of teachers and learners, changed the environment for learning, and introduced a more sophisticated process to developing instruction. Otto Peters (1983) found that:

As tutors and consultants have largely been relieved from the task of conveying course matter, they are able to devote themselves to more demanding tasks, such as aiding motivation; providing individual support; structuring course content for students; identifying problems and establishing connections (p. 108).

Garrison (1989) characterized the roles of distance educators as monitoring and guiding the internal or cognitive aspects of the educational experience, challenging perspectives, and presenting alternative viewpoints that students might not normally encounter. In online education, instructors may adopt the role of moderator or facilitator, which is a significant change from the traditional classroom role, and one that changes both the nature of the instructor's roles and

their workloads. Kearsley (2000) agreed with Peters that for online instruction there has been less emphasis on presenting information and more focus on helping students find information.

DEVELOPING FACULTY EXPERTISE IN ONLINE LEARNING

Turgeon, Di Biase, and Miller (2000) wrote:

The difference between conventional classroom instruction and Web-based distance education is as great as the difference between driving a car and flying a helicopter. While some of the skills one acquires from driving may be applicable to flying, they are not by themselves adequate; thus, transitioning from one to the other requires the acquisition of additional skills. Similarly transitioning from conventional classroom instruction to Web-based, distance education requires the acquisition of skills specific to this new teaching mode (p. 6).

The shifts in pedagogical approaches are related to the evolution of distance education, from its beginnings using print-based media to more recent developments into multimedia, including two-way interactive audio- and video-conferencing, as well as computer-based desktop conferencing and chat sessions. At the same time, the roles of instructors have evolved with the changes in media and communication technologies. Distance education itself has undergone a long evolution since the early 1850s, when the instructional media were print-based. Interactions between instructors and students took place by mail, with occasional face-to-face meetings, which were later supplemented by discussions via telephone (Sherron & Boettcher, 1997). From the 1960s until about 1985, distance educators made use of multiple technologies to present instructional content, including print, audiocassettes, television broadcasts, and videocassettes. Interactions, though still primarily one-way, included discussions between instructors and students by

phone, fax, and mail, supplemented by face-to-face meetings. In the third phase, from 1985 to 1995, the growth of computers and computer networking allowed distance educators to present content through all of the media used previously as well as by e-mail, chat sessions, bulletin boards, computer programs on disks, CDs, and the Internet, as well as by videoconferencing via land, satellite, cable, and phone technologies. Interactions in this phase became more two-way, which enabled asynchronous and synchronous communication and interaction to increase contact among instructors and students and collaboration among students.

Since 1995, with the beginning of high-bandwidth computer technologies, we have entered a fourth phase. More two-way interactive real-time communication via audio and video became possible, as well as full 30-frame-per-second digital video transmission, online databases of content resources, and digital video programming. The same technologies that supported the development of learning communities among instructors and students expanded, and increased student-to-student contact.

Faculty Have Entered a New Field

Typically, higher education faculty members who have decided to try online teaching most probably have not participated in the evolution of distance education, and so enter completely new environments without knowing much about the changes in pedagogy that have evolved over distance education's long history. Faculty members might think of themselves as simply attempting to put their face-to-face courses online. In their minds, this process might not have anything to do with distance education, which on many campuses is handled by continuing

education offices. Since the lecture/discussion model predominates in higher education, the tendency for faculty members new to distance education has been to move into the new online instructional environments and to try to adapt the same old pedagogy to the new technology. Murray Turoff (1999) has noted that when strategies are transferred to computers, trying to copy the way these strategies were used before computers does not take advantage of the opportunities that computers offer.

The role changes that many have written about as necessary for faculty who teach in online environments, (Harasim et al., 1998; Kearsley, 2000; Ko & Rossen, 2001; Palloff & Pratt, 2001) do not fit well with the traditional higher education culture. Modern higher education is based on the European university model established in the thirteenth century (Van Dusen, 1997). This model includes the curriculum and credit-for-contact model, as well as live lecture and discussion. Higher education faculty who move from the classroom to online are moving into a new educational environment. McIsaac and Gunawardena (1996) found that most in-service programs taught faculty how to operate technology equipment, but gave little attention to the concepts and practices that make distance education a uniquely different enterprise from the traditional classroom. Institutions of higher education and the corporate and military sectors have designed professional development programs to introduce faculty to these new environments, and have explained the nature of distance education, the needs and challenges of distance learners, and the knowledge and skills necessary to teach effectively using the new distance education technologies (Bates, 1996; Mugridge, 1996; Thompson, 1994).

Some who described the differences in context also set forth lists of the pedagogical skills needed by online instructors, which ranged from providing structure and setting an appropriate pace to modeling appropriate behavior (Harasim et al., 1998). Others described the need for online instructors to make presentations accessible with clear language, to provide explicit advice and suggestions for students, to invite students to interact through questions or discussion, and to use a more personal tone in course correspondence (Kearsley, 2000; Ko & Rossen, 2001; Palloff & Pratt, 2001; Seward, Keegan, & Holmberg, 1983). Other writers who examined online teaching pedagogy described three types of interaction practiced by distance instructors: learner-content, learner-instructor, and learner-learner (Moore & Kearsley, 1996). More recently, a fourth interaction has been added: learner-interface (Hirumi, 2002).

Faculty Roles Have Changed

The major difference for faculty has been to change from presenting content, or transmitting information, to organizing students' interactions with that information by monitoring and facilitating their work. Kearsley (2000) said that online instruction places emphasis less on presenting information and more on helping students find information. Both Peters (1983) and Garrison (1989) described new distance education instructors as having shifted from being information presenters to managing motivation, providing support to students, and helping students understand the content and make the connections necessary for learning. Beaudoin (1990) stated that online, the instructors' teaching function is not becoming obsolete, but that the role is being transformed to being

intermediaries between students and resources. When distance education instructors become moderators or facilitators, their roles and work change significantly, as they must plan and observe the social dynamics and patterns of student interaction (Kearsley, 2000).

While distance education practitioners and researchers have suggested that distance education instructors must change their roles, such changes may be difficult for faculty at traditional institutions of higher education. Larry Cuban (1993), a researcher on technology and education, wrote that the lack of use of computers and telecommunications in schools and classrooms was not because of inadequate funds, unprepared teachers, or indifferent administrators, but because of the dominant beliefs in the traditional “culture” of education about teaching, learning, knowledge, and the teacher-student relationship, as well as how schools have been organized for instruction. K-12 teachers use curriculum resources in ways consistent with their ideas about their roles as educators and with the educational cultures in which they work. For many teachers, teaching has been defined as the management or control of students (Tobin & Dawson, 1992). Similarly, in higher education institutions, faculty have culturally conditioned beliefs about their roles and the roles of learners. Faculty also have well-established beliefs about what is “worthwhile” knowledge, student learning, the organization of learning, assessment, and faculty-student relationships (Errington, 2001).

The traditional faculty role of academic expert has been to provide students with information through lectures and required readings (Moore, 1993). Students have been expected to take responsibility for their own learning and motivation. The large college lecture hall was once a model of industrial efficiency (Van

Dusen, 1997). For traditional faculty the shift from being the sole source of information to being only one among several resources for learners may be a threatening role change. Threatening, both because faculty themselves were most likely taught in traditional classrooms, and because their professional identities as faculty are involved with controlling the process (Beaudoin, 1990). In one of Cuban's most recent works, *Oversold and Underused* (2001), he found that despite the expensive investments universities have made in technological infrastructure, "there has been, at best, modest to little impact on the teaching strategies commonly used" (p. 130).

Many faculty entering the online world have attempted to treat their virtual classrooms no differently from their on-campus classrooms. Print materials are converted to Web pages, and other information materials are packaged on CDs and sent to students. Students are expected to study their materials and take exams, while not much discussion is encouraged (Foster & Hewson, 1998).

Studies of distance education have shown that faculty who made the shift from faculty-centered to student-centered teaching not only became more successful distance education instructors, they also became more successful classroom teachers (Dillon & Walsh, 1992; Harasim et al., 1998). Harasim's (2000) research showed that instructors believed that their on-campus teaching had improved as a result of teaching online. In fact, many instructors reported that teaching online reinvigorated their enthusiasm for teaching, since they felt more intellectually stimulated and motivated by their online students who were more engaged in learning.

Online Faculty a Small Minority

Learning to teach with technology is a process with differing stages. Faculty teaching in online environments have made the shift from using technology for instruction to teaching online. They represent a small minority of faculty in higher education, as evidenced by Larry Cuban's (2001) study at Stanford where "most academics have yet to seriously pursue the use of computers for instruction" (p. 124). In a recent study, *Faculty Involvement in Web-Based Instruction at Five Academic Components of the University of Texas System*, Cheurprakobkit and Olson (2001) found that the majority of faculty preferred the traditional classroom practices of lecture and discussion, and least preferred live chat, and computer conferencing (p. 11). In the same survey of 486 faculty, only 71 had taught an online course.

Faculty Incentives

Institutions of higher education who wish to increase faculty participation in distance education often use financial rewards and incentives (Wolcott, 1997). Dillon (1989) and Dillon and Walsh (1992) found that faculty participated in distance education for a variety of intrinsic reasons, including the opportunities for new experiences and access to non-traditional learners. Taylor and White (1991) found that faculty members were more motivated by intrinsic factors than by extrinsic factors such as financial rewards or incentives from the institution to teach in distance programs. In Schifter's (2000) study, the top five motivating factors for faculty teaching distance education courses at a Carnegie Research I university were:

1. a personal motivation to use technology;

2. the opportunity to develop new ideas;
3. the opportunity to improve their teaching;
4. the opportunity to diversify instructional program offerings; and
5. greater flexibility for students.

Betts (1999) presented a slightly different but similar set of motivating factors for faculty participating in distance education from a Carnegie Research II institution:

1. the intellectual challenges;
2. a personal motivation to use technology;
3. the ability to reach new audiences that cannot attend classes on campus;
4. the opportunity to develop new ideas;
5. access to technical support provided by their institutions;
6. increased overall job satisfaction;
7. the opportunity to diversify instructional program offerings;
8. the opportunity to improve teaching;
9. increases in salary; and
10. greater course flexibility for students.

Administrative Views of Faculty Incentives

Although faculty have participated in distance education because of intrinsic factors, university administrators have believed their faculty were motivated by extrinsic factors, such as university support or benefits for individual faculty in the form of monetary support or credit toward promotion and tenure. Administrators in Schifter's (2000) study said that they thought the top five motivating factors for faculty were:

1. personal motivation to use technology;
2. monetary support (e.g., stipends, overload pay);
3. intellectual challenge;
4. credit toward promotion and tenure; and
5. release time.

Betts (1999) reported that deans believed that the factors which motivated faculty to become involved in distance education were:

1. monetary support for participation (e.g., stipends, overload pay);
2. personal motivation to use technology;
3. increase in salary;
4. credit toward tenure and promotion;
5. release time;
6. opportunity to develop new ideas;
7. merit pay;
8. intellectual challenge;
9. royalties on copyrighted materials; and
10. professional prestige and status.

There were thus considerable discrepancies between faculty and administration perceptions about motivating factors for faculty participation in distance education. Faculty members cited intrinsic reasons while administrators cited extrinsic ones. Shifter concluded his study (2000) by saying that faculty already comfortable with technology found distance teaching a challenge to their technical and intellectual skills as well as an opportunity to reach new groups of students. Scriven (1986) found that full professors were more satisfied by their distance teaching

experiences than were those in the lower ranks, and hypothesized about the positive effects of immunity from institutional reward systems. Wolcott and Betts (1999) suggested that:

Senior faculty had less to lose; getting involved did not cost them as much as it might cost a junior-level faculty member. They were freer to make the choice to participate in innovative practices and were more immune to the risks that such investments might pose in terms of career advancement (p. 11).

Integrating Technology into Teaching

Attracting faculty to teach distance education courses and attracting faculty to integrate technology into their classroom teaching are actually two aspects of the same challenge. The single most important instructional technology topic that confronted administrators in all sectors of higher education institutions from 1996 to 2001 was helping faculty integrate the use of technology into their instructional practices (Green, 2001a). Almost a third (31.5 percent) of the institutions surveyed in 2001 reported instructional integration as the most important issue in the next few years.

K-12 MODELS OF INTEGRATION

The issue of technology integration has been defined in the K-12 environment by two models that record the process of teacher technology adoption through five stages (Dwyer, Ringstaff, & Sandholtz, 1991; Rieber & Welliver, 1989), beginning at an entry level where technology has been obtained but not used very much and progressing to an advanced level in which teachers redefined teaching and learning roles. The Apple Classrooms of Tomorrow (ACOT) project

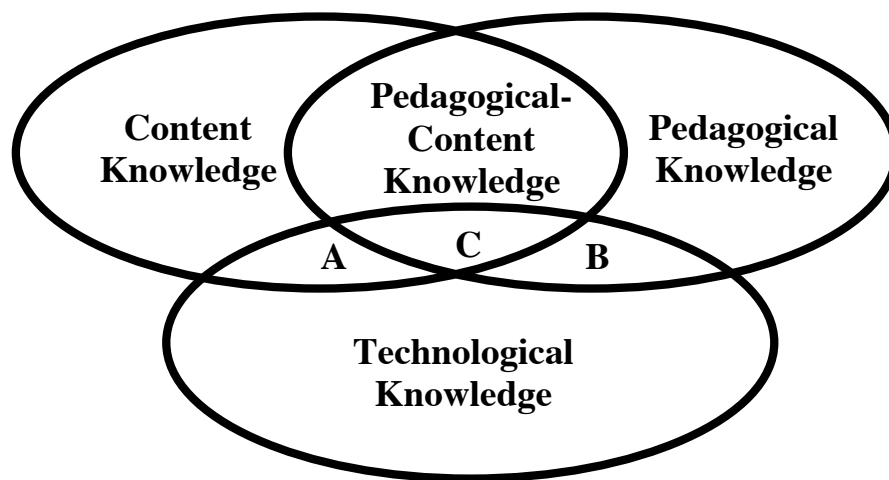
identified a series of five stages through which teachers progressed as they integrated the computer into their teaching practice:

1. **Entry.** Learn the basics of using the new technology.
2. **Adoption.** Use new technology to support traditional practices.
3. **Adaptation.** Integrate new technology into traditional practices. The focus here is on student productivity using word processors, spreadsheets, and graphics tools.
4. **Appropriation.** Change to incorporating the technology as needed and as one of many tools in activities such as cooperative, project-based, and interdisciplinary work.
5. **Invention.** Discover new uses for technology tools, such as developing spreadsheets and databases to teach social studies, or designing projects that combine different technologies (Sandholtz, Ringstaff, & Dwyer, 1997, pp. 37-44).

Rieber and Welliver's (1989) model, a hierarchy for the successful application of technology to education, utilized a slightly different five stage model:

1. **Familiarization** - becoming acquainted with computers, the concept of word processing, and how to run simple activities on commercial software packages.
2. **Utilization** – using computers for many activities, such as math or reading, but not being committed to their use.
3. **Integration** – assigning computers purposeful roles in educational activities such that taking them away would disrupt the educational process.
4. **Reorientation** – trusting certain educational responsibilities to computers so that teachers reformulate their relationships to the educational process.
5. **Evolution** – identifying educational problems and then designing, developing, implementing, and evaluating solutions (pp. 28-29).

Both K-12 models showed teachers moving through a process of integrating technology use into their practice. Hadley and Sheingold (1993) in their nationwide survey found that teachers took five to six years to integrate technology into their teaching practices. Pierson (2001) suggested that technology integration combines extensive content knowledge and pedagogical knowledge with technological knowledge. She represented her idea with a diagram in which the three intersect:



- Section A represents knowledge of content-related technology resources.
- Section B represents knowledge of the methods to manage and organize the use of learning technology.
- Section C represents the intersection, or technological-pedagogical-content knowledge, which is true technology integration (p. 427).

COMPARING THE K-12 MODELS TO BONK'S CONTINUUM

The studies of K-12 teachers learning to integrate technology into their teaching practices offered higher education some idea of stages through which faculty might move as they integrated technology into their practices. The ten-level Internet integration continuum for higher education faculty introduced by Curtis

Bonk showed faculty moving through similar processes as they integrated the Internet into their teaching practices (Bonk, Cummings, Hara, Fischler, & Lee, 1999). In levels one to five, faculty used the Internet for information: to market a course, share a syllabus, distribute course handouts, and post supplemental course resources. These levels corresponded to the first three stages of the Apple Classrooms of Tomorrow series and to Rieber and Welliver's first two stages. Levels six to ten of Bonk's continuum, which featured increased student participation and interaction, with the Internet acting as more than a resource or add-on feature, corresponded to the later stages of the two K-12 models. In levels eight to ten of Bonk's continuum, the Internet has increasingly become central to course activity until the course is entirely Internet-based and finally becomes part of the larger programmatic initiatives of their institution (Bonk et al., 1999). Level ten represents teaching online in an organized higher education initiative such as the ones in this study.

Summary

Distance education and online instruction have become a growing market that attracts both on-campus students who take online courses for convenience and off-campus adult students who balance work and family responsibilities in order to get an education. Adult learners, largely ignored by traditional colleges and universities, are attracted to distance learning. There has been remarkable growth of distance education and online distance education, both in institutions of higher education and for-profit institutions in the United States and abroad.

Universities and colleges in the United States face higher enrollments, less funding, higher operating costs, and competition from other higher education institutions both inside and outside the United States, as well as from private for-profit corporations. Distance education, and online distance education in particular, are seen as a possible solution to some of the problems facing higher education, as well as a way of providing access to a population of students that higher education might not normally reach. Higher education may need to transform itself to meet learners' needs for access to communities and credentials.

Research on the quality of distance education, and more recently on online education, has dominated distance education research efforts for over twenty years. Research that compared the learning effectiveness between classroom and online courses, taught by the same instructors giving the same examinations, did not find any significant variation in learning effectiveness. In fact, some researchers believed that off-campus, online students actually received better instruction.

While lecturing is still the primary tool in on-campus classrooms, it translates poorly to online instruction. The presentation of content takes place online and replaces the lecture. In distance education the instructors' roles often change because they must work with a team to produce their courses. In this paradigm, faculty members become managers of meaning, facilitators, and guides. Distance education technologies have evolved from print-based to high bandwidth, offering two-way interactive real-time communication via audio and video, as well as full 30-frame-per-second digital video transmission, online databases of content resources, and digital video programming.

Integrating technology into classroom teaching has been and continues to be one of the most important issues facing many institutions of higher education as well as K-12 classrooms. Most institutions have a “culture” or philosophy of teaching and learning that has not embraced technology. If we look at efforts to integrate technology into the K-12 classroom, we see that research has advocated a series of stages, with teachers moving from an entry level of becoming acquainted with computers to an advanced level of designing, developing, implementing, and evaluating solutions to pedagogical needs. The whole process may take five to six years. Studies of K-12 teachers’ experiences of integrating technology into their teaching offer higher education some idea of the stages through which faculty might move as they integrate technology into their teaching. Of course, we lack research that has shown that faculty go through similar stages. There has been no solid research to show any changes in instructional methods. We have little sense of the trajectory of experiences of faculty who have shifted to teaching online.

The purpose of this study is to understand the experiences and patterns of higher education faculty as they adapted to teaching on the Internet. Do higher education faculty who chose to use technology to teach in an online environment move through stages similar to those of K-12 teachers who integrated technology into their teaching? This study is designed to enrich the understanding of how professors perceived their experiences of teaching in the online environment and what adjustments they have made to accommodate to the new environment. Will faculty teaching online adapt their traditional methods or change their pedagogy to fit the new environment?

Chapter Three: Research Methods

This chapter provides a rationale for the research methods used in this study. It also discusses the qualitative research methods that were used in this inquiry, and explains why this type of study and these methods were appropriate to the topic being investigated. Further, this chapter describes the process used for the selection of informants, explains how data were generated, and specifies the process used for the analysis of those data. Finally, this chapter explains the strategies used to establish the trustworthiness and authenticity of the results of this research study.

REASONS FOR SELECTION OF THE INQUIRY FOCUS

The primary goal of conducting this research was to examine new and emerging educational practices in order to gain better understanding of online teaching experiences. The potential gains from research into the experiences of higher education faculty as they began to use the Internet as a medium for teaching and learning seemed important for several reasons.

First, exploring faculty experiences of learning to teach online seemed to be a particularly significant area for research. Much of the published material about faculty experiences teaching online has been anecdotal, usually one person's reflection on their experiences (Kearsley, 1997; Collins & Berge, 1996; Palloff & Pratt, 1999). We have little research on what experiences faculty thought would help them adapt more readily to the challenges and demands of the online environment. Faculty have long been accustomed to being in control of their own curricula and classroom interactions, but teaching online requires a team approach

because the medium is so complex, so that to do it well often requires the efforts of a team, including instructional designers, graphics and programming persons.

Second, if online teaching strategies have been increasingly integrated into the higher education classroom, then exploring what online faculty have thought might help them to be more effective in their online teaching practices is an important topic of investigation. Much of “faculty development” has taught how to use software tools or how to translate current classroom practices into online environments, but little is known about what actually needs to be taught.

Third, if it is possible to identify some of the characteristics that faculty have thought would lead to more authentic professional development, then a better understanding or even a model for this practice might be developed that more closely represents faculty perceptions of what has worked best for them. Such an understanding or model might subsequently be used to develop new methods or to adjust current methods of professional development for faculty so that these efforts have maximum benefit to them. In the case of this research study, the focus has been on an analysis of faculty perceptions of their experiences, roles, and pedagogical strategies as they shifted from classroom teaching to online teaching and then to examine what changes in their thinking and practices have ensued.

This study asks: What were the experiences and patterns of higher education professors as they adapted to teaching on the Internet?

- What were faculty perceptions of changes in their roles as they shifted from classroom to online teaching?

- What were faculty perceptions of major events or factors that supported or impeded their moving from classroom to online teaching?
- What were faculty perceptions of changes in their teaching strategies and practices in shifting from classroom to online teaching?

RESEARCH PARADIGM AND PERSPECTIVE

A naturalistic multiple-case study approach was appropriate for this type of research, since the outcome was intended to enhance existing knowledge or concepts (Peshkin, 1993). Specifically, the objectives of this study were to understand more about faculty experiences as they began to use the Internet as a medium for teaching and learning, and to explore faculty perceptions of changes in their teaching practices as a result of teaching online.

This research was based on the subjective interpretations by professors of their own experiences and perceptions. A qualitative approach was therefore utilized, which allowed for subtleties of interpretation to be retained in the data collected and analyzed. Qualitative research is defined in *The Handbook of Qualitative Research* as:

multimethod in focus, involving an interpretive, naturalistic approach to its subject matter. This means that qualitative researchers study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them. Qualitative research involves the studied use and collection of a variety of empirical materials—case study, personal experience, introspective, life story, interview, observational, historical, interactional, and visual texts—that describe routine and problematic moments and meanings in individuals' lives. Accordingly, qualitative researchers deploy a wide range of interconnected methods, hoping always to get a better fix on the subject matter at hand. (Denizin & Lincoln, 1998, p. 3)

While generally qualitative in nature, due to the questions that were explored and the data that were analyzed, this research was conducted in an interpretivist manner. The goal of interpretivist research is to increase the understanding of a “complex world of lived experience from the point of view of those who live it” (Schwandt, 1997, p. 221). It was this researcher’s responsibility to interpret the meaning of the information that the faculty provided as informants in this study. A variety of qualitative methods were used during data collection and analysis to ensure that this researcher’s understandings of meaning were consistent with the meanings intended by the informants involved in the process of this research.

Research Sample

The participants in this study were a purposive sample. That is, the informants selected for the study were persons who “will most help to answer the basic research questions and fit the basic purpose of the study” (Erlandson et al., 1993, p. 83). The informants for this study were recruited from among the faculty teaching online graduate courses for a large southwestern United States university system. Faculty members who had taught more than two semesters online in one of eight master’s degree programs were asked to volunteer as study participants. Representatives of the university system agreed to send an e-mail through the individual program listservs requesting volunteers for the study. The text of the e-mail is in Appendix A: E-mail Request for Volunteers. Once volunteers had been selected, appointments for face-to-face or phone interviews were scheduled, and a pre-interview survey was sent. The pre-interview survey is contained in Appendix

B: Pre-Interview Survey Questions, and the consent form is in Appendix C: Consent Form.

The research sample of faculty was drawn from five graduate programs to reveal the complexities about the kinds of experiences they had in common, and those experiences which might be individually unique. If possible, the informants should have represented the greatest range of content areas, in order to achieve maximal variation sampling (Lincoln & Guba, 1985). In this case, faculty from five master's degree programs – educational technology, kinesiology, reading, business administration, and computer science and electrical engineering – offered a range of disciplines. This type of informant sampling provided a basis for trustworthiness, since it accommodated a variety of informants' experiences, not just those considered the most typical or representative (Erlandson et al., 1993).

DATA GENERATION

Data were generated during the fall 2002 and spring 2003 semesters. To the extent possible, constructivist or naturalistic inquiry strategies were used to generate data about the informants' experiences (Creswell, 1998; Lincoln & Guba, 1985). In constructivist methodology, the “investigator and the object of investigation are assumed to be interactively linked so that the ‘findings’ are *literally created* [emphasis in original] as the investigation proceeds” (Guba & Lincoln, 1998, p. 207).

Data generation in this type of naturalistic research was an active process in which the researcher collected information about topics of interest in order to gain, to the fullest extent possible, a holistic view of the phenomena. The intent in this

naturalistic inquiry was to reveal the multiple perspectives of the informants (Erlandson et al., 1993).

In order to explore the nature of professors' experiences with online teaching, this researcher relied on interviews, e-mail exchanges, and course-related documents. Specifically, this researcher collected the following types of data:

- Interviews with these faculty, many of which were telephone interviews, that were tape recorded and later transcribed;
- The pre-interview questionnaires, information contained in the faculty members' syllabi and course materials; and
- E-mail communications after the interviews, so that faculty could comment on the transcripts.

The interviews were participant-focused. The inquiries began with a general question, asking the informants to describe their experiences teaching online. By asking them to describe their experiences, using a series of open-ended questions and then letting subsequent or follow-up questions emerge from their responses to this initial question, this researcher hoped to be able to understand the informants' perceptions of their online teaching experiences, particularly as they related to their becoming comfortable with teaching in online environments. New questions may have been added and existing questions may have been changed during the research process (Erlandson, Harris, Skipper, & Allen, 1993; Lincoln & Guba, 1985). Strake (1995) described a process of "progressive focusing" wherein research issues became clearer and the research questions became more refined. In addition to generating interview data, these interviews provided opportunities for the faculty to reflect on their own experiences and perceptions as newcomers to

online teaching. All the interviews were tape recorded, then transcribed, and the transcriptions were stored in electronic files, i.e., as word processor documents, for later use in data analysis.

METHODS FOR ENSURING QUALITY

A variety of techniques were used in this study to ensure that the investigation was conducted in a rigorous and trustworthy manner, and that it revealed as much as possible about the subject being researched from the points of view of those whose experiences were examined by this research. Since this researcher was the main data-collection instrument in this type of research, it was necessary to begin by examining, identifying, and acknowledging her own values, experiences, and expectations. A Researcher as Instrument Statement has been provided, contained in Appendix D: Researcher as Instrument Form. By freely admitting her own biases and beliefs, this researcher strove to avoid allowing these ideas or preconceptions to influence her interpretations of the informants' descriptions of their own experiences and views (Lincoln & Guba, 1985). The goal of naturalistic inquiry is to make "the commitment to studying human action in some setting that is not contrived, manipulated, or artificially fashioned by the inquirer" (Schwandt, 1997, p. 107).

As the inquirer, this researcher made that commitment and endeavored to capture the meanings of informants as accurately as possible. In addition to starting with her statement of beliefs about the topic, this researcher maintained a reflexive journal (Erlandson et al., 1993). A common tool of naturalistic inquiry, this journal was a continuous running dialogue kept by this researcher throughout the research process. Its purpose was to document the ongoing ideas and actions

that she dealt with and made decisions about during the course of the research project. The reflexive journal served to help this researcher reflect about the progressive development of ideas and interpretations, and about actions taken on the basis of those ideas.

In order to ensure that this researcher had understood the faculty members' meanings and had not interjected her own, she used a process called "member checking", which required that this researcher engage in "soliciting feedback from respondents on the inquirer's findings" (Schwandt, 1997, p. 88). This process occurred in several ways during the data generation process. First, during the interviews, which were tape recorded, this researcher checked her understanding of informants' meanings if their meanings seemed unclear. Second, after transcribing each of the interview tapes, this researcher summarized the informants' meanings, and then reviewed these summaries with the informants to ensure that their meanings were reported as they had intended. Third, at the conclusion of the interviews with the informants (i.e., the end of the part of the data generation process that involved the informants' being interviewed and their meanings documented and summarized), informants were asked to review the study findings that were derived from information that they had provided. At any time during this member-checking process, if informants felt that their intended meaning had not been reported accurately or as they had intended, the statement of their meanings written by this researcher was revised to more closely reflect their actual views. Fourteen of the twenty faculty interviewed responded that the case studies represented their viewpoints, with only slight corrections, which all were made. Six faculty did not respond, even after the case study was twice sent to them.

In order to more fully reflect on the data collected in this research study, this researcher will share information gleaned from interviews, e-mails, or other course-related documents pertinent to this study with other naturalistic researchers, who, throughout the course of this investigation, meet regularly for “peer debriefing” sessions.

Triangulation was another method that used to support the data generation process. Triangulation is demonstrated by the use of “multiple data sources, methods, investigators, or theories” that increase the level of “confidence in the observed findings” (Erlandson et al., 1993, p. 139). In this study, these multiple data sources included interviews, survey data, e-mail communications, and other documents such as syllabi. In addition, this researcher’s training in cultural anthropology and her fieldwork in Iran helped her to learn the discipline of seeing through her informants’ eyes as they described the online learning environment.

DATA ANALYSIS

Data analysis began as soon as data were generated. This continuous-analysis process continued throughout the research study so as to inform the ongoing data collection and the analysis of data, to aid in the analysis and recognition of emergent themes, and to connect emergent findings to existing literature.

The multiple case study design of this research allowed this researcher to provide a thick, rich description of the “circumstances, meanings, intentions, strategies, motivations, and so on” that characterized the experiences of the faculty who were the informants in this study (Schwandt, 1997, p. 161). In naturalistic inquiry, case studies are often used to provide a condensed, focused, thick

description, which allows readers to understand, and to some extent to share, the experiences and perceptions of those experiences held by the informants. Thus, in the process of analyzing, condensing, summarizing, and reporting informants' experiences as case studies, the informants were involved in the construction of these case study reports.

Data generated during interviews with informants were analyzed before scheduling follow-up interviews. The taped interviews were transcribed as soon as possible after the interviews occurred. These transcriptions then were summarized, and the summaries were provided to informants. They were asked to review and correct the information so as to better reflect their intended meanings, in part to meet the criterion of fairness necessary to demonstrate authenticity and confirmability for this study (Lincoln & Guba, 1985).

With these case studies, this researcher can provide information that allows the reader to share aspects of the experiences of the informants. If this information seems useful or relevant to readers, then they can, as they like, apply the themes that have emerged from this researchers' analysis of the data, or they can apply their own analyses in a manner that seems appropriate to them or which applies to their own experiences.

After construction of the case studies, with feedback and corrective help from the informants, this researcher proceeded to conduct a cross-case analysis.

QUALITY CRITERIA

There are two main "safeguards" in naturalistic inquiry that assure quality: trustworthiness and authenticity (Erlandson et al., 1993). Trustworthiness is a quality that primarily relates to the methods used in conducting the research study,

while authenticity is a quality that primarily relates to safeguarding the human subjects involved in the research study (Guba & Lincoln, 1998).

Trustworthiness

Major considerations in doing non-positivist research are the issues of: “how truth will be determined, how it will be communicated, ... and how error will be detected and corrected” (Erlandson et al., 1993, p. 29). In naturalistic inquiry, there are four common criteria for evaluating the trustworthiness of the research: credibility, transferability, dependability, and confirmability (Erlandson et al., 1993; Lincoln & Guba, 1985; Schwandt, 1997). A variety of processes were used in this research study to address each of these concerns.

Credibility

Credibility is an issue related to the researcher’s ability to show that the views presented in the research report as those of the informants are in fact the informants’ actual views (Schwandt, 1997). Among the strategies usually recommended to address the credibility of the research, and which were used in this research study, are: *prolonged engagement*, *persistent observation*, *triangulation*, *peer debriefing*, *member checking*, and *keeping a reflexive journal* (Erlandson et al., 1993; Lincoln & Guba, 1985).

Prolonged engagement, or involvement with a specific context for a sufficient time to reduce distortions of meaning, was addressed in this research study by this researcher’s review of the e-mail and course-related materials, by the whole process of interviews, transcriptions, summarizations, and member checking of these summaries for accuracy. This process required frequent exchanges of ideas

between informants and this researcher. These interviews, the summaries drawn from the transcriptions of the interviews, e-mail messages, and other communications and sharing of understanding between researcher and informants provided continuous opportunities for persistent engagement and observation of the informants over an extended period of time.

Concerns about triangulation of the data were addressed by the variety of the types of data that were gathered for analysis, such as e-mail logs, interviews, and information written by and about the informants themselves. Summaries of the interviews were member-checked with the informants, and corrected as deemed necessary by these informants in order to accurately reflect their views. In addition, this researcher met regularly with a peer-debriefing group composed of six colleagues who were engaged in conducting dissertation research with projects that had research designs similar to those of this study, as naturalistic inquiries.

This researcher also maintained a reflexive journal throughout the research process, as a means of: (1) recording decisions made about the project and documenting the reasons for those decisions; (2) continuing to examine her beliefs and assumptions and continuing to be vigilant and mindful in the avoidance of having her own preconceptions be inadvertently injected into the interpretations of the data; and (3) keeping a collection of relevant field notes on the process and progress of the research.

Transferability

Transferability, or the application of information gleaned from one research study to another, is something that the readers of this study will have to judge for

themselves. In naturalistic inquiry, there are no formulations of generalizations about findings, as there are in other more positivist types of research (Erlandson et al., 1993; Lincoln & Guba, 1985). These faculty members' experiences were assumed to be unique, and a naturalistic inquiry into their experiences with online teaching was thus intended to "illuminate a particular context and provide working hypotheses for the investigation of others" (Erlandson et al., 1993, p. 45). By providing thick descriptions of the situations, perceptions, and experiences of the informants in this study, this researcher intended to describe these unique circumstances in a way that revealed aspects that they might have in common. But these descriptions were not intended to be used to characterize or predict all of these kinds of situations.

Dependability

Dependability relates to the consistency of the research, and represents an assurance that there is an accurate fit between the data recorded as data and what happened in the setting (Erlandson et al., 1993). Strategies that are considered effective in ensuring the integrity of the data analyses that were used in this study included: the reflexive journal; the documentation of communications with members of the peer debriefing group; the transcriptions of the interviews; and e-mail correspondence between this researcher and the informants.

Confirmability

Confirmability is the quality of showing that the data, and the interpretations of the data, are primarily a result of the research process rather than merely reflecting the beliefs of the researcher (Lincoln & Guba, 1985). The quality

of naturalistic research is considered to be demonstrated in situations where future researchers can trace findings to their original sources (Lincoln & Guba, 1985). Strategies for addressing this issue included member checking, to ensure that the informants' opinions and views were interpreted correctly by this researcher, and peer debriefing, to ensure that others knowledgeable about the conduct of this kind of research could inspect and question this researcher's process and progress. In addition, in naturalistic inquiry the researcher should be prepared to collect the data in a comprehensive manner so that, if requested, the data could be reviewed by another competent researcher, who should be able to conduct an "audit" of the materials and should be independently able to arrive at conclusions consistent with those of the original researcher.

Authenticity

Authenticity relates to the ethics of the research study, by exploring the interests of the informants, and what they got out of participating in the study. (Erlandson et al., 1993). There are five major criteria of authenticity: *fairness*, *ontological authenticity*, *educative authenticity*, *catalytic authenticity*, and *tactical authenticity*.

Satisfying the criterion of *fairness* entails giving all participants during the inquiry sufficient opportunities to express their views. The faculty informants were asked the same initial open-ended question: to describe their experiences with online teaching. During the inquiry, the informants were asked to express their ideas and thoughts about the topic, and their own words were used in asking for clarification and elaboration during follow-up questioning.

Ontological authenticity ensures that informants increase their understanding of the world around them by participating in the study.

Although these types of authenticity are generally considered sufficient to demonstrate the quality of a study, there are several other types of authenticity that, if they emerge in the course of a research study, are thought to indicate quality.

Educative authenticity involves the informants' freely and spontaneously acknowledging that they have grown in their understanding through participating in the research study. For example, an informant's unprompted comment that she felt that by participating in the research study, she had an opportunity to reflect on aspects of her online teaching practices in ways that she had never considered before, could be seen as an indicator of this kind of authenticity.

Catalytic authenticity involves an evaluation of the "extent to which decisions and action are facilitated by the expanded constructions of the stakeholders" (Erlandson et al., 1993, p. 154). For example, faculty might have mentioned the kinds of future plans, which they believed they might implement in their courses, that were directly affected or were influenced by their participation in this research study. This would be seen as evidence that might indicate catalytic authenticity.

Tactical authenticity relates to an evaluation of the extent to which the informants feel "empowered to act" (Erlandson et al., 1993, p. 154). Tactical authenticity might be demonstrated by the informants' actions or their comments about their intended future actions that were connected to what they felt they learned as a result of their participation in this study.

ANTICIPATED AUDIENCE

The audience for this study might include university personnel of the participating university system as well as from other universities, interested in the possibility of establishing similar programs to support their faculty in teaching online. In addition, persons interested in establishing or expanding professional development programs for on-campus faculty to use online practices may find this study of interest.

Chapter Four: Case Studies

The virtual university has served as a central support system for distance education programs and services among the fifteen components of this southwestern state university system. Nine components are academic, and six are health science components. The virtual university began in May 1998 as a central support system for online educational initiatives, and, according to published information, strives to meet the educational needs of the state, the nation and the world. The virtual university has two guiding principles: All virtual university activities must be consistent with the mission of the state university system in its efforts to provide access and high-quality educational opportunities for state citizens; and the virtual university would not exist without the support of the state system faculty. The virtual university promotes and supports faculty throughout online course development and delivery.

According to virtual university sources, by spring 2003 there had been over 16,000 enrollments in thirteen fully online programs. The virtual university catalog lists more than 75 courses, with 104 courses offered by over 200 faculty and instructors across the state system. Undergraduate course completion rates were 85 percent, and graduate completion rates were 97 percent. The virtual university has provided \$4.5 million in direct financial support to components for course development. At the same time, components have generated \$9.2 million in revenues from virtual university courses, through tuition, fees, and formula funding from virtual university enrollments. Approximately fifty percent of the revenue dollars are “new” dollars to the system. The virtual university is a system-wide distance education infrastructure that reduces the need for campuses to duplicate

services and to commit resources to course management systems, to 24 hour, seven days a week technical support services, and to academic support services (tutoring).

There are five case studies in this section, each relating to a particular master's degree program offered by the virtual university. These include: the Master's of Education in Curriculum and Instruction in Reading (MReading); the Master's of Computer Science and Electrical Engineering (MCS/EE); the Master's of Educational Technology (MEd); the Master's of Business Administration (MBA); and the Master's of Science in Kinesiology (MKin). Many of the programs are collaborative in nature, joining several components in the delivery of courses. The degree programs have the same basic admission requirements and curricula as their on-campus counterparts. The same faculty who teach on campus teach the online courses.

Before turning to the individual program case studies, an overview is needed of the programs and of the sample interviewed in the study. Table 4.1 shows: the total number of faculty in a specific program; the number of faculty interviewed; the total number of courses in the program; and the number of courses taught by those interviewed. The last column represents the number of components from which faculty were interviewed, with the total number of participating components in the program shown in parentheses.

TABLE 4.1. SUMMARY OF PROGRAMS, COURSES, AND FACULTY INVOLVED

| Program | Total Faculty | Faculty Interviewed | Total Courses | Courses Taught By Interviewed Faculty | Components With Faculty Interviewed |
|----------|---------------|---------------------|---------------|---------------------------------------|-------------------------------------|
| MReading | 6 | 2 | 12 | 7 | 1(1) |
| MCS/EE | 20 | 4 | 24 | 4 | 2(2) |
| MEd | 8 | 4 | 12 | 7 | 3(6) |
| MBA | 20 | 5 | 16 | 5 | 3(8) |
| MKin | 16 | 5 | 18 | 7 | 3(6) |
| Totals | 70 | 20 | 82 | 30 | |

Overall, twenty of the seventy faculty members in the five master's degree programs were interviewed. They taught thirty of the 82 courses offered. Faculty from three components of each of the larger programs were interviewed. These included the Master's of Educational Technology (Components B, E, and J), the Master's of Business Administration (Components B, E, and H), and the Master's of Science in Kinesiology (Components E, F, and G). Faculty from the Master's of Education in Curriculum and Instruction in Reading came from Component A, while faculty from the Master's of Computer Science and Electrical Engineering program came from Components A and D. Faculty members from six of the nine academic components in the state university system were interviewed. Faculty interviewed from the seventh component taught at one of the six health science centers.

Table 4.1 shows the number of faculty interviewed, the number of courses they taught, and the component from which they taught. Table 4.2 presents demographic data on individual faculty members by program.

TABLE 4.2. FACULTY DEMOGRAPHIC DATA BY PROGRAM

| MReading Program | University Rank | Age | Gender | Years Univ Teach | Years Virtual Univ Teach | Comp Campus |
|-------------------------|-----------------|-------|--------|------------------|--------------------------|-------------|
| Jana | Associate | 50-54 | F | 8 | 3 | A |
| Nora | Associate | 50-54 | F | 20 | 4 | A |
| MCS/EE Program | | | | | | |
| Guy | Associate | 45-49 | M | 20 | 2 | D |
| Ian | Associate | 55-59 | M | 32 | 3 | D |
| Ron | Instructor | 30-35 | M | 7 | 2 | A |
| Roy | Full | 55-59 | M | 21 | 2 | A |
| MEd Program | | | | | | |
| Bob | Associate | 50-54 | M | 27 | 3 | J |
| Mark | Associate | 50-54 | M | 7 | 4 | B |
| Ray | Full | 55-59 | M | 27 | 3 | J |
| Thomas | Full | 55-59 | M | 20 | 4 | E |
| MBA Program | | | | | | |
| Carlos | Associate | * | M | 28 | 4 | B |
| Dan | Full | * | M | 41 | 4 | H |
| Jack | Assistant | 45-49 | M | 6 | 3 | B |
| Lisa | Associate | 40-44 | F | 14 | 4 | E |
| Sam | Full | 55-59 | M | 32 | 4 | E |
| MKin Program | | | | | | |
| David | Full | 55-59 | M | 38 | 3 | G |
| Doris | Associate | 45-49 | F | 6 | 2 | E |
| Garry | Associate | 65-69 | M | 24 | 1 | E |
| Lola | Associate | 55-59 | F | 32 | 3 | G |
| Sarah | Associate | 60-64 | F | 22 | 3 | F |

* Did not give age.

As shown in Table 4.2, six of the twenty faculty interviewed in the study were full professors; twelve were associate professors; one was an assistant professor; and one was an instructor.

Seven faculty members were in the 55-59 age group, four were in the 50-54 age group, three were in the 45-49 age group, and one faculty was in each of the 30-35, 40-44, 60-64, and 65-69 age groups. The majority, eleven, were in the 50-59 age group, followed by four in the 40-49 age group, two in the 60-69 age group,

and one in the 30-34 age group. Two male participants did not give their ages. Six of the faculty members were female and fourteen were male.

Five faculty members had taught from thirty to 41 years at the university had level. Nine had taught from twenty to 29 years, one had taught for fourteen years, and five had taught between six and eight years.

Seven faculty taught online for the virtual university for four years. Eight taught online for three years, four had taught for two years, and one had taught for one year.

The presentation of each of the case studies included in the research is comprised of the following set of sections and subsections:

1. **Program description.** Information in this section was drawn from the virtual university's website and was supplemented with some information on the history of the program and enrollment.
2. **Faculty perceptions of events or factors that supported or impeded their moving from classroom to online instruction.** In this section individual faculty members' perceptions were compared under the headings: How they became involved in teaching online; Training and course development; and Benefits and impediments to teaching online.
3. **Changes in faculty roles as they shifted from classroom to online teaching.** Individual faculty members' perceptions were compared under the headings: Views of their roles in teaching online; and Motivations for teaching online.
4. **Faculty perceptions of changes in their teaching strategies and practices in shifting from classroom to online teaching.** Individual

faculty members' perceptions were compared under the headings: Course structure and feedback; Scheduling and assignments; and Viewpoints on teaching online or in the classroom.

5. Case study summary and exploration of emerging themes.

MASTER'S OF EDUCATION IN CURRICULUM AND INSTRUCTION IN READING PROGRAM

This program was chosen as the first case because it was the least complex. The program originated from one component, had only six faculty members, and the two faculty interviewed taught seven of the twelve courses offered. This researcher reviewed their courses online and sent the case study to them for their comments and suggestions. Both faculty members responded positively.

Program Description

Here is an adapted version of the program description from the website:

Component A offers the unique opportunity to complete a Master of Education in Curriculum and Instruction (M.Ed.) completely online. This degree provides opportunities for those interested in the field of education to develop effective teaching, research, and leadership skills that are congruent with an ever-expanding theoretical knowledge base in the field. This program enables elementary and secondary in-service teachers to specialize in advanced coursework in their teaching fields and other professional certification areas designed to meet a variety of professional goals. This program requires 36 credit hours (12 courses).

The program went online in the fall of 1999 with an enrollment of thirteen. As of fall 2002, enrollment was 158 with an overall program average class size of 27. In fall 2002 the three largest class enrollments were 49, 45, and 32. The Reading program had its most students in the summer of 2001, with 172; the three

largest class enrollments then were 47, 38, and 32. The largest class taught so far was 55 in the spring 2002 semester. According to virtual university staff, it was impossible to distinguish the number of on-campus students who took courses in the online program from those pursuing online degrees.

Events or Factors that Supported or Impeded Moving from Classroom to Online Teaching

In this section we look at how Nora and Jana got into teaching online, their training, course development experiences, and benefits and impediments to teaching online. Nora and Jana were both associate professors. Nora had taught in higher education for over twenty years, and Jana had taught for eight. Nora had taught online for the virtual university for three and a half years, while Jana had taught for three. Of the twelve courses offered, Nora taught four and a half, while Jana taught two and a half; the half represented a course that they taught together.

HOW THEY BECAME INVOLVED IN TEACHING ONLINE

Nora had been asked by a colleague to develop an online course in literacy studies, because part of their teaching effort was to teach teachers how to read and respond, and in the online environment they could require that. She put up her first course in the fall of 1999 as part of an English as a Second Language endorsement for teachers. Funding for the master's degree came in the fall of 1999 and the master's degree went online in 2000.

Jana's experience began with developing online courses at another institution before she came to Component A. She and a colleague wrote a grant to an agency other than the virtual university to support the course development, and taught two teacher education courses in 1998. She did her own coding in Netscape

composer. Jana recalled this experience as, “We were, think about pioneers, and just in there learning on the job, you know. It was a great experience.” The move to Component A put Jana into an environment with more emphasis on online education and which had a distance education center with instructional designers and technicians.

Training and Course Development

Nora and Jana were essentially self-taught, since there were not many online courses for them to see or take at the time they started. The virtual university that funded the development of their courses gave them training in the software platform, and in what was then known about online pedagogy. Both mentioned that they spent a lot of time developing their courses, anywhere from a to a semester for each course. Nora and Jana spent time fine-tuning their materials before giving their courses again.

Benefits and Impediments to Teaching Online

Benefits came in different forms. One form was to receive recognition for advancement, promotion, and tenure. Both professors said they received recognition for their online work as well as financial compensation for the use of their intellectual property on a per student basis. Nora mentioned that putting the program online helped maintain the existence of the program. She added, “I think because we have made a case, and we’ve been able to generate numbers, the administration has been very supportive.”

Another benefit both reported was the flexibility of teaching online. This meant that they could travel, maintain two homes as Jana did, or do administrative

work and more easily carry a full teaching load, as Nora did. This flexibility had a downside: When asked how many courses she taught in addition to being the program advisor and course scheduler, Nora said, “You don’t want to know!” Circumstances that semester produced a schedule of four and a half courses, whereas ordinarily her load was three, in addition to her administrative duties. She had a total of 185 graduate students, and some courses had as many as seventy students.

Jana had much the same schedule, without the administrative responsibilities. Her normal load was three online courses per semester for the fall and summer semesters. She asked to teach a face-to-face undergraduate class each spring along with her two online courses. Each of her classes averaged 45 to fifty students. Having sat at the computer for long hours has produced a variety of physical aches and pains, which Jana has coped with by doing yoga, getting massaged, and having reflexology therapy. The long hours could put a strain on one’s family life, as she mentioned, but she had found a way to balance both.

Neither professor would have been able to continue teaching such large classes if not for the added benefit that Component A provided teaching assistants for every class or combination of classes with 25 students. Each assistant worked about twenty hours a week. Nora reported using previous online students as her assistants because they had taken her courses and knew what she required. Both Nora and Jana said that assistants helped them with the logging of required discussion participation and other time consuming tasks.

Changing Roles from the Classroom to Online Teaching

Views of Their Roles in Teaching Online

In answer to the question of how she viewed her role in online instruction, Nora spoke about developing the course to provide organized, quality content. Nora recalled, “My colleague who pitched this program said, ‘You’ll do well in an online environment, because students need organization.’” Nora also mentioned that she saw her role while the course was progressing as managing the interaction, anticipating difficulties, and scaffolding support. To this end, she participated in discussions and sent messages and weekly reminders to the general discussion area or as broadcast e-mail.

Jana saw her role in much the same way:

Same as when I teach in person. You know the axiom, “don’t be a face on the stage but a guide on the side?” Exactly the same. My role is so much up front work, so much planning, so much studying up the learning experiences. And then just stepping back, engaging the students, and supporting them as they interact with each other, providing them feedback on their work, and so that’s a full time thing.

Both mentioned that they liked the interaction with the students that the online environment can provide. They also valued the diversity of their online students. Jana found that one semester her students were from ten states and four different countries. Jana said, “It’s like being able to travel and not really doing it. It gives me a broader perspective on education.” Nora agreed:

I never thought I’d be teaching only online. I never thought I’d be teaching people around the world. It’s been an incredible experience for me.

While Nora saw the value for herself she also stressed the value for her students, who might never have taught outside their districts or might not have had much

contact with other teachers from other areas by attending conferences. Both valued the richness of the discussions from their diverse online student populations.

Motivations for Teaching Online

In order for us to better understand these faculty members' roles in online instruction, we need to look at what motivated them to teach online. Speaking as a thirty-year veteran of the teaching field, Nora was happy not to have to deliver the same content over and over again, "Online, everyone gets the same content." Teaching online she could concentrate on how well her students were learning. Nora mentioned that it was easy to become stagnant, and she said about involving other faculty, "I believe it could be just this incredible rejuvenation for them."

Jana, who coded her first course pages, liked the technological challenges, but she was also motivated to provide students with access to education, as she said:

I want to bring education – you know, anytime, anyplace, no geographic boundaries – to people. And I think the technology and the connectivity that we have now is so exciting that it breaks down all these lines that have existed before. And it's just like, I don't know, I'm just absorbed by it. I want to be right on the leading edge of it.

Nora agreed with Jana that providing student access to education was an important motivation for her.

Perceptions of Changes in Teaching Strategies and Practices in Shifting from Classroom to Online Teaching

Course Structure and Feedback

Nora and Jana saw their online students as needing more structure, more validation, and more assurance, since the students could not see the faculty member

in the classroom. Both presented very detailed syllabi for their online courses. Nora supplemented her syllabus in each course with a multitude of aids describing everything from instructions on how to post to the discussion area, to class discussion guidelines, class discussion assessment guidelines, and guidelines for projects and assessments. As she noted, “In the online environment, you need things spelled out in a very concrete way.”

Jana agreed on the need for organization in an online course:

I’d say, on the positive and negative side, that you have to plan in minutest detail and plan your course well in advance, because once it’s up and running, at least for me, it takes everything I have to keep up with the students and to keep responding.

One way of responding in the online environment is called “feedback”. Both Nora and Jana tried to provide prompt feedback to students. One way Jana handled feedback for more immediate questions was to set up a folder called “Questions for the Instructor”. She told the students that this was for students who had personal issues that could not be discussed in a classroom environment. Jana rotated surveillance of the folder with her teaching assistants so that this folder was watched daily, even on weekends. Both Jana and Nora graded discussion participation. Nora’s teaching assistants helped her keep track of the discussions. She noted that she was always pleased when her students said that she sounded like a real person. She thought that an instructor’s “voice” is critical in an online environment. Nora observed that her quieter, more reticent students commented that they interacted far more in an online environment than they ever interacted in the classroom, and also that because they were online they had the time to think through and edit their ideas before posting them.

Scheduling and Assignments

As both faculty members noted, scheduling was very important for online students. In fact, they coordinated with each other and other faculty members in the program so that deadlines for major assignments were staggered. In the first two weeks, while the student population fluctuated just as it did on campus, expectations were fairly basic with no graded assignments. Activities focused on orienting students to the course requirements, the discussion area, and technological concerns, in addition to making introductions and some reading. Both Nora and Jana provided a rubric for every assignment so that students knew what the assignment expectations were, and how it would be graded.

Jana provided a folder structure that facilitated the students' posting of assignments and her own grading. Students posted the same assignment in two places: to their own work folders and to the discussion area for other students to review. Each student had a self-assessment folder and a portfolio folder. Grading was done on the work in these two folders. In addition, grades were given for participation in the discussion area assignments. Nora utilized the discussion area for student discussion, self-assessment, and assignment posting.

Although scheduling their time to work on student discussions and grading was more flexible in the online environment, the work could still take a lot of time, especially with large classes. Both professors agreed that teaching online took more time than teaching on campus. Nora estimated that she spent about eleven hours per course per week, while Jana estimated closer to sixteen hours per course per week. Some of the tasks they attended to related to giving feedback, monitoring the discussions, grading, and solving student problems. In addition, Nora, as advisor,

handled administrative and marketing efforts. She often worked in the middle of the night, because the connection time was quicker. Her students often asked, "Were you really up at three a.m.?" She answered, "Yes, I really, really, was."

Viewpoints on Teaching Online or in the Classroom

Both faculty members noted the intellectual challenges of translating their teaching to an online environment. Nora said:

I went into this with really kind of a skeptical attitude, because with so much of my course work, there was a lot of hands-on, experiential, experiencing this technique and debriefing how that went. "Would you use that in your classroom? What modifications would you make?" And I thought, well, how can I simulate that in an online environment?

Nora was so satisfied with the transformation of her courses to the online environment that she taught entirely online. When asked if she missed teaching on-campus courses, she said:

No, I don't. And you know, people ask, "Do you miss that?" I really don't. I thought I would. And even though it is more work, I don't know, I just prefer teaching online. I still do workshops with teachers, so it's not like I can't. I still see people face-to-face, but this seems to suit me.

Jana, on the other hand, requested a face-to-face class once a year because it "keeps me honest, keeps me in touch with people face-to-face, and keeps those skills honed. And I feel like I'm a better online teacher because I do that." Her on-campus course, she noted, was paperless. She used many of her online teaching strategies in her on-campus course.

Case Summary and Exploration of Emerging Themes

This case study on the Master's of Education in Curriculum and Instruction in Reading program represents the experiences of two of the six professors in the

program. Together they taught seven of the twelve courses offered. Both taught three to four online courses a semester, each with enrollments of 45 to seventy each. They estimated that they spent eleven to sixteen hours a week on each course. Component A provided teaching assistants, which made it possible for the two to teach such large classes.

Both first offered online courses in 1998 or 1999. Few online courses were available for them to see or to study when they started to create their own online courses. As a result, both Nora and Jana were largely self-taught. They were assisted by a distance learning center at Component A. They were enthusiastic about teaching online courses and enjoyed the intellectual and technical challenges, as well as the flexibility of selecting their work times and locations. Faculty at Component A received extra money as a sort of royalty fee for using their materials for the online courses. Both Nora and Jana felt that their online work was recognized for advancement and promotion.

Nora was more motivated by the freedom from presenting content that an online course gave her; this freedom allowed her to concentrate on student learning. Initially, Jana felt excited by the technological challenges. Both valued the access to education that online courses offered their students. The diversity of students, who were often from other states or countries, enriched the course discussions for professors and students alike. Both faculty members saw their roles as creating quality course content and then managing the interactions, anticipating difficulties, giving scaffolding support, and providing prompt feedback. Faculty members in the Reading program coordinated their assignments with other faculty in the program

and used the first two weeks for student orientation. While Nora has moved to teaching totally online, Jana chose to teach one on- campus course a year.

Emerging Themes

At this point, we note the themes that seem to be emerging.

Factors that supported or impeded their move from classroom to online instruction

There are layers of motivations for teaching online. It seems natural for a faculty member to be interested in teaching online if they have had a previous background in some form of distance education, or if they enjoyed experimenting with technology or different methods of teaching. After many years of teaching, using new methods to teach can rejuvenate a faculty member's enthusiasm. These were faculty who tried such a new method of teaching that they regarded themselves as essentially self-taught. A less obvious motivation, that could only come from having taught online, was that with the presentation of information transferred to online materials, the faculty member could then focus on facilitating student learning. Two other motivational themes relating to students were providing access to graduate student education that might not otherwise be possible, and providing faculty with access to a more diverse group of students than found on most campuses. The last theme related to motivation was that of saving a graduate program at the component.

Several themes related to the benefits of teaching online for faculty at Component A included: their recognition for advancement, promotion, and tenure; financial compensation for the use of their intellectual property for the online courses; and the flexibility to choose the time and location to work. In addition,

faculty received support from the component in the form of teaching assistants for faculty with class enrollments over 25, and training from both the virtual university and the component's distance education center.

Three impediments were mentioned: class enrollments were expanding, online teaching took more time to do than on-campus teaching, and teaching online could allow faculty members to manage additional administrative responsibilities, thus making them much busier.

Changes in their roles as they shifted from classroom to online teaching

Before the online courses began, faculty spent much more time selecting and developing materials and assignments than they would have for an on-campus class, because the online course had to be completely finished before it could be given. Since the presentation of materials was online, the instructors' roles changed after the courses started. Faculty spoke of providing facilitation and guidance at this point, of managing the interaction, anticipating difficulties, scaffolding student activities, and providing prompt feedback.

Changes in their teaching strategies and practices as they shifted from classroom to online teaching

Themes relating to changes in teaching strategies pivoted around providing more detailed instructions and schedules, as well as providing additional worksheets, aids, and grading rubrics. Online students, without the weekly on-campus class meetings, needed more structure and more detailed schedules. Each course, because of enrollment changes used the first two weeks as an orientation period for students. Discussion participation by all students was expected and was part of course grading. Students needed prompt feedback.

Themes relating to satisfaction with teaching online included being skeptical in the beginning about online education, being enthusiastic about teaching online, and preferring to teach online so much that the faculty member did not miss the classroom. On the other hand, a faculty member might miss the classroom. Those continuing to teach on campus brought their new skills into on-campus teaching.

MASTER'S OF COMPUTER SCIENCE AND ELECTRICAL ENGINEERING PROGRAM

This program was chosen as the second case study because it contrasted with the Master's in Reading program in several aspects relating to faculty perceptions of their roles, teaching strategies, and practices. The program originated from two Components, A and D. Twenty faculty members were involved, and the four faculty interviewed taught four of the 24 courses offered. This group of interviews was the hardest to secure; it took several rounds of e-mail solicitations to schedule four interviews. All interviews were done by phone. The case study was sent to the participating professors for their comments and suggestions.

Program Description

Here is an adapted version of the program description from the website:

The Computer Science/Electrical Engineering (CS/EE) Online degree program is a collaboration between Component A and Component D for the purpose of providing telecommunications professionals an opportunity to get a Master's degree. The CS/EE Online Program is comprised of three degree options. Based on past experience and current career goals, a student can select which of the three will best serve their educational needs. Choices include master's degrees in Electrical Engineering, Computer

Science, or Computer Science and Engineering.□To emphasize the multidisciplinary nature of this program, students in one department will be required to take at least two major courses from the other department. □All three degrees are conferred with the Graduate Telecommunications Engineering Certificate.

The CS/EE Online program is offered predominantly using the Internet, but may include supplemental materials such as video/audio tapes and CD-ROM. Students will not be required to attend the campuses at any time. However, some courses require proctored examinations, which can be arranged at locations near the student.

Students with an engineering undergraduate degree are eligible to apply for the Master of Science in Computer Science and Engineering program from Component A. Both engineering and non-engineering students have the option of receiving a Master of Science in Computer Science degree from Component D or Component A.

The program went online in the fall of 2000 with an enrollment of 51. By fall 2002 enrollment had increased to 236, with an overall program average class enrollment of fifteen. The three largest classes in the fall 2002 semester were 53, 31, and 23 students. The three largest class sizes in the spring 2002 semester were 58, 38, and 28. According to virtual university staff, it was impossible to distinguish the number of on-campus students taking courses in the online program from those pursuing an online degree. The faculty members interviewed mentioned that most of the students were from areas near the two components. Ian and Guy taught at Component D. Ron and Roy taught at Component A.

Events or Factors that Supported or Impeded Moving from Classroom to Online Teaching

In this section, we look at how Ian, Guy, Ron, and Roy got into teaching online, their motivations, training, course development experiences, benefits and inhibitors to teaching online. Roy was a full professor, Ian and Guy were both

associate professors, and Ron was an assistant professor. Both Roy and Guy had taught in higher education for over twenty years. Ian had taught for over 32 years, while Ron had taught for only seven. Of the 24 courses offered, each faculty member taught one course. Ian had the most experience in online course delivery because he had taught online every long semester since fall 2000, for a total of six semesters. Since the fall of 2001, Roy had taught his course four times, Guy had taught his course three times, and Ron had taught his course twice. Roy and Ron represented Component A, while Ian and Guy represented Component D.

How They Became Involved in Teaching Online

As Roy and Ian described the program's history, representatives of Component A and Component D's computer science and engineering departments met and outlined a program, deciding on what courses to offer from each campus. Roy and Ian were part of the organizing group and volunteered their courses. The course Ron taught was selected, so he was invited to create its online equivalent. Guy, who had a long history in various forms of distance education, said that he saw the department advertisement and applied for a grant to develop his course.

Training and Course Development

Perhaps because of their technical expertise, the subjects' attitudes toward the training offered by the virtual university varied from "useless, waste of time," and "both could have been avoided" to comments on how the training had helped them to get ideas on how to prepare their courses. The less enthusiastic as well as the more positive faculty members asked for a seminar on best practices taught by other online veterans. All four of these professors gave their materials to the

technical staffs of Component A and Component D for migration into the courseware platform.

Roy, whose course used his textbook, took almost a year to develop his materials. For two semesters he prepared materials, including adding audio to animations of many of the concepts; in the third semester he tested the materials. Guy converted his lecture notes. His course also employed audio and animations. He described the course development process as a huge task, though worth it, since he has had to make few revisions in the three years he taught it. Ian worked for over one thousand hours over two semesters. He recalled that some of his java-based applets each took one hundred hours. Ron, who already had his materials on the web and had been using web-based discussions, took only a summer to prepare his web-based course.

Benefits and Impediments to Teaching Online

In this section we look at the benefits, both extrinsic and intrinsic, and the impediments to teaching online. At both Component A and Component D an instructor's online course counted as equal to an on-campus course. At Component A, Ron and Roy received extra financial compensation for the component's use of their intellectual property. In addition, Ron mentioned that in the annual review, one of the questions asked was if the faculty member had taught an online class. Ron said he assumed that since it was an explicit question, the information was taken into account in some way in the annual review, thus giving some recognition for advancement, promotion, and tenure. Both Ian and Guy said that they did not

think there was any recognition at Component D for online teaching other than the fact that an online course counted as a course in the teaching schedule.

All reported that an intrinsic benefit was the flexibility of teaching online. To this group of faculty members, this meant that they did not have to go to specific classrooms at specific times. Instead they had the flexibility of scheduling their work at convenient times. Ron was a graduate advisor in addition to his two-course teaching load. None of the faculty mentioned that the flexibility allowed them to travel and still teach. In fact, Ian said, “Yeah, so I get back from a trip to Austin on the weekend, and I’ve got 40 e-mails from my twelve students, and a bunch of discussion stuff to get to.”

Ian noted that many of the students worked in industry doing the kinds of things they were studying in his course, which he thought put them ahead of the students who were not working. He also mentioned having Indian and Chinese students, but they were not students living in India or China. Ian said:

A few have come from places as far as Japan and Europe, but the majority of students, frankly, are close to the metropolitan area, and they’re taking courses at the university as well as these online courses.

Ron agreed and extended the description:

There are basically two groups of people who are in my class, two demographics, if you will. One is the true online student, another is the student who is pursuing an on-campus degree, but either out of choice or lack of choice, has signed up for this class.

And Ron found that it was the on-campus students who were the least well equipped to take an online course from a technological standpoint, whereas the online students usually had their own computers. The diversity that CS/EE faculty

reported was less geographical than occupational, since many of their students were working.

CS/EE faculty did not complain about having large enrollments. As noted earlier, the average class enrollment was fifteen. From faculty reports as well as virtual university enrollment figures, the largest enrollment of any of the faculty interviewed in this program was Roy's spring 2003 class of 29. Ian has had classes ranging from twenty to 25. Ron's fall 2002 semester enrollment, his largest ever, was thirteen, while Guy's class always ranged from four to six students. Faculty members at both components were given teaching assistants for their classes over 25.

Roy did not report that his online course took more time to teach than his on-campus courses. He attributed this to the CD-Rom he was able to create, which answered a lot of questions on the topics in the course that he had learned to expect from having taught the course for many years.

In contrast, Ian explained why the online courses took more time and effort:

With the online courses, I'm doing all that discussion stuff, you know. And in the classroom it's over during the class sessions and the office hours. So what are we talking? I mean two sessions of an hour and a quarter, plus two hours of office hours per week. So you're talking about five hours of total commitment, plus prep time. Whereas for the online courses, it's seven or eight hours a week. Actually steering these students, counseling them into the right modes of thinking, is pretty time consuming and exhausting, too.

What Ian failed to mention in this quote was the time he spent grading projects, which could add to the weekly total because projects were turned in during the semester. He noted that it took more time to teach a class of twelve online than a

class of fifty in the classroom. Both Ron and Guy commented that they did not spend more time teaching the online courses than they did teaching their on-campus courses.

Ron, the graduate advisor, offered an insight into the class size situation, saying that it came from a departmental policy decision to alternatively offer courses on campus one semester and online the next semester. Online courses offered through the virtual university cost the student more than on-campus courses. He said that the student body had protested, asking for a choice of an on-campus course or online course during the same semester. Roy offered a slightly different explanation:

One of the problems is that when we teach both an online course and an on-campus section of the same course, the online course costs \$200 more, so most students take the on-campus section. That was one of the main reasons we had a small number of students in the previous semester, I think.

He also added that this might be the reason that there have not been large enrollments in some courses. He reinforced his thought by saying, “We have some students that are from out of town, but usually there are not that many.”

Changing Roles from the Classroom to Online Teaching

Views of Their Roles in Teaching Online

Faculty members in the computer science/electrical engineering program agreed that providing well thought out, organized material was part of their role. As Roy put it:

I think the main role is for me to prepare the best possible material on the CD so the students can do it, can refer to it anytime they want within the

timeline of the course, where they're not restricted to come to class every week. Then if there are additional questions, to help them with those. But I think the main work I did was preparing the CD and trying to make it as good as possible, and the website.

Guy saw his role as very much the same as in his on-campus courses, explaining difficult concepts, answering questions, and “poking them” with questions. Ron agreed, and explained, “I would like to think that I’m actually the enabler of the education, of their understanding and education on the topic.” Guy and Ian saw themselves as tutors. Ian went a step further, saying:

I feel the more interaction that I can generate and encourage, not just between me and them, but between them as well, and between them and the material with the online experiments, the more interaction that goes on the better I can judge how well it’s going over.

In summary, the faculty members of the computer science/electrical engineering program saw their roles as providing good materials, explaining difficult concepts, answering questions, and in the case of Ian, promoting interaction.

Motivations for Teaching Online

While the professors in this program were all highly skilled technologically, they were lured by opportunities to revamp their course materials with new technology they had not used before. Roy, who had taught his on- campus course for 21 years and had written the textbook he used, mentioned that he had some ideas about how to animate concepts to show how things worked. He had a CD to accompany his textbook and used both for his online and on- campus versions of the course. Guy also wanted to prepare materials he could use with his on-campus course. Roy wanted the chance to develop interactive materials. With Ron’s

materials already online for his on-campus course, developing an online course was a natural next step for him. Ian spoke of the challenge in this way:

It was the challenge of trying something new, something that I thought would be extremely effective and valuable to the state, since it is such a large state and we have so many rural students. I guess I'm one of the many people, I hope, in our university teachers, who like to try new things and see how they work.

Though Ian was not sure that online education was cost effective, he admitted that it was a way to serve students in rural areas. Although providing access was an important motivator for Ian, all of the CS/EE faculty were motivated by the opportunities to develop new technological teaching aids to help their students learn.

Perceptions of Changes in Teaching Strategies and Practices in Shifting from Classroom to Online Teaching

Course Structure and Feedback

The course syllabi for the computer science/electrical engineering online courses were detailed. Nearly all of the faculty members supplemented their syllabi with animated examples that helped explain course concepts, and as Ian said, “reduce anxiety”. One reason the syllabi were so detailed was that mistakes in instructions or questions could be amplified in the online environment. “What could be taken care of in ten minutes in the classroom,” said Ian, “can stretch into a week of e-mail exchanges.” Ron included a frequently asked questions section because students were used to the on-campus mode of operations, but “they tend to be a little confused when it comes to online.” Guy’s course was structured so that students could go at their own pace. He said that he had consciously made an

attempt to explain in his online notes additional material “over and above the book,” so that students could review his notes and get a better understanding of the phenomena they were studying.

In the computer science/electrical engineering courses reviewed feedback was handled largely by e-mail. Guy was the only one who mentioned exchanging faxes and using the phone to answer questions. All reported answering questions in a day or two. If the answer to a question would help the entire class, Roy had it posted to the course website. He sent e-mails out the week before exams to alert students to the kinds of questions to expect, and sent e-mails again before project assignments. Ron reported that he usually had a few students whose e-mail addresses were not available in the first month of the course, and that this could create communication problems. He felt that e-mail did not give him a clear understanding of what was going on:

Because of the lack of true feedback, and the closed loop thing that a regular class has, I’m not entirely sure that learning is happening. I would literally have to ask them, “Are you learning anything?” or “What do you think about this lecture?”

In contrast, Ian thought that one of the best parts of teaching online was that it was possible to get to a deeper level of understanding of the students:

As long as you don’t have a very big class, you get to know the students pretty well, at least using the methods that I use. And you can really judge how much they really understand the material, and how much they can reason about it; not just talk back to you about what it says in the textbook.

Ron used discussion areas with his on-campus courses for several years before starting to teach online. Students helped Ron answer questions in the

discussion areas. He even had his on-campus students answer questions posed by his online students. Neither Roy nor Guy used discussion areas. Guy said:

All these group discussions and group projects, I think it's a goof-off. I think it's a waste of resources. Let them gossip.

None of the faculty members used chat to facilitate feedback, either because it was hard to synchronize students for a specific time, or perhaps because, as Ron put it, a chat room tried "to mimic what you can do elegantly in a classroom through a rather sloppy mechanism." Even so, Ron did have his students design and build conferencing and chat facilities. Though none of the faculty members used chat, and only two used the discussion areas, all used e-mail for feedback to students.

Scheduling and Assignments

The faculty members did not make critical assignments during the first two weeks, when the student enrollment fluctuated just as it does on campus. All of the faculty used projects and exams. Ron emphasized the "nuts and bolts" behind the project, such as compression and coding and decoding, because, he said, "That's what I teach." Ian focused on his students' understanding and conceptualizing. Guy and Ron assigned individual projects, while Roy and Ian allowed the students to work together on at least one project.

Although Ian used peer review, he did not trust students' self-reporting. He thought that there could be discrepancies between what actually happened and their self-reports. As evidence for his lack of trust, he pointed out that the year before he had found some of his students on E-Bay offering \$300 for someone to write their software projects for them. Ron, Roy, and Ian used quizzes and tests in different

ways. Ron offered fifteen-minute synchronous quizzes every Friday at a specific time, with a window of one hour. Students were unable to download, copy, or print the quiz question. They e-mailed him their answers. Roy allowed students to take his open book tests online, although he did let them come on campus to take the tests. He admitted that he was apprehensive about students cheating or copying others' work, though he noted that this happened in on-campus classes as well. Roy said that making the tests open book and for a limited time period helped reassure him. Ian used tests as well as programming projects. Faculty members in the computer science/electrical engineering program assigned projects, usually individual projects, and two of them used quizzes and tests to check understanding.

Viewpoints on Teaching Online or in the Classroom

Faculty in the engineering program were evenly split between those that favored on-campus teaching and those that favored online teaching. Both Ron and Guy preferred teaching on-campus courses to teaching online courses. Guy preferred teaching on campus because he felt that the students learned more when they had his animations and his lectures. He said that he could “make them learn more” in an on-campus class environment. When he pictured himself choosing between an online course and an on-campus course, he chose the on-campus course because he preferred a human being delivering the lectures. Ron, like Guy, had his reservations about teaching online. He said that given a choice, he would not teach online. He did not like the fact that he did not have face-to-face interactions. He felt that the online environment was impersonal. Ron said that he felt he had to “force feed” his online students. He saw advantages to the online program for students,

but from a pedagogical standpoint he preferred on-campus courses, because he was not sure that online students were getting the full learning experience he intended for them to have. Ron was uncertain that his online students were learning, whereas in the classroom he knew when the students had encountered a stumbling block. Ron felt that online materials were an excellent supplement to an on-campus education. He admitted that he was not knowledgeable about whether the online environment was effective for other disciplines.

Both Roy and Ivan preferred teaching online. Roy liked the fact that online courses were more flexible for the students and for him. He thought that on-campus students had more interactions with him. Roy liked the fact that his students could look at the course materials at any time they wanted, and he could answer their e-mails asynchronously. He had taught his course only as an online course since the fall of 2001, but said that if he did teach it again on campus he intended to use his CD of animations to help his students. Ivan said that at first teaching online was difficult:

Obviously, in the early days I felt a sort of isolation, not really seeing the faces and having thirty years in the classroom. I'm used to being able to judge how well things are going over by looking around and just sensing the atmosphere. A bit more difficult online.

In fact, Ivan said that he was better off then than when he was in the classroom. He had converted two of his on-campus courses into hybrid courses, using some of his new techniques and skills. He preferred the level of interaction he had with his students, which he felt led to deeper understanding on their part. In addition, he found that he was learning from his students about things he had not thought or

heard about before. He delighted in saying that his students told him that they enjoyed the class but also that it was “pretty damn tough”.

Case Summary and Exploration of Emerging Themes

This case study on the master’s of computer science/electrical engineering program represents the experiences of four of the twenty professors in the program. Enrollments increased from 51 in the fall of 2000 to 236 in the fall of 2002, with an average class enrollment of fifteen. The program originated from two Components, A and D. Ron and Roy came from Component A, while Ian and Guy were from Component D. Ian began offering his course in the fall of 2000, while Roy, Guy, and Ron began teaching online in fall 2001. Roy and Ian were part of the original group that organized the program, and they volunteered their courses. Guy and Ron followed. Faculty members in the computer science/electrical engineering program agreed that providing well thought out, organized material was part of their role. Guy and Ron saw their roles as very much the same as in their on-campus courses: explaining difficult concepts, answering questions, and asking questions. Ian and Roy saw themselves as tutors, helping their students to understand what they were learning. All four were motivated by the desire to revamp their courses with various forms of new technology. Activities in the engineering courses focused mainly on projects, although Ron and Roy did give exams. Most projects were individual projects, though some were group projects. While Roy and Ian favored online teaching, Ron and Guy preferred on-campus teaching.

Emerging Themes

At this point, we look at the themes that seem to be emerging.

Factors that supported or impeded their moving from classroom to online teaching

As in the previous case study, engineering faculty members either had previous backgrounds in some form of distance education, or they enjoyed experimenting with technology or different methods of teaching. As a result of having taught online, where the presentation of information was transferred to online materials, faculty members focused on facilitating student learning. In addition, there were two themes relating to students: one was providing students with access to graduate education that might not otherwise be possible, and the second was providing faculty with access to a more diverse group of students than found on most campuses.

There were several themes related to the benefits of teaching online for faculty at Component A that were not available at Component D, such as: recognition for advancement, promotion, and tenure; financial compensation for the use of their intellectual property for the online courses; and teaching assistants for faculty with class enrollments over 25. This was the first instance where the theme of lack of recognition appeared. The theme of flexibility to choose the time and location to work continued. In addition, faculty received support in the form of training from both the virtual university and the component's distance education centers.

Three impediments to teaching online occurred again: class enrollments were expanding, online teaching took more time to do than on-campus teaching,

and teaching online could allow faculty members to manage additional administrative responsibilities, thus making them busier.

Changes in their roles as they shifted from classroom to online teaching

Faculty in the engineering case study echoed those in the reading program about how they spent much more time selecting and developing materials and assignments than they would have for an on-campus class. With the course materials presented online, the instructors' roles changed. When the course began, faculty said that they were providing facilitation and guidance, managing the interactions, asking and answering questions, and providing prompt feedback.

Changes in their teaching strategies and practices as they shifted from classroom to online teaching

Several themes related to changes in teaching strategies were repeated, particularly the theme of providing more detailed instructions and schedules. The engineers provided additional animations and Java-based applets to explain difficult concepts and focus on understanding and conceptualization. Faculty provided more structure and more detailed schedules than they would have in the on-campus courses. Again, the theme occurred of using the first two weeks as an orientation period for students. Some faculty members used discussion and some did not. Those who did use discussion expected participation by all students and graded it. Faculty here also felt that they needed to give students prompt feedback.

Themes relating to satisfaction with teaching online included being enthusiastic about teaching online, particularly using the animations and Java-based applets. On the other hand, some faculty were uncertain that students learned as

well online as they did in the classroom. Faculty here, as in the previous program, brought their new skills and strategies into their on-campus teaching.

MASTER'S OF EDUCATIONAL TECHNOLOGY PROGRAM

This program was chosen as the third case study because it contrasted with the reading master's program and the computer science/electrical engineering master's program, because different components contributed courses. The degree was granted from Components B, E, G, and J. The educational technology master's degree had eight faculty members. Four of these eight faculty were interviewed. They taught seven of the twelve courses offered and represented three of the six components contributing courses. This researcher reviewed their courses online and sent the case study to them for their comments and suggestions. All four of the faculty members responded that the case study represented their viewpoints.

Program Description

Here is an adapted version of the program description from the website:

The MEd Online program in Educational Technology is a 36-hour Program designed to prepare persons in K-12, higher education, corporate, and military settings to develop the skills and knowledge necessary for the classrooms of tomorrow. Graduates of this program will have a much better understanding of the uses of technology and how it can be integrated and applied in a classroom or campus setting.

The program focuses on the theory, research and applications related to the field of educational technology and is intended to help educators: 1) to use instructional technology (computers, telecommunications and related technologies) as resources for the delivery of instruction; 2) to serve as facilitators or directors of instructional technology in educational settings and/or be developers of instructional programs and materials for new technologies; and 3) to design instructional materials in a variety of media.

The program went online in the fall of 1999 with an enrollment of 54. By the spring of 2003 online enrollment had increased to approximately 250. According to virtual university staff, it was impossible to distinguish the number of on-campus students taking courses in the online program from those pursuing an online degree, although the program advisor told this researcher that the 250 included 25, or ten percent on-campus students. The three largest classes in the fall 2002 semester numbered 47, 46, and 37. The three largest classes in the spring 2002 semester had 40, 38, and 32 students. Overall program average class size was 21. Bob and Ray taught at Component J; Mark taught at Component B; and Thomas taught at Component E.

Events or Factors that Supported or Impeded Moving from Classroom to Online Teaching

In this section we look at how Mark, Thomas, Bob, and Ray got into teaching online, their motivations, training, course development experiences, and benefits and inhibitors to teaching online. Mark was an associate professor with seven years of teaching in higher education. Thomas was a professor and vice president and director of the distance learning center at Component E who had taught in higher education for over twenty years. Bob was an associate professor with more than 27 years of higher education teaching experience. Ray was a professor and assistant dean for technology at Component J; he also had 27 years of higher education teaching experience.

What all these faculty members shared were backgrounds in previous distance education modes. Mark began teaching distance education through audio conferencing in 1991. Thomas had worked in distance learning for 35 years, using

radio, television, audiocassettes, video conferencing, and websites before putting up a course for the virtual university in this program. Bob and Ray used video conferencing before they experimented with combining video conferencing with websites in 1997.

How They Became Involved in Teaching Online

Mark, the program advisor, wrote the original grant for the program that went online in 1999. Thomas was part of the original group that applied for course grants. Bob and Ray, who taught a course together, put their course online a year later. All had been teaching in this program for three to four years. Mark recently told his new chair that he thought that the students, particularly the students around his component, really benefited a lot when they took courses from professors at other components.

Training and Course Development

All faculty members attended the virtual university's technical and pedagogical trainings. But as Bob put it, "I don't recall seeing a complete self-contained online course before I created one. And so it was hard to visualize, even for us, what an online course would look like." What Bob did take away from the trainings was an understanding of the issue of the "socialization of students so that they feel connected to the course and their classmates and the professors."

Thomas took six to nine months to develop his first online course. Bob and Ray took six months even though they were working from a text Ray had written and a set of website materials they had been using in their on-campus course. They also had a third faculty member work with them about twenty percent of the time.

The fact that Bob and Ray did their own technical work added to the time they needed to develop their course. For Ray their course was an extension of previous experiments on how to find the balance between telling students exactly what to do, and learning what he wanted them to learn, and “setting them free to explore an area to learn whatever they find exciting.”

Benefits and Impediments to Teaching Online

None of the faculty members in this case study reported receiving much recognition for their work that could relate to advancement or promotion. Their work was more recognized in the beginning of the program. Only Component E offered to pay for Internet cable connections for faculty to work from home. None received extra financial compensation for the use of their intellectual property in teaching the online courses. Mark worked with Component B’s colleges for them to better recognize that faculty needed a certain amount of benefits for teaching online. As he said, “What’s in it for the teacher to really concentrate on his or her students, vis-à-vis technology?” Mark wanted to see tenure track faculty get “a couple of brownie stars, big stars, put on your assessment, your annual review plan,” and he wanted Internet cable connections to be furnished to faculty at home to make their connection more secure and rapid.

The benefits of flexibility, being able to work at any time and from any place, was highly valued by the faculty in this program. Mark was a morning person who often worked from four to seven in the morning. He logged on again in the evening, after putting his daughter to bed, and worked from 8:30 to midnight. Thomas valued this flexibility because it allowed him to handle his administrative

work, with all the travel involved, and still teach his online course. He said, “As long as I have a computer and access to the Internet, I can schedule interactivity with the students and respond.” Both Bob and Ray utilized this flexibility of time and place to hold synchronous webcasts from their hotel rooms while traveling.

The downside, as mentioned in the earlier case studies, was that the flexibility allowed the faculty members to multitask, to take on more tasks perhaps than faculty members who regularly met their on-campus students. Mark, for example, reported that he taught three to four courses a semester even though his workload was calculated as sixty percent administrative and forty percent teaching. He tried to hold class enrollments to twenty students and created new sections as needed. His introductory class in the fall 2002 semester had 47 students. He would have preferred three classes of fifteen to eighteen students. Mark did have teaching assistants.

Thomas only taught one course a semester. In the fall, he capped the course enrollment at 22. As Thomas said, he tried thirty, and “I realized I almost died with thirty, because you just cannot manage that many by yourself.” His component did not automatically provide teaching assistants based on course enrollment. Bob and Ray taught their course in the fall along with an on-campus undergraduate course. In the fall of 2002, they had twenty-eight students in class. They did not have a teaching assistant. With the exception of Mark, the faculty in this case study limited the number of students they could handle in their courses, because their institutions did not provide teaching assistants for large class enrollments.

Changing Roles from the Classroom to Online Teaching

Views of Their Roles in Teaching Online

These faculty viewed their roles very similarly in this program. Mark noted that, first and foremost, he saw himself as helping to create a community of learners. As the course progressed, he often felt himself in a managerial role. Thomas saw himself as creating first class materials and then as a facilitator of the learning events in his course. Bob saw his role as comprising two parts: the course design, involving the selection and organization of material; and then the feedback to the students as the course progressed. Because the course did not have any exams, students were graded on submitted assignments and discussions. Ray saw his role, in the same course, as providing resources, asking questions, setting problems, and synthesizing discussions for the students.

Just as Mark thought that the students, particularly the students around his component, really benefited when they took courses from professors at other components, he thought that the students benefited from the diversity of experience and opinions they found among the students in their online courses. Bob noted that the online students were different from his on-campus students because they were distance education students. In addition, they were older, already working in careers that might include business, industry, or academia, and they took the course for career advancement. Thomas thought that one of the good things about doing online instruction was the diversity that came into classes. He suggested that the distance learning modality, by its very nature, “brings you a full array of diversity from gender to age to background to race to language to nationality that you

wouldn't get otherwise." He has had students in the same class from France, New York, and California, in addition to those from within the state itself. "Just where they stand when they enter the course and the chat room sessions makes for great excitement in the discussions." The faculty valued student diversity both for themselves and for their students.

Motivations for Teaching Online

Mark was motivated by the commitment that "public education should be about making a difference in people's lives, and this does, and that is very important." He thought that this form of education had provided access to a lot of opportunities that many students would not otherwise have had. He liked the fact that:

The students tend to be very appreciative of the type of instruction they're receiving, and the fact that they're receiving it on their time, at their convenience, et cetera, et cetera. It really has provided a lot of opportunities for people that readily admit they wouldn't have that opportunity otherwise. And that's a very rewarding thing.

Mark himself has always measured his own progress by whether he felt he was learning as much as his students. In the online environment he found that his "students are often out there in the business or educational world actually doing very new things," which he said he wished he were doing a lot more of. While Thomas echoed Mark's comments on access, he himself was always learning and experimenting with new forms of teaching technology. He also saw the online courses as a way to promote the reputation of his campus. Bob agreed with his colleagues on both the access and technology issues, pointing out that, "We're out there, pushing the envelope, doing cutting edge work. That is very exciting." He

and Ray were motivated by the fact that they could experiment and try new strategies and techniques in the online teaching environment.

Perceptions of Changes in Teaching Strategies and Practices in Shifting from Classroom to Online Teaching

Course Structure and Feedback

In this section we look at faculty perceptions of changes in their teaching strategies and practices in shifting from classroom to online teaching. Regarding course structure, Mark suggested that in planning an online course a good structure was important, like having a well thought out plan. “But the one thing you know about your plan is that you’re going to deviate from it when the ‘ah ha moments’ arise.” He said:

Teaching to me is still an art form, and it shouldn’t be distilled down to simply a systematic approach. The systematic approach is critical, but we don’t want to kill the artiste in the process.

Bob thought that in an online course the design, selection, and organization of material was much more important than in an on-campus course. The course Bob and Ray taught was largely self-paced, although there were definite due dates. They noted that a student could work ahead, though most students tended to keep to the schedule. The course was problem-based, with no exams, and was geared to help students master the material. Thomas’s courses featured problem-based assignments, supplemented with open book exams.

Feedback was very important to all four faculty members in this program. It was so important to them that they devised multiple means of providing feedback to students, ranging from the normal online discussion and chat venues to phone

calls, audio conferences, and webcasts combined with chat. Although the virtual university emphasized an asynchronous experience for students, each of these professors used some form of synchronous mode. Mark scheduled weekly chats and three times a semester scheduled audio conferences. Bob and Ray had weekly Monday night webcasts combined with chat. Ray saw their webcasts as a way to communicate to those who needed to hear explanations in addition to reading them. Thomas had regularly scheduled chat sessions. Although not required, all four faculty members found that at least half of their students participated in the various synchronous meetings.

Bob and Ray felt that the webcasts built the socialization process and connectedness among the faculty and students. It represented a dialogue during which they answered questions posted in the chat and explained concepts. All four faculty compiled the chats and posted them for those students who wanted to review the chat script. Mark found that the chats and audio conferences brought people together. His chats and audio conferences featured a strict agenda with time for him to answer questions and explain concepts and time for students to discuss issues and plan presentations. In addition to chats, Thomas phoned each of his students once a month to give them feedback and answer questions. Bob reflected that the feedback told him and Ray what was working and not working in the course. For Bob, “It’s continuous quality improvement going on all the time.”

Scheduling and Assignments

Perhaps because these four professors taught at three different institutions, they did not coordinate their scheduling, though all had deadlines for assignments

and projects. None of them reflected that this had caused their students any problems. Each devised a series of “soft” activities that enabled students to get acquainted with and oriented to the course assignments for the first two weeks, which also accommodated the fluctuating student enrollment. Mark has sought to devise methods to make the first two weeks more functional, by trying to open the course materials to students a few weeks earlier.

Course activities included reading reports, problem-based projects, literature reviews, role-playing, debates, and research papers. All four faculty members used peer review of assignments in their courses. Usually the peer review was between pairs of students. The critiques were then sent on to the instructor and counted as part of their grades. Bob and Ray used peer review in the discussion area twice during the semester as part of project assignments. Mark used peer review more frequently. Both Mark and Thomas used group projects. Mark’s students ended the course with group presentations that combined both web-based materials and synchronous audio.

In addition to these course activities, online courses often had exams. While Bob and Ray did not give exams, Thomas and Mark did. Thomas’s exams were problem based and open book. He noted that the first time he gave the course, he gave the students from Friday morning to evening to complete the test. More recently he gave students a long weekend, from Friday afternoon to Monday noon, to complete their exams. Mark’s exams were comprehensive, with questions drawn from the discussions and readings. Students were given three days to complete the open book exams. Mark was not concerned that students might call or e-mail each other about the questions, because he had not found them supplying identical

answers. In fact, he told them, “I highly encourage you people to talk to each other.” Mark had anecdotal reports that students who had not been conversing much with other students became very conversational at that time. He suggested, “If you want students to go back over information and think about it, this is a good way.” Thomas agreed, “For me that’s okay. This is learning.” Thomas, speaking about his problem based final exam, commented further:

This type of exam places the student in a tremendous mode of reflection, and I don’t mind if they discuss it with other students. But I’ll tell you, in the three years of teaching each of those two courses, I’ve never seen a paper that’s identical. Never.

Not all of these faculty agreed that teaching online took more time. Bob thought that the time he spent on his online course was about equal to that he spent with his on-campus course, while his colleague Ray thought that the online course took more time. The fall 2002 course, with almost thirty students, was larger than any he and Ray had had before. The large class size increased the amount of work for both. Mark and Thomas agreed that online classes took more time to teach than on-campus courses. Mark spent approximately nineteen hours a week on each course. This did not include the time spent by his assistant or by a co-instructor he sometimes employed. Thomas spent thirteen hours a week on his course. Ray, Mark, and Thomas all carried administrative responsibilities in addition to their teaching duties.

Viewpoints on Teaching Online or in the Classroom

While Bob and Ray continued to teach an on-campus course, Mark and Thomas taught only online courses. Ray did not favor one over the other. In fact, the course he taught with Bob on campus was actually a hybrid: on-campus

meetings supplemented with the web-based materials they had developed for the online course. Anything a student wrote was sent to them as an e-mail attachment. Thomas missed the on-campus interaction with his students. He missed seeing his students and getting to know them, although his online students have continued to keep in touch with him over the years. They have updated him on their degree progress, new jobs, marriages, and new children. While Mark's courses were all online, he taught hybrid courses with high school students during the summers, utilizing many of his online techniques.

Case Summary and Exploration of Emerging Themes

This case study on the Master's of Educational Technology program represents the experiences of four of the eight professors in the program. Together they taught seven of the twelve courses offered. All four began experimenting with online instruction as early as 1997, as a result of earlier forays into various forms of distance education that ranged from audio conferencing and audiocassettes to video conferencing. They were realistic about the amount of effort involved in creating online courses as well as in teaching them. All of these faculty members interviewed had developed additional synchronous methods of bringing their classes together on frequent, often a weekly basis, to provide feedback and clarification.

Most of the faculty shared the opinion that teaching online took more time than teaching on campus. With the exception of Mark, who could open new sections when enrollment rose over twenty, Thomas and Bob and Ray limited enrollment in their classes because their components did not provide teaching

assistants. As faculty members, they valued the flexibility of time and place offered them through the online teaching experience, even though this flexibility seemed to open them up to more administrative responsibilities. They also agreed that distance education offered students access to educational opportunities they would not previously have had. All four were convinced that their students benefited from the variety of professors and students involved in the program.

Emerging Themes

At this point we explore the themes that seem to be emerging.

Factors that supported or impeded their moving from classroom to online instruction

As in previous cases, two themes reappear: Having a previous background in several forms of distance education, and enjoying experimenting with technology in teaching. Again there was the theme of faculty regarding themselves as essentially self-taught in regard to online teaching. As mentioned previously, another motivation for these professors was the shift from presenting information to facilitating student learning. Two motivational themes relating to students were again repeated: providing access to graduate student education that might not otherwise be possible; and providing faculty with access to more diverse groups of students than are found on most campuses.

Also repeated was the theme of lack of recognition for advancement, promotion, tenure, and financial compensation as a result of teaching online. This theme was reinforced by the lack of teaching assistants for faculty with class enrollments over 25. The only support mentioned was the provision of cable

modem Internet connections for online teaching faculty's residences at Component E, and teaching assistants at Component B. Here again, the theme of flexibility was repeated, in being able to chose the time and location to work.

The same three impediments were mentioned again: class enrollments were expanding; online teaching took more time than on-campus teaching; and teaching online could allow faculty members to manage additional administrative responsibilities.

Changes in their roles as they shifted from classroom to online teaching

As in prior cases, the theme was repeated that faculty needed more time to select and develop materials and assignments for online courses than for on-campus classes. Again, faculty members brought up the theme that the online instructors' roles were different when their courses started. No longer burdened with presenting information, faculty concentrated on: providing facilitation and guidance; managing interactions; anticipating difficulties; scaffolding student activities; and providing prompt feedback.

Changes in their teaching strategies and practices as they shifted from classroom to online teaching

Themes relating to changes in teaching strategies concentrated mainly on providing more detailed instructions and schedules, as well as on providing additional worksheets, aids, and grading rubrics. Online students needed more structure and more detailed schedules. As noted in the previous two cases, each professor, because of changing enrollments, used the first two weeks of the course as an orientation period for students. Discussion participation by all students was expected and was part of course grading. Students needed prompt feedback. In this

case study the theme of synchronous weekly class sessions occurred as a way of holding office hours, answering questions on assignments, and presenting new information.

Themes relating to satisfaction with teaching online included being enthusiastic about teaching online. The theme again arose of a faculty member who taught only online missing the classroom. Those continuing to teach on campus brought their new skills into campus teaching.

MASTER'S OF BUSINESS ADMINISTRATION PROGRAM

This program was chosen as the fourth case study because it originated from eight components, which each component contributing two courses. The MBA program started at about the same time as the Master's of Instructional Technology and the Master's of Educational Technology programs. The MBA program had twenty faculty members, and this researcher interviewed five, two by phone and three face-to-face. The five interviewed came from three different components and taught five of the sixteen courses offered. This researcher reviewed their courses online, when possible, and sent the case study to them for their comments and suggestions. Three of the five faculty members responded within 24 hours, saying that the case study was good, excellent, or superb. Two faculty corrected details about their course feedback mechanisms. Another responded with additions regarding his course. One did not respond.

Program Description

Here is an adapted version of the program description from the website:

The MBA Online program in General Management provides today's students with the tools necessary to become leaders in the workplace of tomorrow. This challenging degree program pools the impressive resources and diverse perspectives of eight accredited components of the system. Students will find a highly skilled, statewide team of professors presenting a broad, interactive curriculum.

Areas of study in this collaborative General Management degree include accounting, finance, administration, business law, economics, marketing, statistics, and technology. Courses are designed for a clear understanding of a marketplace that has become increasingly complex with the addition of new technologies and communication tools.

The program went online in the fall of 1999 with an enrollment of 86. By fall 2002 enrollment increased to 402, with an average class size of 26 for the overall program. In the spring 2002 semester the largest reported class sizes were 71, 56, and 55. The largest class sizes reported in the fall 2002 semester were 57, 53, 52, 49, and 48. Virtual university staff asserted that it was impossible to distinguish the number of on-campus students taking courses in the online program from those pursuing online degrees. Sam and Lisa taught at Component E, Jack and Carlos taught at Component B, and Dan taught at Component H.

In 2001 the U.S. Distance Learning Association named the Master's of Business Administration Program the best of its kind in the nation. In 2002 the program was also awarded third place by the Best E-Learning Program in Higher Education from Telecon.

Events or Factors that Supported or Impeded Moving from Classroom to Online Teaching

In this section we investigate how the five faculty members interviewed by this researcher got into teaching online, their motivations, training, and experiences developing courses, as well as the benefits and inhibitors they experienced to teaching online. Dan and Sam were full professors; Dan had taught in higher education for over forty years, while Sam had taught for more than 32 years. The two associate professors, Carlos and Lisa, had taught respectively for over 25 and eight years. Jack was an assistant professor who had taught for six years. All five have taught online for the virtual university for three or four years.

How They Became Involved in Teaching Online

According to Carlos, of the eight component campuses each was allocated two courses when the MBA was created. The deans worked together to decide the appropriate courses for each of their campuses, and then asked faculty members to participate. At first only tenured professors were invited; Lisa and Jack were the exceptions, invited even though they were untenured at the time. That is how Carlos, Sam, Jack, Lisa, and Dan were recruited to teach online. Dan had also belonged to the original system-level planning group that helped to create the virtual university.

Only Dan, Lisa, and Jack had been developing web-based materials to supplement their on-campus courses before they joined the MBA program. Both Dan and Sam had previous experience in distance education, utilizing television, audio and video tapes, and conferencing. Dan, who had been director of academic computing for Component H, had begun experimenting with online communication

in the 1960s. Lisa, who also had a technology background, started with an interest in instructional design, and in 1996 began to design web resources for her classes. As for Dan and Jack, Lisa's transition to creating and teaching an online course was a natural evolution. Neither Carlos nor Jack had a formal background in distance education or its technology.

Carlos, Sam, and Jack were intrigued by their new experiences. Jack agreed with Carlos, who said, "I volunteered to do it basically thinking this new method was possibly a good thing taking us in a new direction." Sam, who called himself a pioneer in computer use, reflected that, "Sometimes you need a little push, you know, to say okay, this is the newest thing. Start using it." Though each of the faculty in this case study was asked by their dean to create a course for the MBA, for Dan and Lisa this was more of a natural next step. For Carlos, Sam, and Jack, the request pushed them in new directions that they wanted to explore.

Training and Course Development

The virtual university that funded course development provided training in both the technology and the pedagogy of online instruction to all five of these faculty members. Carlos commented that the training had definitely improved over the years. He expressed his admiration for the virtual university's instructional designer when he was developing his own materials, saying that "the critical thing for me was the encouragement she gave me." Component H did not have a distance education center, but the distance education centers of Components B and E provided continual training in the pedagogy of online instruction.

Sam and Lisa taught at Component E, where the distance education center did the technological work for online courses, although Lisa did much of this work herself. Sam decided to let the center do the technological work while he concentrated on pedagogical concerns. Carlos and Jack were at Component B, which had a distance education center to handle the technological work, though both found help within their college as well. Jack had a separate website that used technology that he created and maintained. Carlos decided early on that he was not going to learn the technology.

Dan, whose component did not have a distance education center, had a high level of technological skills and took charge of his own technological work. He looked at online course development as an opportunity to pull together his technological and pedagogical interests. In fact, Dan had taught his course in one form or another for over forty years. He energetically developed a series of “helper applications” or “coaches” on procedural aspects of his course. Dan thought that the “coaches” helped to produce mastery of the procedures that were basic to the problem solving on which he focused. He said that he had been trying to create this course all his life, but the tools had not been available.

Now the tools were available, and Dan thought that he had created an outstanding environment for teaching and learning. He tinkered with parts of the course each time he gave it in order to enhance that environment. Dan received an award for being an outstanding online instructor, and two of his colleagues interviewed by this researcher spoke in awe of his innovative ability to make a dry difficult subject, quantitative analysis, interesting and challenging. They planned to

add some of his type of “helper applications” to their own courses when the time arrived for major course revisions.

Carlos, as mentioned, decided not to learn the technology. His attitude as he began to develop his course was a pedagogical one:

I was looking at having taught, you know, for almost 25 years at the time. I knew that an exercise like this would probably help me to rethink my own curriculum.

Carlos was determined to make sure that his course was not going to be a correspondence course, and that it would present the concepts in meaningful ways. He was proud of the “outstanding set of materials” he had developed. If he had to do it over again, and if he had the technical support, he would add some video lecturing and some “helper applications”. Carlos revamped his course twice in the last three years. He said, “I’m constantly trying to improve this thing. I’m always trying to get it to work better for them and for me.”

Sam was at first hesitant, trying to determine what material how many and which materials to use. He described the process as a “huge, huge step” that took a long time. It took him eight months. Sam converted eight hours of presentations that he used in his on-campus class to the Flash format with narration. He originally offered a well-developed simulation model of a global business game that he used in the classroom, but for technical reasons the model had to be abandoned. He would have preferred to have very compact audio or video files that would allow him to do more lecturing. Although he revised topics each time he taught the course, so as to provide more relevance, his major revision was to update the schedule of activities.

Lisa explained that the long course preparation time was necessary because the course had to be ready on the first day, so that from the beginning students could have access to all of the materials and assignments. She did all of the technical work for her course. Lisa's undergraduate background in education helped her to create what she called active learning assignments that sent her students out into the community to collect data that they then used in different formats, ranging from role playing to projects. She incorporated the use of a lot of free online tools that her students could use in their own organizations. Lisa revised sections of her course each time she gave it, so as to reflect the changing technological issues in education, business, and government.

Jack, who received the chancellor's award for teaching at his component, moved his course online with this strategy in mind: "What I'm trying to do online is to create as much as I can what I would do in a regular classroom, given the constraints of the technology." The transformation of his course took him a long time and involved a lot of work. As he looked back on his course creation experiences, he recalled that time in this way: "It was very exciting and very new. It was like the Wild West, the frontier."

Jack viewed course development as a wonderful learning experience because he refined his course each time he gave it, typically spending "a good solid week or two updating my course." He knew what to update, because as part of the final exam he assigned teams of students to different sections of the course. Jack asked his students to go through the course and to tell him what worked, what did not work, and what could be improved.

Dan, Lisa, and Jack handled most or all of the technology for their courses. Sam and Carlos turned over the technical production for their courses to the distance education centers at their universities. Freed from the technical work, these two faculty could concentrate on designing the pedagogical aspects of their courses. Dan saw creating his online course as an opportunity to finally create the course he had wanted to create for forty years. The transformation of on-campus courses to online courses took much time and effort on the part of all the faculty members. All reported spending time revising their courses each time they offered them.

Benefits and Impediments to Teaching Online

Benefits can come in many different forms. One form is to receive recognition for advancement, promotion, and tenure. Sam presented the majority view on administrative recognition for faculty teaching online:

It's recognized at the beginning, but the continuous effort is not recognized. The maintenance of the course is not recognized, and that is very frustrating sometimes. The time to develop is not considered research. That is one of the things that I believe is limiting faculty participation in this field. It is not the fault of the professor, it is the fault of the system.

Carlos characterized the attitudes of administrators and fellow faculty this way:

"Oh, he teaches online, glad somebody is doing it." "You're weird, aren't you?" "Maybe I should be doing it," kind of an idea, but I would say that there are really no tangible benefits from doing it.

None of the faculty interviewed felt that they received any extrinsic benefits for advancement, promotion, and tenure from teaching online.

These MBA faculty did feel that there were benefits to teaching online. Dan has since moved on to phased retirement from Component H, an arrangement that has allowed him to continue teaching his online course from wherever he happened

to be, which could be at his summer home in another state or while traveling. Sam had to teach a summer course at a time when he had commitments in Europe. He said that it was a very interesting experience because “In every single place I went, I didn’t have to walk more than five blocks around the hotel to find Internet access.” Carlos, Lisa, and Jack valued the flexibility of working at different times and from different places. The flexibility of when to work online allowed Sam to be the director of several projects at his college. Carlos was an interim dean of graduate students. The flexibility also allowed the younger faculty more time with their families. Only Sam had a teaching assistant to help him with his online and on-campus courses.

Just as these faculty members enjoyed the flexibility of time and place to work on their online courses, they also expressed delight in the diversity and quality of their students. All mentioned having students in other states and from countries such as Mexico, Germany, Italy, Algeria, Egypt, India, Taiwan and China. These students have contributed a rich variety of opinions and experiences. They told different things about themselves, as Sam pointed out:

The non-Americans tell you about their wife, their brother, their sister, if they are married, or they’re not. How many times they have had this course before, a bunch of other things. Americans tend to be, “I am presently here, here, here.” The most they mention is if they are married or they are single, and if they have kids or not. That’s it. But they don’t say anything about them. However, they do send a photo.

Lisa mentioned a student in Egypt who presented so much and such different information that everyone wanted to read and discuss his contributions first:

He was a much better teacher that semester than I was. I mean, I just know my textbooks and my experience. He brought so much more to the class.

And in those MBA online courses, there's not just one like that, there's twenty like that. It is an amazing experience to be able to work with them.

As Jack summarized, "I like the diversity because I interact with people who are not from here." He meant this in more than one way, as he explained that in his online course he was able to interact with top managers, even vice presidents of different institutions:

So when I talk about legal risks, they are on full alert, because it is not just a theory to them. Some of them could get sued because they own a business or they manage a business, so it's important. It's not like teaching undergraduates who are cashiers at HEB or Target. They think, "Target's going to get sued, so what?"

Carlos had the same experience. In the spring 2003 semester, he said that a couple of the students were chief financial officers in major corporations. He also found that his students were different from on-campus graduate students. Lisa added that because the students were MBA graduate students, and distance education students in particular, they were more disciplined, self-motivated, and had a lot of study skills. Dan extended the list of the students' qualities by adding diligent and hardworking. He saw students enter his course lacking some basic skills and yet work so hard that they ended the class at the same level as more prepared students. MBA faculty members valued the diversity of their students, who differed in geographical location, nationality, and professional experience from the students in their on-campus classrooms.

All five faculty members mentioned two impediments or disincentives to teaching online: changes in technical platforms and large class sizes. Since the program began in 1999, faculty members had to adapt to two different platforms, and faculty were to convert their courses to a third platform for the fall 2004

semester. Even though some of these faculty members did not do their own technical work, they had to adapt their teaching strategies to the functionality of the different platforms. Most agreed that the changes in the platform offered improved functionality, though not all reported using the new functions. Jack made minimal adaptations, because most of the tools he used were on his own website.

Just as changing platforms could cause faculty members to have to change their curricula, so could large class sizes. As Lisa said, the same design of a course for 25 does not work as well for a course for forty. As a result, she had to change her course design last year. On Lisa's campus, as at most campuses, the online course was counted as a course in a three-course teaching load, but on-campus graduate courses were generally restricted to 26 students on her campus. Lisa said:

Why should I teach an online course of forty, if I can come on campus and teach a class of 26? I love doing it, but there is more work in an online class than there is in a traditional class.

Sam had the same experience, "I've had as many as forty, and that was a nightmare in the sense of the tremendous amount of things I had to read and give feedback on." Sam's feedback came in the form of individual e-mails in which he gave guidance to enhance the assignment. Jack once had to work with two sections, each comprised of thirty students. He said, "I'd never want to do that again. We don't have teaching assistants." Carlos modified his course to accommodate forty students. His spring 2003 class had 38 students. He noted that the quality of the assignments was such that he would not have been able to hand over grading to a teaching assistant even if he could have had one. In the last year or so, the larger class sizes caused these MBA faculty to change course design or to put caps on their class sizes. Most would prefer a maximum class size of twenty.

The two impediments to online teaching, changing technical platforms and large class sizes, frustrated the MBA faculty members interviewed, and they could be a disincentive to those who might be interested in teaching online.

Changing Roles from the Classroom to Online Teaching

Views of Their Roles in Teaching Online

Faculty members in the MBA program unanimously agreed that they were facilitators of learning. Their definitions of facilitator differed somewhat, as the following examples illustrate. Carlos described his role in this way:

I view my role as a professor, as a faculty member. And in fact I guess, from that standpoint, I feel like in what I'm doing, from a mental standpoint, I'm no different than I am in the classroom in the way I address the responsibility. I try for a role where I'm the facilitator, where the students are really the ones that are discussing things and making the case. And I've designed the course online that way.

Carlos allocated his time to moderating the discussions and assessing case studies, which he added, was a formidable task.

Jack called himself a very strong facilitator, a judge, perhaps because of the nature of his course, business law, or because of the organizing structure of weekly trials:

I manage the time. I keep everything on track. I ask very pointed, provocative questions such as: "Now why did you say that versus this?" Even though we're in "court," it is an educational experience because I'm forcing them to think about the legal issues, particularly from a manager's perspective.

Lisa also viewed herself as an organizer, but she echoed Carlos's views as well:

My role is to organize everybody. I just organize everybody. I give them contact with each other and contact to resources. And then I sit back and let it cook, and let it bake. And it never comes out the same. With the graduate

students you don't have any problem about them pulling knowledge out of anything. You can give them any situation, any article, and they're excited to learn. They're going to find some value in whatever you give them. And it's fun to see what that value is going to be, and where it's going to head.

Lisa further explained that she tried to avoid being the authority, the only source of information. As she said, "When you're in a chat room or you're online, then everyone is a source of information." Sam, too, saw his roles as a facilitator and organizer. Dan saw one of his main roles as changing student attitudes toward quantitative analysis from "fear in the hearts of students" to enthusiasm. He facilitated weekly chats with his students. As with the other faculty members interviewed in the MBA program, his goal was to get his students to understand and apply the concepts of his course. Professors in the MBA program called their roles by different names, but they agreed that they were facilitators of learning.

Motivations for Teaching Online

To get a fuller picture of the online faculty members, we need to look at what motivated them to teach online. As they expressed their motivations, it became clear that MBA faculty members were inspired more than anything else by the challenges of the pedagogy and technology. Sam put it this way:

To see, could I teach without having the students? That was basically my challenge. Could I teach without having the students there, and could I still have good results and good comments and good evaluations?

Sam felt that he had achieved good results from a pedagogical point of view. He spoke of the technological opportunities this way:

What I love is the way in which you can use the technology. That was part of the challenge, that was what motivated me. I was the first one to use the simulation model, in Mexico in 1973. And being a pioneer, being the first one in the department to do this, that was for me a big challenge.

The twin challenges also appealed to Lisa, who viewed herself as a course designer as well as a technological pioneer. Jack liked being one of the few professors on campus who taught online. He also felt that the skills he had learned made him more marketable. Dan had always been a pioneer of better teaching through the use of technology, and in this way he shared many of the perspectives of his colleagues. Each of the faculty members interviewed was inspired by the challenges of both the pedagogy and the technology online instruction.

All these faculty members were excited by the initial stimulating demands of creating online courses that produced good learning results and of dealing with the requirements of new technologies. But the challenges could wear off. Sam said, “It is a little burdensome after you have taught it two or three times.” For Carlos, who talked about this matter with colleagues over the last year or two, the question became:

Do I really need to do this from a time standpoint? As I said earlier, the opportunity for me to rethink teaching my course as I explored this methodology was a definite positive thing for me, a motivating thing for me. Now that I’ve done that, it isn’t. That’s a done deal. I don’t learn by tweaking and changing.

But Carlos did not want to stop teaching online. Instead, if given the time, he wanted to develop a new course he had been thinking about. Sam explained that for himself, “It’s not a new challenge anymore.” He also wanted to move on to the stimulating and demanding tasks of creating a new course. Lisa concurred, and said:

I have a little bit of a conflict now, because I’m a designer and I’m a developer, and I’m tired of teaching it. You know, I want to design other classes, and I want to move on to other things. I’ve taught the class itself, I’ve designed it, I’ve taught it, now I’m kind of over it. I love the class, but I

don't want to teach it anymore. I'd just as soon hand it off, and let somebody else teach it. I'd rather design a new class and go into a new area or related area. I just get bored very quickly. And it's my nature that I have to move on and design other things.

Neither Dan nor Jack expressed any desire to quit teaching their courses and to create new courses. Jack might adapt his online course for a future undergraduate audience. He enjoyed his rich teaching experiences and planned to continue teaching his course. Dan loved teaching his course the way he did and planned to continue teaching it, though in his phased retirement he embarked on some new challenges in using technology. Sam, Carlos, and Lisa wanted to move on to their next challenges, to create their next courses. All of these faculty members got into teaching online because they enjoyed stimulatingly difficult tasks. But for some the original challenges had gone flat, and they wanted new opportunities, new problems to solve.

Perceptions of Changes in Teaching Strategies and Practices in Shifting from Classroom to Online Teaching

Course Structure and Feedback

These MBA faculty members provided structure for their courses in a variety of ways. Jack meticulously organized his syllabus and court dockets and displayed them on his website. He used weekly court cases, with students "in trial" as plaintiffs, defendants, and juries. Sam divided his course into weekly lessons. Dan gave his students weekly labs or projects, and Jack's students had weekly trials or projects. Carlos organized his course around five lessons, with time for preparation and reflection. Lisa described her syllabus as structured around flexible topics, which allowed her class to go in different directions depending on the

interests of her students and current events. Another way in which Sam and Lisa provided course structure was to provide worksheets or detailed instructions on each project or type of case study. They provided rich details, asked supportive questions, and in some cases showed an assessment rubric.

Most faculty provided a section of Frequently Asked Questions, so as to reduce such common questions in their e-mails. Most of the professors provided an overall structure of information segmented into weekly lessons, and also added work aids or worksheets of instructions for each type of activity. All faculty insisted on firm deadlines. Lisa explained her reasoning in this way:

You have to learn to make sure that you're in early enough that the Internet provider is not down, all the technical things too. Because I don't take any assignment after 8 o'clock on Monday mornings, nothing is allowed. I look at it like a legal bidding process. If you were going to bid legally on supplies, they have a cutoff date. If you miss that cutoff date, they can't take your bid, and they can't give you an award for a contract, because you were late. So that's another thing that I apply in the class, that they get used to the idea that there are no excuses. Either you got it in or you don't count.

Even with the course structure in place, there are always questions for the professor. Feedback can be given individually through e-mail, as all these faculty members did, or it can be given to small groups. All faculty except Sam held weekly chats with small groups of their students. Lisa had office hours online with her students on Sunday nights for about an hour. Sam's policy was to answer student e-mail on Mondays. Carlos monitored discussions over a nine-day period for each of his five lessons. He compared the discussion this way:

And the fact is, really, I think that the discussions that I get online are richer, and because they're taking place over nine days, that they're getting at things in a way that they just can't get in a three hour class period.

Jack used AOL Instant Messaging to keep in touch with his students in real time when he was at his office. Dan held weekly chats on Tuesdays. He had developed a speech-to-text method for his chats, because he could speak faster than he could type. He gave away the secret when students asked him how he could type so fast. Dan thought that chats tended to be concise, and that the text medium allowed one to look at and think about what was being said, which the verbal flow of classroom discussion did not allow. Dan answered e-mail for an hour or more each morning. Lisa also regularly monitored her e-mail for questions. With the second platform, a global e-mail function became available, used by almost all faculty members to send timely instructions, reminders, or changes in schedule.

Besides using feedback to answer questions about their courses or assignments, faculty gave feedback on assignments, whether they were trial briefs, case studies, discussion threads, or projects. So much of the professor's time was consumed by giving detailed feedback. Carlos's and Dan's projects or labs came every other week, which meant that every other week they did a lot of grading. Carlos said that because of his case study method he received anywhere from fifteen to sixty replies to a discussion question, with at least twenty questions for each of the four cases assigned per lesson. He sometimes had to read through over four hundred replies from thirty-eight students, which could take him from five to six hours on both days of a weekend. Dan's projects came in by Sundays at midnight. He spent most of Mondays grading and sending back the projects, so that students would have them before the Tuesday chats. Jack devoted big blocks of time to grading his briefs. Sam showed this researcher some of his students' case studies, some of which were as short as 25 pages and one which was almost an inch

thick. He said that these were the kinds of things that he could not turn over to his teaching assistant; he graded them himself.

These MBA faculty members provided course structure through their weekly lessons, detailed assignment instructions, and Frequently Asked Questions. They provided feedback in a variety of forms that ranged from weekly chats, discussions, and e-mails to grading of assignments. Most faculty interviewed said that they spent about twenty hours a week on their courses. Even with good course structure and detailed instructions, feedback in its various forms consumed much of these professors' time each week.

Scheduling and Assignments

Schedules were posted as part of every syllabus. But perhaps because the MBA program faculty were spread out on eight campuses, they did not coordinate with each other to staggered deadlines for major assignments. No faculty spoke of any problems with this method. Courses featured case studies, or trials in Jack's course, and projects. Every faculty member noted that in the first two weeks of courses, while the student population fluctuated just as it did on campus, they could not expect to have graded assignments. Orientation activities focused on helping all students learn the skills necessary to accomplish course requirements, such as e-mail, the chat area, the discussion area, and other technical concerns. In each course students and faculty introduced themselves and were required to respond to others' introductions. Lisa used this assignment to help students learn how their online communications represented them to others. In the beginning she answered every e-mail, to give her students a sense of security, that she was there. Lisa said that she

had done group projects the first week of class and found this unworkable, remarking, “I’ve kind of learned my lesson on that.”

Carlos experimented with scheduling case studies and projects in phases, in order to keep his students on track and to give him a sense of “closure” on whether they really grasped the concepts of his course. Since then, through discussions and by dividing projects into phases, Carlos felt that he reached a kind of closure, and he has felt more reassured that his students have learned the concepts of his course. Carlos’s class had four case studies, each typically with four to eight questions, including analytics. He commented on how working in groups functioned for the students in his classes:

Now, what I found early on, when they shifted to the group activity after mid term, this was really a reenergizing of the class. They liked doing that, because basically what they would do in my class would be to chat about the case situation in a synchronous environment, or e-mail each other back and forth. And then they would post what the group, how the group addressed the case for everybody to see. I think having that as part of a course is a really good idea.

Case studies and group projects were used in a similar way in Sam’s course, where students had four individual cases and two group cases. He used group projects because he thought that:

It’s very important that they work in groups, because in the real business world, that’s the environment they are going to be facing every day.

Sam set up chat rooms and discussion areas for his teams, even though it could be difficult to schedule when his students were dispersed throughout the world in different time zones. Sam described how one project worked:

I create three different companies. And each company starts with the same data and the same market and everything. And then they have to decide if

they want to go to a different country. In how many countries are they going to operate? What products are they going to operate? What pricing policies are they going to have? How much are they going to spend in research and development? All that kind of thing.

Sam had his students work in teams to study or create cases that like those of Carlos, were based on real work situations, with many possible variations and dimensions.

Dan required more than the correct answers in his quantitative analysis case studies. As he said, “If you can’t explain the answer so that someone else can understand, then you don’t know it.” Dan reversed the usual process and put the group projects first so that the pairs of students could teach each other; individual projects came in the last section of his course. He thought that group work was easier and more efficient online than on campus. Dan posted previous projects for students to review, get ideas from, do variations of, or extend.

Lisa also posted previous projects for her students to review. She thought that students should share the project results with the whole group to get the most value out of the exercise. She also noted improvements in students’ work from sharing previous and current projects:

The really good thing about the common publication is the bar of performance jumps so quickly, because by the time they first read the first group out, they can place themselves in the range of capabilities, abilities. You know, they’ll look at some and say, “Gosh, that person can’t even spell. Can’t even read English or write English. And where am I? Well, I’m better than that, but look at that person that they have this, and that, and that looks really good. Next time I want to emulate that.” And that gives them a lot of examples. It gives them a chance to see very good work, because I think the problem with a B student and C student is they don’t really know what to do to get that A. What’s the difference?

Lisa noted that at first students were apprehensive about other students seeing their work: “They commented, ‘Oh, my gosh, everybody’s going to see my work.’” She responded to her students in this way:

But you know what, in the real world, everybody is going to see your work, and you’re judged on what you do. And they’re going to be judged just the same way as we judge them, reading what they do and making the assumptions that we do.

Jack’s students did group projects in the form of their weekly trials. During the semester, each student had two chances to take a role as a plaintiff or as the defense arguing a real case in his virtual courtroom. Pairs of students comprised the counsels for the plaintiff or the defense, and twelve students acted as the jury. Other students might attend, though they had written assignments when they were not in the courtroom. In a class of thirty, every student was in a trial every other week. Jack defined the trial this way:

It’s a contest of analysis. It’s a contest of presentation, and at the very end folks vote on the verdict, like a jury.

Jack thought that the trials forced his students to focus on what the legal risks really were. The trial was only part of the project, because students submitted their briefs as well for his grading.

In addition to group work, Sam and Lisa also used peer assessment or peer review. Sam used peer assessment to derive half of the group grade in the two case studies his students were required to complete. At the very end he sent an e-mail to all participants with the names of the other two or three persons in their groups. Sam explained his use of peer assessment in this way:

The reason is basically because of the high individualism of Americans. I use that because I have to force them to work, but it’s very important that

they work in groups, because in the real business world, that's the environment they are going to be facing every day.

Lisa encouraged her students to learn how to work as a virtual team in cyberspace. She exhorted them to use both synchronous and asynchronous communication in their group projects. Lisa showed this researcher examples of her students' interactions:

The peer review is so interesting, because if you look here, this guy, their deadline was 8 o'clock in the morning, and this guy was late. And you can see here that somebody came back and said, "You were late." There's one up here. Here's another one; this one was late. This guy writes back and says, "I don't think you had it on the Web by 8:00." Being on time is very important. So that is very interesting to me.

Jack's form of peer assessment was part of his courtroom metaphor, because the juries actually voted on the verdicts like real juries. Carlos did not practice any form of peer review because he did not want to be "the police person" in his approach to the graduate MBA course. He thought that while being "the police person" might be an appropriate tool or technique for certain classes and for certain management classes, it was not something he wanted to spend time on. Though all five professors utilized group work in their courses, only Sam, Lisa, and Jack used any form of peer review. Jack had a class participation and "collaboration" survey at the end of the semester that students filled out to assess each other. This survey was a component of the students' final grades.

Exams or tests were not part of each course, possibly because the students were judged on their case study reports and their projects. Sam did not give tests. Those faculty members who did use tests or exams used them in different ways. Dan gave pretests and lesson tests to make sure that students understood the basic concepts. Students could retake tests if they wanted to. The tests were not part of

the final grade, but students retook the tests, as Dan said, to “chase A’s on those tests, to show me they can do A work.” Carlos gave mid-term and final exams in the form of case studies to analyze. Lisa gave three exams, one after every two modules. Jack gave a final exam, as mentioned earlier, in which his students critiqued a course lesson. Tests and exams were not a major focus of the MBA faculty, who focused more on case studies and project-based assessments.

Viewpoints on Teaching Online or in the Classroom

All of the faculty members except Carlos and Dan continued to teach two on-campus courses at the same time that they taught their online courses. Carlos was not required to teach because of his interim status as dean of graduate studies. Dan’s phased retirement permitted him to continue teaching his online course. Not everyone was as enthusiastic as Dan about online teaching. He found the online students to be harder workers and more willing to interact than on-campus students. To Dan the online environment was more efficient and created better learning outcomes, particularly with the series of special “helper applications” or “coaches” he had made for procedural aspects of his course.

Jack agreed with Dan in many respects. He preferred online teaching: “Three years later, I actually enjoy teaching online more than I do on-campus, at least in the MBA level.” His online experiences convinced Jack that, “I don’t need to see people, and they don’t need to see me to be interacting really well.”

Not being seen was why Lisa actually preferred to teach in an online environment. She did not like to lecture in the classroom. Lisa said that she was an

introverted person, and she asserted that the online mode allowed her to plan activities and to divert attention away from herself.

Carlos made this observation about the differences between on-campus and online courses in relation to contact with students:

One of those differences between a campus class and an online class is that there's much more continuity in terms of your interface with the students. I mean you really truly are available and interacting in a much more ongoing basis than with a class where you see them once a week for three hours....I like that part of it. It has a lot of potential. I'm not sure that I realize all the potential from it, but it does provide a basis for you to really shape people, given the right course design.

Sam seemed to prefer the on-campus environment because it allowed him to react more spontaneously to current events such as the Enron bankruptcy or the destruction of the World Trade Center. He could walk into the classroom and change the topic without having to prepare materials to be posted on the website or having to change the weekly schedule. Sam thought that one of the big limitations of the online medium was its "stillness". To Sam the online environment was not very dynamic because much time was needed to modify the materials. He viewed management courses such as his as very dynamic and therefore difficult to teach online.

Carlos missed the classroom environment for a different reason. He missed the fun and magic of presenting cases, which he did not do online. Jack said that he has had lots of ideas for integrating the Internet into his on-campus classes. Carlos viewed his experience as teaching him about the tools he could use to make hybrid courses, if he were to continue teaching. All of the faculty members have used their online materials for their on-campus courses.

Case Summary and Exploration of Emerging Themes

The MBA faculty members were invited by their deans to create courses for the MBA online program. The virtual university provided training that was supplemented by the distance education centers at Components B and E. All of the faculty except for Dan and Lisa turned over the technical work to their distance education centers, in order to concentrate on the pedagogical issues of transforming their on-campus courses into online courses. Each faculty member described the course development period as one that took a lot of time and effort.

The MBA professors agreed that there were no extrinsic benefits or recognition for teaching online. Instead these faculty reported that they appreciated their flexibility of work times and places, as well as the rich discussions of their students from around the world. Faculty members identified two impediments to teaching online: they had to adapt to three changes in course platforms in four years and to increasing class sizes, which took more time to teach. Though they differed over precise definitions, all felt that their roles were those of facilitators and organizers of the learning environment. All were motivated by the pedagogical and technical challenges of creating and teaching online courses. But after three or four years, three of the five faculty were ready to move on to new challenges, to create other online courses that incorporated newer technologies.

In transforming their courses from the classroom to the online environment, these faculty provided more structure and more assignment instructions, as well as Frequently Asked Questions. Weekly lessons and trials were supplemented with weekly chats and discussions. Feedback was provided through chats, discussions, and e-mail. Projects, case studies, and trial briefs were mostly created by groups

working together both synchronously and asynchronously. Peer reviews of work were done in three of the courses. Final grades were drawn more from the projects, case studies, and briefs than from exams and tests. Three of the faculty preferred online teaching, while two preferred on-campus teaching. Feedback and the grading of the projects, case studies, and briefs took about twenty hours a week per course. Even with good course structure and instructions, feedback in its various forms consumed most of the professors' time each week.

Emerging Themes

At this point we note that several common themes emerged across these case studies.

Factors that supported or impeded moving from classroom to online teaching

The motivations of professors for teaching online in the MBA program seemed to come primarily from the challenges of learning to teach with new technologies, as well as from being among the first to do so. Again, the themes arose of the participants' previous backgrounds in some form of distance education, or of their enjoying experimenting with technologies in teaching. As noted before, after many years of teaching faculty can rejuvenate their enthusiasm by using new methods to teach. The two motivational themes regarding students were repeated: providing students with access to graduate education that might otherwise not be possible, and providing faculty with access to more diverse groups of students than can be found on most campuses.

Also repeated was the theme related to the flexibility for faculty to choose the time and place to work. An extension of this theme was the benefit of phased

retirement, wherein a faculty member could teach entirely online and did not need to come to campus.

Several themes related to the lack of benefits and incentives for teaching online. These included: little or no recognition for advancement, promotion, and tenure; no financial compensation to faculty for the use of their intellectual property in online courses; and no teaching assistants for classes with enrollments over 25 students.

Three impediments mentioned before were: class enrollments were expanding; online teaching took more time to do than on-campus teaching; and teaching online could allow faculty to manage additional administrative responsibilities, and thus be busier with non-teaching activities. An additional disincentive emerged: frequent changes in course platforms required these teachers to take the time to learn how to use each new platform.

Changes in their roles as they shifted from classroom to online teaching

As in all of the previous cases, faculty emphasized the theme that they had to spend much more time selecting and developing materials and assignments before their online courses began than for on-campus classes. Because materials were presented online, the instructors' roles changed after their courses started. These faculty focused on providing facilitation and guidance to and managing the interactions with and among their students and the materials, asking and answering questions, and providing prompt feedback.

Changes in their teaching strategies and practices as they shifted from classroom to online teaching

Themes relating to changes in teaching strategies centered on providing detailed instructions and schedules as well as additional worksheets, aids, and grading rubrics. Once again the first two weeks of courses were used as an orientation period for students. All students were expected to participate in class discussions, and this was part of course grading. Students clearly needed prompt feedback.

Themes relating to faculty satisfaction with teaching online included: being skeptical at first about online education; later being enthusiastic about teaching online; and even preferring to teach online so much that the faculty member did not miss the classroom. Those continuing to teach on campus brought their new skills into their campus teaching.

MASTER'S OF SCIENCE IN KINESIOLOGY PROGRAM

This program was chosen as the last case study because it involved the most degree plans offered by the most component campuses. The program originated from six components and had sixteen faculty members. Degrees were granted through four of the components, specifically Components E, F, G, and I. The five instructors interviewed taught eight of the eighteen courses offered in the program. This researcher interviewed four in person and one by telephone, reviewed course materials, and sent the case study to all the participants for their comments and suggestions.

Program Description

Here is an adapted version of the program description from the website:

This program gives you the choice of four degree plans and the flexibility of online, web-based instruction through the virtual university. The combined resources of six component campuses allow you access to online graduate courses designed to meet your academic, professional, and lifestyle needs as a physical educator, a coach, or other professional interested in the science of people in motion. Students wanting to participate in the online Master's Degree in Kinesiology should apply for admission to one of the four component campuses offering the master's degree, enroll and complete that institution's degree requirements. Through a consortium of six component campuses, there is sufficient coursework offered so that all courses can be completed online. Any of the online graduate courses offered will be accepted by each participating university for any of its kinesiology online degree-seeking students.

Funding was secured for the first courses in 1999. The program went online in the fall of 2000 with an enrollment of 64. As of fall 2002 enrollment was 172, with an average class enrollment of seventeen in the overall program. The three largest class enrollments in fall 2002 were 37, 28, and 27. Enrollment in spring 2002 was the largest in the program so far with 180 students; the three biggest class enrollments were 41, 33, and 30. Virtual university staff asserted that it was practically impossible to parse out the number of on-campus students taking courses in the online program from those pursuing online degrees. Lola and David taught at Component G; Doris and Gary taught at Component E; and Sarah taught at Component F.

Events or Factors that Supported or Impeded Moving from Classroom to Online Teaching

In this section we will look at how David, Lola, Garry, Sarah, and Doris got into teaching online, their training, course development experiences, and the benefits and inhibitors they cited to teaching online.

David, from Component G, was a professor who had taught 38 years at the university level and three years online for the program. Lola, also from Component G, was an associate professor who had taught 32 years at the university level and three years with the program. Garry from Component E was an associate professor who had taught 24 years at the university level and two years in the program. Sarah from Component F was an associate professor who had taught 22 years at the university level and four years online. Doris, from Component E, was an associate professor who had taught six years at the university and two years for the program. These five faculty taught eight of the eighteen online courses offered: Lola taught three, Sarah taught two, and David, Doris, and Garry each taught one.

How They Became Involved in Teaching Online

The Master's in Kinesiology program had a unique origin unlike the other online master's degree programs. The MBA program was essentially a system-wide initiative with two courses from each component, as mandated by the then chancellor of the system. The Instruction in Reading and the Computer Science and Electrical Engineering programs both originated from one or two components that contributed all the courses. The Educational Technology program originated from Component B, with courses contributed from three other components.

David and Lola helped this researcher understand how the kinesiology program came into being, as well as how they became involved in online teaching. David, director of the distance education center at Component G, had long and varied experience in distance education that ranged from traditional self-paced instruction to television teaching and video conferencing. He concluded that video conferencing for his sparsely populated area of 50,000 square miles was too confining and too expensive. He began to encourage faculty to develop online instruction in 1996. He was also on the university system's committee to consider options for the creation of the virtual university. Early on, the virtual university encouraged components to put programs together. David said that he approached Lola and told her:

“You know, if anybody can pull this off, you're the one that can put this together, because they all know you, everybody at all the institutions.” So she went out and recruited the fellows, the people at Component E and Component I and Component F, and she got some folks at Component H and at Component A involved, even though they don't even actually give the degree. The kinesiology departments wanted to be part of it.

Lola already had a history of distance education teaching, with experience that included self-paced written materials and video conferencing. In 1997 she and her colleagues at Component G began to create their first online courses in response to David's encouragement. Lola learned about the virtual online university through the Faculty Advisory Council, a faculty senate from the different campuses of the university system. By the time the Request for Proposals came out, Lola and the other Component G faculty members had one online graduate course and one undergraduate course ready, and were already teaching four interactive television graduate courses supported by web materials. In the

beginning the Master's of Kinesiology program asked for sixteen courses, but was only funded for fourteen. David was persuaded to teach his course for free. Four more courses have since been funded, and by the fall of 2003 nineteen courses are expected to be online.

Here is how Sarah told the story of how Lola persuaded her to participate in the online program:

I tell this story all the time. I was sitting at my computer, literally, in my office one summer. At home, up here in my home town. And I got a call from Lola. Now Lola and I have known each other and worked with each other professionally for years in our mutual professional organizations. And she called and asked me the question, "Sarah, what do you know about distance learning?" And that was all she asked me. And I said, "Oh," I said, not knowing where this conversation was going, I said, "It's done from afar." And I tell that over and over because that's all I knew. And she said, "Let's think aloud a second. And how could or what if we could make, what if we could design a program and make it accessible to students in our state?" And that was originally why this program was designed, to meet the needs of graduate students in the state, who were either teaching and/or coaching in our discipline. She said, "Would you be..." She asked me the next question, you know, we talked about it just off and on. She said, "Well, I don't know what we're going to do," but she said, "Are you game?" And I said, "Sure." I said, "Nothing ventured, nothing gained." I said, "What do you know about it?" And she said, "About as much as you do." So the rest is history.

At about the same time, Component F's distance education center began to provide workshops on everything from Microsoft Word to using e-mail. Sarah said that she took them all. Lacking a prior distance education background, she experimented with having students attach assignments to their e-mails to her. When Sarah wanted to start using discussions with a graduate course, she asked her students to be "guinea pigs". Sarah said that this was what happened:

Well, they took off, the graduate students took off so quickly and so favorably that I stopped it. I almost panicked, because they wanted everything done that way. They still wanted to come to class, the traditional come to class once a week for three hours graduate course. But they knew they could get me at any time doing online work. And so I reviewed their comments and had them do things anonymously, to comment and stuff like that, to get ideas on what I could do.

Sarah planned the next semester's coursework with three weeks of pure online work, and the course went so well that she extended her planning to six weeks. Students could still come to class or could leave and go to the lab. She recalled that she was not yet ready to completely release her students. Sarah thought that her feelings were mixed: one feeling was of insecurity; with another feeling she was like the typical professor, wanting to have control and to have an audience. Sarah did not attempt a fully online course until Lola invited her to be part of the collaboration that created the online kinesiology master's degree.

Doris took a different path before she joined Lola in the collaborative grant proposal. In 1997 the distance education center at Component E invited faculty to a session on distance education given by the future director of the virtual university. Someone was needed to represent the kinesiology department, and the chair asked Doris to attend. She remembered being a bit skeptical and that she had some concerns about this new method of teaching. Shortly after that the dean of her college began to exhort faculty to become involved in distance education classes delivered by video conferencing. Doris decided to try, and the distance learning center's staff assisted her in delivering the videoconferences and providing supplementary materials on the Internet. This was her first experience with distance learning and providing access for students who were not close to campus.

Not long after that, Lola persuaded the chair of Doris's department to attend some of the meetings to develop the Master's of Kinesiology grant for the virtual university. The chair agreed to develop a course and asked Doris to work with her. The chair then moved to another university outside of the state, and Doris developed the course she has since been teaching. Doris also became the Component E representative to the kinesiology collaborative.

Garry, who had no distance education background, was the last of the faculty interviewed to join the program. Both Lola and Doris were his friends, and when Doris asked Garry to put his course online, he agreed. In our interview he said:

I tend to say yes to lots of things, and it sounded good, you know. And when you're in the beginning, and they don't have many submissions, you're lucky. See, I had a course they needed. So what do they say? Luck is when preparation meets opportunity.

In fact, when preparation met opportunity might describe how the Master's of Kinesiology program came into being. Each of the faculty members involved had parts of the puzzle, but it only became a picture, a program, when they put their pieces together.

Training and Course Development

Over the years all five of the kinesiology faculty members attended the virtual university's training and course development workshops. Doris remembered attending one before she started work on her course. She came to feel that her participation helped her to create ideas for course development. Later after she had developed her course, she attended another workshop. This time it made more sense to her:

Okay, that's how I can make my discussions better. Oh, okay, that's what they mean by more interaction.

She thought that it was useful to attend workshops even after one has started teaching. Doris recalled that, as one of the first to receive a grant, there were only a few online courses to look at, and she thought that it would have been better if she could have seen a course before she prepared her own. Doris felt that being able to look at other kinesiology courses in the program helped her, and she helped to orient Garry while he developed his course. Garry, who began with little technological and no distance education experience, also appreciated the patience shown to him by the virtual university and the Component E distance education staff.

Sarah's experience was very different. The distance learning center at Component F secured a grant for five faculty members to take a semester-long online course from Walden University. She reported that she had difficulty completing an assignment from her Florida hotel room during a conference, and that she emailed the instructor to request an extension because she had had technical difficulties with the connection. The experience had this effect on her:

And I'll never forget this is what changed me completely. That changed me. I've been a changed person ever since. And it was because I experienced that. I have developed a totally different, oh I guess you might say, approach, to students. I am more patient. I am more understanding. I'm as demanding, but I can sure compromise and work with them any way I can.

Sarah had taken that course to become a certified online instructor. This was her purpose, but not the actual result. She explained the result this way:

We have all been traditional students. But we have not been online students, working full time, with family responsibilities, or whatever other responsibilities, and trying to go to school. We have not done that.

Sarah came to believe that all instructors who create online courses should first be required to take an online course, to experience what it is like from a student's perspective.

Sarah communicated her excitement to Lola, who enrolled in an online instructor certification program from the University of Wisconsin at Madison. Lola actually ended up taking courses from five different instructors, which gave her five different models to think about as she developed her first course. Lola agreed with Sarah on how this affected her, saying that her experience built empathy for the students' experience. She also agreed with Sarah that every faculty member and staff person in distance education should be required to take an online course, even one as short as four weeks. Lola shared her experiences with David, the director of distance education on the same campus. David also took courses from the University of Wisconsin at Madison.

Course development time varied among faculty: Doris took a semester, while Sarah took about a year. All had been teaching the courses on campus before they created their online courses. Sarah spoke about converting a course from face-to-face delivery to online delivery: "It was tough. It was tough to get going, and it was tough at the end." David described the course development process in this way:

And one of the things that I think people encounter is that it takes a lot of time, because you have to put this course together ahead of time. And you can't just go into class and make it up, because nobody can type that fast, right? You have to really sit down and think about what it is you want the course to accomplish, what you want the students to accomplish by passing through your wonderful instructional experience. And so you've really got to do some thinking about the design of the course and that sort of stuff, and

that takes a while. Now, once you get past that, then that part of it is not so bad.

Although David used a textbook, he supplemented it with a very extensive set of materials he had written to explain concepts and procedures, the way he would have in an on-campus class.

Not all the faculty interviewed developed their courses by themselves. Sarah developed one course by herself and co-developed another course with four faculty members from three other components, who alternated teaching it. Lola has co-developed three courses with faculty members from other components who, for a combination of reasons, have never taught the courses. She has been developing her first course by herself for the spring 2004 semester. Lola mentioned that another course was co-developed and co-taught by faculty at Components G and I.

Sarah, Doris, Garry, and David did not do their own technical work. But Lola did when she started teaching online, when web page development tools were new and awkward, which caused her much frustration. Lola said that her office neighbors noticed:

And one of them said that she will never do an online course because she could hear me swearing through the walls all that summer.

All faculty members reported revising and fine tuning their courses before offering them again.

Benefits and Impediments to Teaching Online

The faculty members at all three components felt that their work was recognized and rewarded with extrinsic benefits. Lola said that there was system wide support and encouragement for faculty to engage in online course development and delivery, but did not see much evidence that these efforts were

regarded in all disciplines as teaching. Faculty members in her own department did not have any choice, because they were expected to offer online courses, and the department recognized this for promotion and tenure. David took a broader view:

For today's assistant professor, today's non-tenured person, at least on our campus, I think it's becoming something of an expectation that they will show some sense of the modern, appropriate, and effective use of instructional technology, and I do not mean PowerPoint.

The kinesiology department at Component E recognized Doris's online teaching as part of her tenure portfolio. Doris managed to move from assistant professor to associate professor and to receive tenure while she taught online. She said that she was able to produce the necessary research and publications while she successfully developed and taught an online course. Sarah's online courses were recognized as equivalent to teaching on campus. She taught online both virtual university and Component F courses, and has moved into phased retirement, which did not require her presence on campus.

All of these faculty appreciated the intrinsic benefit of the flexibility to work from any place that teaching online offers. This meant that Sarah could work in her hometown instead of living near campus and could travel as much as she wanted. Lola was the department chair of behavioral science, the area coordinator of kinesiology, and the advisor of the online kinesiology program. She admitted that the flexibility allowed her to do her administrative work on campus and to handle the work for her two or three courses a semester from home or on vacation. David appreciated the flexibility that allowed him to travel and work from home, despite his administrative load as director of Component G's distance education center. Doris taught a summer course which she originally dreaded and ended up

liking because she could “take your laptop and still go to the mountains and correspond with students. The flexibility is a huge upside to online classes.”

The ability to teach from anywhere was complemented by the ability to teach at any time. As Doris said, “I don’t mind getting online at home, early in the morning, late at night, and working for an hour and then putting it away and doing something else.” Garry enjoyed the convenience, and often checked his e-mail at midnight, when he knew students were posting their work. He said:

I do most of my work at night, at home. I don’t have to leave my family. But I can leave them in a sense, I’m in my room. But I also am willing to interrupt and go back and be with my family, too. That is something that we all have to adjust to: When are we going to do this?

Sarah worked regular hours during the day, but admitted:

But I am there religiously from a specific time to a specific time and then I’m addicted. Every time I go down the hall by the office, “Oh, well, I’ll just check and see if there’s any e-mail that I really need to get into.” And I do that. And there’s where the addiction is, or compulsion or whatever word you want to use. I come in from doing something at night, if it’s 9:00 at night, that’s the last thing I look at.

Lola did her work from home and reported working evenings and weekends to keep up.

These faculty did not agree as to whether it took more time to teach an online course than an on-campus course. Doris and Garry felt that it was about the same, but their class enrollments ranged from ten to fifteen students. Doris did say that perhaps the time she spent did not seem like more hours because her time was so flexible. David methodically logged his time over two semesters and came out with an average of two hours and forty minutes a day, seven days a week. He said that the time did vary, from twenty minutes to five or six hours, depending on what

was happening in his course. During the two semesters he kept his log one course had 37 students and the other had 41. David summarized the class size situation in this way:

It is not exactly linear, but the work does scale with the size of the class. If the class is half as big, then that amount of time is going to be cut, not necessarily in half, but by a considerable amount. Doubling the size of the class really does increase greatly the amount of work you had to do, much more than it does in a regular class.

While Sarah's course enrollments varied from twelve to eighteen, she figured that she put in about twenty hours per course per week. The same figure or more reflected Lola's efforts, though her course enrollments ranged from a low of fifteen to a high of 37. None of the faculty involved in this program were provided teaching assistants, even though the online enrollments have continued to increase. Lola has experimented with using a former online student as a "virtual" teaching assistant, to help with facilitating discussions.

Just as the faculty members could work from anywhere and at any time, so could the students. The kinesiology faculty reported teaching students located throughout the United States, including from Texas, Arkansas, California, Hawaii, Florida, Illinois, New York, Massachusetts, and an aircraft carrier in the Mediterranean, as well as from Canada, Scotland, and Trinidad. Doris added:

It is much more diverse than we expected. We marketed this program to teachers and coaches in rural areas of our state that did not have access to higher education, to post-baccalaureate higher education. That's who our market was, and the market is a very viable market. What we found was we're getting people from all over the country and some that are in health care related fields and some who are not.

Sarah agreed that the online courses attracted a greater diversity of students:

And that variety means professionally, they are not all public school teachers, they are not all college teachers. They're everything. They're not all necessarily in kinesiology.

Some were trainers in corporate fitness or the military, who ran programs for other officers or recruits. Some were changing careers, like the mortgage banker Doris had in one course. Some of Lola's students were changing careers, too:

We have a lawyer in Vermont who is the general administrator for the Vermont bar. He's my age, right? He got interested in personal training as a consumer, just finds it fascinating. He's going to do his master's degree. He took David's stats course. Then he went back to a community college to take anatomy and physiology so he could take exercise physiology. We have a computer science bachelor's degree person, who made all his money and invested in a facility in New Jersey. Well, he wants some credential for doing this wellness/fitness facility. So he's in our program.

David's course was taken by many outside the kinesiology field, including nurses, MBA and biology students, as well as students from other universities. Garry had one student in charge of a nutritional program for three year olds for forty schools in a large urban setting. He said:

Now that's innovative, and it's just at the cutting edge of how we are going to raise children. So you see what I am learning by being fortunate enough to teach this course.

All of these faculty in the kinesiology program saw this geographical and occupational diversity as a benefit for their students and themselves.

None of the kinesiology faculty mentioned any particular impediments or disincentives to teaching online. Though the class sizes have increased for some courses, and teaching assistants were not available, these faculty did not complain. Doris did mention that:

I think the biggest class I had was seventeen and the smallest was ten. But you know, even ten in an online graduate class feels pretty big when you're

used to six or seven in a traditional class. Just the simple article review, for example, when you have to grade ten of those, that's a fairly onerous thing to do. And so again, it hasn't been horrible, but the classes are bigger than the traditional classes, and really, the only thing I dislike about that is the grading. More people means better discussion sometimes, and more varied discussion. But the grading is harder to manage.

Lola acknowledged that teaching online took a lot of time, and stated that this has been a concern for faculty because it could become an issue of burnout, which she thought that administrators need to carefully watch. While Lola had an understanding husband and no children at home, she thought that administrators needed to be very protective of their faculty.

Regarding the three changes in course platforms, Sarah dismissed these changes by comparing them to changing from a word processing program like WordPerfect to Word. To her the platform did not make any difference, because the process was the same. Other faculty members did not regard a change in platform as an impediment to their work. David thought that the other kinesiology faculty would have different reactions if they did not have the mostly local staff support that actually allowed for the conversions to happen. As David noted, "The fact is, from the staff side it can be a real pain."

The kinesiology faculty members felt that their online work was recognized and rewarded by their respective departments. They appreciated the flexibility that online course delivery offered, which enabled them to work at convenient times and locations. They counted as benefits, both for themselves and their students, the geographical and occupational diversity of their students. Although class sizes have increased, resulting in increased time commitments from them, these

kinesiology faculty had not complained, but they were concerned. They did not consider platform changes a problem.

Changing Roles from the Classroom to Online Teaching

Views of Their Roles in Teaching Online

As these faculty members moved from classroom to online teaching, their roles changed because the materials normally presented in the classrooms and the assignments were already prepared and presented in their online course materials. Sarah spoke for all of the faculty interviewed when she said that she was a facilitator, but she added:

I see it really as a facilitator, because the teaching—that's a tough one. I have already given them, in my modules and stuff, information. And they can choose to read it or not read it. I firmly believe in tossing an issue, a question, a statement, a comment, or something out, and then stepping back. Let it rip! And that means, as our distance education center director would say, "Toss something into the pot, stir it, and let it go."

Sarah, Lola, Doris, David, and Garry saw themselves as facilitators, as givers of direction and managers of student discussions and activities. Garry also saw himself as a nurturer:

I nurture my students, and I want them to nurture their children, their students. The only way you can really get anything across is by modeling what you claim to be teaching.

David had a very similar attitude:

I spend a great deal of time, just as I do in the classroom, working to convince students who are not very mathematically experienced, and often have not been very successful with it, that they can do it.

Motivations for Teaching Online

The one common motivation for these kinesiology faculty was to provide access to graduate education for students living far from centers of higher education, as Lola mentioned when she originally asked Sarah to help create the online program, or as Doris said about marketing this program. Doris expanded on the access issue when she noted:

You know how many hundreds of miles there are between graduate institutions. And yet there are schoolteachers and other workers out there in those areas that don't have the option of quitting their jobs to go back to school. They just don't have that option anymore. If you live out in the middle of nowhere, you don't have that option. So I think this is a fabulous thing for those students.

Besides solving the geographical access problem, the online program has solved another kind of access problem: scheduling specific courses often enough so that students could have access every year and did not have to wait a year or two or three to take a particular course to finish their degrees. Scheduling had previously been so rigid that some sports coaches could not take needed courses because the courses were only offered in the seasons when they coached their teams. This availability has enhanced the program's attractiveness to students from other universities, who have taken the online courses to complete their degrees.

In addition to expanded access, Lola, the chair of kinesiology at her component, also wanted to save her master's degree program. In 1996, when graduate class sizes had shrunk to less than ten, and while the undergraduate program enjoyed large enrollments, she and her faculty devised a strategic plan to use video conferencing and online courses. They decided that if this did not work, the graduate program would end.

At first the online kinesiology program requested sixteen courses, but was funded for only fourteen. David was persuaded to teach his course for free. Four more courses have since been funded, and by the fall 2003 semester there are expected to be nineteen online courses.

David did not have a program to save, but he said that he would have been interested, even if he had not been the distance education center's director. Given his long history in alternative types of instruction, ranging from audiography to interactive video, online instruction was a natural next step. But because he was the director, he felt compelled to participate:

I can't not be a practitioner. It would be like being a computer center director and not knowing anything about computers. I can't do that. I feel like I have to do it. And I kind of like it. It's fun.

Sarah, who called herself a "junkie teacher," sought a change, and described herself in this way:

It was different. I was teaching I think eight years traditionally at [Component F], and I thought, "God, there's got to be more." I mean I'd already risen to the top, president of the faculty senate. I didn't want to be department chair, I'd been in administration, didn't want to go back there. I get very restless, and online was it. So what is keeping me fresh and online is I don't have to teach the same subjects every semester.

Sarah's move into phased retirement inspired Garry, who had not originally conceived of this possibility. He has since envisioned teaching a course or two online even after he has "retired". These kinesiology faculty were unanimously motivated by providing access to students who would not otherwise be able to earn master's degrees. But beyond this, their motivations varied from Lola's intention to save her graduate program to the widespread desire to try new forms of instruction.

Perceptions of Changes in Teaching Strategies and Practices in Shifting from Classroom to Online Teaching

Course Structure and Feedback

In addition to their posted syllabi, these kinesiology faculty provided Frequently Asked Questions, interactive applets, guiding questions, and assignment forms. Firm deadlines were part of each course. Many courses required textbooks, some featured tests, and all provided projects. None used synchronous elements like chats for webcasts, which Sarah suggested would defeat the purpose of putting courses online, “Online is to accommodate that student who cannot, for whatever reason, or chooses not to go to a traditional campus for their course.” As Garry noted, the content and assignments were all online.

Garry divided his course into weekly units, while David divided his course into eight modules, each about two weeks long. David described the structure of his course as “locally self-paced,” by which he meant that if the assignments were individual, students could do all their work the first day if they wanted, but all their work had to be posted by the deadline. He thought that self-paced instruction did not work very well online because the students were on their own, alone, which made it much harder for them. He used a textbook with an accompanying CD and his own guiding instructions and comments. He also had a series of guiding questions and answers in applet form distributed throughout the materials.

These kinesiology faculty emphasized prompt feedback. Doris was online several times a day, so that some of her students heard from her almost immediately. She explained how she treated feedback:

I think that’s important. I think they appreciate that. It kind of spoils them, though. You know, if I ever go out of town on the weekend and tell them

I'm not going to check e-mail this weekend until Sunday night. You know I'll get back Sunday night and some will be kind of frantic. But I also think that I give good feedback. I mean I take every question very seriously and really try to do a good job of explaining and referring them to other sources. And I try to follow up: Do you need more? Is there something else I can help you with?

Garry said that he hoped to answer any request within 24 hours. He checked his e-mail from his office, but he admitted that he did most of his work at home. His attitude was one of nurturing, as he said:

Right now it's so new that I just don't want to leave the student. If they have an e-mail on my e-mail I want to answer it soon so that they'll know that I'm there. That's the great thing. You can run in there, I can e-mail the whole class or anyone individually or groups. You know, if you know that someone cares about you even if they can't be there, if they have been there all term, then you're not in stress.

Lola worked primarily from home because her office hours were crowded with administrative duties. Lola usually did grading and messages in threaded discussions from home, seven days a week. All of the messages in her course also came to her as e-mail, which allowed her to closely monitor the course throughout the day. Lola answered all course-related e-mails as they arrived in her "in" box. She described her e-mail as an "IV," or intravenous, connection. All day long, at work and at home, she continuously checked all e-mail, course-related and otherwise.

When David had time, he sometimes worked from his office, where he checked his e-mail three or four times a day and provided almost instant feedback. He said that students were always kind of amazed when this happened. David estimated that there were 2,000 posts with his fall 2002 class of 37. At other times he worked from home. He took his laptop with him when he traveled, and he

explained to students that he would be traveling and for them to expect some lags in his response time.

Sarah traveled a lot and continued teaching from her hotel rooms. If she thought she were going to be out of touch or difficult to connect with, she let her students know ahead of time. Sarah worked a regular schedule, usually from nine in the morning until one in the afternoon. She did this because she had found that many of her students were working from their offices or schools during the day because there they had better and faster Internet connections. Sarah explained the downside of her situation:

You're right, that allows me flexibility. However, it can be a ball and chain in that there are many days here at the house when I don't even get outside. If I were in my office at school, I would have walked across campus to talk to someone in the Center for Distance Learning, or gone around and visited, or gone into somebody else's office, or something like that. And I'm a very gregarious, assertive person who is people-oriented, and so that's the downside. Not too much of a downside, but that's the downside.

Kinesiology faculty members kept an active watch on their e-mail during the day and evening in order to provide prompt feedback to their students.

In addition to e-mail feedback, class discussions were also used by all of the faculty members in their courses. David had several discussion areas; an area for questions about problems, tests, or projects; and a "statskeller," a café-like area for the students to discuss whatever they wanted. David said:

I mean they talk about the damndest things. Babies and crying. We had a big long discussion this semester about colic. And a side thing on morning sickness because two students had babies this semester.

On course-related subjects, he often found that students answered questions not only before he got to them, but also better than he might have. He said that he functioned as a guide to keep his students from wandering down wrong paths.

Many of the faculty used discussion strategies the way Doris did. She used a two-tiered structure, a posting deadline and a discussion deadline. Students initially posted responses to the comment, concept, or question she had posed. Students then had to discuss the responses. Doris expected students to participate in weekly discussions, and included their participation as part of their grades. Typically, responses were due Friday morning, and discussion postings were due Monday morning. Her summer courses had daily deadlines because, as she explained, in summer school students were expected to attend class every day. Doris did not respond to every posting, but instead preferred to intervene occasionally, to guide or give direction. For these kinesiology faculty their attention to their discussion areas was almost a daily effort.

Lola guided discussions, often using the discussion technique of leading with a question to stimulate further interaction. Sarah required all her students to participate in discussions, though she did not respond to every individual posting. At least once during the semester Sarah's students had to respond to three different people. Sarah said that her students read everything even if they did not respond to every posting. Her students understood that she did not allow opinions unless the students could substantiate and support their opinions. Sarah thought that online students were more polite because of the online environment, where they could not see each other and had more time to respond. For instance, students would say, "You know, I disagree with you. Now, here's what I think and why." Sarah said

that the discussions were better than in-class discussions in terms of their quality and depth, as well as the fact that every student responded. Garry said that he was surprised at the openness and honesty of his students in the discussion area.

While these kinesiology faculty paid close attention to feedback and the discussion areas, their efforts took time. None of the component campuses involved provided teaching assistants for these faculty. As David noted, it took a lot more time to do this. Only Lola has experimented with using a “virtual” teaching assistant who was not located on her campus.

Scheduling and Assignments

In addition to e-mail and discussions, kinesiology courses involved, besides tests, projects, individual work, and group work. All of the kinesiology faculty members used the first two weeks of their courses to orient their students to online work. As Sarah mentioned:

For many, it's their first online course they've ever done. I want them to become comfortable. They're going to have to develop their discipline, their self-discipline, as to when they're going to get on, how they're going to do stuff. That's up to them. But I will spend those two weeks making sure that they can do the technical thing. Can they carry on a discussion online? Can they do an e-mail? Can they do an e-mail attachment? I might have a philosophical question there. For example, what is play? Just to see where they're coming from. Or what is sport? I don't want any research yet or anything. I don't even mention research. So they're becoming comfortable in that way.

According to David, the first two weeks included a lot of “hand holding and confidence building” activities. Since most of the students who took David's statistics course were required to take it, and because many students had had bad

experiences with mathematics, David felt he had to convince his students that statistics was not brain surgery, and that he would get them through the course.

Most of the faculty, like Sarah and Lola, were explicit about how much time they expected students to devote weekly to their course work. Sarah told students to expect to spend about twenty hours a week on her courses. She told them, “If you’re not on this thing daily, you’re lost.” She also asserted, “And all it takes is for them not to do it one time, and they see how much communication they have got to go through.” Lola told her students to expect to spend twelve to sixteen hours a week per course. Garry expected six or more hours a week. Doris asked her students for six to twelve hours a week. And David expected ten to twelve hours or more, depending on the students’ levels of technical experience and sophistication in the subject matter.

When students told Lola that they were going to take three courses, she asked them where the 45 hours were going to come from in their schedules. As a result, most kinesiology students took one or two courses a semester. Doris, who advised the Component E students, thought that part of the reason students overestimated how many courses they could take online came from their undergraduate experiences. She said that students just assumed that they could handle six or nine hours online because they had taken eighteen or 21 hours a semester as undergraduates. Doris said that in the beginning students did not understand the differences in effort required between undergraduate and graduate level classes.

Sarah used a big one-page calendar to help her visualize the schedule of assignments. She usually had a question or assignment for her students every other

day, except on weekends. The only exceptions to this were the four tests. She posted them on Thursday nights with Sunday night deadlines. Sarah's tests were usually one question, mini research papers. Lola did not have tests in her introductory classes. David sprinkled self-tests in the form of applets throughout his statistics course readings. He e-mailed tests to his students individually and the students sent them back to him. David said that with his tests it did not matter if the student had the book open or not. He was convinced that his students were not finding others to take the tests for them:

Or if they are, they are finding lousy people, trust me. The kind of mistakes they make are not the kind of mistakes that somebody who knew what they were doing would make.

For David, getting correct answers was the easy part. The hard part was for his students to know how their answers responded to the questions. From his students' explanations he had opportunities to help them, by suggesting ways and means they might well need to think about. Doris gave midterm and final exams. Sixty percent of each was actually conceptual knowledge-based multiple-choice questions that were in the course. Doris's students also had a short answer, open book, take home test. This test comprised twenty percent of the total course grade. Doris did not worry about cheating, because as she said:

You know, I teach biomechanics. It's not like there's a whole lot of people out there walking around to whom somebody could just say, "Hey, come take this test for me." I mean, you know, I just don't worry about that.

Sarah's students had, in addition to the tests, a major original research problem to research and write up. She emphasized the process: 1) state what you are going to do; 2) gather your data; 3) report your data; 4) draw your conclusions;

and 5) make your recommendations. As she told them, “You will use this process in everyday life, when you go to buy a car or a TV or a box of cereal.”

While most of the faculty members required papers, they also required projects. The projects in both Doris’s and Garry’s courses were labs or lessons. In contrast to her on-campus course, where she could see her students teach the lessons, usually to other college students, she did not get to see her online students teach the labs. The online students created a wide variety of labs, some of which were written for young children, and wrote summaries of their experiences.

In Garry’s early childhood development course the teaching assignments were more difficult because his students had to go out and find classes of young children to work with. He gave his students five or six weeks to do this because they had to persuade child care facilities to allow them to teach classes there. Garry provided his students with letters of introduction, and they took their fee receipts to show the child care facilities that they were enrolled in his course. Garry saw this as the hardest part of the assignment, to obtain permission to teach at child care facilities. His students taught lessons to children aged three to eight, and then wrote up their experiences.

Lola required labs in addition to debates, journals, and other activities. Everything that she assigned had personal pieces so that “There’s nobody to copy from.” She had designed the learning activities with two intentions: the first was to oblige her students to go back into the course content; and the second intention was to ensure that the activities were such that they really had to be done by the students who were doing the work.

While there was a lot of individual work in the kinesiology courses, most of the faculty did make group assignments. Only Garry did not, and he attributed this to the smallness of his classes, whose enrollments ranged from ten to thirteen. He did not want to cut students off from one another. David had some small group activities that required four or five students. Sarah's group work was collaborative: her students had to communicate and to solve their differences by consensus before posting. She moved away from having group members assume specific roles. The students in Doris's class were allowed to do some of their labs as teams, though there were not really any team assignments. Doris did have her students exchange their article reviews to get feedback before turning them in to her.

These kinesiology faculty employed several strategies in their courses, including projects, labs or lessons, individual and group work, article reviews, papers, and tests. They all limited activities in the first two weeks of courses to introductory and orientation activities. Instructors were often specific with their students about the amount of work required to complete their courses.

Viewpoints on Teaching Online or in the Classroom

Garry was surprised at how personal teaching online could be. He did not prefer online teaching to on-campus teaching, because he preferred the immediate interchange of an on-campus classroom where he could see the expressions on students' faces. He noted that students were open:

People are willing to say things online that they might not even say face-to-face. That was an unexpected, pleasant thing to find out.

Doris missed seeing her students teach their lab assignments, but the diversity of her students enhanced the course:

I had one who was a police sergeant. He wrote a laboratory for police recruits. I've had people write labs for Little League teams, or just whomever they have access to. So I get this really rich diversity in laboratories, but I don't actually get to see them do it. What I do is I have them write up the lab, and then they perform the lab, and then they write up a summary of it. So the summaries are a lot of fun to read, but that's the one thing I miss.

Doris only taught her class online, because the faculty at Component E was so small that the same course could not be offered in both ways. Although Doris used discussion in her online course, she never used it in her on-campus courses. Similarly, Garry never asked his on-campus students to go out and teach lessons in child care facilities.

Lola liked the fact that she was teaching her online course throughout the week, instead of gearing up for a Wednesday night class from seven to ten p.m. David described the sense of completion that his online courses gave him:

My in-class classes never come out on the same day. You know what I mean? Sometimes you get all the way to the end, sometimes you get all the way to the end a week early, do a little extra stuff. Sometimes you don't get to the end, right? In this environment, you get to the end.

All the kinesiology faculty felt that they were teaching more diverse student populations than they did on campus, which to them was good for the students as well. Lola and David even gave presentations with some of their students at state and national conferences. David felt that he knew his online students a lot better than he ever would have known them in class. He also believed that both completion rates and class grades were higher. David thought that the reason for this was that the online students had to work a little harder and to put more effort into learning. Interestingly enough, David did not think that, compared to an on-campus course, the students were spending more time. He thought that this was

because they spent time actually working and not just sitting in class listening to the instructor. They were learning more, he said, because they were more involved.

Garry was the only one to mention his future teaching online:

No, I don't prefer online teaching. But I'm thinking, I'm 67. And in a few years, I'm going to say well, you know my grandkids are just starting up, and in a few years I'm going to want to spend more time with them. And so I visualize that I'll be able to teach a course or two online even after I have so-called retired. So, in a way, I'm really glad that I got involved, because I hope to teach this class.

Garry did not realize that Sarah was already doing what he envisioned. In her phased retirement, Sarah taught two courses a semester online, one for the virtual university and one for her component campus. Sarah was the only faculty member in her department who taught online. She did not miss teaching in the classroom, perhaps because she taught workshops around the country.

Case Summary and Exploration of Emerging Themes

The Master's of Kinesiology program offered four degree plans, and faculty at six components contributed courses. Online courses for the virtual university were first offered in the fall 2000 semester. In fall 2002, 172 students were enrolled in the kinesiology program, with an overall average class size of seventeen.

This case study represents the experiences of five of the sixteen professors in the program, who taught eight of the eighteen courses offered. Class sizes for these faculty ranged from ten to 41 in the 2002 academic year. Doris and Garry each taught one online course every other semester. David taught his online course almost every semester. While Sarah and Lola taught two or three online courses per semester, the sequence of courses alternated.

The virtual university funded the program in 1999. David and Lola had previous experience teaching with alternative modes of distance education delivery. Lola worked with faculty from all six components to create the proposal for the online program. All of the faculty attended the virtual university's training workshops. Sarah, Lola, and David took online courses, which gave them insights into student experiences of online learning. They recommended that all faculty should have online course experiences as students before developing their own courses. The distance education centers at the three components involved offered training and technical support for course development.

Faculty at all three components felt that their work was recognized and rewarded and considered for tenure, promotion, and advancement. They all appreciated the flexibility of being able to work at any time and from any place, which allowed all of them to work and travel at the same time. Though some worked on their courses during the day, the majority worked at home at night. Those who taught small classes, like Doris and Garry, did not see that they were doing more work than they would for on-campus courses. Those with larger classes, like Sarah, Lola, and David, reported spending twenty hours or more per online class per week. These faculty valued the geographical and occupational diversity of their students and felt that this added richness to the online student experience.

These kinesiology professors viewed their roles as facilitators, givers of direction, and managers of discussions and activities. The one common motivation for them was to provide access to graduate education for students who live far from centers of higher education. Because the course schedule alternated from semester

to semester, the program allowed those involved in particular sports at particular seasons to take needed courses. This flexibility attracted students from other graduate programs with more rigid course schedules. One of the motivations for Lola was that the added student enrollment from putting courses online helped save the graduate program at her component. While David was motivated to try a new and alternative mode of distance education, Sarah was restless and interested in having new teaching experiences.

All these faculty kept a close watch on their e-mail and discussions, logging on several times a day if not more. None of the components involved provided teaching assistants. Kinesiology courses were more structured toward projects, labs, research papers, and lessons than toward multiple choice tests, though Doris did use some multiple choice for basics. No synchronous elements were required, although Lola did use chat for online office hours. All these faculty provided orientation with few assignments in the first two weeks of their courses. While much of the course work was individual, there were some group assignments. Lola was the exception; she required about half of her work to be done with others, either in pairs or in small groups. She also experimented with using a “virtual” teaching assistant who did not live near the campus.

These kinesiology professors were very interested in their students. Many felt that they knew their online students better than their on-campus students. Lola, David, Doris, and Garry taught a mixture of on-campus and online courses. Doris and Gary both appreciated elements of online and on-campus teaching. Sarah, the only one who taught entirely online, was in a phased retirement that allowed her to live and work off campus.

Emerging Themes

At this point we look at themes that have emerged among these case studies.

Factors that supported or impeded their moving from classroom to online instruction

As we saw previously, there was a theme that faculty were more interested in teaching online if they had previous experience in some form of distance education, or if they enjoyed experimenting with technology in their teaching. Here again we saw the rejuvenation of faculty enthusiasm, after many years of teaching, when they used new teaching methods. With the presentation of information transferred to online materials, professors could focus on facilitating student learning. We saw repeated here the two motivational themes relating to students of providing access to graduate education that might not otherwise be possible, and of giving faculty access to more diverse groups of students than are found on most campuses. As with the Instruction in Reading program, there was a theme related to saving a graduate program at the component campus.

There were several themes related to the benefits of teaching online. There was recognition for advancement, promotion, and tenure. No teaching assistants were provided, nor was financial compensation paid for the use of professors' intellectual property in their online courses. Also repeated here were the benefits of having the flexibility to choose the time and location to work.

As in the past four case studies, three impediments were mentioned: class sizes were expanding; online teaching took more time than on-campus teaching; and teaching online could allow faculty to manage additional administrative

responsibilities, thus making them busier. The theme recurred of the frequent changing of courseware platforms and the time needed to deal with these changes.

Changes in their roles as they shifted from classroom to online teaching

There was a theme that faculty spent much more time selecting and developing materials and assignments before their online courses began than they would have for on-campus classes, because online courses must be completely finished before they can be given. The instructors' roles changed after their courses started to: providing facilitation and guidance; managing the interaction between instructors and students and among students; anticipating difficulties; scaffolding student activities; asking and answering questions; and providing prompt feedback.

Changes in their teaching strategies and practices as they shifted from classroom to online teaching

Themes relating to changes in teaching strategies concerned providing more detailed instructions and schedules, as well as additional worksheets, aids, and grading rubrics. The first two weeks of each course were used as an orientation period for students. All students were expected to participate in discussions, and this was part of course grading. Students needed prompt feedback.

Themes relating to satisfaction with teaching online included: initial skepticism about online education; subsequent enthusiasm about teaching online; and such strong preference for teaching online that the professor did not miss the classroom. Those who continued to teach on campus brought their new skills into campus teaching.

Chapter 5: Findings, Conclusions, and Recommendations

The question basic to this entire study has been: What were the experiences and patterns of higher education faculty as they adapted to teaching on the Internet? In this chapter, the researcher will synthesize the data and discuss emerging themes from the five case studies to shed light on this question. In the first section, we will look at these findings in relation to the three research questions.

- What were faculty member perceptions of changes in their roles as they shifted from classroom to online teaching?
- What were faculty member perceptions of their motivations, or major events and factors that supported or impeded their moving from classroom to online teaching?
- What were faculty member perceptions of changes in their teaching strategies and practices as they shifted from classroom to online teaching?

In the remaining sections, this researcher will offer conclusions and make recommendations for further research.

FINDINGS

Factors that supported or impeded moving from classroom to online teaching

How they became involved in teaching online

Before the virtual university issued the request for proposals in 1998, only four of the twenty faculty interviewed, Jana, Thomas, Lola, and David, had courses online, although seven faculty, Ron, Mark, Bob, Ray, Lisa, Sarah, and Doris taught on-campus courses with web-based materials. The virtual university promised grant

money to support course materials, and technological development, and also promised such other forms of support as training, administration, marketing, registration, and library services. These powerful incentives attracted many professors who were interested in exploring the new online teaching environment.

Four of the five master's programs studied here were proposed by component campuses or by combinations of components of the university system that would become the degree granting institutions. The virtual university created the fifth program, the MBA, by combining eight degree granting components.

Most components had distance education centers that provided instructional design and technical support to faculty developing online courses. It is doubtful that the majority of the faculty involved in this study would have developed their online courses without the financial and service support of the virtual university. The funds and activities generated by and through the efforts of the virtual university not only increased the impetus to move degree programs online but also stimulated collaborative efforts among component campuses. Both the Master's of Education in Curriculum and Instruction in Reading program and the Master's of Science in Kinesiology program at Component G had experienced declining enrollments before they were moved into distance education, and both have since enjoyed increasing enrollments. Some participating kinesiology programs, because of more students, have even added faculty since they went online.

Besides the four faculty who were already teaching online and the seven who were experimenting with online materials when the request for proposals was announced, several other faculty had previous experience in distance education that

ranged from television, audio conferencing, and video conferencing to the use of e-mail.

As Sam put it, “Sometimes you need a little push, you know, to say okay, this is the newest thing. Start using it.” Some thought, like Carlos, “I volunteered to do it basically thinking this new method was possibly a good thing, taking us in a new direction.” For others, their new work was exciting. As Jack looked back on his experiences creating an online course, he recalled, “It was very exciting and very new. It was like the Wild West, the frontier.” Jana agreed, “We were, think about pioneers, and just in there learning on the job, you know. It was a great experience.” Bob still felt that he was on the frontier, “We’re out there, pushing the envelope, doing cutting edge work. That is very exciting!”

Training and Course Development

Those faculty members who worked on developing their online courses in 1998 and 1999 were at a disadvantage, because few online courses then existed for them to look at or to take as students. The virtual university provided workshops and training in what was known at that time about online pedagogy. Most faculty reported that these workshops were useful, and helped them to get ideas on how to prepare their course materials. However, many of these professors regarded themselves as essentially self-taught. Sarah, David, Lola, and Lisa each took online courses. Sarah explained why she took the courses:

We have all been traditional students. But we have not been online students, working full time, with family responsibilities, or whatever other responsibilities, and trying to go to school. We have not done that.

Lisa expanded on this by saying:

I mean, how can you teach it if you've never experienced this? It's very hard to know, you have to know what's on the other side, what those students are feeling, what their problems are when they access a classroom. All the little things you need to know before you can be there to help them or fix it.

Lola not only was able to gain experience as an online student but also was able to compare five different instructors, which gave her five different models to consider as she developed her first online course.

The time to develop courses varied from a summer to a year. Longer development times were associated with engineering courses, which included many animations with narration, or java-based applets, or other forms of coaching applications that students could play again and again to learn a process or procedure. Ian noted that it took him over one hundred hours each to create some of his applets. Other courses took a long time to produce because faculty had to develop materials to replace their course lectures, as Sam did. Carlos was determined not to create a correspondence course, and said that he had welcomed the opportunity in this way:

I was looking at having taught, you know, for almost 25 years at the time. I knew that an exercise like this would probably help me rethink my own curriculum.

Dan used the opportunity and the tools made available to create helper applications for his course in quantitative analysis applications, that he had long wanted to use. Lisa explained that part of the long preparation time could be attributed to the fact that an entire course and all its materials had to be ready several months before the course was to be given, in order for the virtual university to check for technical and grammatical accuracy. Except for Dan, Jack, and Lisa, most of these faculty gave

their course materials to their distance education center staffs to be put into the course delivery platforms.

Benefits and Impediments

Benefits for faculty who taught online courses varied greatly among component campuses. Component A offered the most comprehensive package; their faculty received: recognition for advancement, promotion, and tenure; teaching assistants for large classes; and financial compensation for the use of their intellectual property in teaching their classes. The kinesiology departments at Components E, F, and G offered recognition of online teaching for advancement, promotion, and tenure. At Component G, Lola expected her departmental faculty to offer online courses, and the department recognized their efforts for promotion and tenure. David, also at Component G, took a broader view:

For today's assistant professor, today's non-tenured person, at least on our campus, I think it's becoming something of an expectation that they will show some sense of the modern, appropriate, and effective use of instructional technology, and I do not mean PowerPoint.

Although this researcher did not have information on all the factors considered, Doris of the kinesiology program and Lisa of the MBA program received tenure and were promoted to associate professor while teaching online. Until recently Jack was untenured, but he will become an associate professor at the start of the next academic year. Component E paid for cable modem Internet connections for their faculty who offered online courses with the virtual university.

For faculty other than at Component A or in the kinesiology departments of Components E, F, and G, the outlook was very different. Sam spoke for many when he said:

It's recognized at the beginning, but the continuous effort is not recognized. The maintenance of the course is not recognized, and that is very frustrating sometimes. The time to develop is not considered research. That is one of the things that I believe is limiting faculty participation in this field. It is not the fault of the professor; it is the fault of the system.

Institutional benefits were few for most of the professors involved in this study.

These faculty consistently identified only two benefits to teaching online: the flexibility to choose the time and location to teach; and having different, more diverse students with whom to interact. This flexibility allowed faculty to travel or even to live away from their campus and still teach their classes. These professors could work at any time of the day or night, which they often did. Nora answered e-mail in the middle of the night, not just because the connection was faster, but because she could. Mark worked on his classes early in the morning and after his daughter had gone to bed. In fact, four faculty in this study, Nora, Mark, Thomas, and Carlos, juggled administrative jobs and taught online courses, while eight faculty, Ian, Ron, Bob, Ray, Sam, Lola, David, and Doris juggled administrative duties, taught online, and taught on campus. The remaining eight faculty taught full course loads, with their online courses counted as one of the courses. In an extension of this flexibility, Dan and Sarah, both in phased retirement, continued to teach from wherever they wanted and did not have to come to campus.

Faculty in all five of these master's programs praised the diversity and quality of the students they have had in their online courses. Students came from all over the country and the world, with varied backgrounds, ethnicities, and native languages. Some were Americans living abroad, but many were foreign nationals, who brought experiences and perspectives to the discussions that faculty did not encounter in their on-campus classes. Lisa mentioned a student in Egypt:

He was a much better teacher that semester than I was. I mean, I just know my textbooks and my experience. He brought so much more to the class. And in those MBA online courses, there's not just one like that, there's twenty like that. It is an amazing experience to be able to work with them.

Another form of diversity among online graduate students was occupational diversity. Students in the MBA program came from high levels of management, such as vice presidents or chief financial officers in many leading companies. Jack explained what this brought to his classes:

So when I talk about legal risks, they are on full alert, because it is just not a theory to them. Some of them could get sued because they own businesses or they manage businesses, so it's important. It's not like teaching undergraduates who are cashiers at HEB or Target. They think, "Target's going to get sued, so what?"

Lola spoke about the course in which she had three baseball coaches, which she said was quite unusual. In the kinesiology program, students from corporations, the military, colleges, and schools came seeking a change of career, certification, or more knowledge. In the Master's of Educational Technology (MEd) and Computer Science programs, students came from corporations and the software industry. Nora in the Reading program said that for some of her students, who had never taught outside their current school districts, the diversity was especially stimulating.

Most of these faculty agreed that online students were quite different from their on-campus students. Bob noted that his students in the MEd program were older, already worked in careers, and took the courses to advance their careers. Lisa suggested that because her students were graduate MBA students, and distance education students in particular, they were more disciplined, self-motivated, and had a lot of study skills. Dan added that he had seen students begin his course

lacking some basic skills, but then apply themselves so diligently that they finished his class at the same level as the more prepared students. David believed that his online students had to work a little harder and put more effort into learning, but that as a result their completion rates and class grades were higher.

Again and again in the interviews, three impediments arose to satisfaction with online teaching: online teaching took more time; classes were getting larger; and course delivery platform swere frequently changed. Only those faculty with small classes of fifteen students or less reported that online teaching took about the same amount of time as teaching an on-campus classes. Ian explained why online teaching took more time:

With the online courses I'm doing all that discussion stuff, you know. And in the classroom it's over during the class sessions and the office hours. So what are we talking? I mean two sessions of an hour and a quarter, plus two hours of office hours per week. So you're talking about five hours of total commitment, plus prep time. Whereas for the online courses, it's seven or eight hours a week. Actually steering these students, counseling them into the right modes of thinking, is pretty time consuming and exhausting, too.

Doris, who reported that she spent about the same time on her online course as she did on her on-campus courses, mentioned that:

I think the biggest class I had was seventeen and the smallest was ten. But you know, even ten in an online graduate class feels pretty big when you're used to six or seven in a traditional class. Just the simple article review, for example, when you have to grade ten of those, that's a fairly onerous thing to do. And so again, it hasn't been horrible, but the classes are bigger than the traditional classes, and really, the only thing I dislike about that is the grading. More people means better discussion sometimes, and more varied discussion. But the grading is harder to manage.

David kept a time log over two semesters and found that he spent an average of two hours and forty minutes a day, seven days a week. Depending on

what was happening in his course, the time he spent did vary, from twenty minutes to five or six hours. During the two semesters when he kept his time log, he had 37 students in one course and 41 in the other. David summarized his class size situation in this way:

It is not exactly linear, but the work does scale with the size of the class. If the class is half as big, then that amount of time is going to be cut, not necessarily in half, but by a considerable amount. Doubling the size of the class really does increase greatly the amount of work you had to do, much more than it does in a regular class.

Most of the faculty members in this study reported spending ten to twenty hours a week per online course.

The time that professors spent on their online courses varied in relation to the class size, though not in a straight, linear fashion, as David pointed out. Large class sizes were related to increased program enrollments. Table 5.1 shows the growth in enrollments for all five programs from their inceptions to the fall 2002 semester.

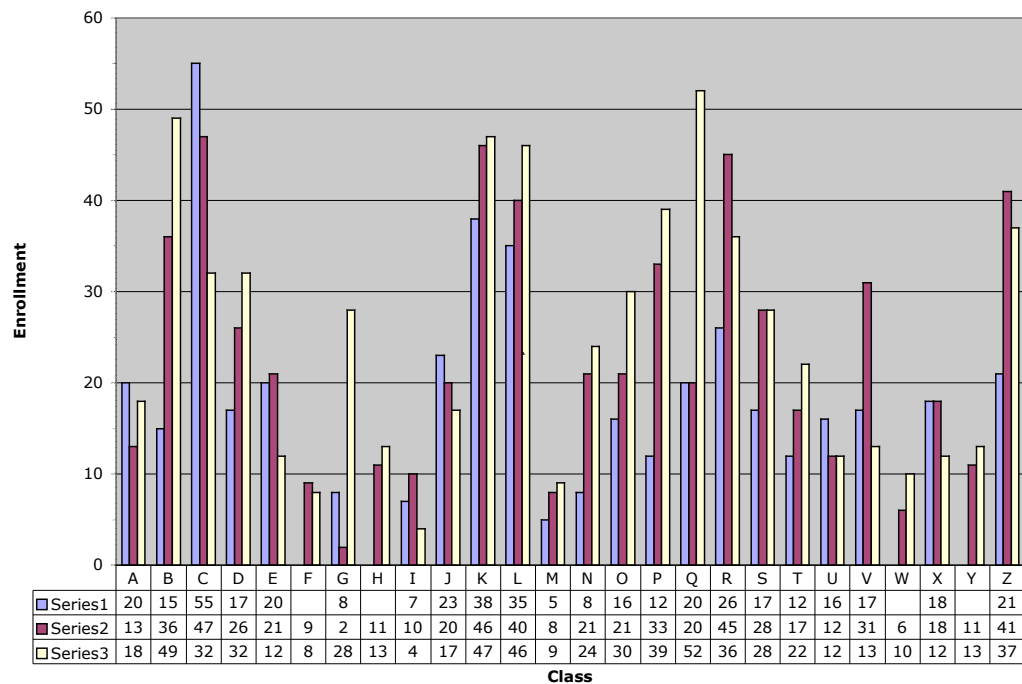
Table 5.1. Program Enrollment Figures

| | Fall 1999 | Fall 2000 | Fall 2001 | Fall 2002 |
|---------------------|-----------|-----------|-----------|-----------|
| Reading Program | 13 | 127 | 116 | 158 |
| Engineering Program | | 51 | 124 | 236 |
| MEd Program | 54 | 74 | 191 | 241 |
| MBA Program | 86 | 196 | 291 | 402 |
| Kinesiology Program | | 64 | 109 | 172 |

Growing program enrollments were reflected in class sizes, although class sizes differed from year to year in a program as students percolated through, taking one or more courses a semester.

Nevertheless, larger numbers in a program that offered only a set number of courses showed up in one course or another. An analysis of course enrollments will help us understand what faculty had to say about increasing class sizes. Table 5.2 shows the last two or three enrollment figures for all the courses taught by faculty in this study. Series three reflects the most recent time a course was given; series two, the time before; and series one, the time before that.

TABLE 5.2. ENROLLMENT FOR LAST THREE SEMESTERS COURSES WERE GIVEN



Classes A-F are from the Reading program. Classes G-J are from the Engineering program. Classes K-O are from the MEd Program. Classes P-T are from the MBA program. Classes U-Z are from the Kinesiology program. One class in the Reading program was not listed because it had only been given once; the class size was 44.

Table 5.2 shows that fourteen of the courses had 25 or fewer students, while twelve of the courses had between 26 and 55 students. By scanning the numbers to see if a faculty member ever had a class over 25, the number only increases to thirteen classes. In fact, only twelve faculty members had classes of 25 or more. The other eight professors included three who had thirteen students or less and five who had between sixteen and twenty-four students. Table 5.3 shows the changes in class sizes from the same data set.

Table 5.3. Class Enrollment Changes for Last Three Times Courses Were Given

| | Number of Increases | About the Same* | Number of Decreases |
|--------------|---------------------|-----------------|---------------------|
| Series 1-2** | 15 | 2 | 5 |
| Series 2-3 | 11 | 7 | 8 |

*The same enrollment or changes up or down involving only one or two students.

**Four courses were given only twice. They appear in Series 2-3.

The enrollment figures at the bottom of Table 5.2 show that class sizes fluctuated. Only seven of the 26 courses showed increased enrollments all three times they were given. Enrollment figures showed some support for faculty reports that their class sizes increased.

The perception that they might eventually have classes larger than 25 was prevalent among those faculty who had not yet had them. Doris had not yet had a class over twenty, but she mentioned the amount of work needed to tend to a class as small as ten:

I think the biggest class I had was seventeen and the smallest was ten. But you know, even ten in an online graduate class feels pretty big when you're

used to six or seven in a traditional class. Just the simple article review, for example, when you have to grade ten of those, that's a fairly onerous thing to do. And so again, it hasn't been horrible, but the classes are bigger than the traditional classes, and really, the only thing I dislike about that is the grading. More people means better discussion sometimes, and more varied discussion. But the grading is harder to manage.

Faculty who had in fact taught the larger classes were frustrated by their experiences. Thomas once taught a class of thirty, and he said, "I realized I almost died with thirty, because you just cannot manage that many by yourself." Sam echoed Thomas's experience: "I've had as many as forty, and that was a nightmare in the sense of the tremendous amount of things I had to read and give feedback on." Jack once had to work with two sections, each with almost thirty students, and he asserted, "I'd never want to do that again. We don't have teaching assistants." In response to his larger classes, Carlos redesigned his course so that it would work with more students. Lisa did the same thing, and she noted that, "When you design a course for 25, that same design does not work as well for forty." At Lisa's component campus, as at most components, online courses counted as one in a three-course teaching load, but on-campus graduate courses were generally restricted to 26 students. Lisa argued:

Why should I teach an online course of forty, if I can come on campus and teach a class of 26? I love doing it, but there is more work in an online class than there is in a traditional class.

These faculty felt pressured to take larger enrollments. Most of the components unfortunately did not offer teaching assistants, as did Component A. Unlike Mark, not all faculty could start a new section when a class enrollment grew too large. Sometimes the quality of their assignments was such that faculty like Carlos, Sam, and David would not have been able to hand over grading to a

teaching assistant, even if they had one. Lola experimented with a “virtual” assistant, a former student she paid to help with the discussion areas of her courses. Another solution would be to cap course enrollments. Increasing enrollments meant that a program was growing. The problem was, and is, how to keep up with growing enrollments and not overwork faculty.

The last impediment to teaching online was the fact that the virtual university has twice switched its courseware delivery platforms, and will change to a third platform for the fall 2004 semester. For most of these faculty this will be the third courseware delivery platform. For some faculty, like Sarah, these changes were no more serious than changing from a word processing program like WordPerfect to Word. But for others it has meant adapting their assignments and strategies to the new platform. Most agreed that the platform changes offered improved functionality, though not all used them. Some made minimal adaptations and preferred to work mostly out of their own websites. The virtual university often did much of the work to convert courses. David, who not only taught online but also directed a distance education center, thought that the other faculty would have had very different reactions if they had not had technical support from their distance learning centers. These staffs did most of the conversion work for faculty. As David noted, “The fact is, from the staff side it can be a real pain.”

In this section we looked at major events or factors that supported or impeded faculty as they moved from classroom to online teaching. The virtual university provided funding after four of these faculty were already teaching online courses, while seven experimented with using online materials to supplement their on-campus courses, and when several others already had experience in other forms

of distance education. The funding made it possible for faculty to make the transition to teaching online in the five master's degree programs. The virtual university provided workshops and training in both the courseware delivery platforms and the pedagogy of online instruction, yet there few online courses to investigate or to take as a student in 1998 and 1999. Those professors who did take online courses gained empathy for the student experience as well as ideas for developing their own courses. Course development generally took two or more semesters, either because faculty reworked their curricula for the new environment or because of the development time they needed for animations or other types of web-based applications to improve student learning. Most of these faculty provided their course contents to the staff at their components' distance education centers, for the staffs to work with.

The case studies indicated that only a few of the component campuses offered recognition for merit, tenure, and promotion. For example, only the kinesiology departments at Components E, F, and G offered recognition for online teaching. Faculty at Component A received: recognition for advancement, promotion, and tenure; teaching assistants for large classes; and financial compensation for the use of their intellectual property in teaching their classes. Three faculty from these components received tenure and were promoted to associate professor while they taught for the virtual university. Other departments in other components had yet to recognize online teaching as part of merit, promotion, or tenure. These professors identified two benefits from teaching online: the flexibility to choose the time and place of work; and access to much more diverse graduate students. There were three impediments to faculty

satisfaction with online teaching: teaching online took more time; online classes were getting larger; and delivery platforms changed and will change again.

Changes in instructional roles and demands as they shifted from classroom to online teaching

When faculty moved from the classroom to teaching online, the first requirement that they faced was the necessity to produce more than syllabi and schedules of class topics. In typical classrooms, materials were presented and discussed, questions were answered, assignments explained, and expectations outlined in discrete time slots during the week. As Ian noted earlier, class and office hours, not counting class preparation time, took him about five hours a week. So much of what occurred in the face-to-face class environment needed to be translated for online students into detailed instructions and schedules, worksheets, grading rubrics, and lists of Frequently Asked Questions. Faculty rethought their curricula with instructional designers, and with distance education staff developed java-based aids, animations, and helper applications. Many professors were challenged as was Sam, who said:

To see, could I teach without having the students? That was basically my challenge. Could I teach without having the students there, and could I still have good results and good comments and good evaluations?

These faculty spent semesters selecting materials, thinking through the assignments, and preparing additional instructions and aids, even before their courses even started.

After the courses started the roles of faculty were analogous to those of faculty in on-campus classes. As Jana remarked:

Same as when I teach in person. You know the axiom, “don’t be a face on the stage but a guide on the side?” Exactly the same. My role is so much up front work, so much planning, so much studying up the learning experiences. And then just stepping back, engaging the students, and supporting them as they interact with each other, providing them feedback on their work, and so that’s a full time thing.

Carlos thought of himself in much the same way:

I view my role as a professor, as a faculty member. And in fact I guess, from that standpoint, I feel like in what I’m doing, from a mental standpoint, I’m no different than I am in the classroom in the way I address the responsibility. I try for a role where I’m the facilitator, where the students are really the ones that are discussing things and making the case. And I’ve designed the course online that way.

Both of these faculty members and most of those interviewed saw their roles as the same or similar to what they were in the classroom: facilitating learning. Ian explained, facilitation of online students in this way:

I feel the more interaction that I can generate and encourage, the better. Not just between me and them, but between them as well, and between them and the material, with the online experiments. The more interaction that goes on, the better I can judge how well it’s going over.

As many faculty chose to label their roles as facilitators as those who called themselves managers or organizers. Jack described how he managed an online class:

I manage the time. I keep everything on track. I ask very pointed, provocative questions such as: “Now why did you say that versus this?” Even though we’re in “court,” it is an educational experience because I’m forcing them to think about the legal issues, particularly from a manager’s perspective.

These professors also emphasized engaging with their students, asking questions, supporting their students, guiding discussion, anticipating difficulties, and providing prompt feedback.

Feedback

Almost every faculty member interviewed mentioned prompt feedback as a critical factor for successful online teaching. Their definitions of prompt feedback varied from almost instantaneous to 24 hours or 48 hours or even every Monday. Lisa discussed her feedback strategy of communicating very often with her students in the beginning, and the reasons for it:

And that first week, as soon as an e-mail comes in, if you're right back on that e-mail, then on down the line, that kind of, the curve goes down, and you don't have as much communication to do. And they feel more secure that you're there, they can get you. I think when they have that feeling, they relax and there's a much better feeling in there.

Garry had much the same strategy:

I just don't want to leave the student. If they have an e-mail on my e-mail I want to answer it soon so that they'll know that I'm there. That's the great thing. You can run in there, I can e-mail the whole class or anyone individually or groups. You know, if you know that someone cares about you even if they can't be there, if they have been there all term, then you're not in stress.

In the cases we saw that faculty like Nora and Mark worked in the middle of the night or very early in the morning. Others were like Doris, who said, "I don't mind getting online at home, early in the morning, late at night, and working for an hour and then putting it away and doing something else." Even though Sarah worked regular hours, she said, "Every time I go down the hall by the office, 'Oh, well, I'll just check and see if there's any e-mail that I really need to get into.'" At a more extreme level, Lola felt connected to her e-mail during the day like an "IV," or intravenous connection. Thomas was more pragmatic, "As long as I have a computer and access to the Internet, I can schedule interactivity with the students and respond." Probably the important fact was that these faculty set their respective

policies and then followed them. Exceptions to these policies occurred when a faculty member told their class that for a specific period of time they were going to be unavailable.

An extension of feedback occurred when a faculty member tried to help students feel comfortable with or confident in the online environment or with the subject matter. An example of this was how professors sought to ensure that students became comfortable with using the technology, which was often mentioned as an important part of the first few weeks. Sarah explained the situation in this way:

For many, it's their first online course they've ever done. I want them to become comfortable. They're going to have to develop their discipline, their self-discipline, as to when they're going to get on, how they're going to do stuff. That's up to them. But I will spend those two weeks making sure that they can do the technical thing. Can they carry on a discussion online? Can they do an e-mail? Can they do an e-mail attachment?

Besides having their students become comfortable with the technology, it was also important to have them become comfortable with the subject matter. David tried to calm the fears of those who had to take his statistics course and who may have had bad experiences with mathematics in the past. David used a lot of “hand holding and confidence building” activities as he tried to convince his students that statistics was not as difficult as brain surgery, and that he would get them through the course. Dan, who taught quantitative analysis, saw one of his main roles as changing his students' attitudes toward quantitative analysis from “fear in the hearts of students” to authentic enthusiasm. Garry, who taught a kinesiology course on early childhood, described his commitment in this way:

I nurture my students, and I want them to nurture their children, their students. The only way you can really get anything across is by modeling what you claim to be teaching.

In their efforts to help their students become comfortable and confident with both the technology and the subject matter, most of the faculty in this study modeled those behaviors for their students.

These professors' roles in online instruction began with their spending much more time selecting and developing materials and assignments than they would have for on-campus classes, because online courses had to be completely finished before they could be given. The instructors' roles after their courses started became those of facilitation, management, providing prompt feedback, and modeling desired behaviors. Several faculty indicated that their roles had intensified in their transition to online teaching.

Changes in teaching strategies and practices in shifting from classroom to online teaching

Themes relating to changes in teaching strategies included providing more detailed instructions and schedules. Nora set the tone this way: "In the online environment you need things spelled out in a very concrete way." Jana agreed about the need for organization in an online course:

I'd say on the positive and negative side, that you have to plan in minutest detail and plan your course well in advance, because once it's up and running, at least for me, it takes everything I have to keep up with the students and to keep responding.

One reason syllabi were so detailed was that mistakes in instructions or assignment questions could be amplified in the online environment. Ian warned, "What could be taken care of in ten minutes in the classroom can stretch into a week of e-mail

exchanges.” Many courses featured a section of Frequently Asked Questions because, as Ron noted, students were used to the on-campus mode of operations, but “they tend to be a little confused when it comes to online.”

To further reduce any confusion about assignments, these faculty provided worksheets, forms, activity aids, sample projects, and grading rubrics. To deepen the understanding of concepts and processes, the engineering program faculty created animations with narration and java-based applets for processes. Dan produced a number of helper, or coaching, applications for his quantitative statistics course as a way of doing much the same thing.

As mentioned earlier, these professors used the first two weeks of each course as an orientation period for students. This was a time when students learned how the technology worked and how to use e-mail, attachments, online discussion areas, and library resources. Students introduced themselves, sent photos, introduced each other, and generally had a series of “soft” experiences before graded activities began. Though originally founded on the fact that the first two weeks were a period when students added and dropped courses, the two-week orientation eased students into the course requirements and the course community. This was particularly important in courses where discussion participation by all students was expected and was part of course grading.

Synchronous versus Asynchronous Communication

In addition to discussion, synchronous modes of communication were used, ranging from chats to audio conferencing to webcasts. Sarah suggested that using chats would defeat the purpose of putting courses online: “Online is to

accommodate that student who cannot for whatever reason or chooses not to go to a traditional campus for their course.” While the professors of the kinesiology, engineering, and reading programs did not use chat, the faculty in the MEd and MBA programs did. Lisa used chats only for office hours, for several reasons:

But for distance classes, chat is just really bad, especially if they’re dispersed. Because I’m not getting up at three o’clock in the morning for the guy in China, you know. So he gets up at seven. So I don’t find chat to be a very good element to use in a distance class at all. It works fine for a small group; I’d say five, six, something like that.

Faculty members who used chat with their classes on a weekly basis included Mark, Dan, and Thomas. Mark also used audio conferencing several times a semester with his students. Bob and Ray had weekly Monday night webcasts combined with chat. Ray saw their webcasts as a way to communicate effectively to those who needed to hear explanations in addition to reading them. In one sense, all these faculty members held weekly sessions to answer questions on assignments or projects. In another sense, they used these means as a way to help create communities of learners. But as Mark remarked on his distaste for the use of chats and audio conferencing, “Actually, that’s one of those things I wish would go away.”

Group Work

Most courses required individual student projects, though over half of the courses featured group projects as well. Sam favored group work because:

It’s very important that they work in groups, because in the real business world that’s the environment they are going to be facing every day.

Carlos found that group work changed the class flow:

Now, what I found early on, when they shifted to the group activity after mid-term, this was really a re-energizing of the class. They liked doing that, because basically what they would do in my class would be to chat about the case situation in a synchronous environment, or e-mail each other back and forth. And then they would post what the group, how the group addressed the case for everybody to see. I think having that as part of a course is a really good idea.

Dick favored a different sequence for integrating group work into his instruction; he had his students work in pairs or small groups at the beginning, to support each other, before they did individual work. Many faculty such as Jack, who had weekly trials in his course, used group work. The group work was usually posted for all to see. Lisa noted that at first students were apprehensive that other students would see their work. Students commented, “Oh, my gosh, everybody’s going to see my work.” Lisa responded to her students in this way:

But you know what, in the real world everybody is going to see your work, and you’re judged on what you do. And they’re going to be judged just the same way as we judge them, reading what they do and making the assumptions that we do.

Over half of Lola’s projects were group work. About half of these professors used some form of peer review of projects, which was another way for students to work together, as well as a way to deepen students’ understanding of assessment.

Assessment

Only twelve of these faculty used tests or quizzes in addition to projects. Those professors who used tests or exams used them in different ways. Dan gave pretests and lesson tests to make sure that students understood basic concepts. Students could retake these tests if they wanted to. Even though these tests were not part of the final grade, students retook them, to “chase A’s on those tests to show me they can do A work,” said Dan. Carlos gave mid-term and final exams in the

form of case studies to analyze. Jack gave a final exam, as mentioned earlier, in which his students critiqued a course lesson. Sarah posted her tests on Thursday night with a Sunday night deadline. Her tests were usually one question, mini research papers.

Cheating

There were various views on whether or not online students cheated. In 2002, Ian found some of his students on E-Bay offering three hundred dollars for someone to write their software projects. Ron offered fifteen-minute quizzes every Friday at a specific time, with a window of one hour. Roy allowed students to take his open book tests online, although he did let them come on campus to take the tests. He admitted that he was apprehensive about students cheating or copying others' work, though he noted that this happened in on-campus classes as well. Roy said that making the tests open book and for a limited time period helped to reassure him. David argued that with his tests it did not matter if students had the book open or not. He was convinced that students were not finding someone else to take the tests for them:

Or if they are, they are finding lousy people, trust me. The kind of mistakes they make are not the kind of mistakes that somebody who knew what they were doing would make.

Doris gave midterm and final exams. Sixty percent of each was actually conceptual knowledge-based multiple-choice questions that were in the course. Doris's students also had a short-answer, open book, take home test. This test comprised twenty percent of the total course grade. Doris did not worry about cheating , because, as she said:

You know, I teach biomechanics. It's not like there's a whole lot of people out there walking around to whom somebody could just say, "Hey, come take this test for me." I mean, you know, I just don't worry about that.

But what if the students talked or e-mailed about the exams? Thomas and Mark both gave problem-based and open book exams. They each gave students the weekend from Friday afternoon to Monday noon, or a three-day period, to complete the exams. Mark's exams were comprehensive, with questions drawn from the discussions and readings. Mark was not concerned that students might call or e-mail each other about the questions. He had not found that students supplied identical answers. In fact, Mark told his students, "I highly encourage you people to talk to each other." He had informal, anecdotal reports that students who had not been conversing much became very conversational at test times. He suggested, "If you want students to go back over information and think about it, this is a good way." Thomas agreed, "For me that's okay. This is learning." When Thomas spoke about his problem-based final exam, he commented further:

This type of exam places the student in a tremendous mode of reflection, and I don't mind if they discuss it with other students. But I'll tell you, in the three years of teaching each of those two courses I've never seen a paper that's identical. Never.

When tests and exams were used in addition to projects, students often faced a mini research paper or an open book exam. As we have seen, faculty in general were not very concerned about students cheating on their exams.

As these professors shifted from classroom to online teaching they made some changes to their teaching strategies and practices. Students in the online environment needed detailed schedules and assignments, supplemented by instructions, worksheets, forms, activity aids, sample projects, and grading rubrics.

Courses often featured a section of Frequently Asked Questions. These faculty designed interactive animations, java-based applets, and helper applications to enhance their students' understanding of concepts and processes. Students received their orientations to the technology and the specifics of their courses during the first two weeks. There was more focus on individual and group projects than on quizzes and exams, which often were open book.

Viewpoints on Teaching Online or in the Classroom

Almost every faculty member interviewed was enthusiastic about teaching in the Internet environment. Some, like Nora, Sarah, and Dan, preferred to teach online. When asked if she missed teaching on-campus courses, Nora replied:

No, I don't. And you know, people ask, "Do you miss that?" I really don't. I thought I would. And even though it is more work, I don't know, I just prefer teaching online. I still do workshops with teachers, so it's not like I can't. I still see people face-to-face, but this seems to suit me.

One of the reasons Nora preferred teaching online was her satisfaction with the transformation of her courses to the online environment. Sarah, who was in phased retirement, answered the same question in this way:

"Do I miss the classroom?" No, because I've had other things, that I didn't even know about five years ago or three years ago, that have occurred in my life and that have allowed me to fulfill that need.

In fact, one thing that Sarah did was teaching motorcycle safety workshops around the country. She said, "So what is keeping me fresh and online is I don't have to teach the same subjects every semester." Dan, also in phased retirement, has only been teaching online, and has spent his free time working on new technology

projects. Garry, who did not prefer online teaching, wanted to emulate Sarah and Dan, as he mentioned:

No, I don't prefer online teaching. But I'm thinking, I'm 67. And in a few years, I'm going to say well, you know my grandkids are just starting up, and in a few years I'm going to want to spend more time with them. And so I visualize that I'll be able to teach a course or two online even after I have so-called retired. So, in a way, I'm really glad that I got involved, because I hope to teach this class.

But some, like Thomas, did miss teaching in the classroom. Jana missed classroom teaching so much that she requested an on-campus class once a year because it “keeps me honest, keeps me in touch with people face-to-face, and keeps those skills honed. And I feel like I'm a better online teacher because I do that.” Jana noted that her on-campus course was paperless. She used many of her online teaching strategies in her on-campus courses. Those professors who continued to teach on campus brought their new skills and perspectives into their on-campus teaching.

Four faculty members, who found that their excitement about and the challenges of teaching online had diminished, voiced an unexpected theme. As Sam said, “It is a little burdensome after you have taught it two or three times.” He explained that for him, “It's not a new challenge anymore.” Thomas explained:

But these two courses, even though I update them, are basically very smooth sailers. And they offer what they say they were going to offer, so it reached a point that probably the excitement of having created the course, having taught it, is beginning to wear thin.

Carlos talked with his colleagues about this matter over the past two years. For him, the question became:

Do I really need to do this from a time standpoint? As I said earlier, the opportunity for me to rethink teaching my course as I explored this methodology was a definite positive thing for me, a motivating thing for me. Now that I've done that, it isn't. That's a done deal. I don't learn by tweaking and changing.

Lisa explained her temperament and her situation in this way:

I have a little bit of a conflict now, because I'm a designer and I'm a developer, and I'm tired of teaching it [her online course]. You know, I want to design other classes, and I want to move on to other things. I've taught the class itself, I've designed it, I've taught it, now I'm kind of over it. I love the class, but I don't want to teach it anymore. I'd just as soon hand it off, and let somebody else teach it. I'd rather design a new class and go into a new area or related area. I just get bored very quickly. And it's my nature that I have to move on and design other things.

Sam, Thomas, Lisa, and Carlos did not want to stop teaching online. Instead, if given the opportunity, they wanted to develop new online courses, to take on new and different challenges. Most of the professors taught both online and on-campus courses; some added administrative duties to teaching online and on campus. This latter group did not mention that they wanted to discontinue teaching online.

CONCLUSIONS

In this study of faculty who taught for the virtual university, several strands of themes wove themselves into discernible patterns. One theme related to the impulses that motivated faculty to apply for grants to teach online. Some had already taught online or had experimented with online elements for their on-campus courses; some had previous distance education experience; and some had neither, but were excited by the challenge of using the Internet to teach. The faculty with distance education experience spoke of providing access to students who had few if any other ways of obtaining graduate degrees. Some of those who had been

motivated by the technological challenges were ready for others to teach their courses and wanted to develop new ones.

The major theme question that served as a focus of this study was whether faculty perceived that their roles had changed as a function of their online teaching experiences. Since lecturing was the traditional higher education transmission mode, to what extent did this change as a function of teaching online? In fact, some professors did not exactly give up lecturing; they developed animations of their class note presentations or processes and added narration. Most of the faculty would have agreed with Otto Peters's definition of their roles:

As tutors and consultants have largely been relieved from the task of conveying course matter, they are able to devote themselves to more demanding tasks, such as aiding motivation; providing individual support; structuring course content for students; identifying problems and establishing connections (1983, p. 108).

One role which all the faculty in this study agreed applied to them was that of facilitator. They facilitated the discussions, the smooth flow of assignments, and student interactions with resources and each other. These professors would also have felt comfortable with Garrison's (1989) characterization of their role as one of monitoring and guiding the internal or cognitive aspects of the educational experience of helping their students learn.

Faculty who lacked distance education experience and who decided to teach online initially focused on translating their course materials for web-based delivery. For perhaps the first time they worked with other professionals in deciding how to deliver their courses. They worked with instructional designers and web savvy technicians to recast their curricula into an instructional environment in which they

most often never saw their students, though they interacted with their students primarily through text. These professors responded by providing detailed syllabi, explicit assignment instructions, forms, as well as technological aids in the form of animations, java-based applets, and coaching applications.

Most faculty in this study, through their online work, became even more student-centered than they may well have been before. Because of the introductory assignments in most courses, these faculty came to know more about their students than they normally would have in classrooms. Where student discussion was graded, as it was in most virtual university courses, the professors saw more student output than they ever did in classrooms. Online students had greater access to these faculty than did students on campus. The increased time these teachers reported spending with their online courses came from their ongoing attention to student discussions and to giving students feedback.

When we look at what other institutions (Betts, 1999; Wolcott & Betts, 1999) have reported as motivating factors for attracting faculty to participate in distance education, we can compare the benefits, noted earlier, that administrators said were the top five motivating factors for faculty:

1. personal motivation to use technology
2. monetary support (e.g., stipends, pay for extra courses)
3. intellectual challenge
4. credit toward promotion and tenure, and
5. release time.

Many professors were motivated by their desire to use technology and by the intellectual challenge of teaching online. The grants from the virtual university

provided monetary support, often translated into release time, for faculty to create course curricula and to receive technical support. Only Component A provided stipends, teaching assistants for large classes, and credit toward promotion and tenure. Kinesiology departments involved in the online graduate program extended credit for promotion and tenure. Three faculty members received promotion and tenure while they taught online.

Previous research (Betts, 1999; Wolcott & Betts, 1999) has indicated five intrinsic motivating factors for faculty to participate in distance education:

1. personal motivation to use technology
2. the opportunity to develop new ideas
3. the opportunity to improve their teaching
4. the opportunity to diversify instructional program offerings, and
5. greater flexibility for students.

The participants in this study identified some of the same factors. Several faculty indicated their excitement about using the online technologies, encouragement in developing new ideas, and their satisfaction at providing for their students with greater flexibility in terms of the time and the location of their classes. The opportunity that technology offered to improve teaching was not a significant factor. Most faculty did not indicate that they entered this field to improve their teaching skills. Faculty in the MEd and kinesiology programs agreed that their online programs did diversify program offerings. This study added two more benefits cited by online faculty: the flexibility for them to choose the time and location to teach; and their access to a greater diversity of students than they saw in their classrooms.

Impediments

These professors cited three impediments to teaching online: the increased time necessary to teach online classes; the increasing class sizes; and the frequent changes in course platforms. Most agreed that online courses took more time to teach than did on-campus courses. In some cases, the availability of teaching assistants would help to ameliorate this problem. In other cases, faculty felt that they could not turn over grading of projects and assignments to teaching assistants even if they were available. These faculty asserted that online teaching required greater efforts to facilitate and monitor each student's progress toward understanding the concepts in the course. In general, these professors indicated that they were much more available to their students than in an on-campus environment. Respondents suggested that time demands could increase exponentially rather than linearly with the increase in students. Institutions of higher education will have to carefully consider this issue in determining faculty workloads.

These faculty noted that the changes in course platforms based on increased capabilities involved much more than technicians moving content to a different courseware package. Adjusting course interaction patterns, activity locations, and much else required significant adjustments in pedagogy for those who experienced these changes.

Although this study provided important insights into faculty use of technology to teach online, it did not find specific evidence of patterns of faculty movement through stages of development, that is, of levels of adoption of technology, similar to those of kindergarten through grade twelve teachers observed in the Apple Classrooms of Tomorrow research (Dwyer, Ringstaff &

Sandholtz, 1991). However, based on the findings of this study, this question remains important for further research. Such studies will require a different research strategy that involves a longitudinal perspective and observational procedures to determine if similar patterns are found among higher education faculty as they become increasingly competent in their use of online strategies and technologies. Although prior research (Harasim et al., 1998; Kearsley, 2000; Ko & Rossen, 2001; Palloff & Pratt, 2001) noted that teaching online had significant effects in changing face-to-face teaching, the present study did not find evidence that faculty had improved their on-campus teaching, other than the fact that many incorporated e-mail and discussions into their on-campus courses.

Similarly, little evidence emerged in this study that supported Bonk's ten-level Internet integration continuum (Bonk, Cummings, Hara, Fischler, & Lee, 1999) for higher education faculty. Although Bonk et al. did not indicate that there was a linear progression within the continuum, it has sometimes been interpreted in this way. The interviews in this study did not provide evidence of a linear progression from one level to another. As noted earlier, prior to the advent of the virtual university, four of the faculty had taught online, seven had experimented with web-based materials, e-mail, and discussions, and the remaining nine professors were at best at a novice level in web-based instruction. The latter were of particular interest, because they made an extraordinary leap and commitment to design and deliver web-based courses.

In conclusion, the rapid proliferation of online courses offered by institutions of higher education have posed both new challenges and opportunities for faculty. The new online learning tools and environments have required new

knowledge, technological skills, pedagogical skills, and technological tools to successfully create, deliver, and evaluate online instruction. The case studies reported in this dissertation study may help to provide insights into the experiences of faculty who have taught in these new learning environments, as well as to illuminate the factors which they perceived as supporting or impeding their efforts. Several themes emerged from these case studies that can help to illuminate the landscape of personal, institutional, and situational factors related to online teaching. It is hoped that these findings will inspire future researchers to better understand the experiences of faculty in online teaching, and that these findings will also be useful to institutions of higher education in developing policies and support systems to assist their faculty in responding to these challenges.

RECOMMENDATIONS FOR FURTHER RESEARCH

In this last section we suggest areas for further research. Several of the faculty asserted that they were better prepared to develop online courses because they took online courses as students beforehand. Further research in this area might help faculty preparing to teach online, faculty who want to improve their online teaching skills, and specialists in faculty development.

This study found that most faculty were satisfied with teaching their online courses. But some said that their initial excitement or sense of challenge was gone, and that they wanted to move on to create other courses or take on other technological challenges. Further research on the interaction of faculty's motivations to teach online and their experiences over a longer period of time could help program designers plan for or be better able to arrange faculty and course assignments so as to promote program stability. Such research would also help

administrators to create meaningful incentives that could attract and retain faculty to teach online.

Other research could look at how to balance faculty teaching and administrative loads so as to avoid faculty burnout and the loss of experienced online teaching faculty. Research could help develop better understanding of how to address the impediments to teaching online identified by the faculty in this study, such as how to make online teaching take less time and yet maintain quality faculty-student interaction.

It seems logical that online faculty would transfer their technological skills into their on-campus classrooms, yet some of the faculty interviewed for this study did not. The transfer of technological skills and online pedagogical strategies into on-campus classrooms would be a fruitful area of study. It is also important to understand better and to develop research-based strategies to modify courses to handle larger enrollments. Some of the professors in this study were in the process of retiring, and further research might look at how to retain knowledgeable faculty on a part-time basis, so as not to lose their seasoned talents and expertise. In short, areas for research on the experiences of online faculty are abundant and not likely to diminish any time soon.

Appendix A: E-Mail Request for Volunteers

E-MAIL REQUEST FOR VOLUNTEERS

Carolyn Awalt, a doctoral candidate at The University of Texas at Austin in Instructional Technology, needs volunteers for her study on faculty perceptions of the online teaching experience.

There is a lot of research on the administrative and student issues of distance education, but little on the experiences of faculty who teach online. The purpose of this project is to better understand faculty perceptions of teaching and learning online. Results of this study could help trainers and faculty developers better prepare faculty to teach online.

Carolyn is looking for faculty who have taught for more than two semesters for the UT TeleCampus. Your identity will be kept confidential by replacing your name in the data with a pseudonym when coding the data and writing up the study. Carolyn will interview you for approximately an hour, either on your campus or by phone. You will be given a summary of your statements and a copy of the final study.

If you participate, you will be one of approximately 18 people selected for the study, two from each of the master's degree programs.

You can volunteer for the study by sending Carolyn an e-mail at cawalt@mail.utexas.edu.

Appendix B: Pre-Interview Survey Questions

PRE-INTERVIEW SURVEY QUESTIONS

All responses to this survey will be kept confidential.

The purpose of this survey is to gather information about you and your background before you are interviewed.

1. Your name: _____
2. Age: ☐ 35-39 ☐ 40-44 ☐ 45-49 ☐ 50-54 ☐ 55-59 ☐ 60-64 ☐ 65-69
☐ 70-over
3. Gender: ☐ M ☐ F
4. Ethnicity: ☐ African-American ☐ Caucasian ☐ Hispanic
☐ Native American ☐ Asian ☐ Other
5. UT Campus _____
6. Discipline/Degree Program _____
7. How long have you been teaching at the university level?
8. How long have you been teaching with the UT TeleCampus?
9. Before starting to teach online for the UT TeleCampus, did you own a computer at home?
10. Did you have an Internet connection at home?
11. Did you use any of the following with your on-campus courses before starting to teach online?
☐ e-mail ☐ a conferencing system ☐ listserv
☐ web pages for syllabi ☐ post student projects ☐ web resources
12. Did you teach any online courses before starting to teach with the UT TeleCampus? ☐ yes ☐ no
If yes, how many? ☐ For how many years? ☐
13. Do you think that you spend more time on your online classes than your on-campus classes?

14. How much time do you spend on the following per week?

- | | |
|------------------------------|---|
| ___ giving students feedback | ___ grading student papers |
| ___ in class discussions | ___ attending to student problems |
| ___ marketing your program | ___ attending to administrative details |

Appendix C: Consent Form

CONSENT FORM

Moving from the Classroom to Online Teaching: A Study of Change in Faculty Attitudes

You are invited to participate in an evaluation research project. My name is Carolyn Awalt and I am a doctoral candidate at The University of Texas at Austin working on my doctorate degree in Instructional Technology. There is a lot of research on the administrative and student issues of distance education, but little on the perceptions and experiences of faculty who teach online. The purpose of this project is to study and to better understand faculty perceptions of teaching and learning online. You are being asked to participate in the study because you are a member of the University of Texas TeleCampus faculty and have taught for more than two semesters. If you participate, you will be one of approximately 18 people in the study.

There are two aspects of the study. The first aspect has two parts: I will send you a pre-interview survey to gather information about you and your background, then I will interview you. This interview will last approximately an hour. I will tape record and transcribe the interview. The second aspect of the study occurs after the interview when I will send you a summary of the interview for your review. The survey and interview are designed to obtain information related to your perceptions of your experiences teaching online.

Participation in the survey and interview will be strictly voluntary, and you do not have to answer every question on the survey or during the interview.

A potential risk of participation in the study is possible disclosure of your identity. However, if you choose to participate, your identity will be held confidential by replacing your name in the data with a pseudonym when coding the data. The audio cassettes recorded during the interview will be heard or viewed only for research purposes by the researcher, and will be kept in a locked file cabinet in the researcher's office. They will be transcribed so that no personally identifying information is disclosed by replacing your name with a pseudonym. The cassettes will be erased after they are transcribed. There are no known physical, psychological, social, or legal risks likely to occur through participation in this study.

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission. Your responses will not be linked to your name in any written or verbal report of this research project.

This study will yield information understanding the perceptions of faculty who teach online. The information may be helpful to other educators in understanding the critical factors related to the design of effective training and support of faculty who teach online courses. It will also provide practical guidelines to help faculty developers and instructional designers. All participants of the study will be given the results of the study.

Your decision whether or not to participate will not affect your relationship

with The University of Texas at Austin.

If you have any questions about the study or any additional questions at a later time, please feel free to contact me by sending me an e-mail to cawalt@mail.utexas.edu or by calling me at 915-747-7674 or contact Paul Resta, doctoral advisor, at resta@mail.utexas.edu or call 512-471-4014. If you have any questions or concerns about your treatment as a research participant in this study, call Professor Clarke Burnham, Chair of the University of Texas at Austin Institutional Review Board for the Protection of Human Research Participants at 512-232-4383.

A copy of this consent form will be sent to your email address to confirm your participation in the study.

You are making a decision whether or not to participate. If you are willing to participate, please type your name and date in the space provided, to indicate that you have read the above information and have decided to participate in the study, save the document and then attach it to an e-mail to me. If you later decide that you do not want to participate in the study, simply tell me. You may discontinue your participation in this study at any time.

I agree to participate in the study.

Name of Participant

Date

Appendix D: Researcher as Instrument Form

PERSON AS INSTRUMENT: CAROLYN AWALT

Most important experiences that you have had in contexts similar to the ones that you will be exploring.

I will explore two areas: *research experiences* and *web-based course experience*.

Research Experiences: I have had four important research experiences that certainly color my ideas about naturalistic inquiry:

My first research experience was in Iran, where I spent seven years from 1971 to 1977. I originally went there as an anthropologist with a Fulbright-Hays fellowship to study Islamic women and their religious practices. My husband had a two-year National Institute of Mental Health fellowship to study village marketing patterns. In the fashion typical of anthropologists, we lived in an Iranian home in a small town and tried to become part of the community. By having two children born in Iran we both learned much more about Iranian family and child raising culture than we had set out to. Eventually, through a combination of family changes and economic changes in higher education, a doctoral degree in anthropology and Middle Eastern studies seemed to me to be an invitation to perpetual underemployment. I finished a master's thesis instead of a dissertation.

Some important things that I learned from this experience were that you open more doors and are better received if you speak the native language, dress appropriately, observe the social customs, and blend in as much as possible. I found this very useful as I became part of the distance learning community associated with the virtual university.

My second research experience also happened in Iran. The United States Information Service asked me to join a research project. After a week as an interviewer, I was asked to become the in-country project director. Our project involved interviewing county-level government leaders who had been brought to the United States and exposed to local and state democratic institutions and experiences. The goal of our research was to find out if these leaders had absorbed any of the ideas about democracy to which they had been exposed and if they had put any of those ideas into practice.

Our questionnaires were in English, but we usually interviewed in Farsi and wrote the answers in English. Our project lasted almost six months, and we interviewed officials all over the country, sometimes taking planes, buses, and finally a jeep to reach our informants. Our interviews lasted as long as four hours, and I participated in writing the final report sent to Washington. Since our visits were quick trips we had no opportunity to blend in, but the other points, speaking the native language, dressing appropriately, and observing local customs, eased somewhat our interviewees' suspicions. I used all of these lessons to help fit into the culture of distance education faculty.

My third research experience happened in the early 1980s. I worked in San Antonio at the University of Texas Health Science Center, as an interviewer on a project to study sterilization decisions, specifically, how couples made the choice of sterilization, and how they made the choice of which one would be sterilized. Our informants were recruited in gynecologists' offices, because for this study we only interviewed the wives. Interviews took place in their homes or occasionally a

coffee shop and often lasted several hours. We used a standardized questionnaire, though we wrote qualitative impressions of the interviews for our notes.

We often interviewed women more than once to verify information, and we kept in contact as long as they had questions or comments for us. One might well think that doing research with American women would not be as influenced by the factors already mentioned, but it was. I was an upper middle class Anglo woman with a lot of education and foreign travel, factors that made me quite different from my interview subjects. It was important for me to “speak their language” and not use academic talk, to dress casually, to observe their customs, and to try to blend in as much as possible.

In the late 1980s I again worked in San Antonio for the University of Texas Health Science Center on two very different projects at the same time. I worked in methadone clinics for heroin addicts run by the San Antonio Mental Health and Mental Retardation (MHMR) offices, and was part of a national research effort to understand the relationship between intravenous heroin use and HIV/AIDS. As a consequence, I interviewed recovering heroin addicts in treatment, who had volunteered to be part of the study and to have their blood tested. HIV positive results were communicated to the clients by professional counselors who recommended treatment.

Here the extreme differences between my external circumstances and theirs were a challenge to overcome. I did not feel “better” than they, and I know that I communicated this. I did not take on the “I’m better than they” attitude, as did some caseworkers, because I could see that this did not make for good rapport. Humor and kindness, being able to listen sympathetically, and not exhibiting a

judgmental attitude worked for me, and I became one of the most successful interviewers in the project, on which I worked for almost three years. At the end of the project I was hired as a counselor because I got along so well with clients and other caseworkers.

My second project was an evaluation of summer workshops financed by the Texas College Coordinating Board. The summer workshops for science and math teachers throughout the state were conducted by several universities. I created the protocol with the principal investigator and later co-wrote the grant extension to continue the research. I interviewed the university professors who wrote the grants and conducted the workshops as well as the participating teachers. The goal was to find out if these teachers thought that they had received valuable training, and to make recommendations on various factors and processes in successful workshops.

Interviews, entirely by phone with interviewees whom I had never met, lasted one to two hours. Though I never met any of the teachers, I eventually did meet some of the professors at meetings sponsored by the College Coordinating Board. This project was really fun, since with my educational background, Master of Arts of Teaching, and teaching experience, I spoke to peers when I talked to these teachers. When I spoke to the professors I talked to people like those with whom I had done graduate studies, and I felt comfortable. Much of the data were statistical, which made it necessary for me to learn the Statistical Package for the Social Sciences (SPSS) and to spend much time with the University of Texas Health Science Center statisticians to render our reports. The qualitative data were written as an ethnographic narrative, since the field of qualitative analysis was relatively new at that time.

Web-based course experience:

With funds from the University of Texas TeleCampus Course Grants, I worked with Dr. Paul Resta and Dr. Nolan Estes to create three online courses for the Master's of Educational Technology degree program. In 2001 the University Continuing Education Association recognized one course, Instructional Technology Planning and Management, by awarding it the Outstanding College Course Award. In the last few years I attended most of the University of Texas TeleCampus training sessions and met many of the faculty who taught in the online programs.

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Vita

Carolyn Joy Awalt was born in San Antonio, Texas, on February 17, 1942, to Roy and Velma Awalt. She attended Sarah Lawrence College and received her Bachelors of Arts in history from Antioch University, Yellow Springs, Ohio, in June 1966. Carolyn then spent a year at Antioch New England University, Putney, Vermont, and obtained a Master of Arts of Teaching, with Certification in Secondary Social Science from the state of Ohio. She joined the Peace Corps and was in the India 36 group from 1966 to 1967 in Raipur. Carolyn then taught for one year in the United States Embassy School in Vientiane, Laos.

In 1969 Carolyn entered the anthropology graduate program at the University of Texas at Austin. Her studies were supported by Title VI Defense Foreign Language grants in Hindi and Persian. In 1971 she went to Iran with her husband, Dr. Charles T. Thompson, with a Fulbright-Hays Fellowship to do her doctoral research. During her research years in Iran, from 1971 to 1978, she taught at Farah University, Tehran University, the Tehran Banking Institute, and an Islamic clerical school in Qom. Carolyn's two children, Laila and Nick, were born in 1971 and 1973. In 1978 Carolyn returned to Austin to finish a master's degree in anthropology. She took her children to San Antonio where she started teaching in a private girls school. Between 1979 and 1996, Carolyn worked in the catering business, did research for the University of Texas Health Science Center at San Antonio, worked as a computer applications instructor for the Mental Health and Mental Retardation Center, and as a computer graphics artist at the United States Automobile Agency.

Carolyn started back to graduate school in the doctoral program for Instructional Technology in the Department of Curriculum and Instruction in the College of Education at the University of Texas at Austin in 1990. She commuted from San Antonio to Austin until 1996, when she started work for the Southwest Educational Development Laboratory in Austin as a web developer. After two years she began work with Dr. Paul Resta and the Learning Technology Center, in the College of Education, developing web-based courses for the University of Texas TeleCampus. During her four years at the Learning Technology Center, Carolyn was media coordinator for three TeleCampus courses. One of the courses, Planning and Management of Instructional Programs, won the 2001 Distance Learning Course Award from the University Continuing Education Association. She worked as webmaster for the Preparing Tomorrow's Teachers to use Technology (PT3) grant for a year and a half, and started the IDEA Studio (Innovative Design of Educational Activities Studio), a faculty development center. In August 2002. She joined the faculty of the University of Texas at El Paso's College of Education as a visiting assistant professor. In the fall of 2003 Carolyn will join the faculty there as a tenure track assistant professor.

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