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RELATIONSHIP OF STUDENT SATISFACTION LEVELS
IN DISTANCE LEARNING AND TRADITIONAL CLASSROOM ENVIRONMENTS
AT EMBRY-RIDDLE AERONAUTICAL UNIVERSITY

by

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A dissertation submitted in partial fulfillment of the requirements
for the degree of Doctor of Education
in the Department of Educational Research, Technology, and Leadership
in the College of Education
at the University of Central Florida
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Major Professor: William C. Bozeman

ABSTRACT

The purpose of this study was to determine (a) what differences, if any, exist between Embry-Riddle Aeronautical University (ERAU) students enrolled in distance learning and traditional courses during 2004 with regard to their satisfaction with course quality and (b) the level of satisfaction of distance learning students with regard to online delivery technology and administrative services provided to them in distance learning.

Data were gathered using information from 400 distance learning undergraduate students using the Distance Learning Student Response Questionnaire (DLSRQ) and 400 traditional undergraduate students using the Student Survey Form (SSF). These students were enrolled in at least one of the four courses selected from the general education competency areas of Communications, Mathematics, Humanities, and Social Sciences during 2004.

It was concluded that distance learning and traditional classroom students experienced a high level of satisfaction in regard to almost all aspects of course quality. It was also determined that there was very little difference in the levels of satisfaction between the two groups. Unlike traditional classroom students, distance learning students did not express a high level of satisfaction with the timeliness of instructor feedback. They did, however, express a high level of satisfaction with online delivery technology and administrative services.

Implications and recommendations addressed a mentoring program, expanded quality control and professional development initiatives. Recommendations for future research were also offered.

This study is dedicated to my loving wife, Suellen, and the family I love,

Joe, Dan, Heather, and especially my granddaughter, Kylie Grace.

ACKNOWLEDGMENTS

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CHAPTER 1

PROBLEM STATEMENT AND DESIGN COMPONENTS

Introduction

Since the mid 1990s, the opportunities to participate in higher education have

been considerably increased beyond the traditional classroom setting to include distance

learning. Advancements in computer technology and public access to the Internet have

provided a venue that supports distance learning. Many mainstream institutions of higher

learning have adopted distance learning as the next logical step in educational delivery

systems. The educational pedagogy of the future has been projected to increasingly

include classroom courses that are web enhanced or delivered totally online. No longer is

the conventional lecture format the only accepted method of instructing students.

Innovations in educational technology, coupled with the desire to serve increasing

numbers of students and meet their diverse needs, have challenged many institutions to

rethink and expand their delivery systems.

Statement of the Problem

The questions addressed in this study were to determine (a) what differences, if

any, exist between Embry-Riddle Aeronautical University (ERAU) students enrolled in

distance learning and traditional courses during 2004 with regard to their satisfaction with

course quality and (b) the level of satisfaction of distance learning students with regard to

online delivery technology and administrative services provided to them in distance learning.

Definition of Terms

For the purpose of clarification, the following definitions of terms were used throughout the study.

Course Management System – a set of computer software tools designed to enable users to create Web-based courses.

Distance education – a generic, all-inclusive term used to refer to the physical separation of teacher and learners (Picciano, 2001).

Distance learning – the process of distance education which emphasizes the experience of the student and in which the student is separated from the instructor in and/or place during 75% or more of the instruction (Gordon, 2000).

E-Learning – electronic delivery of educational material and courses.

Online – describes products, services or information that can be purchased or accessed over the Internet.

Retention rate – the percentage of students at Embry Riddle Aeronautical University (ERAU) who continue their study through distance learning after completing at least three courses will be used in the calculation of retention rate.

Telecourse – educational courses delivered over a long distance, typically by telephone, or on television.

Traditional courses – courses in which the instructor and the learner are face-to-face in the same classroom.

Assumptions

The following assumptions were made in this study:

1. The Distance Learning Student Response Questionnaire (DLSRQ) and Student Survey Form (SSF) served as adequate instruments in assessing the satisfaction of students with course quality, delivery technology and administrative services.

2. The sampled respondents were representative of all distance learning and traditional classroom undergraduate students at Embry-Riddle Aeronautical University's Extended Campus, thus allowing for generalizability of the findings.

Significance of the Study

Better understanding of distance learning and traditional student satisfaction and their relationship could provide valuable insights useful in improving both the quality of the experiences and the retention rates of distance learners. The intent in conducting this research was to develop an increased understanding of student perceptions of distance learning and to identify possible differences with those students in traditional classroom environments.

Understanding any differences in student satisfaction could greatly enhance the ability of university administrators to make informed decisions relative to distance learning program improvements. The additional focus on distance learning students' satisfaction with technology and administrative services was also anticipated to be valuable in arriving at improvements and modifications in course content and delivery methodology and as well as in improving administrative services.

Gay (2000) has stated that causal comparative studies identify relationships that may lead to experimental studies. Results of this study may provide the basis or incentive to conduct further studies into the relationship of student satisfaction in distance learning and traditional classrooms.

Limitations of the Study

Data used in this study were gathered using the Distance Learning Student Response Questionnaire and Student Survey Forms associated with the ERAU Course Management System, Blackboard that ERAU utilizes. The response rate was dependent on the number of students who completed the questionnaire and survey at the conclusion of their respective courses.

The study was limited to the ERAU general education student population. Any inference drawn from this study should be carefully examined according to the particular characteristics of the subjects used, the institutional environment, and the conditions under which the study was conducted (Valley, 2003).

Conceptual Framework

An array of forces worldwide has had a profound effect on the way career and technical education have been delivered (Wonacott, 2001). Fast paced and pervasive changes have been occurring in the economical, social, and technological foundations of education and educational delivery (Dirr, 1999).

According to Toffler (1995), demand for continuing education and lifelong learning was projected to increase in the information age. Hanna (2000) noted that colleges and universities would be required to struggle to find ways to meet the growing demands. The National Association of College Admissions Counseling (2000) supported these contentions in its projections that adult enrollment in postsecondary programs would likely increase 50% by the year 2010.

As of 2002, it was estimated that over 2 million students were enrolled in distance learning courses. In 1999, the National Center for Educational Statistics reported a 72% increase in distance learning enrollments between the years 1995 and 1998 (Scagnoli, 2001). Klingner (2003) stated: "According to the web site on the Center for Adult Learning and Educational Credentials on Education, the number of distance learning students increased at a rate of 33% per year" (p. 1). Sorg et al. (1999) predicted a growth in the University of Central Florida student population from approximately 30,000 in 1999 to 52,000 by 2010 and anticipated that distributed/distance learning would grow at a corresponding rate.

There have been a myriad of reasons for adult students to be attracted to distance learning alternatives; and institutions, always concerned with retention of students, have

been eager to learn more not only about what attracts students but their level of satisfaction and success. Thus, independent and institutional researchers have examined distance learning in an effort to advance distance learning in responsible and responsive ways.

Moskal and Dziuban (2001) found that the top three reasons students enrolled in online courses were flexibility, curiosity about or desire to try online courses, and the avoidance of scheduling conflicts associated with traditional classes. Online technology was found to empower students to assume the role of lifelong learners and to combine work and study over an extended period of time (Lee & Dziuban, 2002). Pyle and Dziuban (2001), in an earlier study, had identified rapid changes in technology associated with distance learning as a major challenge to instructors.

Though institutions have been striving to develop new technologies that facilitate online learning to meet the increasing interest of potential students and the promise of technological advancement, research into the effectiveness of the educational experience has not been emphasized (Diaz & Cartnal, 1999; Merisotis, 1999). Coupled with the lack of studies relating to effectiveness of learning is the lack of research related to the retention of distance learners. Bertrand-Hines (1998) suggested the need for more research related to students who complete distance learning courses. Carr's (2000) statement that "Anecdotal evidence suggests course completion rates are often 10 to 20 percent higher in traditional courses than in distance learning offerings" (p. 39) also highlighted this need.

Moore and Kearsley (1996), in their earlier research, noted that retention rates for distance education have ranged from 30% to 50%. The rise of distance learning opportunities in higher education has caused much questioning and debate about issues of quality, standards, outcomes, and retention (Carr, 2000; Merisotis, 1999; Van Dusen, 1997). In essence, distance learning has forced educational institutions to rethink almost every aspect of learning (Klingner 2003).

Because online learning is more flexible in terms of time, students may expect more flexibility in instructional methods than they would receive in classroom instruction (Ralen & Gillani, 1997). Williams and Peters (1997) have suggested that while it is not realistic for faculty to customize instruction for each individual in an online course, instructors should try to create a variety of learning activities using a range of instructional strategies. Sarasin (1999) addressed the importance of considering learning style differences in an expanding postsecondary population when he said, "As higher education becomes more accessible, our students are more representative of the general population, which means greater diversity in learning styles" (p. 2).

Theorists have suggested that there are several characteristics that may affect the dropout rate and that, in turn, are likely to influence retention. These attributes include: educational background, personality traits (including learning styles), and extracurricular concerns such as work and family obligations (Moore & Kearsley, 1996). There is some evidence that interaction between students and instructors may also influence student retention (Dillon & Cintron, 1997).

Over the years, academics as well as the general public perceived most non-traditional educational delivery systems as inferior methods of providing instruction and training (Gallogly, 1995). This perception did not encompass all programs but was nurtured by institutions that became known as diploma mills. Non-traditional delivery methods have been comprised of a broad range of instructional strategies extending beyond the traditional classroom environment and include correspondence courses, distance education, and distance learning programs. Distance learning provided by a recognized, accredited institution of higher education is the non-traditional education technique that was the focus of this research.

Research Questions

The study was guided by the following research questions:

1. To what extent did any difference exist between students in distance learning courses and traditional classroom environments with regard to their perceptions of satisfaction with course quality (i.e., quality of materials, effectiveness of instructor, resources, and requirements) as measured by the Distance Learning Student Response Questionnaire (Appendix A) and Student Survey Form (Appendix B) used in traditional classroom evaluation?

2. To what extent were distance learning students satisfied with online delivery technology (i.e., quality of video presentation, instructional aids, web site, and quality of videotapes) as measured by the Distance Learning Student Response Questionnaire?

3. What was the level of student satisfaction in distance learning courses with regard to administrative services (i.e., support, advising, grading procedures, and financial aid) as measured by the Distance Learning Student Response Questionnaire?

4. To what extent did the open comments and observations of students on the Distance Learning Student Response Questionnaire provide additional information as to perceived assets, challenges, and overall student satisfaction with their distance learning courses?

Methodology

The Setting

Embry-Riddle Aeronautical University (ERAU) was established in 1972 with a residential campus in Daytona Beach, Florida. The University expanded campus offerings in 1978 by establishing a second residential campus in Prescott, Arizona. A third component, Extended Campus, was created in the early 1980s to provide educational opportunities for students who could not attend residential classes. The Extended Campus has served adult students in the military and private sectors at approximately 130 teaching sites in the United States and Europe and through distance learning.

Embry-Riddle has had a lengthy history of serving a broad range of student needs in distant places. Committed to the use of technology and innovation in delivering

instruction, ERAU has been on the forefront of distance learning. Embry-Riddle's

distance learning evolved from a correspondence program in the early 1980s to the

electronic delivery methodology in use at the time of the present study. Innovations in

course delivery and aggressive marketing have enabled the distance learning program to

grow from approximately 200 enrollments in 1993 to over 25,000 in 2004.

Instrumentation

The Distance Learning Student Response Questionnaire (DLSRQ) is a 41-item

instrument developed by the Office of Institutional Research at ERAU for the purpose of

gathering data regarding distance learners' perceptions of their level of satisfaction with

their distance learning courses. The instrument permitted the acquisition of data in regard

to course quality, delivery technology and administrative services and also yielded

information on the open comments and observations of distance learning students

(Appendix C). It was initially administered in 1998 to approximately 1,000 students, and

it has been offered to all enrolled distance learners at the conclusion of each course since

that time.

Since 1972, students participating in traditional classroom courses offered through

the Extended Campus have been requested to complete the Student Survey Form (SSF)

developed by the Office of Institutional Research at ERAU for the purpose of gathering

data regarding student perceptions of course quality. Use of DLSRQ and SSF data in the

present study was approved by the Office of Institutional Research at ERAU (Appendix

D) and reviewed by the University of Central Florida's Institutional Review Board (Appendix E).

Population and Sample

The population for this study consisted of undergraduate students who were enrolled in Embry-Riddle Aeronautical University's distance learning and traditional classroom program offered through the Extended Campus during any of the academic terms of calendar year 2004. Four general education courses, all of which have been offered in distance learning and traditional classroom settings, provided a representative sample (N=800) of the 2004 student population. The 800 completed surveys of 400 distance learning and 400 traditional classroom students, enrolled in four courses from the general education competency areas of Communications, Mathematics, Humanities, and Social Sciences during 2004, provided the data used in all analyses associated with this study.

Data Collection

In order to determine the extent of student satisfaction in distance learning delivery methodology, a three-phase data collection process was used. The first phase of this collection process involved accessing data provided by students who had completed Distance Learning Student Response Questionnaires (DLSRQ) during 2004. Data were accessed with the assistance and support of Embry-Riddle Aeronautical University's Department of Institutional Research. In Phase Two, that same office made available

archival data that was used to determine student satisfaction with traditional classroom

delivery methodology that was gathered using the Student Survey Form (SSF) in 2004.

In Phase 3, information and data for these analyses was mined using data

provided by the Office of Institutional Research, Embry-Riddle Aeronautical University.

Analogous survey questions garnered from the DLSRQ and the SSF were analyzed to

determine if a difference existed between students in distance learning and traditional

classroom environments with regard to their satisfaction with course quality (i.e., quality

of course materials and effectiveness of instructor).

Data Analysis

Data were analyzed using SPSS in order to answer the four research questions.

Embry-Riddle Aeronautical University's Department of Institutional Research provided

support in accessing DLSRQ and SSF data from ERAU archival files. Calendar year

2004 provided the distinct time frame for this research, and data were compiled for each

item and category for that calendar year.

In order to respond to Research Question 1 as to levels of satisfaction with course

quality (i.e., quality of course material, delivery, and effectiveness of the instructor),

frequencies and percentages of distance learning and traditional classroom students who

responded as being very satisfied or satisfied on the DLSRQ and SSF were calculated for

the respective categories. A criterion of 80% of very satisfied or satisfied responses was

established and used in determining if distance learning and traditional classroom

students had a high level of satisfaction with course quality.

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Research Questions 2, 3 and 4 were focused exclusively on distance learning students. The level of distance learning student satisfaction related to online delivery technology (Research Question 2), and administrative services (Research Question 3) were tabulated. The same criterion of 80% of very satisfied or satisfied responses was applied in determining if distance learning students had a high level of satisfaction with their distance learning experience.

Research Question 4 permitted inquiry into the open comment and observation portion of the DLSRQ. Open comment and observation data collected by Embry-Riddle Aeronautical University's Department of Institutional Research during calendar year 2004 were analyzed. Analysis of these data provided additional information that assisted in formulating a clearer picture of distance learning program quality. Emphasis was placed on student observations indicating highest and lowest levels of satisfaction.

Descriptive Statistics involving frequencies and percentages were used to analyze the data provided by Embry-Riddle Aeronautical University's Department of Institutional Research. Tables indicating frequencies and percentages were used to display the data and were discussed.

Organization of the Study

Chapter 1 has introduced the problem statement and its design components. Chapter 2 contains a review of the literature and related research. Chapter 3 presents the methodology and procedures used in data collection and analysis. Chapter 4 presents a

summary of the results of the data analysis. Chapter 5 contains a summary and

discussion of the findings of this study and recommendations for future research.

CHAPTER 2

REVIEW OF LITERATURE AND RELATED RESEARCH

<u>Introduction</u>

Though institutions of higher education have often been recognized and

associated with bricks, mortar, and ivy covered walls, the advent of distance learning has

slowly changed that perception. The phrase "From bricks to clicks" accurately describes,

in many instances, the bricks or structure of the institution being replaced by the click of

a computer mouse and the 21st century students who no longer are attend lectures in

traditional classrooms but are at their computers geographically separated from the

professor and communicating through the Internet.

Laferrière (as cited in Karsenti, 1998) suggested that many years ago, Gutenberg

had redefined access to knowledge with his invention of the printing press. Society was

facing similar opportunities. At the beginning of the 21st century, Universities faced

numerous challenges: the growing diversity of student profiles, the arrival of new

technologies, the multiplicity of university programs, as well as students' lack of

motivation (Karsenti, 1998). According to Gadbois (1989),

> Of all things that ail society . . . the most important is the lack of interest for any
> activity that doesn't offer short-term personal profit. This attitude is manifested
> by a great number of young people in their lack of motivation for schooling and
> for their no-preparation for an eventual social role. (p. 68)

With the advent of electronic media in the late 1980s came the establishment of the firm foundation of the Internet in the early 1990s. Many educational institutions initiated a move to a web based distribution in an effort to attract additional students.

Collens (1993) has suggested that forces are at work that has the potential to totally reshape the landscape of higher education. Technological forces have changed how and when teaching can occur as well as the nature of the sponsoring organization. Global economic forces have also been reshaping the requirements for successful business competition and thus changing the kind of preparation necessary for graduates. As a result, educational institutions, corporations, and governments have increasingly established communications networks to facilitate distance learning.

The traditional delivery system for higher education has been a traditional classroom setting where professors lecture and students listen and learn. Interaction between the professor and the student, in such a setting, has been viewed as essential (O'Malley, 1999). Greene (1993) has defined distance learning as any learning that takes place away from the place where the teacher is. The geographical separation has often been bridged by communication media that provides contact electronically between the student and faculty member. Lewis and Hedegaard (1993) stated that personal computers were becoming the vehicles for educational communication. Place independence has made it possible for students living in remote areas to attend accredited college programs.

In 2000, corporations spent approximately $1.2 billion on e-learning, and this amount was expected to increase as much as $23 billion by 2005 (Commission on Technology and Adult Learning, 2001; Zenger & Uehlein, 2001). Distance and e-

learning have had the capacity to influence worker productivity and performance, and they have directly affected the economic growth of business and industry. Skills and expertise needed for the future have required workers to become more learning-oriented. Distance and e-learning have been viewed as the catalysts for sweeping changes in the structure of the workplace environment and the workforce (Derrick, 2003). Business and industry have experiences less time to make changes in order to remain competitive and current in a global environment. Often, the very survival of organizations has depended on the rapidity in which change can occur.

At the time of the present study, educators of adults were facing the challenge of serving a student population and society that was increasingly diverse. The adult student population was expected to be the fastest growing segment of higher education and, in fact, older students were projected to eventually constitute the majority. Kovel-Jarboe (2000) expressed the opinion that continuing to expand one's knowledge base would be essential and that life-long learning was rapidly becoming a necessity as opposed to an opportunity. Understanding the key factors and behaviors associated with an individual's proclivity to engage in lifelong learning has remained ambiguous despite continued research and study in this area. Houle (1961) spoke to the complexity of the question in his search for answers regarding why some people continue to study and learn. Confessore (1992) established the notion that "self-directed learning manifests itself in people who feel a need to learn something" (p. 2). He also asserted that success was ultimately dependent on an individual's personal desire, initiative, resourcefulness, and persistence.

According to Merisotis and Olsen (2000), although a plethora of literature on the distance education phenomenon is available, original research on distance education has been limited. The literature on distance education, in reality, is a subset of all research conducted in education and still has many facets to be explored and investigated (Derrick, 2003). Distance education evaluation has been concerned primarily with (a) student outcomes (achievement, grades, test scores), (b) attitudes of students and instructors, and (c) satisfaction of students and instructors (Walker, 2002). Research on factors that can be quantified and analyzed is important in examining trends and refining programs to meet learner needs and expectations.

It was with this focus on improvement of programs and services that the present research was initiated. The following review of literature and related research was conducted in support of the research and has been organized for reporting purposes into six component parts: the evolution of distance education, the growing demand for distance learning opportunities, student success and satisfaction, the changing role of faculty, and technology associated with distance learning. Finally, the importance of distance learning at Embry Riddle Aeronautical University is presented.

<u>The Evolution of Distance Education</u>

The distance learning process is not new to the educational community. Exactly when distance learning began is difficult to say (Picciano, 2001). Tifflin and Rajasingham (1995) described the epistles of Paul the Apostle as a form of religious correspondence education. Letters written on papyrus by scribes were delivered by

messengers to the early Christian communities to promulgate and explain religious dogma. Although this may appear to be a stretch of the reasonable, it was in essence a distance learning program.

Formal correspondence programs were initiated in Europe. Holmberg (1986) traced the development of correspondence courses as far back as the 1830s in Sweden, Germany, and Great Britain. Picciano (2001) credited Isaac Pitman with establishing a successful correspondence program in Great Britain in 1840. He also recognized programs at Skerry's College in Edinburgh in 1878 and at the University Correspondence College in London in 1887.

In the early 1700s, mail and correspondence courses supplemented by public lectures in lyceum halls existed in colonial America (Willis, 1993). Distance education is neither a new method of educational design and delivery nor a new idea or concept. According to Jayroe (1998), distance education evolved in the early 1700s in the form of postal-delivered correspondence. Distance education has seen unparalleled growth in design, delivery, and number of courses. At the time of this writing, the future possibilities of distance education appeared to be unlimited and were anticipated to have a continuing and profound impact on how individuals communicate and learn (Leh, 1999).

The distance learning controversy in the United States can be traced back to the late 1890s. University of Chicago founder William Rainey Harper initiated a distance learning program when the university opened. Two of the brightest stars he had recruited as deans for the new university threatened to quit when they heard that he intended to

introduce correspondence study. This incident foreshadowed a never-ending series of arguments at the University of Chicago that finally ended in 1963, when the university sold its courses to the University of Wisconsin (Pittman, 1993).

For over 100 years, distance education has served as an alternative method for delivering academic course work to students unable to attend traditional campus based classes. The format of distance education has varied from correspondence style courses to technologically based courses using the Internet. Distance education has offered students considerable benefits including increased access to learning, lifelong learning opportunities, and convenience of time and place for study (St. Pierre, 1998). Distance education may be essential for learners who are truly place-bound because of factors such as employment, child-care demands, disability, or remoteness of the location where they live (Rintala, 1998).

Since the last decades of the 20th century, the teaching and learning environment at colleges and universities has been expanding significantly beyond the boundaries of the traditional classroom (Steffes, 2004). In addition to online and distance learning opportunities, many students have taken part in structured experiential learning that has given them opportunities to test the academic foundations and knowledge to which they are exposed in class settings well beyond the walls of the classroom.

Student satisfaction and eventual success within a distance learning program can be fostered by providing a pedagogical framework that supports learning. Distance learning, in one sense, does not differ, but rather parallels, traditional delivery methodology while expanding delivery venues to support learning objectives.

The Growing Demand for Distance Learning Opportunities

In 1900, only 2% of U.S. high school graduates continued on to higher education (Bracey, 2003). This is in contrast to the year, 2000, when 17% of the population over 25 years of age had obtained a Bachelor Degree or higher (U.S. Census Bureau, 2002). In the United States, formal education up until the 1950s was basically the province of a privileged few. Formal education, which includes exposure to the liberal arts and technology, however, has become essential over time for the economic success of individuals, organizations, and countries (O'Malley, 1999). The American economy was first agrarian, then industrial mode and has progressed into the information and telecommunication ages. In l975, the undergraduate student population was basically single, residential, full-time, and 18-23 years old. As the telecommunication age of the 21st century began, with its vastly expanded employment skill sets, the undergraduate student population has changed to include older, married, employed, and non-residential students (Beller & Or, 1998).

Though males had dominated enrollment in U.S. higher education for many years, statistics from the Department of Education, National Center for Educational Statistics (1999) suggested that males made up just 44% of higher education enrollments in 1997, down 12% from the 56% total in 1972 towards the end of the Vietnam War. The domination of males in higher education enrollments began to shift to females in 1977 due, primarily, to the ratio of females to males of college age (U.S. Census Bureau, 2002).

Higher educational enrollments for males 18-24 years of age had increased at a steady rate between 1985 and 2005. Enrollments for the 25-34 and 35+ year groups of males maintained a steady level until 1995 with a slight decrease after that time period (U.S. Census Bureau, 2002). Female enrollment in higher education for the same period of times and the same age groups demonstrated a significant increase in the 18-24 age groups for the 20 year period and a leveling of the enrollments after 1995.

There has been a resurgence of interest in distance education, particularly in postsecondary education (Greene & Meek, 1998; Lewis et al., 1999). In just 3 years, from 1994-95 to 1997-98, the number of distance education courses offered rose from 25,730, with about 760,000 students enrolled, to 54,470 courses offered, with about 1.66 million enrollments (Wonacott, 2001). The number of graduate and undergraduate degree programs available by distance education rose from 690 in 1995 to 1,190 (500 undergraduate) in 1997-98; certificate programs increased from 170 to 330 (160 undergraduate).

Galusha (1997) indicated that the majority of students enrolled in distance courses were women. In her research, Matthews (1999) was supportive of Galusha and stated that distance learning mainly attracts women with children. She determined that 66% of the adult distance education market was female, and 80% of them had children. Again, this reality has typically been attributed to competing interests of family/children for women who have been the primary caregivers responsible for the care of both children and elderly parents.

Distance learning has usually been intended to serve individuals who cannot attend pursue educational goals in traditional classroom settings. In 1999-2000, over 16,539,000 enrollments in distance learning were recorded in the United States (U.S. Census Bureau, 2002). This enrollment figure includes only those courses taken for credit in higher education programs and excludes correspondence courses.

During the twelve month 2000-2001 academic year, 56% (2,320) of all two-year and four-year Title IV-eligible, degree-granting institutions offered distance education for any level or audience. Approximately 12% of all institutions indicated that they planned to start offering distance education courses in the next three years, while 31% did not offer any distance education courses and did not plan to offer any in the next three years. There were an estimated 3,077,000 enrollments in all distance education courses offered by two-year and four-year institutions and an estimated 2,876,000 enrollments in college-level, credit-bearing distance education courses with 82% of these at the undergraduate level (Tabs, 2003). The number of student enrollments and total online certificate and degree programs was expected to continue to increase as technology became further embedded in the foundations of society.

According to Eaton (2001), the growth of online learning opportunities has continued to expand the numbers of participating institutions and of students enrolling. The University of Maryland University College (UMUC) provided distance learning opportunities to over 30 countries in the world in 1999-2000 and had more than 40,000 online students; the University of Wisconsin enrolled more than 5,000 students in online courses in 1999-2000 (up from just under 2,200 in 1998-99), and the Pennsylvania State

University World Campus enrolled 3,000 online students in 1999-2000, tripling the enrollment of the prior year (Eaton, 2001).

A 1984 survey of telecourse participants found that about two-thirds were women, half of whom were at least thirty years old. Over half had at least one dependent, and two-thirds were married. A total of 80% were employed, and over half of these were working full-time while pursuing their studies (Sheets, 1992). Wood (1996) reconfirmed this demographic picture and found that over 70% of recent graduates who studied by the distance mode were full-time employees.

U.S. Department of Education, National Center for Educational Statistics (1998) reported that 34% of the estimated 5, 010 public and private two and four year postsecondary education institutions offered distance education. It was also determined that 20% of those who were not currently providing distance learning planned to offer this mode in the next three years. Formal enrollments in 1994-1995 distance education courses totaled 753,640 and had increased to 1,632,350 in the 1997-1998 academic year.

Pethokoukis (2002) and Thomas (2001) have discussed the growth of online learning and indicated that enrollments were increasing 33% per year and were part of an estimated $2 billion business. The overall market was estimated at 2.3 million students in 2002 (Katz-Stone, 2000). Approximately 17,000 courses were available online, and more than 50% of Western universities were offering some type of online course (Lowe, 2000). At the time of the present study, almost 200 institutions offered online graduate degrees (Pethokoukis, 2002).

The University of Central Florida reported that in fall 1998 the withdrawal rate of 9% from the university's Web based courses was almost twice the 5% from face-to-face courses in the same subjects (Carr, 2000). According to Knapper (1988), distance learners were more likely to have insecurities about learning. These insecurities are often founded in personal and school related issues such as financial costs of study, disruption of family life, perceived irrelevance of their studies and lack of support from employers. These pressures have resulted in the often higher dropout rates than among traditional classroom students (Sweet, 1986).

Withdrawal or "drop" rates are among the characteristics that have routinely prompted distance education studies (Cookson, 1990; Dowdall, 1991; Parker, 1999). Drop rates for distance classes have been consistently higher than those of traditional classes. Researchers have not agreed as to whether these drop rates are suggestive of academic non-success (Diaz, 2000, 2002; Phipps & Merisotis, 1999; Ridley & Sammour, 1996).

Diaz and Cartnal (1999) addressed the differences in learning styles of distance learners and indicated that online students may possess stronger independent learning styles than their on-campus counterparts. According to the authors,

> It is not surprising that students who prefer independent, self-paced instruction would self-select into an online class. It may be that the distance education format appealed to students with independent learning styles, and that independent learning preferences are well suited to the relative isolation of the distance learning environment. (p. 130)

Diaz (2002) further analyzed the perceptions of online students using an 11-item satisfaction survey. Data indicated a high degree of satisfaction with multiple facets of

their online experience. In the National Postsecondary Student Aid Study (2000), undergraduate and graduate student satisfaction with quality of instruction in distance education relative to classroom based courses was reviewed. A total of 70.4% of undergraduate and 73.3% of graduate subjects were found to be more or equally satisfied with the quality of distance education instruction when compared to a classroom based experience.

<div style="text-align:center">Distance Learning Student Success and Satisfaction</div>

Traditionally, distance learners have been perceived as adults, providing education at the post secondary level. In a study by Kahl and Cropley (1992), it was noted that the majority of face to face learners were less than 25 yrs old, whereas the majority of distance learners were between 25 and 34 years of age.

Based on this review of the literature, the growth in online courses appears to be attributable to attracting a new and different base of students rather than cannibalizing current on-campus programs (Mangan, 2001; Thomas, 2001). It has been estimated that five of six online students are employed and would not be able to attend traditional classes (Thomas, 2001). Given the economic situation in the United States, according to Mangan (2001), there were many managers who could not afford to leave their current jobs for a full-time or on-campus program. Furthermore, the rapid pace of technological changes has made it necessary for adults to continuously upgrade their knowledge and skills so as to stay competitive in the job market (Devi, 2002).

Moskal and Dziuban (2001) found that the top three reasons students enrolled in online courses were flexibility, curiosity about or desire to try online courses, and scheduling conflicts with traditional classes. McEwen (2001) additionally noted a major concern with time management, because students were juggling classes, work, family, and travel commitments. Students who enroll in distance learning courses do so for convenience (Galusha, 1997). They are either time bound by work, travel schedules, or location bound due to geographic or family responsibilities.

Although online courses offer major advantages such as flexibility, they are not for everyone (Devi, 2001; Kearsley, 2002). Students need to understand their own learning styles and the level of interaction that they need to sustain their interest in a class (Devi, 2001). Those who thrive on the social aspects of the traditional classroom or who enjoy face-to-face lectures may have difficulties with online learning (Jana, 1999; Ramos, 2001).

Online students have been found to value convenience and flexibility more than interaction with instructor and peers (Roblyer, 1999) and to have a learning style that is more independent and less collaborative than face-to-face students (Diaz & Cartnal, 1999). Such students may select online learning expecting instruction that is more individually paced than interactive. Yet online courses designed to make use of distributed expertise and social construction of knowledge as described by Hung and Chen (2001) require substantive online interaction with, and collaboration among, both peers and professor.

In his research, Gee (1990) noted that successful telecourse students favored an independent learning style. James and Gardner (1995) suggested that students who favored reliance on independent learning skills would be more suited to a distance format. Such information can help learners understand their unique bundles of competencies and increase satisfaction, motivation, learning, and ultimately success in a course (Drawbaugh, 1972). Competency based feedback based can provide a foundation for individual learning plans.

Kader (2001) noted that online learning may be more suited to men, because they are more likely to use the Internet; however, women's use of online learning may increase because online learning requires logic and detail, areas in which women may have an advantage. Moskal and Dziuban (2001) found that women were 8% more likely than men to succeed in online courses by completing with a grade of C or better at the University of Central Florida. They also found that more female students were enrolled in online courses than men at a ratio of 3:1 and that the online student was typically older (a mean age of 30 years, compared with 24 years for the student attending face-to-face classes). They further learned their online students tended to be working students who lived farther away from campus and that 92% of online students had taken other online courses.

Satisfaction has been linked to experience with online learning. The more experience students have with online learning, the more satisfied they are with online course delivery (Arbaugh & Duray, 2002). Moskal and Dziuban (2001) determined that

89% of online students would take another online course. Arbaugh and Duray (2002), however, noted that larger class sizes decreased online course satisfaction.

MacGregor (2000) found that online students were more serious and more accommodating than traditional classroom students. In the same study, it was also shown that online students perceived their classes as having a higher workload. They anticipated lower grades than traditional classroom students but reported similar levels of satisfaction.

The primary role of the student is to learn. Under the best of circumstances, this challenging task requires motivation, planning, and the ability to analyze and apply the information being taught. In a distance education setting, the process of student learning is more complex for several reasons. Schuemer (1993) listed the age of students, the diversity of purpose, isolation of the learner, and difficulty in communication among the reasons for the complexity of the learning process for online students.

Brundage, Keane, and Mackneson (1993) have suggested that adult students and their instructors must face and overcome a number of challenges before learning takes place. These challenges include (a) becoming and staying responsible for themselves; (b) owning their strengths, desires, skills, and needs; (c) maintaining and increasing self-esteem; (d) relating to others; (e) clarifying what is learned; (f) redefining what legitimate knowledge is; and (g) dealing with content.

Students in distance education settings have been judged to perform as well or better on assignments, class activities, and exams when compared to campus-based students (St. Pierre, 1998). Nevertheless, students must maintain persistence and a clear

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focus to succeed in a distance-learning situation. Self-direction, a passion for learning, and strong individual responsibility are important influences on achievement. There are indications that distance education works best for more mature, motivated, well-organized, and already accomplished learners (Rintala, 1998).

Many distant learners require support and guidance to make the most of their distance learning experiences (Threlkeld & Brzoska, 1994). This support typically has taken the form of some combination of student-instructor and student-student interaction. According to Story and DiElsi (2003), high retention and improved quality of distance learning courses require this support. Oaks (1996) viewed the support services issues as more important than any technology issues even though technology costs and considerations are often the focus of attention due to their budgetary importance.

Students have expressed the belief that having a good tutor is vitally important in helping them get the most out of a course and achieve a credit (Meacham & Evans, 1989), and geographical isolation has been identified as one of the major problems for distance students. In addition to the practical problems of contacting academic and administrative staff, obtaining study materials and borrowing library books, distance students suffer from the disadvantage of being unable to interact with other students and are often denied the perception that they belong to a scholarly community. This may lead to feelings of inadequacy and insecurity, and a lack of confidence in their own abilities (Wood, 1996).

Although some researchers have found that the effectiveness of online learning equals or exceeds that of traditional classroom learning (Rice, 2000; Rosenbaum, 2001),

the debate regarding the quality of online programs has continued into the 21st century

(Hongmei, 2002). In general, quality has improved since the days when distance learning

programs were known for being easy courses with no team interaction (Lankford, 2001).

Smith (2001) spoke to the rigor of some courses in which distance students are judged by

their ability to communicate electronically and must demonstrate understanding of the

course material on assignments other than closed-book tests.

Kearsley (2002) correctly suggested that online learning is not for everyone.

Some students prefer the classroom experience and do not have the self discipline or

initiative to succeed in the distance learning environment. In a vision statement to

promote a unified e-learning strategy, Britain's Charles Clark (as cited in McCracken,

2004) stated,

> If we can support students better as they move up the education ladder, we may be
> able to reverse the trend of poorer levels of attainment at successive stages
> Delivery, accessibility, connectivity, and affiliation not only promote short-term
> student retention among distant students; combined with support and instruction,
> they ultimately enable academic achievement and persistence through degree
> completion. (p. 1)

Interaction in the distance learning environment is the key element to student

success and transfer of knowledge. Moore and Kearsley (1996) stated that there are four

primary elements that the instructor should consider when teaching is accomplished

through distance learning. First, the instructor might never see the students' reaction to

what the instructor is saying or doing. Second, the effectiveness of teaching is

proportional to the instructor's use and knowledge of the technology involved. Third,

instructors in distance learning courses need to focus on students' feeling, especially their

motivation. Fourth, instructors must endeavor to encourage and give students confidence in the unfamiliar environment.

Acker and McCain (1993) stated "interaction is central to the social expectations of education in the broadest sense and is in itself a primary goal of the larger educational process and that feedback between learner and teacher is necessary for education to develop and improve" (p. 11). Baker (1995), in his research, indicated that interaction is important for a variety of types of learning, learner satisfaction, and persistence of distance students.

Schott, Chernish, Dolley, and Lindner (2003) noted developing and delivering courses, curricula, and programs at a distance requires faculties and administrators to consider many factors including how to overcome barriers to effective and efficient implementation of distance education courses, curricula, and programs. Moore (2001) noted that to be successful in delivering online courses, faculty must: allow student to student interaction with minimal faculty intervention; engage students in regular assignments in order to monitor progress and intervene when needed; provide specialized attention to students with low levels of self-directedness; and help students become more self-directed. Students in distance education courses and programs often feel isolated and apprehensive. This may be due to lack of student to student and student to faculty contact (Muilenburg & Berge, 2001).

Wood (1996) addressed institutional responsibility to distance students. He believed that distance learning institutions serious about providing equity of educational opportunity to all, needed to carefully consider the special needs of students undertaking

distance education for the first time. Of particular importance, in his thinking, was the design of study materials for distance students who enroll with little or no distance study experience. These students are at risk of dropping out unless they develop study survival skills as rapidly as possible (Wood, 1996).

A number of authors have stressed the importance of support programming. Thorpe (as cited in McCracken, 2004) addressed the potential for "transformations in the nature and the scale of activities made feasible by online teaching . . . widespread change in pedagogies and learning communities, and across institutions as a whole in open and distance learning" (p. 3). She defined critical systems as including all activities required by learners throughout their distance learning experience. Thorpe (2002) concluded her remarks emphasizing support services as critical because of their centrality to quality. Yalama and Aydin (2004) identified more specific support components, to include ". . . 1) activities that enable students to progress satisfactorily; 2) [instructional] strategies such as cognitive, affective, metacognitive and motivational, and 3) skills such as informing, advising, counseling, assessing, enabling and feeding back" (p. 1).

Yalama and Aydin (as cited in McCracken, 2004) noted that inadequate mechanisms for ongoing affiliation, participation, and connectedness actually undermine instructional effectiveness with the ultimate impact of fragmented support systems measured in elevated student attrition rates. McCracken also noted that it is generally believed that student retention through academic program completion increases as equal access to integrated services such as writing/math tutoring, computer skills training, career development and placement, grievance and appeals processes, or co-curricular

activities are visible, accessible, and responsive via the instructional medium by which a student learns (Ludwig-Hardman and Dunlap, 2003; Palloff and Pratt, 2003; Tinto (1975); Yalama and Aydin, 2004). The support needs of students studying exclusively in a virtual environment are sufficiently unique to demand a redefinition of academic programming that emphasizes the integration of institutional systems in order to ensure virtual students have access, comparable to that of their on campus peers, to educational resources, experiences, and environments. Such integration requires broad-based collaboration to re-vision the internal relationships and systems that enable reliable, consistent access and, ultimately, facilitate instructional effectiveness as evidenced by participant (faculty and student) retention, learning achievement, and program completion.

McCracken (2004) identified the importance of linking the institution and curriculum to academic, social, and professional learning experiences, noting ". . .the key to enhancing learning and personal development is not simply for faculty to teach more and better, but also to create conditions that motivate and inspire students to devote time and energy to educationally-purposeful activities, both in and outside the classroom" (p. 4). Oliaro et al. (1997) emphasized that such a change in focus from instruction to learning, in a web-based learning environment, required instructional and support functions to be seamlessly and consistently linked.

The critical role of support services in facilitating comprehensive personal and academic development has been well documented (McCracken, 2004). Both research and anecdotal information have indicated that support services promote retention for

distant student populations in a web-based environment. Services mentioned frequently are: (a) reliable, stable technology and related support and training; (b) available, accessible, and visible instructional, business, and student support systems, programs, and services; (c) ongoing responsiveness from and communication/interaction with support staff and faculty members; (d) available career readiness and transition information; and, (e) the creation of strong, congruent and interactive learning opportunities (Fredericksen, Pickett, Shea, Pelz, & Swan, 2001; Palloff & Pratt, 1999, 2001; Western Cooperative for Educational Telecommunications, 2004).

According to the American Association of University Professors (1998), distance education is "the process whereby the education of a student occurs in circumstances where the educator and student are geographically separated, and the communication across the distance is accomplished by one or more forms of technology" (p. 34). Derrick (2003) defined distance education as simply any form of instructional delivery in which the student and teacher are not physically in the same location. The teaching and learning is accomplished through modes that are either asynchronous (teaching and learning not limited by time and place) or synchronous (teaching and learning requiring a definitive time and specific location). Asynchronous distance education typically includes methods of instruction using the postal system, videocassettes or CD-ROMs, computer-based conferencing, Web-based bulletin boards, or e-mail (Leach & Walker, 2000)

Since many adult students are not well versed in the uses of technology such as computers and the Internet (Galusha, 1997), the use of an electronic medium in distance

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learning can inadvertently exclude students or be problematic for those who lack required computer or writing skills. If students are undertaking distance learning courses that require knowledge of computers, students must be taught, at a minimum, the fundamentals of operating the system of choice of the distance-taught course. If distance learning is to be successful, technical barriers to student success must be removed.

Cooperative learning models such as cohort groups can provide support in that they increase student to student and student to faculty interactions (Kochery, 1997). Such interaction may result in increased retention rates and provide a mechanism for helping distance education students deal with isolation issues associated with being time and place bound (Boyle & Boice, 1998; Dorn & Papalewis, 1997).

Relating to students is often different in the distance learning mode of delivery for instructors. Burge (1993) has suggested assignments in which students work together and report back or present to the class as a whole to encourage student-to-student interaction. The need for clear directions and realistic goals for group assignments has also been emphasized.

Morgan (1991) has suggested that distance learning students who are not confident about their learning tend to concentrate on memorizing facts and details in order to complete assignments and write exams. The result is a poor understanding of course material. Morgan (as cited in Willis, 1993) discussed memorization of facts and details as a "surface" approach to learning. Contrasting with this approach was a "deep" approach which stressed the importance of understanding, relating new ideas and previous knowledge, applying new concepts as well as materials to the reality of

everyday experience. Morgan believed that distant students needed to become more selective and focused in their learning in order to master new information. The focus of their learning needed to shift them from a surface to a deep approach.

<u>The Changing Role of Faculty in the Distance Learning Environment</u>

Schifter (2004) stated, "Distance education is now closer to being main stream than many faculty and administrators in universities thought it would be. No longer is distance education considered novel, or only for the technical savvy" (p. 1). This change has affected the role of faculty as well as the need to examine the faculty reward system, i.e., salary, promotion and tenure (Beaudoin, 1998).

The link between the preparation of the instruction and interaction with students has always been significant. Distance education has dictated changes in behavior for both teachers and learners. Successful students must develop persistence and skill in self-directing their work. Successful distance education teachers must become conversant with new technology and develop new instructional styles as they move from creating instruction to managing resources and students and disseminating views (Strain, 1987). Miles (2001) has suggested that instructors need to maintain flexibility, address isolation concerns including elements of asynchronous learning, develop learning objectives that relate to the students' business goals, and use low-bandwidth materials that any student can access.

Sarasin (1999) noted that professors should be willing to change their teaching strategies and techniques based on an appreciation of the variety of student learning

styles. He emphasized the necessity of matching methods, materials, and resources with students' learning styles so as to maximize each student's potential. Smith (2001) noted that at the outset, the costs of an online program, including time and frustration, may outweigh the benefits for faculty members. Professors must learn new technologies and be conversant with their frequent upgrades. This is important for professors but vital in assisting students. The ease of use of the online course is an important element in the course's success.

Gibson (1998) has challenged distance education instructors to "know the learner." She noted that distance learners are a heterogeneous group and that instructors should design learning activities to capitalize on this diversity. Because the dynamic nature of the distance population precludes a "typical" student profile (Thompson, 1998), it is important to continually assess students' characteristics.

Historically one area of concern for the distance student has been the perceived lack of feedback or contact with the teacher. Because there is not daily or weekly face to face contact with teachers, students may have trouble in self-evaluation. Keegan (1986) believes that the separation of student and teacher imposed by distance removes a vital link of communication between these two parties. The link must be restored through overt institutional efforts so that the teaching-learning transaction may be reintegrated (Keegan, 1986). Citing Tinto (1975), Keegan hypothesized that students who did not receive adequate reintegration measures such as electronic or telephone communication, would be less likely to experience complete academic and social integration into institutional life. Consequently, such students would be more likely to drop out (Sheets,

1992). This early concern has continued in the new millennium and has continued to be addressed by concerned academic leaders.

Kearsley (2002) and Smith (2001) recommended having no more than 20 students in an online course. Additionally, online courses require significant institutional support to be successful (Mohamad & Ismail, 2001). Thus, online classes are not used best as volume revenue producers (Hongmei, 2002), but they may offer an opportunity to charge a premium price (Arbaugh & Duray, 2002).

Successful courses have a high level of faculty involvement (Hongmei, 2002). Online courses may be even more interactive than traditional ones (Mangan, 2001; Rosenbaum, 2001), because they may make it easier for shy students or those who need more response time to participate (Smith, 2001). Online courses need to give students the opportunity both for team building with their classmates and for community building (Ramos, 2001). Studies on retention have indicated that creating satisfying and rewarding social experiences may be as important to retention as academic and intellectual factors.

Instructor effectiveness in the online classroom helps increase student satisfaction and retention, which, in turn can help the online program grow. By mentoring new online instructors, Felician College has not only improved the quality of their online program, but has also improved student retention (Gaide, 2004).

Student/instructor communication is vital to online course success and should be established quickly. Immediate instructor contact reassures first time online students and builds confidence by demonstrating an initial technological competence. The online

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interactive capability (forum, bulletin board, chat room, etc.) can serve as an "ice

breaker" for the class (Lee & Dziuban, 2002). Such informal, non graded activities

provide students with a platform to become acquainted, share concerns, offer support,

and hopefully relax and enjoy the course. This strategy also assists the instructor to

identify early those students that might encounter difficulties (Keller, 1983; Keller &

Burkman, 1993).

Many faculty members, who were expert teachers in traditional classrooms,

become novices confronting new and intimidating technologies (Berliner, 1988). As a

counterpoint to the negative aspects of teaching online, Bocchi, Eastman, and Swift

(2004) and Jana (1999) have cited potential benefits related to improved student quality

and output, increased one-to-one interaction with students and learning while teaching.

Cassiani (2001) saw the online environment as being capable of providing a more diverse

group of students, as there may be students from many geographical locations and

backgrounds.

Jaffee (1998) addressed the mythology associated with technology in an attempt

to explain faculty resistance to distance learning in the following statement:

> Whether faculty use technology depends on how well it modifies the faculty's
> rationalized myths: the belief that classroom instruction is the "single best and
> necessary means" for student learning. Others call this romanticizing the reality
> of the classroom, which for some students may be dull, boring, and frustrating.
> These myths are powerful not because there is empirical evidence to support
> them, but because they confirm deep-seated consensual beliefs and long-standing
> tradition. (p. 4)

These myths may explain the significant resistance many faculty members have to online learning, because it violates their identity as a professor and expert, a source of knowledge and information, and a performer at the classroom lectern.

<p style="text-align:center;">Technology Associated with Delivery of Distance Learning</p>

Fast paced and pervasive changes are occurring in the economic, social, and technological foundations of education and educational delivery (Dirr, 1999). Short product cycles, a fast expanding knowledge base, and the rapid obsolescence of existing knowledge have put tremendous pressure on employers to upgrade worker skills in a timely, effective, economical manner.

Web-supported instruction has becoming more commonplace in many colleges and universities (Lindner, Dooley, & Murphy, 2001). Distance education has continued to expand because of growth of the Internet, increased capability and flexibility of web-based tools, increased proficiency in basic Internet skills, and shrinking barriers with respect to accessing and using the Internet (Lindner, 1999). To optimize methods of delivering instructional programs, a need exists to examine continually technologically mediated delivery strategies (Murphy & Karasek, 1999). Web course tools, including static and dynamic Web pages, threaded discussion groups, email, chat, instant messaging, streaming media/video, animations, application sharing, IP audio/video conferencing, are being adopted and used increasingly by teachers to optimize delivery of instructional material (Olliges, Wernet, & Delicath, 1999).

According to Edelson and Pittman (2001), distance learning represents the most dynamic sector of adult education, particularly in the United States where World Wide Web-based electronic delivery is fast becoming the dominant mode of instruction. Although educational institutions have embraced distance education as a method of course delivery, the implications extend far beyond the institutional wall into the very essence of culture and society on a global dimension (Derrick, 2003). The dynamics of change occurring in economic, social, and technological areas are compelling factors for how citizens of the world interact, communicate, and learn. Distance learning and e-learning have become critical and driving growth forces in information and communication technology as new means of defining workplace environments for business and industry.

One of the dangers of recent advances in instructional technology is that instruction and instructors are often driven by technology rather than having technology drives the needs of instruction (Pyle & Dziuban, 2001). These authors have observed that this inversion has resulted from instructors discovering new ways to communicate with students and their frequent enthusiasm for the vehicle as opposed to the substance of the communication. Also, each new tool requires an investment in learning and time to assess its effectiveness. Teaching on the World Wide Web has been such a new and innovative activity that most instructors remain engaged in the learning phase. Assessment has been relegated to a concern for the future.

Internet technology has enabled universities to offer courses in an anywhere, anytime environment and has opened new possibilities for both students and faculty (Lee

& Dziuban, 2002). In this new teaching modality, universities have been more responsive to students' lifestyle needs, and students have had the potential to become more actively involved in their learning. Online technology empowers students to assume the role of lifelong learners.

The advent of computers, telecommunications, and the World Wide Web has provided an unprecedented opportunity for faculty and students to learn in a cooperative environment (Galusha, 1997). It is interesting to note, however, that students have responded to this changing environment more adeptly than have teachers. According to a 1996 journal article (*Syllabus*, 1996), more than 50% of the California State University student body, but less than 50% of the faculty, own home computers. Obtaining proper equipment and training is critical in teacher acceptance of distance learning. Kinnaman (1995) addressed the need for teachers to accept and become comfortable with technology in order to assist students.

Meyer (2004) suggested, as have many early writers (Clark, 1994; Morrison, 2001; Russell, 1999) that technology does not have an independent impact on learning and that there is nothing inherent in the technologies that elicit improvements in learning. Learning is not caused by the technology but by the instructional method embedded in the media. Windschitl (1998) made a similar point regarding the duplicative nature of distance learning instructional activities.

The debate as to the importance of the technology itself has continued, and many comparison studies have been conducted that describe the technology used but have not

addressed pedagogy. Meyer (2004) stressed the need to consider both the instructional strategies and their effects on learning in addition to the technology.

The question remains whether instructional design can be separated from the technology used to implement it. Media and instructional approaches are essentially integrated and therefore, method is necessarily confused with medium. Kozma (1994) stated that both medium and methods influence learning and that they do so synergistically by influencing each other. This, however, begs the question of whether the impact of media or method can be separately estimated (Meyer, 2004).

Computer conferencing and electronic mail can be integrated into the delivery of the course to provide missing interactivity. Because both are essentially asynchronous, they continue to leave students in charge of setting their own work times and provide a critical success factor for the distance student. It is important that the student receive prompt feedback in any institutional setting, particularly in distance learning, where the learner is impaired by the lack of casual contact with the teacher and other students. The frustrations resulting from problems with communication between student and academic institution are factors of which distance education planners should be well aware (Wood, 1996).

Poor access to libraries, student advisors, tutors, financial aid, and technical support all influence motivation levels of the student (Bontempi, 2003). Without proper support, students often develop a sense of learned helplessness which in turn, acts as a de-motivator leading to levels of dissatisfaction with distance learning and in some cases education in general.

Distance Learning at Embry-Riddle Aeronautical University

Distance Learning at Embry-Riddle Aeronautical University (ERAU) has been a strong component in the University's development. Embry-Riddle has a lengthy history of serving a broad range of student needs in distant places. Committed to the use of technology and innovation in delivering instruction, ERAU has been on the forefront of distance learning. Embry-Riddle's distance learning evolved from a correspondence program in the early 1980s to the electronic delivery methodology employed in 2004. Innovations in course delivery and aggressive marketing have enabled the distance learning program to grow from approximately 200 enrollments in 1993 to over 26,000 in 2004.

Embry-Riddle's Distance Learning program has been an integral part of the Extended Campus College of Career Education (CCE) and has provided an opportunity for students whose schedules or geographic location would otherwise prevent them from having the ability to pursue a higher education degree. Online delivery has eliminated a major barrier that keeps many adults from advancing their education and has enabled them to fit campus based classes into their busy schedules by providing convenience and flexibility.

The program has supported and connected learners through online support groups, e-mail discussion forums, an online help desk, full access to the University's Hunt Library, and online bookstores. The online format that has evolved has been successful in developing a sense of community among students and keeps them from feeling isolated.

All distance learning instructors have been required to complete an online course, DDL 201, which requires the novice instructor to act as a student while learning to use Blackboard technology. This ensures that instructors understand and experience the same technological challenges required of students. Distance learners have indicated in surveys conducted in 2001 and 2003 by Embry-Riddle Aeronautical University, Office of Institutional Research (2003) that faculty are accessible, supportive, and provide comparable assistance to that of traditional instructors.

Although program growth is a positive sign of acceptance by students, there is a need to assess the quality of any program. Embry-Riddle's administrative structure has required defined objectives within the strategic plan and measurement of those objectives to determine if projected goals are met. The 2003-2004 Assessment Planning portion of the University Strategic Plan (2003) provided the desired educational outcomes for the Department of Distance Learning.

Evaluations associated with program reviews and reports to accrediting bodies, as well as regular student evaluations of instruction, have ensured periodic attention to student perceptions and reaffirmation of program goals since the inception of distance learning into the University's programs (Sloan Consortium of Colleges and Universities, Consultant Report, 2003). Favorable feedback on several aspects of the distance learning program was received in a consultant review. ..Consultants found that "Especially impressive are the number of students served, the cost effectiveness of the academic programs, and student satisfaction with online experiences" (p. 3)" The report also addressed assessment, indicating that ". . . to demonstrate learning quality, an institution

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must put in place a set of metrics and measures that assess learning in both online and traditional settings" (p. 4). Little focus, however, has been placed on the specific components within programs and their impact on student perceptions.

The objective of the present research was to measure student perceptions on a programmatic basis and to compare the perceptions of distance and traditional classroom students regarding their course experiences. While limited to four courses, this research was intended to provide a stronger information base, to be used in further assessments and in future programming decisions at Embry-Riddle Aeronautical University distance learning program.

Summary

Distance learning has developed over many years and has evolved to meet the growing demands for distance learning opportunities. The changes in the American economy over the 20th century have greatly influenced the educational desires of an increasingly diverse population. Institutions of higher education have become very competitive in their desire to serve students in the telecommunication age of the 21st century. These students are often older, married, employed and non-residential student's who are concerned with time management as they juggle classes, work, family, and travel commitments. These students have often enrolled in distance learning courses for convenience. Their satisfaction is linked to their success, and their success is often linked to their ability to function as independent learners.

Institutions of higher education have necessarily been concerned with student success and satisfaction. While students must be sufficiently independent and self disciplined in pursuing distance learning, institutions are not free of responsibility. Faculty and administrators must consider many factors in helping students overcome barriers to effective and efficient implementation of distance education courses, curricula and programs.

Given the rapid development of technology, it has been critical that institutions are attentive to the level of support required by both distance learners and faculty who are teaching distance courses. Faculty, who were expert in traditional classrooms, must be assisted as they cope with new and often intimidating technologies.

Overall, student satisfaction and success depends on students perceptions regarding the value of their learning experience. Knowing the demographics of the student (client) and tailoring the delivery methodology to support the student while fostering a pedagogical arena for delivery are essential for a successful program.

CHAPTER 3

METHODOLOGY AND PROCEDURES

Introduction

The methods and procedures for this research are presented in this chapter.

Included is information describing the purpose, setting of the research, the distance

learning and traditional courses used in the research, and subjects in the study. The

instruments used in the data collection process and the methods of analysis are also

described.

Purpose of the Study

The purpose of this study was to determine (a) what differences, if any, exist

between Embry-Riddle University students enrolled in distance learning and traditional

courses during 2004 with regard to their satisfaction with course quality and (b) the level

of satisfaction of distance learning students with regard to online delivery technology and

administrative services provided to them in distance learning courses.

The Setting

Embry-Riddle Aeronautical University was established in 1972 with a residential

campus in Daytona Beach, Florida. The University expanded campus offerings by

establishing a second residential campus in Prescott, Arizona. A third component,

Extended Campus, was created in the early 1980s to provide educational opportunities in

the traditional classroom and through distance learning for students who could not attend residential classes.

At the time of the present study, the Extended Campus served adult students in the military and private sectors at approximately 130 teaching sites in the United States and Europe and through distance learning. Embry-Riddle has a lengthy history of serving a broad range of student needs in distant places. Committed to the use of technology and innovation in delivering instruction, ERAU has been on the forefront of distance learning. Embry-Riddle's distance learning evolved from a correspondence program in the early 1980s to the electronic delivery methodology in place as the 21st century began. Innovations in course delivery and aggressive marketing have enabled the distance learning program to grow from approximately 200 enrollments in 1993 to over 25,000 in 2004.

<u>Instrumentation</u>

The Distance Learning Student Response Questionnaire (DLSRQ) is a 41-item instrument developed by the Office of Institutional Research at ERAU for the purpose of gathering data regarding distance learners' perceptions of their level of satisfaction with their distance learning courses. The instrument permits the acquisition of data in regard to course quality, delivery technology and administrative services. It was initially administered in 1998 to approximately 1,000 students, and it has been offered to all enrolled distance learners at the conclusion of each course since that time.

Students participating in traditional classroom courses offered through the Extended Campus complete the Student Survey Form developed by the Office of Institutional Research at ERAU for the purpose of gathering data regarding student perceptions of course quality.

Population and Sample

The population for this study consisted of undergraduate students who were enrolled in Embry-Riddle Aeronautical University's distance learning and traditional classroom programs during any of the academic terms of calendar year 2004. Four general education courses, all of which were offered in distance learning and traditional classroom settings, constituted the sample and were representative of the population. Courses selected were from the Communications, Mathematics, Humanities, and Social Science areas and represented a cross section of subject disciplines. Data were obtained from students who had completed, either by distance or in a traditional setting, one of the courses. Since each of the courses was taught in both formats, a total of 8 sections were used to generate the 800 surveys analyzed in the study. Specific courses by number and title were:

1. ENGL 221 Technical Report Writing

2. MATH 222 Business Statistics

3. HUMN 142 Studies in Literature

4. SOCI 310 Personality Development

Data Collection

In order to determine the extent of student satisfaction in distance learning delivery methodology, a three-phase data collection process was used. The first phase of this collection process involved accessing data provided by students who had completed Distance Learning Student Response Questionnaires during 2004. These data were accessed with the assistance of Embry-Riddle Aeronautical University's Department of Institutional Research (IR). In Phase Two, that same office made available data gathered using the Student Survey Form (SSF) in 2004 to determine student satisfaction with traditional classroom delivery methodology.

In Phase 3, information and data for these analyses were mined with the assistance of the Office of Institutional Research, Embry-Riddle Aeronautical University. Analogous survey questions garnered from the Distance Learning Student Response Questionnaire (DLSRQ) and the Student Survey Form (SSF) were extracted to determine if a difference existed between students in distance learning and traditional classroom environments with regard to their satisfaction with course quality (i.e., quality of course materials and effectiveness of instructor). The comparability among the respective research questions and related DLSRQ and SSF items are displayed in Table 1.

Table 1

Research Questions and Related Distance Learning Student Response Questionnaire (DLSRQ) and Student Survey Form (SSF) Items

Research Questions	DLSRQ	SSF
Question 1	2, 4, 6, 9-11	2-5, 7, 11
Question 2	12-14, 32	NA
Question 3	17-24	NA
Question 4	37, 38	NA

Phase One: Data Collection for Distance Learning Students

The initial phase of this study consisted of collecting data obtained on the

DLSRQ, a questionnaire that measures distance learning students' perception of course

quality, delivery technology and administrative services. Items on the DLSRQ are

measured by several methods. Open comments and observations provided by students

provided additional data as to the student satisfaction with distance learning.

The 11 items addressing course quality (i.e., quality of course materials and

effectiveness of instructor) were measured using a 4-point scale where 4 = Very Satisfied,

3 = Satisfied, 2 = Dissatisfied and 1 = Very Dissatisfied. Not Applicable/Omitted

responses were recorded as zero (0). Distance learning student perceptions of course

quality were measured by calculating the percentage of students who indicated they were

Very Satisfied or Satisfied in responding to the 11 survey items (a-k). The items and

their respective DLSRQ numbers that relate to quality of course materials and

effectiveness of instructor are:

a. Quality of learning as compared to a traditional classroom setting (1)

b. Attainment of Learning Outcomes stated in the online syllabus (2)

c. Assignments/projects/case studies were appropriate for this course (3)

d. Text and/or readings were appropriate for this course (4)

e. Examination(s) sampled the important material in the course (5)

f. Overall quality of the course material (6)

g. Accessibility of appropriate resources to complete assignments (7)

h. Amount of student-to-student interaction (8)

i. Amount of instructor-to-student interaction (9)

j. Quality of guidance/feedback provided by the Designated Instructor (10)

k. Timeliness of feedback from the Designated Instructor (11)

Student level of satisfaction related to online delivery technology was measured by calculating the percentage of students who indicated they were Very Satisfied or Satisfied by responding to 5 survey items within the technology segment of the questionnaire. Five of the six items (a-e) pertaining to delivery technology were measured using the same 4-point scale where 4 = Very Satisfied, 3 = Satisfied, 2 = Dissatisfied, 1 = Very Dissatisfied, and Not Applicable/Omitted was recorded as zero (0). The single item (f), calling for a rating of technical support for distance learning, generated responses using a 4-point scale where 4 = Excellent, 3 = Good, 2 = Fair, and 1 = Poor. The DLSRQ items and numbers that pertain to delivery technology are:

a. Quality of the video instructor's presentation (12)

b. Quality of instructional aids used on video (13)

c. Quality of the ERAU web site (14)

d. How would you rate the technical support provided by distance learning (32)

Student level of satisfaction as to administrative services were measured by calculating the percentage of students who responded as being Very Satisfied or Satisfied to eight items within the administrative services segment of the questionnaire. The eight items (a-h) pertaining to administrative services were measured using a 4-point scale ranging from 4 = Very Satisfied to 1 = Very Dissatisfied. Not Applicable/Omitted responses were excluded from the analysis as it was determined that omitted responses were related to the fact that distance learning students did not necessarily use the services. They were, however, reviewed separately. The items and respective DLSRQ numbers that pertain to administrative services are:

a. Quality of advising services (17)

b. Selection of Distance Learning courses (18)

c. Quality and timeliness of exam distribution (19)

d. Distribution of academic materials (20)

e. Quality of financial services (21)

f. Quality of veteran services (22)

g. Turnaround time of grades (23)

h. Quality of the Distance Learning Enrollment Office Support (24)

Phase Two: Data Collection for Traditional Classroom Students

The second phase of this study consisted of accessing archival data from Embry-Riddle Aeronautical University's Department of Institutional Research related to traditional classroom student satisfaction with course quality (i.e., quality of materials, effectiveness of instructor, resources and requirements). Student satisfaction was measured using a 4-point scale that ranged from 4 = Strongly Agree, 3 = Agree, 2 = Disagree,1 = Strongly Disagree, and 0 = Neutral for the six items. Data were analyzed to determine the percentage of traditional classroom students who responded as Strongly Agree or Agree on the Student Survey Form (SSF).   SSF item 11 responses of Excellent, Good, Satisfactory, Fair, Poor, and Omitted were recategorized for ease of comparison so that Excellent = Strongly Agree; Good and Satisfactory = Agree; Fair = Disagree, and Poor = Strongly Disagree. The SSF items and corresponding instrument numbers that pertain to course quality are:

a. The instructor achieved the stated objectives of the course well (2)

b. The instructor was well prepared for each class session (3)

c. The instructor provided meaningful and timely feedback to students (4)

d. The instructor was readily available for consultation with students (5)

e. The course materials used by the instructor were of high quality (7)

f. I would rate the overall quality of the textbook/instructional materials as (4-point rating scale from Good to Poor) (11)

Phase Three: Comparison of Data gathered in Phases One and Two

In the final phase, analogous questions identified in Phases 1 and 2 were matched

in preparation for the data analysis of differences between distance learning and

traditional classroom students' satisfaction with course quality. Table 2 displays the

linkage between DLSRQ and SSF items listed by respective number and relationship.

Table 2
Congruence of Items: Distance Learning Student Response Questionnaire (DLSRQ) and
Student Survey Form (SSF)

DLSRQ	SSF
Please indicate your level of satisfaction on the following: (Instructions to student)	Please indicate your degree of concurrence or non-concurrence with each of the items: (Instructions to student)
Attainment of Learning Outcomes stated in the online syllabus (Item 2)	The instructor achieved the stated objectives of the course well. (Item 2)
Quality of guidance/feedback provided by Designated Instructor (Item 10)	The instructor was well prepared for each class session. (Item 3)
Timeliness of feedback from designated instructor (Item 11)	The instructor provided meaningful and timely feedback to students. (Item 4)
Amount of instructor-to-student interaction (Item 9)	The instructor was readily available for consultation with students. (Item 5)
Text and readings were appropriate for this course (Item 4)	The instructional materials used by the instructor were of high quality. (Item 7)
Overall quality of course materials (Item 6)	I would rate the overall quality of the textbook/instructional material as: (Item 11)

<u>Data Analysis</u>

Data were analyzed using SPSS in order to answer the four research questions. Embry-Riddle Aeronautical University's Department of Institutional Research provided support in accessing DLSRQ and SSF data through archival files. Calendar year 2004 provided the distinct time frame for data collection, and data were compiled for each item and category of interest for that calendar year.

Research Question 1 was concerned with levels of satisfaction with course quality (i.e., quality of course material, delivery, and effectiveness of the instructor). Frequencies and percentages of distance learning and traditional classroom students who responded as being Very Satisfied (4) or Satisfied (3) on the DLSRQ and who Strongly Agreed (4) or Agreed (3) on the SSF were calculated for the respective categories. A criterion of 80% of Very Satisfied/Strongly Agree and Satisfied/Agree responses was established and used in determining if distance learning and traditional classroom students had a high level of satisfaction with course quality.

Research Questions 2, 3 and 4 focused exclusively on distance learning students. The levels of distance learning student satisfaction related to online delivery technology (Research Question 2), and administrative services (Research Question 3) were tabulated. The criterion of 80% of Very Satisfied (4) or Satisfied (3) responses was applied in determining if distance learning students hade a high level of satisfaction with their distance learning experience.

Research Question 4 permitted inquiry into the open comment and observation portion of the DLSRQ. Open comment and observation data collected by Embry-Riddle

Aeronautical University's Department of Institutional Research during calendar year

2004 were reviewed and initially associated with 12 categories prior to reducing that

number to 9 including an "other" category. Analysis of these data provided additional

information that assisted in formulating a clearer picture of the distance learning program

quality. Emphasis was placed on student observations that were noted by students as

being least and most satisfying.

Items 37 and 38 of the Distance Learning Student Response Questionnaire

(DLSRQ) elicited students' perceptions of what they liked most and least about the

course. Data obtained from these two DLSRQ items were synthesized to determine the

salient points highlighted by students. These data are presented in tabular form

displaying frequencies and percentages of responses by students indicating most and least

liked aspects of their distance course work in the nine categories.

Descriptive Statistics involving frequencies and percentages were used to analyze

the data provided by Embry-Riddle Aeronautical University's Department of Institutional

Research. Means and standard deviations were utilized to validate the probable accuracy

of the data. Tables indicating the frequency and percentage of repeat responses to items

by category were used to display the data.

CHAPTER 4

ANALYSIS OF THE DATA

<u>Introduction</u>

This study sought to develop an increased understanding of student perceptions of

distance learning and to identify possible differences from those of students in traditional

classroom environments. To facilitate this understanding, four questions were used to

guide the research related to course quality, online delivery technology, and

administrative services.

This chapter has been organized to present the analysis of the data collected to

respond to each of four research questions. Data gathered in response to Research

Question 1 enabled a comparison of distance learning and traditional classroom student

perceptions regarding satisfaction levels with course quality (i.e., quality of materials,

effectiveness of instructor, resources, and requirements). Results of distance learning

student perceptions concerning satisfaction levels with online delivery technology (i.e.,

quality of instructional aids and web site) are reported to answer Research Question 2,

while Research Question 3 is answered using the reports of distance learning student

perceptions related to administrative services (i.e., support, advising, grading procedures,

and financial aid). Finally, in response to Research Question 4, the open-ended

comments of distance learning students have been synthesized and are presented to

provide further information regarding overall satisfaction with distance learning courses.

Description of Population and Sample

Data for this study were collected for calendar year 2004 from the population of

undergraduate students enrolled as distance learning or traditional classroom students.

The sample for this study consisted of Embry-Riddle Aeronautical University students

(n=800) enrolled in distance learning (n=400) and traditional classroom (n=400) courses.

Four general education courses, all of which were offered in distance learning and

traditional classroom settings, served as the source of the sample and were representative

of the population. Courses selected were from the Communications, Mathematics,

Humanities, and Social Science competency areas and represented a cross section of

subject disciplines. Table 3 displays the sample used for this study.

Table 3
Distribution of the Sample

Course Number Course Title	Distance Learning Students	Traditional Students
ENGL 221 Technical Report Writing	100	100
MATH 222 Business Statistics	100	100
HUMN 142 Studies in Literature	100	100
SOCI 310 Personality Development	100	100

Note: n=800

Research Questions

The following sections address each of the research questions that were used to guide this study. Presented in each section is a summary of the data analyzed along with tabular displays and descriptive narratives.

Research Question 1

To what extent did any difference exist between students in distance learning courses and traditional classroom environments with regard to their perceptions of satisfaction with course quality (i.e., quality of materials, effectiveness of instructor, resources, and requirements) as measured by the Distance Learning Student Response Questionnaire (Appendix A) and Student Survey Form (Appendix B) used in traditional classroom evaluation?

In order to respond to Research Question 1 as to levels of satisfaction with course quality (i.e., quality of course material, delivery, and effectiveness of the instructor), frequencies and percentages of distance learning and traditional classroom students who responded as being Very Satisfied or Satisfied on the DLSRQ or Strongly Agree or Agree on the SSF were calculated for each item. A criterion of 80% of Very Satisfied or Satisfied (DLSRQ) and Strongly Agree or Agree (SSF) responses was established and used in determining if distance learning and traditional classroom students had a high level of satisfaction with course quality.

To accomplish this analysis, a three-step process was utilized. The first step focused on the responses of distance learning students to the DLSRQ items 2, 4, 6, 9-11 related to course quality. Table 4 presents the frequencies for all response categories

(Very Satisfied, Satisfied, Dissatisfied, Very Dissatisfied and Not Answered/Omitted).

Percentages of combined Very Satisfied and Satisfied responses were also calculated and

are displayed in Table 4.

Table 4

Distance Learning Student Response Questionnaire (DLSRQ) Item Frequencies and
Combined Very Satisfied (VS) and Satisfied (S) Percentages

Survey Item (#)	VS	S	D	VD	NA/O	% VS + S
Attainment of learning outcomes stated in online syllabus (2)	214	148	24	9	5	90.5
Text and/or readings were appropriate for this course (4)	245	119	24	8	4	91.8
Overall quality of the course material (6)	260	115	20	3	2	93.8
Amount of instructor-to-student interaction (9)	241	114	21	9	15	88.8
Quality of guidance/feedback provided by instructor (10)	238	114	31	8	9	88.0
Timeliness of feedback from designated instructor (11)	152	151	72	13	12	75.8

Note. VS=Very Satisfied; S=Satisfied; D=Dissatisfied; VD=Very Dissatisfied; NA/O=Not
Answered/Omitted.
%VS+S = sum of Very Satisfied and Satisfied. n = 400.

With one exception, respondents indicated a high level of course satisfaction with

each of the aspects of course quality. Over 90% of respondents indicated a high level of

satisfaction with the three items (2, 4 and 6) that concerned quality of materials. Only

slightly lower were the percentages related to satisfaction with instructor-to-student

interaction (item 9, 88.8%) and quality of instructor guidance and feedback (item 10,

88.0%). In regard to the timeliness of feedback from the designated instructor (item 11),

respondents failed to meet the criterion of 80% established to determine a high level of

course satisfaction. Only 75.8% of distance students indicated that feedback from their

designated instructor was timely.

The second step of the analysis focused on the responses of traditional classroom

students to SSF items 2-5, 7, and 11 related to course quality. Table 5 presents the

frequencies for all response categories.

Table 5
Student Survey Form (SSF) Survey Item Frequencies and Cumulative Strongly Agree
(SA) and Agree (A) Percentages

Survey Item (#)	SA	A	D	SD	N	% SA + A
Instructor achieved stated objectives of the course well (2)	221	143	24	9	3	91.1
Instructor was well prepared for each class session (3)	256	110	24	4	6	91.5
Instructor provided meaningful, timely feedback to students (4)	245	117	23	8	7	90.6
Instructor was readily available for consultation with students (5)	257	114	20	3	6	92.8
Instructional materials used by instructor were of high quality (7)	219	133	35	7	6	88.1
Overall quality of texts, instructional materials as (11)[a]	152	223	13	8	4	93.6

Note. SA=Strongly Agree; A=Agree; D=Disagree; SD=Strongly Disagree; N=Neutral. %SA+A = sum of
Strongly Agree and Agree. n = 400.
[a]Item 11 responses were recategorized as follows: Excellent=SA; Good and Satisfactory=A; Fair=D;
Poor=SD.

Items 2-5, and 7 frequencies were calculated using Strongly Agree, Agree, Disagree, Strongly Disagree and Does Not Apply/Omitted. Item 11 responses of Excellent, Good, Satisfactory, Fair, Poor, and Omitted were recategorized for ease of comparison so that Excellent = Strongly Agree; Good and Satisfactory = Agree; Fair = Disagree, and Poor = Strongly Disagree.

Thus, percentages of combined Strongly Agree and Agree responses were calculated for each of the six items and are displayed in Table 5. Respondents exceeded the 80% criterion of combined Strongly Agree and Agree responses for all items. This was indicative of a high level of satisfaction with regard to all aspects of course quality in the traditional classroom. Over 90% of respondents indicated a high level of satisfaction with the four items (2-5) that were focused on the instructor. The only item that did not exceed 90% was related to the quality of instructional materials used by the instructor (item 7, 88.1%). In contrast, the highest ranking was assigned by students to the overall quality of texts and instructional materials (item 11, 93.6%) used in the traditional classroom.

Finally, the perceptions of distance learning and traditional classroom students related to course quality (i.e., quality of materials, effectiveness of instructor, resources, and requirements) were compared using data from the six matched items on the two instruments. Table 6 presents the data for each relational area associated with course quality as measured on the DLSRQ and SSF. Displayed are the frequencies and percentages for the Very Satisfied/Strongly Agree, Satisfied/Agree and combined categories. In all instances but one the 80% criterion was exceeded, and a high level of

student satisfaction was reflected for both distance learning and traditional classroom
students. The one exception was the 75.8% of distance learning students who indicated a
high level of satisfaction with timeliness of feedback as compared to 90.6% of traditional
classroom students.

Table 6
Course Quality: Perceptions of Online (DLSRQ) and Traditional (SSF) Students

Relational Area
    DLSRQ Item Number
    SSF Item Number
	Very Satisfied
	Strongly Agree
			Satisfied
			Agree
					Very Satisfied & Satisfied
					Strongly Agree & Agree	

	n	%	n	%	n	%
Attainment of objectives						
DLSRQ 2 <Online>	214	53.5	148	37.0	362	90.5
SSF 2 <Traditional>	221	55.3	143	35.8	364	91.1
Instructor preparedness						
DLSRQ 10 <Online>	238	59.5	114	28.5	352	88.0
SSF 3 <Traditional>	256	64.0	110	27.5	366	91.5
Timeliness of feedback						
DLSRQ 11 <Online>	152	38.0	151	37.8	303	75.8
SSF 4 <Traditional>	245	61.3	117	29.3	362	90.6
Availability of instructor						
DLSRQ 9 <Online>	241	60.3	114	28.5	355	88.8
SSF 5 <Traditional>	257	64.3	114	28.5	371	92.8
Appropriate instructional materials						
DLSRQ 4 <Online>	245	61.3	119	29.8	364	91.1
SSF 7 <Traditional>	219	54.8	133	33.3	352	89.1
Overall quality of course materials						
DLSRQ 6 <Online>	260	65.0	115	28.8	375	93.8
SSF 11 <Traditional>	152	38.0	223	55.6	303	93.6

n = 800

Of interest are the high numbers of Very Satisfied/Strongly Agree responses in all of the relational areas. Over half of all respondents indicated that they were Very Satisfied/Strongly Agree and Satisfied/Agree with items related to course quality. Only in regard to overall quality of course materials (DLSRQ item 11, 38%) did fewer than half of traditional classroom students respond with the highest rating. Also noteworthy are the slightly higher cumulative percentages of traditional student ratings in regard to their satisfaction with attainment of objectives (SSF item 2), instructor preparedness (SSF item 3), timeliness of feedback (SSF item 4) and availability of instructor (SSF item 5). Only in regard to those items related to texts and instructional materials (DLSRQ item 4) did perceptions of distance learning students exceed those of traditional classroom students.

Additional data related to distance learning students' perceptions of course quality (DLSRQ items 1, 3, 5, 7 and 8) were reviewed. Table 7 displays these data and responses reveal a high level of distance learning student satisfaction for all five items. In all instances, the 80% criterion was met.

When distance students were queried as to the learning quality of their experience as compared to the traditional classroom setting, (item 1), 90.1% indicated they were Very Satisfied or Satisfied. The highest levels of student satisfaction were expressed in the extent to which examinations sampled important material (item 5, 92.3%) and how appropriate assignments/projects/case studies were to the course (item 3, 92%). Only slightly lower were the satisfaction rankings as to accessibility of resources to complete

assignments (item 7, 89.3%) and amount of student-to-student interaction (item 8,

88.6%).

Table 7
Distance Learning Student Response Questionnaire (DLSRQ): Additional Item
Frequencies and Combined Very Satisfied (VS) and Satisfied (S) Percentages

Survey Item (#)	VS	S	D	VD	NA/O	% VS + S
Learning quality compared to traditional classroom setting (1)	233	127	30	6	4	90.1
Assignments/projects/case studies appropriate for course (3)	256	112	24	4	4	92.0
Examination(s) sampled important material in course (5)	258	115	21	4	2	92.3
Accessibility of resources to complete assignments (7)	219	134	35	8	4	89.3
Amount of student-to-student interaction (8)	221	133	40	5	1	88.6

Note. VS=Very Satisfied; S=Satisfied; D=Dissatisfied; VD=Very Dissatisfied; NA/O=Not
Answered/Omitted.
%VS+S = sum of Very Satisfied and Satisfied. n = 400.

Research Question 2

        To what extent were distance learning students satisfied with online delivery
technology (i.e., quality of video presentation, instructional aids, and web site) as
measured by the Distance Learning Student Response Questionnaire?

        In order to respond to Research Question 2 as to levels of satisfaction with quality

of delivery technology, frequencies and percentages of distance learning students who

responded as being Very Satisfied or Satisfied relative to DSLRQ items 12, 13, 14 and 32

were calculated. A criterion of 80% of Very Satisfied or Satisfied (DLSRQ) responses

was established and used in determining if distance learning students had a high level of

satisfaction with the quality of delivery technology. In all instances, the 80% criterion

was exceeded.

Table 8 presents the frequencies calculated for all categories and the combined

Very Satisfied and Satisfied percentages for three of the four items associated with the

quality of delivery technology. The ERAU website (item 14, 87.8%) received the highest

ranking of the three items. Slightly lower, but well above the 80% criterion, were the

rankings for instructor presentation (item 12, 84.1%) and instructional video aids (item

13, 85%). An additional DLSRQ item (32) called for students to rate the technical

support provided for them. Distance learning students responded to this item using a 4-

point scale of Excellent, Good, Fair, and Poor. Student satisfaction was measured using

the combined Excellent and Good responses (343) and yielded a high satisfaction level of

88.8%.

Table 8
Distance Learning Student Response Questionnaire (DLSRQ) Item Frequencies and
Combined Very Satisfied (VS) and Satisfied (S) Percentages: Quality of Technology

Survey Item (#)	VS	S	D	VD	NA/O	% VS + S
Instructor's presentation (12)	205	131	38	13	13	84.1
Instructional Aids - video (13)	200	140	38	15	7	85.0
ERAU website (14)	236	115	26	7	16	87.8

Note. VS=Very Satisfied; S=Satisfied; D=Dissatisfied; VD=Very Dissatisfied; NA/O=Not
Answered/Omitted.
%VS+S = sum of Very Satisfied and Satisfied. n = 400.

Research Question 3

What was the level of student satisfaction in distance learning courses with regard to administrative services (i.e., support, advising, grading procedures, and financial aid) as measured by the Distance Learning Student Response Questionnaire?

Research Question 3 required the measurement of student satisfaction level as related to the quality of administrative services (i.e., support, advising, grading procedures, and financial aid). This was accomplished by calculating the frequencies and combined percentages of distance learning students who responded as being Very Satisfied or Satisfied as to DLSRQ items 17-24. These data are displayed in Table 9. A criterion of 80% Very Satisfied or Satisfied (DLSRQ) responses was established and used in determining if distance learning students had a high level of satisfaction with the quality of administrative services.

Since all distance learning students surveyed did not use all of the administrative services available, Not Applicable/Omitted responses were not included in the analysis. Table 9 displays the valid n for each of the eight items, the frequencies and combined Very Satisfied and Satisfied percentages. In all instances, the 80% criterion was exceeded with the highest ranking levels of satisfaction being expressed for distribution of academic materials (item 20, 95.2%), selection of courses (item 18, 94.4%), and distance learning enrollment office support (item 24, 91.9%). The lowest satisfaction rankings were related to distribution of examinations (item 19, 88.8%) and financial services (item 21, 87.6%).

Table 9

Quality of Administrative Services: DLSRQ Item Frequencies and Combined Very
Satisfied (VS) and Satisfied (S) Percentages

Survey Item (#)	Valid n	VS	S	D	VD	NA/O	% VS + S
Advising services (17)	251	139	90	11	11	149	91.3
Selection of courses (18)	322	162	142	11	7	78	94.4
Distribution of examinations (19)	329	191	101	21	16	71	88.8
Distribution of academic materials (20)	310	182	113	12	3	90	95.2
Financial services (21)	153	86	48	13	6	247	87.6
Veteran services (22)	139	78	46	12	3	261	89.2
Turnaround time of grades (23)	331	169	128	23	11	69	89.7
Distance Learning Enrollment Office support (24)	270	169	79	9	13	130	91.9

Note. VS=Very Satisfied; S=Satisfied; D=Dissatisfied; VD=Very Dissatisfied; NA/O=Not
Answered/Omitted. %VS+S = sum of Very Satisfied and Satisfied. NA/O responses were not included in
the valid n which was used to calculate combined VS + S percentages.   n = 400.

Also of interest were the numbers of Not Answered/Omitted responses indicating

that all students did not necessarily use several of the services. In excess of half of the

400 respondents omitted a response to questions concerning distribution of academic

materials (item 20), financial services (item 21) and veteran services (item 22). Well

over 25% of respondents did not respond to questions related to their use of advising

services (17) and distance learning Enrollment Office support (item 24).

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Research Question 4

To what extent did the open comments and observations of students on the Distance Learning Student Response Questionnaire provide additional information as to perceived assets, challenges, and overall student satisfaction with their distance learning courses?

In order to respond to Research Question 4 as to levels of satisfaction with perceived assets, challenges, and overall student satisfaction with their distance learning courses, comments of the 400 students included in the sample were reviewed. Analysis of these data were intended to assist in formulating a clearer picture of distance learning program quality. Students were asked as to indicate what they liked most (item 37) and what they liked least (item 38) about the distance learning course they were completing.

In reviewing the comments, 12 categories were initially identified. Further review involved tracking repetitions of key words and refining the categories to a smaller number. After a final review of the 227 "most liked" and 204 "least liked" observations, a total of 9 categories, including "other", were established and used to organize the data. Appendix C contains a comprehensive listing of the comments related to what students liked most and least in each of the categories. Table 10 displays the final comment categories, frequencies and percentages associated with favorable (item 37) and negative (item 38) student comments.

The highest number and percentage of favorable (most liked) comments were related to instructor interaction and feedback. Of the 227 observations offered, 82 (36.1%) were related to faculty. A high level of satisfaction was expressed regarding instructors who were perceived as being knowledgeable, helpful and timely in responding

to students. Examples of typical, positive statements made by students are: "The

instructor was helpful, responsive, and reassuring. . .", ". . . was very knowledgeable and

was quite prompt. . . .", "Instructor was extremely interactive, and the course was

designed to permit student interaction." In contrast, a smaller number of comments (22,

10.8%) were written in response to instructors who were viewed as being inaccessible,

did not provide feedback, or lacked management skills. Examples of least liked

statements are: "The lack of feedback and participation," "not available to field daily

questions," and "the class was poorly managed."

Table 10
Distance Learning Students: Most and Least Like Aspects of Course

Category	Most Liked		Least Liked	
	n=227	%	n=204	%
Instructor interaction/feedback	82	36.1	22	10.8
Flexibility of online study	36	15.9	10	4.9
Course material/textbook	36	15.9	20	9.8
Level of Homework	20	8.8	36	17.5
Instructions provided	12	5.3	23	11.3
Interaction with students	10	4.4	22	10.8
Grading procedures	3	1.3	31	15.2
Nothing	5	2.2	35	17.2
Other	23	10.1	5	2.5

Note. Nothing was the comment offered by students as to what they liked most or least.

Two additional areas received substantial numbers of most liked comments: Equal numbers of students remarked positively (36, 15.9%) regarding the flexibility of online study and course material and textbooks. Students repeatedly commented on the ability to study from home, work at their own pace or at convenient times. Students who had military obligations or work related travel frequently made comments such as, "I could not attend a traditional classroom." and "It provided me with the flexibility I required. I was traveling a lot in this period and the distance learning allowed me to complete the course." The negative comments (10, 4.9%) were frequently associated with the very nature of online work. One student commented, "I am not a fan of non-traditional learning. Classroom interaction is much more beneficial to learning. The issue is I have no choice but to take some classes on line." Several students commented on the course content (mathematics/statistics) as being a "difficult subject" to take online.

In regard to course materials and textbooks, students' positive comments (36, 15.9%) were full of high praise for the selected text and included "the book," "very good," and "great." Comments also focused on the course material and addressed such dimensions as practicality of the course as well as the worth of content to which students would not have otherwise been exposed. Specific comments included "practical application to everyday living," "course layout was superior," and "the exposure. . . . I most likely would never have read, or studied, these stories, poems & plays without this introduction." A smaller, but substantial, number of students (20, 9.8%) had negative comments. They cited "dry" and "vague" textbook reading and materials. The reliance distance learning students placed on textbooks was reinforced by the comment ". . . the

text book was not detailed enough to get all the information necessary," and "had to review sections several times just to understand what was being presented."

A total of 23 students (10.1%) made statements that did not fall into the eight established categories. These students mentioned: "The use of the TI-83 Plus calculator", and "I enjoyed the challenge and the critical thinking that it required" in the positive aspect area. They also provided several comments that revealed the unenthusiastic view: "I thought this class would be more about learning from different psychologists, not about dream interpretation, importance of symbols, etc." and "I just do not like the topic."

Also notable was the high level of satisfaction indicated by the students (35, 17.2%) who, when asked what they liked least about the course, indicated "nothing" as their response. This indicated that 35 (17.2%) of the students who responded could not identify anything they liked least about the course. In contrast, a very low number (5, 2.2%) of students had the same response when asked what they liked most.

This chapter has presented the analysis of the data collected from 800 Embry-Riddle's Extended Campus students who responded to the Distance Learning Student Response Questionnaire (DLSRQ) and the Student Survey Form (SSF). The responses were used to organize the data presented for each of the four research questions that framed this study. A summary of the findings, conclusions, implications and recommendations are presented in Chapter 5.

CHAPTER 5

SUMMARY, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

Introduction

This chapter provides a brief review of the statement of the problem,

methodology, instrumentation and data analysis procedures used to conduct the study. A

summary and discussion of the findings organized around the research questions are also

presented. Conclusions, based on the review of the literature and the research findings,

are offered. The final section contains implications and recommendations for Embry

Riddle Aeronautical University with regard to distance learning student satisfaction as

well as recommendations for future research.

Statement of the Problem

The questions addressed in this study were to determine (a) what differences, if

any, exist between Embry-Riddle Aeronautical University (ERAU) students enrolled in

distance learning and traditional courses during 2004 with regard to their satisfaction with

course quality and (b) the level of satisfaction of distance learning students with regard to

online delivery technology and administrative services provided to them in distance

learning.

<center>Methodology</center>

<center>Population and Sample</center>

The population for this study consisted of undergraduate students who were

enrolled in Embry-Riddle Aeronautical University's distance learning and traditional

classroom courses offered through the Extended Campus during any of the academic

terms of calendar year 2004. Four general education courses, all of which were offered

in distance learning and traditional classroom settings, provided a representative sample

(n=800) of the 2004 student population. The 800 completed surveys of 400 distance

learning and 400 traditional classroom students, enrolled in four courses selected from

the general education competency areas of Communications, Mathematics, Humanities,

and Social Sciences during 2004, provided the data used in all analyses associated with

this study.

<center>Instrumentation</center>

The Distance Learning Student Response Questionnaire (DLSRQ) was used for

the purpose of gathering data regarding distance learners' perceptions of their level of

satisfaction with their distance learning courses. The instrument permitted the acquisition

of data in regard to course quality, delivery technology and administrative services.

Students participating in traditional classroom courses at Extended Campus

locations were offered an opportunity to complete the Student Survey Form (SSF) for the

purpose of gathering data regarding student perceptions of course quality.

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Data Analysis

The survey data were collected and entered into an SPSS Version 13.0 for Windows in order to perform the data analyses and answer the four research questions. Embry-Riddle Aeronautical (ERAU) provided support in accessing DLSRQ and SSF data from ERAU archival files. Calendar year 2004 provided the distinct time frame for this research, and data were compiled for each item and category for that calendar year.

Using the data gleaned from the DLSRQ and SSF, a three-step analysis was conducted to determine the satisfaction level of distance learning and traditional classroom students. A criterion of 80% of Very Satisfied or Satisfied (DLSRQ) and Strongly Agreed or Agreed (SSF) responses was established and used in determining if distance learning and traditional classroom students had a high level of satisfaction with course quality.

Summary and Discussion of Findings

The summary and discussion of the findings for the collected data in response to the four research questions for this study were as follows:

Research Question 1

To what extent did any difference exist between students in distance learning courses and traditional classroom environments with regard to their perceptions of satisfaction with course quality (i.e., quality of materials, effectiveness of instructor, resources, and requirements) as measured by the Distance Learning Student Response Questionnaire and Student Survey Form used in traditional classroom evaluation?

In order to respond to Research Question 1 as to levels of satisfaction with course quality (i.e., quality of course material, delivery, and effectiveness of the instructor), frequencies and percentages of distance learning and traditional classroom students who responded as being Very Satisfied or Satisfied on the DLSRQ and who Strongly Agreed or Agreed on the SSF were calculated for each item. The first step focused on the responses of distance learning students to the DLSRQ items related to course quality.

Overall, respondents indicated a high level of course satisfaction with each of the aspects of course quality, save one. The higher satisfaction rankings of over 90% were related to the quality of course material, i.e., the attainment of learning outcomes stated in the online syllabus, the appropriateness of texts, and the overall quality of the course material. Though slightly lower, the percentages related to satisfaction with instructor-to-student interaction (88.8%) and quality of instructor guidance and feedback (88.0%) were well above the 80% criterion. In the one area, however, that specifically addressed the effectiveness of the instructor, the criterion for a high level of course satisfaction was not met. Only approximately three-fourths of responding distance learning students indicated that feedback from their designated instructor was timely.

The second step of the analysis focused on the responses of traditional classroom students to six items on the SSF related to course quality. The responses of students indicated a high level of course satisfaction as evidenced by percentages for all items exceeding the 80% criterion. Four of the items called for traditional classroom students to respond to instructor preparedness, availability for consultation, provision of timely and meaningful feedback, and achievement of stated objectives. Combined Strongly

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Agree and Agree percentages for the items related to instructor performance were all slightly above 90%. Two items focused on course materials. Though 93.6% of respondents Strongly Agreed or Agreed that the overall quality of texts and instructional materials ranged from Excellent to Satisfactory, a smaller percentage (88.1%) Strongly Agreed or Agreed that "Instructional materials used by instructor were of high quality." Overall, these responses indicated that students in traditional classrooms had experienced a high level of satisfaction with regard to all aspects of course quality in the traditional classroom.

The perceptions of distance learning and traditional classroom students related to course quality (i.e., quality of materials, effectiveness of instructor, resources, and requirements) were compared using data from the six matched items on the two instruments. With the single exception of timeliness of feedback reported by distance learning students, a high level of student satisfaction was reflected for both distance learning and traditional classroom students. It is interesting to note that slightly higher percentages of traditional classroom students expressed a high level of satisfaction with instructor related items (attainment of objectives, instructor preparedness, and availability of instructor) than did distance learning students. The difference in perceptions of timeliness of feedback was substantial in that a high level of satisfaction was expressed by over 90% of traditional classroom students while only three-fourths of distance learning students shared this perception regarding their distance learning course.

Baker (1995) emphasized the importance of interaction for a variety of types of learning, learner satisfaction, and persistence of distance students. Wood (1996)

supported this theory by stating that it is important that the student receive prompt feedback in any institutional setting, particularly in distance learning, where the learner is impaired by the lack of casual contact with the teacher and other students. The frustrations resulting from problems with communication between student and academic institution are factors of which distance education planners should be well aware. Muilenburg & Berge (2001) echoed these concerns in their references to the feelings of isolation and apprehension experienced by distance students. Student-to-student and student-to-faculty interaction have been viewed as important in ameliorating these concerns.

Overall, the findings in the present study agreed with those of the National Postsecondary Student Aid Study (2000). In that study, undergraduate and graduate student satisfaction with quality of instruction in distance education was compared to classroom based courses. The subjects in the 2000 study were found to be more or equally satisfied with the quality of distance education instruction when compared to a classroom based experience.

In order to provide a more complete understanding of distance learning students' perceptions of course quality, additional data obtained from DLSRQ items were also analyzed. Distance students were asked to compare the learning quality of their experience to that of a traditional classroom setting. They also had the opportunity to respond as to the extent to which examinations sampled important material and how appropriate assignments/projects/case studies were to the course. Once again, a high level of distance learning student satisfaction, exceeding 90%, was expressed for these

aspects of the course completed. Only slightly lower were the satisfaction rankings as to

accessibility of resources to complete assignments and amount of student-to-student

interaction. These latter two items provide challenges in any distance learning setting,

and students' relatively high rankings of 89% and 88% respectively confirmed a high

level of satisfaction in regard to distance learning course work.

Research Question 2

To what extent were distance learning students satisfied with online delivery
technology (i.e., quality of video presentation, instructional aids, and web site) as
measured by the Distance Learning Student Response Questionnaire?

To answer the question as to levels of satisfaction with quality of delivery

technology, frequencies and percentages of distance learning students who responded as

being Very Satisfied or Satisfied relative to four DSLRQ media related items were

calculated. Students were queried as to their levels of satisfaction with the ERAU

website, instructor presentation and instructional video aids. Distance learning students

expressed high levels of satisfaction with all three media related aspects of their course.

The ERAU website received the highest satisfaction ranking (87.8%). Only

slightly lower were the rankings for video aids (85%) and instructor presentation

(84.1%). An additional DLSRQ item called for students to rate the level of technical

support provided for them. The satisfaction expressed by the 343 (88.8%) distance

students who rated the level of support as either Excellent or Good affirmed the overall

high satisfaction with the level of technical support students received. Pyle and Dziuban

(2001) recognized, as have many researchers, the impact of technology on instructor

delivery methods. Rapid changes in technology associated with distance learning have

presented a major challenge to instructors as well as institutions. Students' perceptions

regarding the quality of technology have been identified as very important. Online

technology has been the vehicle that empowers students to assume the role of lifelong

learners and to combine work and study over an extended period of time (Lee & Dziuban,

2002).

Research Question 3

What was the level of student satisfaction in distance learning courses with regard
to administrative services (i.e., support, advising, grading procedures, and financial aid)
as measured by the Distance Learning Student Response Questionnaire?

Answering this question required the measurement of student satisfaction level as

related to the quality of administrative services (i.e., support, advising, grading

procedures, and financial aid). Students expressed high levels of satisfaction with the

quality of administrative services provided them. In all instances, the 80% criterion was

exceeded with high levels of satisfaction being expressed for distribution of academic

materials (95.8%), the selection of courses available (94.4%), support provided by the

Distance Learning Enrollment Office (94.4%), and advising services (91.3%). This is an

important finding given the problems often experienced by distance students due to

geographic isolation and the associated practical difficulties in contacting academic and

administrative staff, and obtaining study and library materials (Meacham & Evans, 1989;

Wood, 1996).

Also of interest in regard to Administrative Services were the numbers of students

who likely did not avail themselves of selected services and, therefore, did not respond.

While one would expect that not all students would use all services, the lack of student

response in some categories may indicate a need for the institution to be more aggressive

in offering the service or in communicating its availability. For example, it is logical that

a relatively high number of students would not have need for veteran services or financial

services and would not have responded to these items. In contrast, the numbers of

respondents who chose not to respond regarding advising services, Distance Learning

Enrollment Office support and the distribution of academic materials may be higher than

desirable.

Research Question 4

To what extent did the open comments and observations of students on the
Distance Learning Student Response Questionnaire provide additional information as to
perceived assets, challenges, and overall student satisfaction with their distance learning
courses?

To answer Research Question 4 as to levels of satisfaction with perceived assets,

challenges, and overall student satisfaction with their distance learning courses,

comments of the 400 students included in the sample were reviewed. Analyzing the

comments of students as to what they liked most and least regarding their course work

was intended to assist in formulating a clearer picture of distance learning program

quality. Review of the comments involved tracking repetitions of key words and

establishing a total of nine categories, including "other" to organize the data.

Of the 227 most liked observations offered, over one third (36.1%) were related to faculty. The importance of and appreciation for faculty who were perceived as being attentive, well organized and supportive of students was repeatedly noted in student comments. Clearly, the instructor who bridged the distance gap with students enhanced the quality of the distance experience. This finding is in agreement with that of other researchers who highlighted the importance of student-to-teacher interaction in student satisfaction and subsequent retention (Devi, 2001; Dillon & Cintron, 1997; O'Malley, 1999; Story & DiElsi, 2003).

A number of student comments (15.9%) reflected on the flexibility provided by online course work. Students noted that were it not for the flexibility provided by distance courses, they would not have been able to continue their education.   Also acknowledged by students were textbooks and course materials that were considered to be interesting, thought provoking or simply provided additional structure and support.

Least liked comments were also reviewed. The categories receiving the most negative feedback were homework (17.5%) and grading procedures (15.2%) While small numbers of students offered specific feedback across the range of categories, a relatively large number of students (almost 20%) indicated that there was "nothing" they liked least about the course. Some of the negative comments also reinforced the very nature of online study and the need for students to be independent learners. Some students were candid in reporting that they were not suited for distance education. Others spoke to whether a particular course had been, or could be, taught effectively online.

<div align="center">Conclusions</div>

This study sought to determine (a) what differences, if any, exist between Embry-Riddle Aeronautical University (ERAU) students enrolled in distance learning and traditional courses during 2004 with regard to their satisfaction with course quality and (b) the level of satisfaction of distance learning students with regard to online delivery technology and administrative services provided to them in distance learning.

Based on a review of the literature and the research findings, the following conclusions were drawn:

1. It was concluded that, overall, both distance learning and traditional classroom students experienced a high level of student satisfaction in regard to course quality.

2. It was concluded that there were few differences in levels of satisfaction experienced by distance learning and traditional classroom students with regard to quality of materials, effectiveness of instructor, resources and requirements; however, a considerably smaller percentage of distance learning students expressed a high level of satisfaction with the timeliness with which instructors provided them feedback than did traditional classroom students.

3. It was concluded that technical support provided through the ERAU website and instructional media were meeting students' perceived needs and were well received by them.

4. It was concluded that the administrative services being accessed by students were providing a high level of satisfaction. These services included availability of courses, distribution of academic materials and examinations, and turnaround time of grades. There were, however, a number of available services that were not being used by a substantial number of students. These included advising services, financial services, veteran services, and support of the Distance Learning Enrollment Office.

5. It was concluded that distance learning instructors play a vital role in creating a classroom community. Facilitating student-to-student and teacher-to-student interaction yielded high satisfaction rankings and favorable comments from students.

<u>Implications and Recommendations</u>

The intent in conducting this research was to develop an increased understanding of distance learning student satisfaction and to identify possible differences in levels of satisfaction from those of students in traditional classroom environments. Understanding any differences could greatly enhance the ability of university administrators to make informed decisions relative to distance learning program improvements.

The additional focus on distance learning students' satisfaction with technology and administrative services was also anticipated to be valuable in arriving at improvements and modifications in course content and delivery methodology and as well as in improving administrative services. Educational pedagogy of the future has been

projected to increasingly include classroom courses that are web enhanced or delivered totally online. Innovations in educational technology, coupled with the desire to serve increasing numbers of students and meet their diverse needs, have challenged many institutions to rethink and expand their delivery systems.

With one exception, no major differences in levels of satisfaction were found between distance learning and traditional classroom students in the Extended Campus at Embry-Riddle Aeronautical University. It is very much to ERAU's credit that distance learning students expressed such high levels of satisfaction with the quality of their course work, the technology and administrative services.

The noted exception was in the lower level of student satisfaction with the provision of timely feedback in the distance learning environment. Though this is a single item, it is worthy of attention. Distance learning researchers and writers have consistently reinforced the need for well prepared instructors to be trained in appropriate delivery strategies. These instructors, by the structure they provide and the care with which they meet the needs of students at a distance, are keys to the success of the distance learning program. Appropriate professional development and support, both technologically and administratively, will assist the instructors in using appropriate teaching strategies for their content and their students. It is with this rationale in mind that the following recommendations for improvement are offered.

Instructors who are new to the distance learning environment need to be prepared to deliver and interact with students through electronic media. In order to properly prepare instructors, the institution should give consideration to the development of an

expanded professional development program that assists new distance learning instructors in the art of electronic delivery and interaction. Although an introductory program is in place and requires completion of a formal online tutorial, a more comprehensive approach could be considered in order to further enhance instructor preparedness and ensure a high level of student satisfaction.

One specific suggestion might be to initiate a mentoring program that matches experienced distance learning instructors with novices. Felician College established such a program. By mentoring new online instructors, they not only improved the quality of their online program but also improved student retention (Gaide, 2004). In such a mentoring program, the novice would be required to shadow the experienced instructor for at least one complete term to observe delivery and interaction techniques. After completing an observation period, the novice could be assigned to a class section as the primary instructor and the experienced instructor would provide support throughout the term and assist the novice in refining delivery techniques. The experienced instructor would recommend to the administration certification of the novice as qualified to instruct online or that the novice continue in schooling for an additional term.

A second recommendation concerns experienced distance learning instructors and calls for their periodic review to determine if they meet desired delivery criteria. A continual review of activity and quality of interaction should be conducted by assigned faculty support staff within the Extended Campus administration. This review should be accomplished periodically during each 12-week term. Distance Learning Student Response Questionnaires (DLSRQ) should be collated for each class section at the end of

every term and forwarded to the appropriate Program and Department Chair for review. This would provide academic oversight and assist the chair with annual reviews.

Continued in-service professional development should be offered whenever possible to provide improved delivery techniques and familiarization with changes to software in the course management system. Representatives of the institution should attend distance learning conferences and seminars to stay abreast of technological changes and network with others in the distance learning community. Being aware of the potential for technological improvements and recommending changes in the delivery system are important to staying at or near the forefront of distance learning and ensuring a high level of student satisfaction.

Attention should be devoted to improving administrative services to enhance the efficiency and effectiveness of course delivery. One example worthy of consideration is the development of an online testing program that supports learner feedback and provides a faster grade turnaround while measuring the desired learning outcomes/objectives of courses.

Recommendations for Future Research

Based on the results of the present study, the following recommendations for future research are offered:

1. This study could be replicated using all the distance learning and traditional classroom courses delivered at ERAU for one year.

2. This study could be repeated using a different sample of distance learning and traditional classroom courses in order to consider differences in perceptions based on course content.

3. A study could be completed to determine the class size in distance learning compared to traditional classroom courses and the effect on quality and timely communications by the instructor.

4. A study might be conducted to investigate more thoroughly the need for and use of administrative services by distance learning students.

5. A study could be conducted to analyze the instructional work design associated with distance learning compared to traditional classroom delivery modes and the relevance to appropriate feedback to students.

6. A study could be focused on instructor feedback to determine if distance learning students hold higher expectations for the quality and quantity of instructor communication than do traditional classroom students.

7. A survey could be developed and administered to further investigate instructor perceptions of distance learning and traditional classroom student interaction.

8. This study could be expanded to include other institutions with similar distance learning and traditional classroom delivery methods.

9. A study could be undertaken to determine student expectations in distance learning with the specific purpose of assisting distance learning instructors in improving their course delivery.

10. Future investigation that compares satisfaction level of distance learning classes with traditional classroom classes may enhance the quality of course material utilized in the two respective delivery modes.

APPENDIX A

DISTANCE LEARNING STUDENT RESPONSE QUESTIONNAIRE

DISTANCE LEARNING STUDENT RESPONSE TO INSTRUCTION

Instructions to students: Please use this form to provide feedback to the course developer, the designated instructor, and the University about this course. The information will be electronically submitted and entered into a database for use in improving this independent study course and increasing the effectiveness of Embry-Riddle's educational programs.

Please indicate your level of satisfaction (Very Satisfied = 4;
Satisfied = 3; Dissatisfied = 2; Very Dissatisfied = 1; Does not apply = N/A)

Course Quality
1. Quality of learning as compared to a traditional classroom setting
2. Attainment of Learning Outcomes stated in the online syllabus
3. Assignments/projects/case studies were appropriate for this course
4. Text and/or readings were appropriate for this course
5. Examination(s) sampled the important material in the course
6. Overall quality of the course material
7. Accessibility of appropriate resources to complete assignments
8. Amount of student-to-student interaction

Designated Instructor
9. Amount of instructor-to-student interaction
10. Quality of guidance/feedback provided by the Designated Instructor
11. Timeliness of feedback from the Designated Instructor

Video Instructor
12. Quality of Video Instructor's presentations
13. Quality of instruction aides used on the videos

Media
14. Quality of the ERAU website
15. Visual quality of videotapes
16. Audio quality of videotapes

Administrative Services
17. Quality of advising services
18. Selection of Distance Learning courses
19. Quality and timeliness of exam distribution
20. Distribution of academic materials
21. Quality of financial services
22. Quality of veteran services
23. Turnaround time of grades
24. Quality of the Distance Learning Enrollment Office Support

25. Where did you learn about our Distance Learning Program?
Print Advertising
Trade Show
Resident Center
Friend Colleague
Other

26. Which of the following most accurately describes your employment?

Army	Navy	Air Force
Marines	Airline	Corporate Aviation
General Aviation	Airport Operations	Defense Contractor
Manufacturing	FBO	Other

27. Do you plan to take other Distance Learning courses?
(yes/no)

28. How many times per week, on average, did you access the Distance Learning course website?
0 to 1
2 to 3
4 to 5
6 or more

29. What was your average weekly usage of the course website?
0 to 1 Hour
2 to 3 Hours
4 to 5 Hours
6 or more Hours

30. Did you use any website services other than the classroom?
No/Yes (Specify)

31. How would you rate the support provided by the Distance Learning Staff?
Excellent
Good
Fair
Poor

32. How would you rate the technical support provided by Distance Learning?
Excellent
Good
Fair
Poor

33. How much time did you spend, per week, working on course materials/assignments?
   0 to 1 Hour
   1 to 2 Hours
   2 to 3 Hours
   3 to 4 Hours
   More than 4 Hours

34. What speed do you connect to the Internet at?
   2400 baud - 14.4
   14.4 kbps - 28.8
   28.8 kbps - 33.6 kbps
   33.6 kbps - 56 kbps
   64 - 128 k ISDN
   Cable, T1, or DSL/ADSL

35. Would you be interested in computer-based course material? (ie. study guides)
   CD-ROM products
   3.5" disk products

36. Did you have an automatic access program in this course?
   NAVCIS
   TAPCIS
   OZCIS
   AUTOSIG
   CompuServe Navigator
   Other
37. What did you like most about this course?
38. What did you like least about this course?
39. What other courses would you like to see offered?
40. Please indicate any problems or errors which you may have encountered with course materials or the administrative and operational student services area.
41. Is there anyone who assisted you with the Distance Learning process that is particularly praise-worthy (academic, administrative or technical)?

APPENDIX B

STUDENT SURVEY FORM

STUDENT SURVEY FORM

Please fill in the information below using a No. 2 pencil. The information will be electronically scanned and entered into a data base for use in improving future classes and increasing the institutional effectiveness of Embry-Riddle. Thank you for your comments and support.

Section I (1-9
Please indicate your degree of concurrence or nonconcurrence with each of the items in
SA = Strongly Agree A = Agree N = Neutral   D = Disagree SD = Strongly Disagree

1. The instructor made the objectives of the course clear.
2. The instructor achieved the stated objectives of the course well.
3. The instructor was well prepared for each class session.
4. The instructor provided meaningful and timely feedback to students.
5. The instructor was readily available for consultation with students.
6. The instructor made the course intellectually challenging for me.
7. The instructional materials used by the instructor were of high quality.
8. The instructor provided all the information I needed regarding library support services.
9. If given the option, I would take another course with this instructor.

Section II (10 - 13)
Please provide your ratings in the following areas in Section II

E = Excellent   G = Good   S = Satisfactory   F = Fair   P = Poor

10. Compared to other instructors I have had (in secondary school and college), I would rate the overall effectiveness of this instructor as:
11. I would rate the overall quality of the textbooks/instructional materials as:
12. I would rate the overall quality of the class sessions as:
13. I would rate the overall value of the course to me as:

Section III (Comments)
Please provide comments concerning the course, course materials and instructor below.

APPENDIX C

STUDENT COMMENTS: MOST AND LEAST LIKED

STUDENT COMMENTS AS TO WHAT THEY "LIKED MOST" (ITEM 37) BY CATEGORY
(actual names were removed and replaced with XXX to provide anonymity)

INSTRUCTOR
1. supportive instructor
2. The instructor was helpful, responsive, and reassuring at time when I felt lost
3. Teacher interaction with the students.
4. This course was a great example of what a distance learning experience should be like. Instructor, material, and tests were all top notch.
5. the instructor's timeliness in grading assignments
6. Happy with this course...particularly the instructor.
7. Excellent instructor, great learning experience.
8. My instructor flexibility and assistance. She was available almost 24/7 during the length of this course.
9. The instructor was very flexible and helpful
10. The instructor always replied in a timely manner. He never took more than a day to answer any questions. And he always incorporated his own fresh style of humor to his replies.
11. Dr. XXXX gives excellent feedback and suggestions with each assignment. It greatly helped the learning process.
12. Instructor was a master of the course material
13. The instructor did an excellent job of making the course challenging and interesting.
14. Our teacher was eager to help towards the end of the course.
15. The feedback from the instructor on writing mistakes
16. The instructor!
17. The instructor; she was very accessible and personable to the students in her class
18. The instructor's dedication to his students no matter the situation. He took the time to answer everyone individually and helped constantly.
19. What a fabulous instructor.
20. The Instructor was flexible and worked with the individual needs of each of the students.
21. I liked the instructor immensely. She made a topic that I have always found intimidating actually enjoyable.
22. The instructor was very knowledgeable and was quite prompt at posting replies. He has a good sense of humor, and keeps things interesting.
23. Prompt responses from instructor.
24. Instructor was very helpful and worked with each student.
25. Very informative instructor.
26. The instructor being closely involved with the students. He left no doubt that he intends his students to learn. He made the class challenging and enjoyable. The topic was hard but when doubts arose, he provided complete answers.
27. I learned a lot from the professor.
28. The interaction with the teacher. He was always available to answer questions.
29. The instructor.
30. The material. The instructor put a lot of thought and prepared well to teach the main objectives of the course. The readings were difficult, but portrayed the message the instructor wanted us to learn.
31. Professor XXX is an excellent instructor
32. The instructor's knowledge and positive feedback. She made it a good learning environment.
33. The quick feedback of the instructor.
34. The instructor was very knowledgeable and willing to pass that information to the students.
35. Ms. XXX was very interactive with the students and always made me think of different items through her response questions.
36. good and timely instructor interaction

(INSTRUCTOR, Continued)

37. The instructor was very in to his students and the studies at hand. I was not expecting as much interaction and personal responses, but Prof XXX was very good at that.
38. Mr. XXX asks very thought provoking questions, excellent job!!
39. The interaction between the students and the instructor. It is quite fun to learn about new people that you meet in the virtual classroom.
40. Informative instructor insight.
41. A very upbeat learning experience which utilizes the many different backgrounds and skills of the students very well.
42. Excellent instruction
43. The instructor provided a lot of feedback and supplemental materials. She was very knowledgeable and fully qualified to teach the course.
44. Instructor was great.
45. Excellent teacher. You could count on him checking the bulletin boards and email in a timely manner. This course went well with a busy schedule.
46. Dr. XXX was by far the best on-line teacher I have had. He made it clear what to do during the start of the class and his help was super. Probably the hardest class I've taken.
47. The instructor, Dr. XXX. He was the best online instructor I've ever had.
48. Good instructor and student comments.
49. The instructors willingness to assist us with problems that seemed too difficult to handle
50. The instructor was very involved and responded quickly to all student postings. He did a great job!
51. Good instructor
52. The teacher was /excellent/. He was extremely supportive of the various complications that I found myself facing during the course. If it wasn't for his understanding and patience, I never would have made it.
53. Instructor inputs
54. Availability of the instructor XXX was very helpful throughout the course...would recommend him to other students.
55. The almost instant correspondence from the instructor.
56. Dr. XXX was the most informative, timely, responsive instructor I have had. His quick feedback and response to student questions was untouchable! He has a deep understanding and concern for the success of his students!
57. Instructor was easy to reach, prompt in responding, and very clear in his instructions. He was very helpful.
58. The teacher worked very hard to help us understand the material. She interacted with the students more than any other DL instructor I have had previously. She should be commended.
59. The professor
60. Great instructor participation/quick posting of grades
61. The Instructor Guidance throughout the course. He solicited class interaction and submitted ideas of different theorist which challenged the individual to get an indebt understanding through research and bulletin board communications.
62. Professor XXX is a very dedicated, conscientious teacher She tried very hard to keep us interested and on track.
63. This is one of the best instructors I have ever had. He is quick to respond and explains things very thoroughly. He makes the class interesting and everyone interacts with one another.
64. The instructor interaction and feedback was superior. All instructors to date would benefit from a review of this instructors computer etiquette.
65. Instructor was extremely interactive and the course was designed to promote student interaction.
66. The instructor and material learned. I enjoyed this class very much. The instructor made it easy to learn and responded quickly to any questions.
67. Dr XXX is a very good instructor.

(INSTRUCTOR Continued)

68. Professor was very informative and seemed to respond to student questions so that they completely understood the material.
69. Instructor made it very enjoyable. Kept us moving and giving positive feedbacks.
70. My instructor was GREAT! A real professional.
71. The instructor was very informative, timely in responses, and knowledgeable of course material.
72. Professor was outstanding.
73. The instructor was very helpful!
74. The instructor was very thorough. Extremely helpful. The course taught me a lot of things that will be beneficial for my future.
75. Absolutely superb course with good coverage of major theorists. The instructor was simply outstanding, providing timely and thorough feedback, appropriate discipline, and a strong guiding force throughout the course. Excellent discussions.
76. Dr. XXX was very proactive and kept students well informed, and provided excellent feedback in a very timely manner.
77. I enjoyed the subject, we touch on some interesting topics, and the instructor was great. A great first online class for any student.
78. I liked the interaction with the students. I also liked the instructor's answers to our questions. He always answered in a positive way.
79. I learned a lot of things I would never have known about myself if it were not from Professor XXX. He was very good with giving feedback, and getting to know me.
80. The instructor kept good student to professor relations.
81. The reply time of Dr. XXX was almost instantaneous. He was a very good instructor.
82. This was a great course. I learned a lot about writing. I also learned a lot about computers. Great instructor.

FLEXIBILITY
1. The flexibility
2. I actually learned a lot online.
3. It provided me with the flexibility I required. I was traveling a lot in this period and the distance learning allowed me to continue my education when regular classes would not have been possible
4. Being Online
5. Flexible
6. Working during convenient times
7. The fact that I could work at my own pace.
8. It was a distance learning course
9. Interactivity through the bulletin board
10. The freedom to work at my own convenience
11. Work at your own pace
12. That it was online
13. Being able to work on the coursework on my time
14. The ability to attend class on my own schedule is very important while trying to work a full-time airline job.
15. Everything, very challenging, and very useful information.
16. Self study.
17. Online opportunity...can not attend formal courses
18. The ability to gain credits towards a degree without the constraints of class attendance.
19. The ability to study from home. I could not attend a traditional classroom.
20. The convenience and freedom of setting my own schedule. With my military duties, it would be nearly impossible for me to complete this course in a traditional classroom environment.
21. The flexibility to work on assignments during the week.

(INSTRUCTOR Continued)
22. I could make my own schedule.
23. Self paced
24. Flexibility that I had in doing course work and taking exams.
25. Online availability.
26. I enjoyed the challenge and the critical thinking that it required in DL.
27. Flexibility was critical due to my varying schedule. Mrs. Grosser was very flexible, understanding and fair. Made the course completion much less stressful while still acquiring the learning objectives.
28. The whole course online.
29. Can be intensive online but provides scheduling my own time.
30. I learned everything from my tutor and found the course to be enjoyable and flexible.
31. I learned a lot. It was a difficult course.
32. It was interesting and forced me to re-activate the Math portion of my brain
33. It's quick... i.e. finish in 3 months. I have a suggestion. Ask Dr. XXX to divide the bulletin board up into chapters. This way you can access the data without waiting for one huge BB to load. At the end of the course we had over 600 postings.
34. I was introduced to absolutely new material. I never thought about statistics in any such manner previously, that this class brought to light.
35. I like psychology so it would have been hard for me not to like it especially online.
36. Gained insight into what makes people behave in certain ways through DL.

COURSE MATERIAL/TEXTBOOK
1. The text I felt was very good.
2. The course book which was used with the course.
3. The textbook.
4. The text and selection of readings was excellent, the coursework was very thorough
5. Great textbook
6. The selection of the stories to read.
7. Instructor interaction using textbook.
8. For the most part, the textbook gave really good examples and described how Stats is applied in the real world.
9. The textbook was the best textbook I've ever used. The course was one the two best organized online classes I've taken.
10. The text for this course is very well written, especially for a distance learning/self-taught course. Do NOT change texts (except for updated versions, of course).
11. The text book was excellent and the course layout was superior.
12. Great material, the book, etc.
13. A short story about death in the text.
14. Good material
15. Very practical material. Weekly web exams helped to review material and to keep on schedule. Very satisfied.
16. Interesting projects
17. Practical Application to everyday living
18. The course material.
19. The exposure to the classics. I most likely would never have read, or studied, these stories, poems & plays without this introduction.
20. The stories were interesting and fun to read
21. stories
22. I learned a lot about literature
23. The book.
24. I liked the readings

(COURSE MATERIAL/TEXTBOOK, Continued
25. I have never been much of a literature person. I was actually impressed with the interest I took after reading the first assignment. I have continued reading the text for other stories.
26. I read things that I would never had read unless I took this course.
27. The stories and poems we were assigned to read, very interesting stories and great classic authors.
28. The course material was very interesting, I liked the different stories and poems that we had to read.
29. Reading assignments selected for the course.
30. The course allowed time to read the article required and allowed me to work through the material at a slower pace to better understand it.
31. Literature was very interesting
32. Comprehensive and practical material multiple attempts at quizzes pre and post exam reviews
33. The text gave me an overview of the field of statistics.
34. Toughest course I've had. Really spent time and effort to pass. Very challenging. Would recommend to other students to read the book over and over.
35. Breadth of theories covered.
36. The discussion topics were really great and each was labeled with due dates.

LEVEL OF HOMEWORK
1. Assignments allowed creative freedom. Assignments reinforced topics very efficiently It was very challenging
2. The learning topics were well-focused and I finished the class with a broader knowledge base of the subject matter through assignments. I also learned a lot about how to use the various programs on my computer.
3. The final paper.
4. Very Challenging and varied assignments.
5. The course had very challenging problems.
6. The resume and business correspondence section was definitely a big hit with all classmates. We were able to take something immediately from this class and use it right away! Plus the paper, learning APA technique is essential for making great grades.
7. This course Challenged my abilities
8. This course taught me a lot. The assignments were both effective and useful. The instructor issued assignments that applied to the course well and helped me to focus me studies.
9. It was a good course, I learned good sentence structure and the class aided in helping to write term papers.
10. Gave me a greater appreciation for the art of technical writing
11. Learned how to produce a better resume.
12. Great reading of stories presented. Learned a lot
13. The reading assignments
14. Variation in reading assignments.
15. The reading and review of the stories, poems, plays.
16. Literature is more complex than I thought. Even at an introductory level I was consumed by the readings and my interest was consistently peaked.
17. Challenging home work. This should have been an upper level class
18. Learning the material through assignments.
19. Made me think about attention to details.
20. Very challenging course work

INSTRUCTIONS PROVIDED
1. The course content was exactly what I was looking for in the DDL medium.
2. The course outline and content of course was really great. I have gotten a lot out of it
3. Syllabus and learning content

INSTRUCTIONS PROVIDED, Continued
4. Learning outcome was direct and too the point. This class help a great deal with my writing skills
5. Clearly stated learning objectives
6. Well-structured schedule of assignments to progress through course.
7. The information presented was excellent.
8. Clearly defined objective/outcomes and requirements.
9. Straight forward instructions
10. I liked the content of the course.
11. I liked the format of the papers.
12. The overall information of the course was good. The way the teacher presented the material to the students was great.

INTERACTION WITH STUDENTS
1. Interaction with other students and the instructor online and via email.
2. Good interaction on bulletin board.
3. Good interaction between the instructor and the students
4. Open web discussions
5. Student interaction
6. The interaction between the students and the instructors.
7. The interaction with the professor and other students and coming to class at anytime of the day.
8. Real life application of material and interaction w/ students and instructor.
9. I liked the interaction with the students.
10. I learned a lot about myself as I was forced to answer questions about myself and how I view things.

GRADING PROCEDURES
1. It was brief and to the point. It hit the areas that it need and tested these areas.
2. Quizzes helped out for the tests
3. I learned how to take a a-- whipping.

NOTHING
1. It's Over!
2. Nothing
3. Nothing
4. Nothing
5. Nothing!!!

OTHER
1. I found it interesting on how stats are found and how they can be adjusted to what you want as the outcome.
2. Courses available
3. Interesting
4. Price was good
5. Please see below
6. Web Sites/power point provided by Dr. XXX were a great asset in understanding course material.
7. Self realization
8. Reawakened my desire to read for enjoyment
9. The use of the TI-83 Plus calculator
10. I did not like it and needed help

OTHER, Continued
11. The math
12. New info
13. Finishing it....lol
14. Self taught
15. Challenging
16. Really helps you see the type of person you are.
17. Makes you work with your spouse to learn more about each other.
18. I learned a lot about myself and why I act the way I do.
19. Learned valuable information about personalities.
20. Learned a lot about myself.
21. Helped me realize a great deal about m y self
22. Fun
23. Found new friends

STUDENT COMMENTS AS TO WHAT THEY "LIKED LEAST" (ITEM 38) BY CATEGORY
(actual names were removed and replaced with XXX to provide anonymity)

INSTRUCTOR INTERACTION/FEEDBACK
1. The Instructor was condescending and abusive. I feel he is totally unprofessional and biased in his grades. I will be speaking to my advisor on the subject. I have spoken with several other students who feel the same.
2. My instructor, Mr. XXX, did very little in teaching or correcting our problems. He would overly subtract points from your grade for minor mistakes and refused to aid us. He was never clear on what he wanted for papers or anything. Us students had to read his mind.
3. The class was very non interactive. Unless you asked for it, not information was provided by the teacher. Even then, some info wasn't addressed. If I have a question, and I get an answer from another student, I don't know if that answer is correct or not.
4. Where do I begin? First off, this is my 15th on-line class through ERAU and by far the absolute worst class I have ever taken, online or in the traditional classroom. Professor XXX was absolutely of no help to this class. The only input he submitted was final grade.
5. Mr. XXX's attitude during the entire course was unprofessional and demeaning. His assignments were not clearly explained, and were pieced together over several e-mails. His responses to student's questions were derogatory and did not foster a learning environment.
6. Students did a lot of bickering with the instructor
7. The instructor, Mr. XXX, was totally non-responsive! He gave no instruction at all and answered email questions with snide, terse, sarcastic remarks. His syllabus was his only tool of instruction and he tolerated no questions otherwise.
8. I have taken many ERAU on-line courses...the instructor was by far the least supportive, cooperative, and definitely the most arrogant of all ERAU on-line instructors. I would NOT recommend this person to any prospective students in the future.
9. There is no teaching on-line, you have to learn it by reading a book.
10. The time response to submitted material. Also, the response time for email or bulletin questions. The instructor, though I am sure very busy, made us online students feel as though we are second rate students. We would often wait 2-3 weeks to get a response.
11. Slow response time from Professor
12. Our instructor was very nice; she provided excellent feed back to the class. However, she only answered our questions and graded assignments once a week. One time she did not log on for over two weeks, I thought something had happen to her.
13. The class was poorly managed. Professor did not organize the class at all. I would have graduated with a 4.0 had the professor used a friendly study environment. This was the only grade I have ever received which was not an A.
14. Instructor feedback/communication.
15. The instructor did not seem to know the subject. When asked how a certain answer was obtained on quizzes I got no reply. When asked about homework, I was sent the solution. So I had the question and the solution but no clue how to get from one to the other.
16. Mr. XXX is the worst instructor I have ever encountered. He absented himself from the course for two weeks without warning He later stated illness as the cause. There are still unanswered questions on the bulletin board from a month or longer ago.
17. Instructor was in transit often...not available to field daily questions.
18. The instructor. He was kind of short and snappy with some of the responses he gave to students. Being in the Army, I was use to other courses that if you fell a couple weeks behind because of work, you could make them up without any problems.
19. The lack of feedback and participation from the instructor.
20. The fact that I didn't have a professor to explain.
21. The instructor

(INSTRUCTOR INTERACTION/FEEDBACK, Continued)
22. Lack of instructor feedback. Confusion between text and supplemental material provided.

FLEXIBILTY OF ONLINE STUDY
1. It was quite hard for an online course
2. This is not a course to take online/
3. Difficult subject to take online.
4. Preferred to be in a classroom setting.
5. Very tough to do online
6. It was a very tough course for me.
7. unable to fax homework to instructor
8. I would prefer to study in a classroom setting. I find that I learn better more hands on.
9. Math is very hard to learn online
10. I am not a fan of non-traditional learning. Classroom interaction is much more beneficial to learning. The issue is I have no choice but to take some classes on line as they are not offered at the satellite campus.

COURSE MATERIAL/TEXTBOOK
1. To much information was presented in to short a time frame. Additionally the text book was not detailed enough to get all the information necessary to have a clear understanding of the subject.
2. Textbook
3. In some cases the text book was very dry reading. Had to review sections several times just to understand what was being presented.
4. Quizzes are ENORMOUSLY UNuserfriendly.
5. I don't work well with statistics. They're too subjective.
6. Reading Shakespeare material
7. It was Statistics and book did not help.
8. I am not a math major so just the math itself.
9. I did not like the some of the on-line quizzes as some of the questions had incorrect answers. Also, there were at least 5 questions on both the mid-term and final that were never covered in the text or classroom discussion.
10. Book was frustrating for me.
11. Inability to find good examples of a research paper in the materials provided for the class.
12. I could not open attachments (material) posted from other students.
13. Would like to see more interactive DVD or CD-ROM products to help with studying. Also make more of the programs MAC friendly.
14. It could have been related to Aviation in some small way to raise the level of interest.
15. I should have paid for the suggested solution book. Some of the problems in the text just did not make sense until review a week or two later or explanation from the instructor or another student.
16. the subject matter itself and the text
17. Well, that it's math and I could not find enough examples to assist me.
18. I thought this class would be more about learning from different psychologists, not about dream interpretation, importance of symbols, etc. The content of the book was very good, the notes were excessive, worthless and a complete waste of time.
19. I am not good at the subject and text did not help.
20. Text was bad

LEVEL OF HOMEWORK
1. The last part of the course is VERY time consuming, especially with the time frame given for the final project. More time is needed for the final project.

LEVEL OF HOMEWORK, Continued
2. too lengthy exams
3. Homework
4. Writing at a 6th to 7th grade level
5. Many hours spent on assignments
6. Term Paper
7. the essays
8. More writing then I expected. 4 term papers!
9. The reading.
10. Some of the subjects, or stories, I didn't care about to read at all.
11. A lot of reading. I can't find the time to read very often. But I got it done!
12. The reading assignments
13. Having to read 34 poems, which I didn't really understand.
14. reading the plays
15. Reading and understanding the poems.
16. To many assignments
17. The immense amount of reading material. It would not have been a problem if I were only taking this course by itself, but between this one and 2 other classes that I committed to on my own, the reading seemed to take up a lot of my time. By no fault of the teacher.
18. I amount of reading I had to do. It was very time consuming.
19. Very time consuming
20. Hard to keep up with projects.
21. Hard to keep a job and complete assignments on time.
22. Too much homework was assigned, it took too much time for just one course. It's good I only had to take this one course by itself.
23. Heavy emphasis on writing papers.
24. The quizzes did not were not testing material that was assigned in the homework. We were assigned to just read through certain sections, and then found out 95% of the quiz was on a section with no homework!
25. Read, read, read
26. The AMOUNT of homework was oppressive. It is hard to keep up with this course when you have a job and a family and you are not willing to give up sleeping.
27. Heavy reading assignments. A lot to assimilate in a short time
28. Time spent on studying.
29. There is too much to do in this class. I spent much more time on this course than I have on any other course I have taken.
30. It took up a lot of my time. The reading materials in the book were of no interest or use. The supplement reading was very interesting, and full of information I will continue to use.
31. Too much reading!
32. Time consuming.
33. Excessive reading materials.
34. The papers I had to write
35. What is the difference between taking this class and simply reading the textbook and completing the exercises? The only difference is that ERAU's involvement allowed me to get credit for having read the book and completed the exercises.
36. A lot of home work.

INSTRUCTIONS PROVIDED
1. The instructions were confusing. What was in the syllabus was changed and not very clear. There was a tremendous amount of confusion throughout the course and not just by me. Most of the time I was guessing at what I thought the teacher wanted.

(INSTRUCTIONS PROVIDED, Continued)

2. The subject was not explained well.
3. Assignments could be vague at times
4. Distance learning can be difficult when you problems with understanding a course
5. The paper topic was very hard for me because it was so generalized. There was no specifications made about what to write about. That made deciding the topic difficult.
6. The instructor's instructions for school work was not clear and examples did not go with the examples in the text book. I have been told in prior English classes that the university wanted papers in APA format and that is what was taught.
7. Assignments are unclear. The instructor asks for one thing and grades based on another set of standards. When the instructor was questioned regarding the grading, he said to look and do as other students have done.
8. Assignments weren't clearly explained as to what was needed/wanted or how it was supposed to be done (he wanted MLA papers, but didn't give examples.
9. The lack of a clearly defined set of due dates. None of the assignments or exams due dates were clearly identified without having to prompt the instructor.
10. It was tedious in the fact I did not know what to expect from the teacher, other students, and the website. I received little direction in how the process worked. Had I received this direction I might have been able to accomplish the tasks quicker.
11. Found some of the reading very difficult. Depending on reading skills this could be a challenging class. Some other information to assist with reading Othello, or other difficult plays.
12. No Calendar provided showing dates associated with topics of learning. Had this with other classes and it was extremely helpful.
13. Text book was more geared for classroom and the professor did not supplement the readings.
14. There are certain concepts that the instructor, having a strong knowledge of the subject, thinks are important. However, when doing independent study, it is difficult to know which concepts are as important as others. This only reflects in the testing process.
15. Too much information in different locations. Suggestion to divide Bulletin Board discussions by Chapter and Exam. Instructor did so about half way through the course. Made it easier to refer to a particular problem.
16. I did not like or appreciate the fact that the course is oriented towards a self-study/self-improvement type atmosphere. I did not feel comfortable explaining to others how and why I felt about any particular subject. The course is titled "Personality Development" and it was personal not guided.
17. First time enrolled online class was not briefed on how the online program worked. So know I'm far behind and I have to catch up in two weeks of work just to start the course.
18. There were too many bulletin board topics and they could be updated and organized better. Also, I would prefer there be some practice quizzes for the midterm and final. I cannot stress this enough: students don't know what the style of the exam will be.
19. There were a lot of bulletin board postings towards the end, which was a little hard to keep up with finals and stuff around the corner.
20. Course syllabus was very long and not exactly clear on all dead lines i.e. 2 different paper due dates in the same syllabus. The supplementary reading location was not clearly identified in course syllabus. I didn't find it until after the Mid-term.
21. Too much information to sort out.
22. Information layout in "handouts". A little difficult to extract information I needed in a timely fashion. Spent considerable time 'digging" for answers. Otherwise the course was very interesting.
23. The sheer quantity of postings were time-consuming to navigate with Blackboard, but this is technical--not course--failing. Syllabus needed to be more clear with term paper guidance as a separate document.

INTERACTION WITH STUDENTS
1. Lack of classroom interaction
2. Sometimes I would think it would have been better to do this type of course in a classroom setting and learn from the teacher and other students.
3. In this particular course there was very little interaction between students. If there had been more interaction in the BB Forums, I think it would have been more helpful and cohesive.
4. I really missed the classroom interaction with the instructor and other students.
5. The interaction between other students and the instructor seemed a little sarcastic
6. No personal interaction
7. There is not a good way to learn the pronunciations of the more difficult pieces, i.e. Oedipus, Iocaste, etc
8. Would have liked to had it in a classroom setting
9. I missed the interaction of a classroom setting but still enjoyed the ability to do this at my pace
10. Interaction between students was nil.
11. The interaction between the student and instructor.
12. The students didn't discuss with one another very much, they generally answered the instructor and not each other.
13. Very little interaction between students and instructor
14. inability to get quick response from question, i.e., raising your hand in class and getting answer to a question
15. little direct interaction with instructor and classmates
16. Lack of student to student interaction. It's difficult to speak about math online.
17. I don't like DL courses in general. Most instructors are slow to give feed back and don't interact with the students much. The students generally interact even less. I learn from student input and questions during in class courses.
18. The fact that if I had a question concerning a theory there was lag time between time I have the question and when I got the answer. I suppose that is one of the hazards of an on line class may have.
19. Possibly more student interaction at times.
20. No face-to-face interaction.
21. I still miss the traditional class room interaction.
22. Professor did not interact very much.

GRADING PROCEDURES
1. The grading criteria used by the instructor. -I felt that he graded somewhat strict for an on-line course
2. Maybe have more tests with less material covered on each of them. They could still represent the same total of the grade, but each test covered half of the book.
3. Since we were reading the book from the last chapters backwards towards the first chapters it seemed that some of the questions on the exams were for material from earlier (in the book) chapters that we had not read yet.
4. The fact that I could not see what I missed on the final exam really hurts my learning. How do I learn if I can not see what I missed?
5. Very difficult quizzes
6. Inconsistent grading
7. Grade turnaround time. But, the instructor did advise going in that he would be slow to return grades to give us all a quality review of our work.
8. Subject/questions did not cover material for review that explained assignments, mid-term and final.
9. The instructor decides the final grade before completing other graded requirements and tailor's the remaining grades to the final grade. This practice is unethical for a professor to do, just as it is for a student to cheat.
10. Assignments took awhile to get grades on, however with all the hurricanes it is very acceptable.

GRADING PROCEDURES, Continued

11. Grading of the exams. Eight question exams are hard to complete when the student doesn't understand what to study for the exam. I feel multiple choice or short answer over the stories read would be better.
12. No mandatory questions after reading assignment.
13. The online automated quiz grading was very poor. Took quiz online and then would send to instructor for correction. I would like to see a quiz that is sent directly to the instructor for grading.
14. Weekly quizzes did not recognize correct answers - quite frustrating. Online quizzes should only be multiple choice selection type and not rely on exact word recognition.
15. The instructor two different ways of grading.
16. I hated the online quizzes. The way the quizzes are structured makes it nearly impossible to get a correct answer and then the instructor has to take extra time to review everyone's answers and correct their scores.
17. On-line quizzes were very frustrating. Bad idea but it was okay because it gave us a change to correct ourselves.
18. No review for exams. No direction was given from instructor. For the first exam I studied all of the formulas and there was nothing but vocabulary on it. This was not supposed to be an English class.
19. Quizzes were difficult, because they were graded automatically...even with the correct answers entered, the computer would sometimes still mark them as wrong.
20. the quizzes were very hard to enter the answers....you type an answer and if it wasn't word for word with what the programmer entered, you had to retype it...I would spend hours trying to take a 10 minute quiz when I had the right answers.
21. not always having the homework verified by the instructor
22. Participation grade (15% of overall grade) was based on student interaction using the bulletin board. There was some student/professor interaction, but very little student to student interaction.
23. Quizzes should provide example for the each answer
24. The online quizzes did not work
25. Midterm and Final Exam as a large part of final grade.
26. Exams which I understand were written by the department head seemed more intent on showing how smart he was as opposed to measuring student. Testing material learned from the text. Extremely difficult exams, requiring knowledge outside the texts to score well on.
27. Not enough self tests to assist with mid and final exams. Affected my grade.
28. Graded exams stressed authors more than ideas or theories
29. I thought the test were extremely hard for the material that was handed out. I thought the tests were too complex. This is only an elective I am not majoring in this subject.
30. The fact that with distant learning we do not get our exams back to check what we got wrong and affect on my exam grades.
31. The midterm and final exam grades.

NOTHING

1. Nothing
2. Nothing, it was a pleasure taking this class.
3. Everything was interesting.
4. No problems
5. I don't have anything I didn't like or enjoy.
6. n/a
7. Nothing
8. Nothing
9. No comment comes to mind.
10. Nothing
11. Nothing

(NOTHING, Continued)
12. Nothing
13. N/A
14. N/A
15. none
16. Very difficult to digest outside a classroom environment, but once I stopped feeling sorry for my self it began to make sense and thus became fun in the process.
17. Good course
18. I liked everything. This was my favorite class I've ever taken at ERAU.
19. This course was perfect for me.
20. I didn't get to meet some of the students individually because there are some interesting people with great ideas.
21. NA
22. nothing
23. Nothing
24. I enjoyed all of it
25. Nothing really.
26. Nothing
27. Nothing
28. Nothing
29. Liked the course
30. Nothing
31. none
32. na
33. N/A
34. Nothing
35. OK

OTHER
1. The Army was not very flexible or helpful
2. It is really no fault of ERAU, but the computer accessibility was difficult. There were only a few times when I could not access the site, due to the hurricanes. A few times, I tried to go into the "drop box" and was denied access.
3. Fighting with my MNCI Government computer system. It hurt my ability to access the Blackboard system.
4. I am deployed at the time of taking this course. Computers that I had access to were very slow, because other computers share the same lines out, making a half-hour project into four hours. Simplify the bulletin board as much as possible.
5. 12 weeks is to long.

APPENDIX D

EMBRY-RIDDLE AERONAUTICAL UNIVERSITY APPROVAL FOR RESEARCH

EMBRY-RIDDLE
AERONAUTICAL UNIVERSITY

600 S. Clyde Morris Blvd.
Daytona Beach, FL 32114-3900
904-226-6000, Fax: 904-226-6459

February 22, 2005

TO: Dr. Sieland
               Dean Extended Campus
               Embry-Riddle Aeronautical University

FROM: Jim Gallogly

SUBJECT: Utilization of student survey data in dissertation

      Data obtained from Distance Learning Student Response Questionnaires and Student Survey Form (traditional classroom) will be used to assist in determining student satisfaction levels for four (4) General Education courses. The courses surveyed are:
ENGL 221, Technical Report Writing
MATH 222, Business Statistics
HUMN 142, Studies in Literature
SOCI 310, Personality Development

      This data will be presented in the dissertation "RELATIONSHIP OF STUDENT SATISFACTION LEVELS IN DISTANCE LEARNING AND TRADITIONAL CLASSROOM ENVIRONMENTS AT EMBRY-RIDDLE AERONAUTICAL UNIVERSITY".

      Data will not include information that will enable the reader to determine the identity of any student or faculty member.

Approved: _____   Date: __2/22/05__

APPENDIX E

UCF INSTITUTIONAL REVIEW BOARD COMMUNICATION

University
of **Central**
Florida

December 14, 2004

Office of Research and Commercialization

James Gallogly
Interim Chair, Distance Learning
Embry-Riddle Aeronautical University
600 S. Clyde Morris Blvd.
Daytona Beach, FL 32114-3900

Dear Mr. Gallogly:

The University of Central Florida's Institutional Review Board (IRB) received your protocol entitled, "Relationship of Student Satisfaction Levels in Distance Learning and Traditional Classroom Environment at Embry-Riddle Aeronautical University". The IRB Chair did not have any concerns with the proposed project and has indicated that under federal regulations this project using de-identified data is exempt from review by our IRB, so an approval is not applicable and a renewal within one year is not required.

Please accept our best wishes for the success of your endeavors. Should you have any questions, please do not hesitate to call me at 407-823-2901.

Cordially,

Barbara Ward

Barbara Ward, CIM
IRE Coordinator

Copies: **IRB File**

12443 Research parkway. Suite 302 .Orlando. FL 32826-3252 .407-823-3778 .Fax 407-823-3299 An Equal Opportunity and Affirmative Action Institution .

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